

# UNIVERSITY ORGANIZATION AND SCIENTIFIC PRODUCTIVITY IN TURKEY

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## INTRODUCTION

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1. F. HARBISON and C.A. MYERS, *Education, Manpower and Economic Growth*, New York: McGraw-Hill, 1964.

2. G.L. KLEIN, *Soviet Education*, New York: Columbia University Press, 1957.

3. A.K. ÖZİNÖNÜ, *Growth in Turkish Positive Basic Sciences 1933-1966*, Ankara: METU, Faculty of Arts and Sciences, Publication no. 17, 1970; V. TINTO, "The Development of Science and Higher Education in Turkey," A Paper presented at the Third Annual Meeting of the Middle East Studies Association, Columbus, Ohio, November 1970.

4. *Second Five Year Development Plan, 1968-1973*, State Planning Organization; Ankara: Published by the Central Bank of the Republic of Turkey, 1969; *Yeni Strateji ve Kalkınma Planı, Üçüncü Beş Yıl, 1973-1977*, Ankara: T.C. Başbakanlık Devlet Planlama Teşkilatı, Yayın No. DPT:127, 1973, pp.764-768.

5. Many scholars expressed opinions on this issue including Soysal, Mumcu, Erez, Payaslıoğlu, Aybay, Kılıçbay, Özden, Sorguç, Uluöz, Talay, Meray, Karayalçın, SPO (State Planning Organization), Aksoy.

In many developing nations questions of educational reform are often discussed within the broader context of national planning. From the planning perspective, investment of resources in the educational sector is viewed as investment in the production of both trained manpower and knowledge (i.e. educational outputs), which in turn become inputs into the planned growth of the national economy. Considering the findings provided by recent studies which give supporting evidences to establish higher correlations between education outputs and GNP per capita of a nation,<sup>1</sup> planners tend to view questions of educational reform in the light of how proposed changes in the educational system will affect educational outputs, and in turn, how they will affect the achievement of preplanned societal goals. Some centrally planned societies, recognizing the link between educational reform and societal change, make deliberate changes in their school systems as a whole, prior to attempting to induce any change in their social structure.<sup>2</sup>

Recognizing the importance of the fact that scientists are the most valuable assets of a nation, in Turkey, this perspective is especially evident in discussions of university reform, particularly with respect to the role of the university in indigenous scientific development. Because of a prior commitment to invest in scientific development as a means to rapid national development, Turkish educational planners have sought to utilize reform in higher education in order to maximize those outputs of the university which are essential for the growth of an indigenous scientific community.<sup>3</sup> Thus, they have looked at university reform not only as a means to increase the production of Turkish scientists, but also as an instrument to maximize the production of scientific knowledge.<sup>4</sup>

Among numerous reforms being considered are those which deal with the question of university organization. Of these, the one that draws the greatest debate, not only among planners, but also among the scholars themselves, concerns the issue of diversity versus unification among Turkish Universities.<sup>5</sup> Latently, the real issue which lies under such a long debate

concerns with the relative merits of the German origin Faculty and Anglo-Saxon origin the Departmental modes of university organization. Given the presence of both types of university organizations, the ongoing debate in Turkey in effect seeks not only to determine which of the two modes of organization should be utilized in the development of new universities, but also whether the existing universities should be re-organized along predetermined organizational lines.

The present paper focuses upon this debate, and through the analysis of organizational characteristics attempts to explore whether the Faculty or the Departmental mode of university organization would result in higher productivity of scientists within the university. First, the paper investigates the place of the university within different types of organizations. Then, it examines varying organizational characteristics of the Faculty and Departmental modes of university organization with reference to patterns of faculty behaviour conducive to high faculty productivity. The tentative conclusions reached with respect to the mode of organization and faculty productivity are then tested by means of data collected on the faculty productivity in basic sciences.<sup>6</sup>

## UNIVERSITIES AS ORGANIZATIONS

Prior to considering the differential characteristics of Faculty and Departmental Turkish Universities, it is first necessary to review briefly the characteristics of universities as organizations. An organization is broadly defined to be a structure of a formally coordinated effort by groups of individuals to realize specific common goals. A university, as an organization, can be distinguished from other types of organizations both by the manner in which human efforts are coordinated and by the goals for which the coordinated individuals strive.

With regard to the manner of coordination, it has been generally recognized that universities as organizations are fundamentally different in organizational structure from business or governmental agencies.<sup>7</sup> While the latter are normally referred to as bureaucratic organizations, universities have been described as professional organizations.<sup>8</sup> And as distinguished from a wide range of bureaucratic organizations, the goal of the professional organization is generally taken to be the creation and institutionalization of knowledge. The university, however, because of the dual nature of its professional tasks (teaching and research), is different from most other professional organizations in that it is a multiple organizational entity rather than a monotypic one. Within a university organization, at least two distinct structures can be discerned: each with its own authority structure, value system, and set of organizational goals; the administrative structure and the academic structure.<sup>9</sup>

The administrative structure of the university tends to resemble the bureaucratic form of organization with its hierarchial authority structure and detailed set of rules governing the responsibilities of specific roles. Principally concerned with the day-to-day running of the various academic units under a university-wide policy, the control of the financial operations of the institution, and the coordination of the numerous supra-institutional ties which relate the university to external

6. A.K. ÖZİNÖNÜ, Pattern of Scientific Development in Turkey, 1933-1966, *Science and Technology in Developing Countries*, London: Cambridge University Press, 1969, pp. 141-173 and appendix 4, pp. 563-569.

7. P. BLAU, *Formal Organizations: A Comparative Approach*, San Francisco: Chandler, 1962; C. PERRON, A Framework for the Comparative Analysis of Organizations, *American Sociological Review*, v.32, n.2, 1967, pp.194-204; R.B. TAYLOR, *Power, Presidents and Professors*, New York: Basic Books, 1967; E. LITWAK, Models of Bureaucracy Which Permit Conflict, *American Journal of Sociology*, v.67, n.1, 1961, pp.177-184; T. PARSONS, *Structure and Process in Modern Societies*, New York: The Free Press, 1960, pp. 16-96.

8. A. EZZIONI, *A Comparative Analysis of Complex Organizations*, New York: The Free Press, 1961.

9. In this respect it is important to note that the analytic separation of the university organization into separate structures, with distinct and often opposing organizational goals, permits one to utilize conflict theory in the analysis of university change. From this perspective change within the university is viewed as the outcome of the conflict between the different structures over the nature of the university.

10. A. STINCHCOMBE, *Bureaucratic and Craft Administration of Production: A comparative Study*, *Administrative Science Quarterly*, v.4, n.2, 1959, pp. 168-187.

11. S.H. UDY, *Bureaucracy and Rationality in Weber's Organization Theory*, *American Sociological Review*, v.24, n.6, 1959, pp. 791-795.

agencies. The academic organization, itself a multidimensional structure composed of different disciplines and fields of study, more closely resembles the rational form of organization as described independently by Stinchcombe<sup>10</sup> and Udy.<sup>11</sup> Characterized by an emphasis on performance standards and segmental participation based upon contract, it is directly concerned with the professional activities (teaching and research) of faculty members and other personnel within the separate academic unit. And while the goals of the administrative structure center about the continuing existence of the university and the enhancing of its stature among other universities and societal organizations, by means of optimization of the individual academic unit, the goals of the academic structure focus almost entirely upon the maximization of academic output of the individual academic unit.

### FACULTY AND DEPARTMENTAL MODES OF UNIVERSITY ORGANIZATION

Though all universities can be characterized as consisting of distinct administrative and academic organizations, there are important differences between the various types of universities not only with respect to the characteristics of the separate organizations, but also with respect to the manner in which the separate organizations interact within the university setting. Specifically, in the case of Turkish universities, there are significant differences in organizational characteristics between the Faculty and Departmental mode of university organization which affect both the autonomy and career-mobility of faculty members within the different types of universities and which result in different levels of scientific productivity.

Generally speaking, the Faculty mode of university organization tends to have a decentralized administrative structure and a centralized academic structure, while the Departmental mode has a centralized administrative structure and a decentralized academic organization.

Traditionally, the Faculty mode of university organization is largely the result of the adaptation of the German university model. It is based upon a traditional conception of knowledge which holds that all humanistic and scientific knowledge exists in organic wholes of faculties. Organizational structure is thus a matter of principle whereby each self-contained field of knowledge is represented by an equally self-contained Faculty headed by a recognized master of the field. The head of the Faculty, the Chair holder, as master and representative of the field in the university, is therefore given both individual autonomy and full authority over the academic activities within the Faculty.<sup>12</sup> This results in an administrative organization which is decentralized with respect to the distribution of authority between the administrative head of the university, the Rector, and the various Chair holders of the Faculties, but an academic organization which is centralized with respect to the distribution of authority between the Chair holder and the other members of the Faculty. This latter authority being heightened by the fact that the Chair holder is both the highest ranking professor within the Faculty and the administrative head of the Faculty. In effect, the decentralization of authority within the administrative organization enhances the authority

12. A. FLEXNER, *Universities: American, English, German*, New York: Oxford University Press, 1930; R.H. SAMUEL and R.H. THOMAS, *Education and Society in Modern Germany*, New York: Oxford University Press, 1930; R.H. SAMUEL and R.H. THOMAS, *Education and Society in Modern Germany*, London: Routledge and Kegan Paul, 1949.

of the Chair holder within the academic organization of the university.

The Departmental mode of university organization being the outcome of the adaptation of the American university model, takes on characteristics which are very different from the Faculty organization. This is due to the fact that the Departmental structure has been the result of the rejection of the traditional conception of knowledge as represented in the Faculty organizational structure. Not being assumed to exist in closed wholes, knowledge need not be restricted to preconceived university structures. The determination of which academic units should exist in the university could then arise from expediency rather than from principle. The same applies to the internal structure of the academic unit. Since knowledge could not be encompassed or mastered by any one individual, the Department need not be a 'one-man show', but could be structured so as to provide an efficient and effective unit where a number of experts of different specialties could complement one another. Instead of rigid centralization, therefore, the Department exhibits a decentralized academic organization with the internal flexibility to differentiate itself to meet the changing requirements of constantly changing fields of knowledge.

Accordingly, division of labor within the academic organization, as in the case of the American University, tends to be functional rather than hierarchical. Academic activities, both teaching and research, are generally distributed among members of the Department according to interests and abilities rather than by rank, as is frequently the case in the Faculty academic organization. And the Chairman of the Department, unlike the Chair holder of the Faculty, is usually no more influential in academic affairs than other faculty members of equal rank. Indeed, the rewards of the Chairmanship are so minor that younger, more ambitious faculty members often avoid the position.

But if the head of the academic organization of the Departmental university has little authority as compared to the head of the academic organization of the Faculty university, the head of the administrative organization, the President, can have a great deal of authority. This is because the administrative organization of the Departmental university, like that of the American University (whose historical development has been strongly entrepreneurial in nature) centralizes administrative authority usually in the office of the President and/or Board of Trustees. The Departmental Chairman, as part of the administrative hierarchy, is however, of relatively minor importance and as such is unable to use administrative authority to significantly influence decisions within the academic organization.

#### ORGANIZATIONAL STRUCTURE AND SCIENTIFIC PRODUCTIVITY IN THE UNIVERSITY

Differences in the organizational characteristics of the administrative and academic organizations of Faculty and Departmental universities have differential impact upon the scientific productivity of faculty members within the university. Since knowledge and creativity are largely individual properties that cannot be transferred from one person to another by organizational decree like other organizational resources,

13. D. PELZ, *Some Social Factors Related to Performance in a Research Organization*, *Administrative Science Quarterly*, v.1, n.3, 1956, pp.310-325; D. PELZ and F. ANDREWS, *Scientists in Organization*, New York: John Wiley and Sons, Inc., 1966; E. SHILS, *The Autonomy of Science*, *The Sociology of Science*, ed. B. BARBER and J. HIRSH, New York: The Free Press, 1962, pp. 610-623.

14. E. BRIDGES, et. al., *Effects of Hierarchical Differentiation on Group Productivity, Efficiency, and Risk Taking*, *Administrative Science Quarterly*, v.13, n.2, 1968, pp. 305-319; G. SOGELS, *Professional Autonomy and Bureaucratic Organizations*, *Administrative Science Quarterly*, v.15, n.1, 1970, pp. 12-21.

15. J. BEN DAVID, *Fundamental Research and the Universities*, Paris: Organization for Economic Cooperation and Development, 1970.

centralization of authority within the academic organization of a university tends to reduce professional autonomy, and in turn, reduce the likelihood of productive professional activity.<sup>13</sup>

In the Faculty university, though the interaction between administrative and academic authority structures permits the individual Chair holder a high degree of discretion as to research, it tends to reduce the autonomy of faculty members of academic ranks subordinate to that of the Chair holder.<sup>14</sup> In the Departmental university, the reverse is generally true. The Departmental academic organization is such as to maximize the autonomy, and therefore the potential for productivity, of individual faculty members at the expense of the academic head.<sup>15</sup> And though a creative person in the position of Chair holder may be able to develop an extremely creative and productive Faculty, there is no effective mechanism in the Faculty mode of university organization to prevent mediocre professors, once enthroned in the Chair, from having precisely the opposite effect. In the decentralized academic organization of the Departmental university, however, the Department Chairman is, as noted, an administrative official with little more authority than other professors within the Department. Thus, the presence or absence of creativity in the Chairman, apart from its prestige effect, has little direct influence on the productivity of other faculty members within the Department. And though it is entirely possible that a powerful President in the Departmental university can have the same degree of control over the affairs of the Department as does a Chair holder in the Faculty university, several factors may as in the Turkish case, work to limit the ability of the President to influence academic decisions within the Department. On one hand the sheer growth in the size and complexity of the Departmental universities has acted to remove academic affairs on the Departmental-level further away from the center of administrative authority. On the other hand, the growing professional prestige of the academic profession, in the absence of a strong academic head, has enabled the academic organization within the Departmental university to increase its independence of the administrative organization.

The potentiality for greater scientific productivity within the Departmental university may be further enhanced by its relatively more flexible promotion system which increases the prospects for rapid academic mobility. Yet in the university with Faculty organization it takes, on the average, ten to twelve years for an academician to reach to an academic rank where he may become legally and by tradition eligible for teaching even at undergraduate and definitely at graduate level. On the other hand, expansion needed in the academic structure is greatly hindered in the Faculty organization. For unless new Chairs are formed which requires availability of manpower having academic rank at associate professor or above, a Chair is normally filled only when one becomes vacant. And given the centralization of authority within the academic structure of the Faculty university, that generally occurs only upon the retirement of the present Chair holder. For many faculty members then, the highest academic position, the Chair, is virtually unobtainable. In the Departmental universities, this is not the case, since the academic organization is decentralized with respect to both authority and academic activities. Faculty members can carry out research of their own

University	ACADEMIC RANK		
	Assistant Professor**	Associate Professor	Full Professor
Istanbul University	3.9 (20)	7.3 (17)	22.8 (27)
Ankara University	2.3 (12)	6.1 (8)	7.4 (20)
Middle East Tech. Un.	4.6 (10)	... (***)	14.6 (5)
Atatürk University	3.7 (12)	5.7 (7)	11.6 (9)

Table 1. Average number of publications by faculty members in the fields of science in selected Turkish Universities by Academic Rank.\* (number of faculty)

\* Representing the situation in 1966.

\*\* Assistant with Ph.D. in other universities.

\*\*\* METU had no associate professor in sciences in 1966.

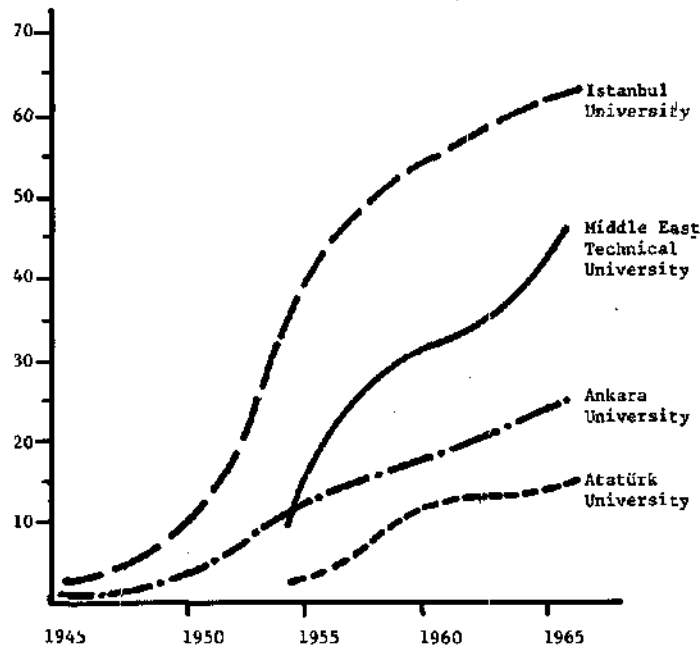


Fig. 1. Growth in the Number of Papers Published in the Field of Physics, 1945-1966, in Selected Turkish Universities.

operating institution of higher education, is more than three times as old. Indeed it is this latter fact that undoubtedly explains the unusually high average number of publications in that institution at the full professor level. That this is not true at the lowest professorial level, is taken to be supportive of the relationship between Departmental academic organization and faculty productivity.

When only scientific publications in foreign journals are considered (Table II), the leadership of Middle East Technical University is even more clear cut. At all academic ranks (where comparisons are possible) faculty members at Middle East Technical University are clearly more productive than faculty at other universities. Since Foreign journals of science are generally regarded having of higher quality and are referenced more frequently than Turkish scientific journals, this implies that faculty at Middle East Technical University are not only more in touch with the international scientific community but

## ACADEMIC RANK

University	Assistant Professor**	Associate Professor	Full Professor
Istanbul University	1.6 (20)	3.1 (17)	9.0 (27)
Ankara University	0.9 (12)	2.1 (8)	2.6 (20)
Middle East Tech. Un.	3.6 (10)	... (***)	11.0 (5)
Atatürk University	2.0 (12)	1.6 (7)	5.4 (9)

Table 2. Average number of publications in foreign journals by faculty members in the fields of science in selected Turkish Universities by Academic Rank,\* (number of faculty)

\* Representing the situation in 1966.  
\*\* Assistant with Ph.D. in other Universities.

\*\*\* METU had no associate professor in sciences in 1966.

24. It must be noted that the Middle East Technical University is the only University of the four studied which used English as the language of instruction. While this may account somewhat for this finding, it is generally true that most Turkish faculty members in science are familiar with at least one foreign language, often two.

25. E. SHILS, Scientific Development in the New States, *Bulletin of Atomic Scientists*, v.17, n.2, 1961, pp.48-52; E. SHILS, (ed.), *Criteria for Scientific Development: Public Policy and National Goals*, Cambridge: M.I.T. Press, 1968.

26. J. BEN DAVID, Scientific Growth: A Sociological View, *Minerva*, v.2, n.4, 1964, pp.455-476.

also produce research of supranational quality.<sup>24</sup> Both of these factors, Shils points out, are extremely important for the growth of high-quality indigenous scientific community.<sup>25</sup> More important, from the standpoint of theory, is the implied conclusion that Departmental universities will not only be more productive than Faculty universities, but also produce work of a more internationally recognized quality. In comparison with the centralized academic organization of the Faculty university, the academic organization of the Departmental university is such as to inspire greater competition among individual faculty members. And while competition among faculty members may not always be a desirable goal, it is apparently an important factor in the growth of science.<sup>26</sup>

And if scientists at Middle East Technical University have not as yet produced as many scientific publications (of all types) as have scientists at Istanbul University, the implication of these findings is that they soon will. Indeed a comparison of the growth in the number of papers published in the field of physics at the four universities (Figure 1) indicates that for the Department as a whole, this may soon be the case. Even though Istanbul University has thus far produced a greater number of publications in physics, the rate of growth in publications since 1956 (the founding of Middle East Technical University) has clearly been greater at Middle East Technical University. Given the data presented in Tables I and II, this is undoubtedly related to the greater productivity of faculty members at the lower academic ranks.

## DISCUSSION

Several factors seem to affect scientific productivity in a university organization. Among those are, the funds allocated to the university for meeting overall expenses, and more specifically the amount of financial support provided for research; the relative age of the university as an organization; the richness of the university environment with other competitive universities or research institutes and research demanding technology; rapid structural changes occurring in the society in which the university exists; backgrounds, orientation and personal motivation of the academic staff toward research and publication; the existence of invisible ties with other universities and research organizations which have

27. F. VARIŞ, *Türkiye'de Lisans-Üstü Eğitim, Pozitif Bilimlerin Temel ve Uygulamalı Alanlarında*, Ankara: Ankara Üniversitesi Eğitim Fakültesi Yayınları No. 23, 1972.

28. S. GÜRSOY, A Survey of Group of Scientific Authors Contributing, from Turkey to Scientific Journals Abroad, *NETU Journal of Pure and Applied Sciences*, v.5, n.3, 1972, pp.483-489.

29. E. İNÖNÜ, 1923-1966 Döneminde Fizik Dalındaki Araştırmalara Türkiye'nin Katkısını Gösteren bir Bibliyografya ve Bazı Gözlemler, ODTÜ Fen ve Edebiyat Fakültesi, Yayın No.24, Ankara, 1971; E. İNÖNÜ, 1923-1966 Döneminde Türkiye'nin Matematik ve Mekanik Araştırmalarına Katkısını Gösteren bir Bibliyografya ve Bazı Gözlemler, IV. Bilim Kongresi, TBTAK, 5-8 Kasım 1973, Ankara, pp.1-5; E. İNÖNÜ and M. DİZER, 1923-1966 Döneminde Astronomi Dalındaki Araştırmalara Türkiye'nin Katkısını Gösteren bir Bibliyografya ve Bazı Gözlemler, IV. Bilim Kongresi, TBTAK, 5-8 Kasım 1973, Ankara, pp.1-3.

30. A.K. ÖZİNÖNÜ, Pattern of Scientific Development in Turkey, 1933-1966, *Science and Technology in Developing Countries*, London: Cambridge University Press, 1969, pp. 141-173 and appendix 4, pp.563-569; A.K. ÖZİNÖNÜ, *Growth in Turkish Positive Basic Sciences 1933-1966*, Ankara: METU Faculty of Arts and Sciences, Publication no. 17, 1970.

31. E. İNÖNÜ, 1923-1966 Döneminde Fizik Dalındaki Araştırmalara Türkiye'nin Katkısını Gösteren bir Bibliyografya ve Bazı Gözlemler, Ankara: ODTÜ Fen ve Edebiyat Fakültesi, Yayın No.24, 1971; E. İNÖNÜ and A. ZURUB, Orta Doğu'daki Arap Ülkelerinin Geçen Yarı Yüzyılda Fizik Dalındaki Araştırmalara Yaptıkları Katkının İncelemesi ve Türkiye'nin Katkısıyla Karşılaştırılması, IV. Bilim Kongresi, TBTAK, 5-8 Kasım 1973, Ankara, pp.1-3; E. İNÖNÜ, 1923-1966 Döneminde Türkiye'nin Kimya ve Biyokimya, Eczacılık, Kimya Mühendisliği, Metalurji gibi İlgili Dallarda Araştırmaya Katkısını Gösteren bir Bibliyografya Üzerinde Bazı Gözlemler, IV. Bilim Kongresi Tebliğleri, TBTAK, BAYG, 29 Eylül - 1 Ekim 1973, Ankara, pp. 563-569.

32. A.K. ÖZİNÖNÜ, Pattern of Scientific Development in Turkey, 1933-1966, *Science and Technology in Developing Countries*, London: Cambridge University Press, 1969, pp. 141-173 and appendix 4, pp.563-569.

internationally recognized research dense scientific milieu; whether or not a graduate school which is generally found in the Departmental universities exists within the university<sup>27</sup> and organizational structure such as Departmental or Faculty modes existing in the university.

In this paper, only the relationship between university as an organization and scientific productivity as number of publications published either in Turkey or abroad is investigated for the disciplines of basic sciences. In order to generalize the conclusions reached in this study which support the view that the Departmental university organization appears to be more favorable than the Faculty university to promote and to flourish scientific productivity requires further investigation to check relative effectiveness of the aforementioned variables and the scientific productivity in a university. Although studies by Gürsey<sup>28</sup> and İnönü<sup>29</sup> provide some further evidences to support the conclusions reached in this study nevertheless supplementary research covering other university disciplines organized around other variables is needed to draw generalizations even for the Turkish case alone. For instance, it is quite clear from the studies of Özınönü<sup>30</sup> and İnönü<sup>31</sup> that there are certain periods in the life span of a university - e.g. 1933-40 and 1925-55 periods for University of Istanbul - when both productivity as scientific publications and fertility<sup>32</sup> as regeneration of young scientists show relatively accelerated growth as compared to other periods in the life span of a university. Therefore, to arrive at a causal relationship between scientific productivity and type of organizational structure of a university requires comparisons to be made among timewise, financial supportwise, academic compositionwise, etc. equated sections of the university within comparably identical periods of life. Nevertheless the study at least sheds light to the necessity of diversification of organizations among universities in Turkey, and to a greater potentiality of the Departmental mode of university organization for more and better scientific productivity.

#### SUMMARY

The present paper has taken the viewpoint that questions of university reform are often better discussed within the context of educational planning; that is, that one looks at university reform with regard to its effect on higher educational outputs. It has been from this perspective that the present paper has considered the effect of the Faculty and Departmental modes of university organization in Turkey upon the production of scientific knowledge within the university. Analysis of data on the number and types of scientific publications produced by faculty members in four Turkish universities suggested that the Departmentally organized university, Middle East Technical University, provided an organizational setting which was more conducive to high faculty productivity than did the Faculty universities studied. As noted this seems to result not only from the greater autonomy present in the decentralized academic organization of the Departmental university, but also from its flexibility in recruiting and promoting individuals of high ability. In this respect it was further noted that certain conditions must exist in the educational environment in order for universities, to develop effective educational programs. From the organizational point of view, the more important of



these conditions is the existence, in both administrative and academic terms, of institutional autonomy. Coupled with the presence of both a diverse mix of institutional types and a high degree of horizontal academic mobility, institutional autonomy is the keystone of the competition essential for high academic productivity in the fields of science.

Maximization of the production of scientific knowledge within the university is, however, only one of a number of possible goals planners may have for the universities. A different set of goals, for instance the maximization of conclusion with regard to the preferability of certain forms of university organizations. In any case, it has been argued here that it is possible, indeed desirable, to evaluate proposed reforms in the university through the development of educational outcomes. And though the present state of the art leaves much to be desired in the way of theoretical rigor, its careful use can provide planners with a reliable set of limiting conditions within which plans can be developed.

## TÜRKİYE'DE ÜNİVERSİTE ÖRGÜTÜ VE BİLİMSEL ÜRETKENLİK

### ÖZET

Bu yazıda üniversite reformu sorunu geniş bir çerçevede içerisinde, yüksek öğretim planlaması açısından ele alınarak bu reformun yüksek nitelikteki bilimsel insan gücü yetiştirilmesi üzerindeki etkileri tartışılmaktadır. Bu nedenle bu yazıda Türkiye'de üniversite örgütünde mevcut kürsü ve bölüm düzenlerinin bilimsel bilgi üretimine olan etkileri eğitim ve bunun bir ögesi olarak üniversite planlaması yönünden incelenmektedir. Makale, 1933-1966 devresini kapsayan temel bilimlerdeki gelişmeyle ilgili yapılan bir araştırmadan elde edilen verileri kullanmak suretiyle, Türkiye'deki dört üniversitenin bilimsel üretkenliklerini buradaki temel bilimcilerin yayınladıkları bilimsel makale, tür ve sayılarına dayalı olarak karşılaştırmaktadır. Çeşitli akademik ünvanlardaki öğretim üye ve yardımcılarının yurt içi ve yurt dışı dergilerde yayınladıkları makale sayıları ortalamalarına bakılırsa, karşılaştırılan dört üniversiteden biri olarak bölüm düzenine sahip Orta Doğu Teknik Üniversitesi kürsü düzeni örgütlü diğer üniversitelere kıyasla daha fazla bir bilimsel üretkenlik göstermektedir. Karşılaştırma uluslararası düzeydeki bilimsel dergilerde yayınlanan araştırma makaleleri ile sınırlandırıldıkta ve profesör kademesinden aşağıya doğru doktoralı asistan ya da O.D.T.Ü. deki karşılığı ile asistan profesör kademesine doğru kayıldıkta O.D.T.Ü. lehine gözlenen bu fark daha da açıklık ve kesinlik kazanmaktadır.

Yazıda da tartışıldığı gibi, gözlenen sonuç, bölüm düzenli çevrecil üniversitenin akademik örgütünde daha geniş bir bilimsel bağımsızlık ortamının yaratılması için gerekli koşulların var olması, bunun yanısıra böyle bir örgütün üstün nitelikteki bilimsel insan gücünü bünyesine kazanmada ve

akademik yönden yükseltme için gerekli esnekliğe sahip olmasından ileri gelmektedir. Ayrıca bu esneklik bağımsız araştırma ve öğretim ortamının oluşturulması için gerekli koşulları hazırlama yönünden de katkısız gözükmektedir. Bu sonuç, örgüt açısından gerek öğretim gerek yönetim bakımından kurumsal bağımsızlığın önemini vurgulamaktadır. Makalenin ortaya koyduğu bulgu ve sonuçların ışığı altında, yüksek öğretim içerisinde öngörülecek bir üniversite reformunun çoğulculuk ve çeşitlilik ilkesi eksenini etrafında kurumlararası rekabete açık ve yatay geçişlere olanak veren bir biçimde düzenlenmesi ile yüksek seviyede bilimsel üretkenlik için optimal bir ortam hazırlanmış olacaktır.

Bilimsel üretimin arttırılması, plancuların üniversiteyle ilgili amaçlarından sadece biridir. Bunun dışındaki pek çok amacın ön plana alınması, örneğin üniversite eğitiminin sosyalleştirme fonksiyonunun öncelik ve ağırlık taşıyan bir amaç olarak düşünülmesi halinde, bu yazıda bilimsel üretkenlik için varılan sonuçların bir kısmı geçerliliğini değiştirebilecek, onların yerine bu yeni amacı gerçekleştirmekte etkin yeni eğitim ve yönetim koşulları öncelik ve ağırlık kazanabilecektir. Bununla birlikte, üniversitede gerek yasal gerek yapısal yollarla öngörülecek köklü değişmelerin, yazıda da değinildiği gibi, bu kuruluşlardan elde edilen ürünlerin (çıktıların) değişik niteliklerinin gerektirdiği değişik düzenleme seçenekleri ilişkisi içerisinde ele alınmasına ve bunların eğitim teorisiyle bağdaştırılmasına gereksinme vardır. Her ne kadar konu, bu günlük bilimsel düzeyde birçok yönleriyle teorik kalmak zorunda ise de, plancılara yapacakları üniversite gelişme planlarında bilimsel yönden yararlanabilecekleri güvenli bazı ilişkilerin, örneğin örgüt-bilimsel üretim ilişkisi gibi, var olduğuna bu yazı yoluyla işaret edilmek istenmiştir.

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