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A Comparative Analysis of the Perceived Bureaucracy in a Turkish State University

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***Abstract*—**Organizational structure of the Turkish state universities is a form of bureaucracy, a high efficient system in rational and formal control. According to the dimensional approach bureaucracy can occur in an organization in a degree, as some bureaucracy characteristics can be stronger than others. In addition, the units of an organization due to their different specific characteristic properties can perceive the bureaucracy differently. In the study, Hall's Organizational Inventory, which was developed for evaluating the degree of bureaucratization from the dimensional perspective, is used to find out if there is a difference in the perception of the bureaucracy between the academicians working in three different departments and two faculties in the same university.

***Keywords*—**Degree of bureaucratization, Hall's Organizational Inventory, perceived bureaucracy.

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I. Introduction

ALTHOUGH bureaucracy is usually seen as inefficient, slow and generally bad, it is a form of organization that has been enormously successful and is the result of thousands of years of trial and error evolution [1]. It is the tool of power, an "effective" device to control and direct human effort and behavior [2]. When organizations begin to grow with the increase in number of staff, division of labor and centralization as well as having more complex activities, more rules and more hierarchical structure, then it means that the organization is bureaucratized.

Universities, a part of public sector [3], are one of the forms of bureaucracy called "professional bureaucracy" by Henry Mintzberg. Reference [4] suggests, this type of organization relies on the skills and knowledge of their operating professionals to function and produce standard products or services. Universities are characterized as professional as the operational processes of the organization have to challenge with the complex and sophisticated knowledge. On the other hand, the structure of these organizations is essentially bureaucratic as its coordination achieved by design, by standards that predetermine what is to be done [4]. The amount of studies about the bureaucratization in universities in the literature is so little.

The aim of the paper is trying to find out if there is a difference in the perception of the bureaucracy between the academic units of the same university. Using the empirical results of a questionnaire developed by R.H. Hall in 1961, the perceptions of staff in different academic groups in Istanbul Technical University are compared. Although all the staff is part of the same university teaching or researching in engineering fields, the responses to the questions are compared as groups that consist of different departments, academic culture, academic titles and working years and significant differences are noted.

The paper is organized as, in section two, the literature about the concept of bureaucracy and the measurement of the degree of bureaucracy is stated. In section three, the hypotheses are generated and in the following section, methodology, data analysis and the statistical results of the empirical study are shown. In the last section the study is concluded with the managerial implications.

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II. Measurement of Bureaucracy

When bureaucracy is scientifically defined, it is a descriptive and objective term describing a complex organizational system that is suitable for big-scaled operations requiring many technical skills for realizing the policies determined by others [5]. There are different points of views to the concept of bureaucracy according to the way it is used [6]. In the literature the most common type of bureaucracy is called Weberian type, developed by German economist and sociologist Max Weber. Weberian bureaucracy requires a formal organization where work is conducted according to formal rules under a hierarchy of rational-legal authority, and individuals are recruited to fill roles in the organization based on their formal competence and educational qualifications [7]. Max Weber [8] argued that; the decisive reason for the advance of bureaucratic organization has always been its purely technical superiority over any former organization.

The degree of bureaucracy in an organization sets the boundaries for human action [2]. There are two approaches used in the literature for measuring the degree of bureaucracy. Reference [2] states that until 1960s, in the studies of organizations, the bureaucratic characteristic of the organizations were evaluated by using case studies which is called unidimensional approach. In the late 1950s this approach was questioned and researchers began to think that all the characteristics of the bureaucracy might not be present in the organization at the same time and some characteristics can be stronger than the others. This approach was designated as dimensional approach.

A. Unitary Approach

According to the unitary approach, an organization is either bureaucratic or not [2]. This approach suggests that all of the bureaucracy characteristics must be observed in a high degree. Stanley Udy (1959), assuming the number of the hierarchical

levels of an organization as criterion, featured an organization as bureaucratic when it had more than three hierarchical authority levels [9].

B. Dimensional Approach

According to the dimensional approach, an organization can be bureaucratic in a number of ways [2]. An organization can have or can be perceived by a high degree of bureaucratization in some areas but not all areas. The most common instruments in the literature used for measuring bureaucracy are stated in Table I ranged from the most wide-used to the least.

TABLE I
THE INSTRUMENTS THAT USE DIMENSIONAL APPROACH FOR MEASURING THE DEGREE OF BUREAUCRACY (ADAPTED FROM [2])

	Researchers	Date	Instrument
1	Hall, R. H.	1961	Organizational Inventory
2	Aiken, J. and Hage, M.	1966	Structural Properties Inventory
3	Pugh, D. S., Hickson, D. J., Hinings, C. R., McDonald, K. M., Turner, C. and Lupton, T.	1963	Aston Interview Schedule

In the study, Hall's dimensional approach which has the most widely usage in the literature is used for the comparison of perceived bureaucracy in a university. Hall's study of the degree of bureaucratization tended to confirm that bureaucracy may be generally viewed as a matter of degree rather than of kind [10]. Hall (1961) developed a survey instrument which is called "Organizational Inventory" to measure six bureaucratic dimensions after an extensive literature review on bureaucratic characteristics [2]. The dimensions identified by Hall are listed as Hierarchy of Authority (HA), Rules and Regulations (RR), Division of Labor (DL), Procedural Specifications (PS), Impersonality (IM) and Technical Competence (TC).

Reference [2] points out that, researchers continuously report two distinct second order factors usually where hierarchy of authority, rules and regulations, procedural specifications and impersonality compose first factor and division of labor and technical competence compose the second factor. These two factors are found as inversely correlated. The first factor is accepted as the measure of bureaucratization by most researchers. On the other hand the second factor, which is accepted as a partial measure of professionalism, is either discarded or analyzed separately [2]. Reference [11], named the fist factor as "control" and second factor as "expertise".

III. HYPOTHESIS

The general bureaucratic structure influences an organization by the rules and governance. However the bureaucratic system can influence the faculties or departments of the university in different ways with separately specific characteristics such as the departments can have different culture with diversified academic background and the staff can work in different types of undergraduate/graduate programs.

The hypothesis of the study is formed as the degree of bureaucracy can differ in organizations or the staff working in the same organization can perceive this differently. The system of bureaucracy in a university can be perceived differently by the staff of its subunits due to the different characteristic properties of these academic units. Even though the departments, the parts of the university, are similar units providing engineering degree to their students in their undergraduate programs, their origin of academic background and having different types of undergraduate/graduate programs make the staff perceive the bureaucracy differently.

In the paper, it is tried to find out if there is a difference in the perception of the bureaucracy between similar academic units in the same university. Using the empirical results of a questionnaire developed by R.H. Hall in 1961 two faculties; management and electrical-electronics faculties and three departments; industrial engineering, management engineering and electrical engineering of Istanbul Technical University are compared as a case. The departments of the faculty have similar research fields both in the engineering area while types of their engineering research areas and the undergraduate /graduate programs they involve are quite different. In addition, the groups of staff are compared among their demographic factors as academic background, academic title and working time.

A. Faculty of Management

Faculty of Management has two departments named as department of industrial engineering and department of management engineering. These departments can be accepted to have engineering programs more related with social sciences when compared with other engineering programs that require more technical knowledge.

Industrial engineering department was derived from the production division of the mechanical engineering faculty, which is one of the oldest branches of the university. It becomes an independent department in 1969 and joined with the management engineering in the establishment of management faculty in 1982 which is an important date for the Turkish higher education system because some reforms had been done in the system and the Counseil of Turkish Higher Education (YÖK) was established. New faculties were formed by YÖK and the departments of industrial engineering and management engineering are taken together to establish management faculty.

The significant characteristic of industrial engineering department is before 1980s the staff originated from mechanical engineering faculty with more technical skills and mostly with its alumni of its undergraduate or graduate programs. After 1980s the staff of the department began to have more diversified background. Most of them have B.S degrees in industrial engineering, but there are some staff graduated from more technical branches like mechanical or electrical engineering. However all the staff has engineering B.S. degrees.

On the other hand management engineering department originated from the Division of Economics and Administrative

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Law as a part of the Faculty of Civil Engineering and has the mission of teaching general knowledge based on economics and law to the engineer candidates. Later as the development in the socio-economic conditions of the country, it expanded to an independent department in 1977. [12] Until 1982 this department was diversified from the academic origins of their academic staff. However after the management engineering program of the department began to give graduates, the academic background of the lecturers became to be less diversified. At present the staff of the department consists of some academicians with the B.S. degrees in engineering and some academicians with the B.S. degrees in social sciences.

When compared to each other, considering their background, industrial engineering department is characterized as more technical while management engineering is more social science oriented. Besides the departments have significantly different structural systems. The academic staff of Industrial engineering department usually works in a common way as one unit in research and teaching activities. On the contrary management engineering department has sub specialty groups separated in their inner operations. These sub groups are management and organization, production management and marketing, economics, law, quantitative methods and finance and accounting, mostly have research fields based on social sciences. As a result both the origin of their establishments and the academic structure of their departments, industrial engineering and management engineering differ from each other does not behave in the same way like a whole unit of a faculty.

B. Faculty of Electrical-Electronics

The origin of this electrical-electronics faculty is very old and the fundamentals go beyond Electro-Mechanic Division, which was the start of Department of Electrical Engineering. In 1937 Electro-Mechanic Division's Electrical Section was merged with Communication Section under the name of Electric-Communication Section. In 1944, it was transformed to Faculty of Electric with two divisions: High Voltage and Low Voltage [13].

Later, Low Voltage Section was replaced by the Department of Electronics and Communication Engineering, High Voltage Section was replaced by Department of Electrical Engineering and Control and Computer Engineering Department was founded to meet the demands of developing technology. In 1983, the name of the faculty became Faculty of Electrical and Electronics Engineering [13].

Beginning from 1996, as a result of restructuring process of the faculty, Computer Engineering Department was founded, Control and Automation Systems Division joined to Electrical Engineering Department and it was decided that Faculty would give five undergraduate engineering programs; Electrical, Computer, Electronics, Telecommunication and Control. Since 2002, Faculty Departments have graduate engineering programs; those are Electronics MS/PhD Program, Telecommunication MS/PhD Program, Control and Automation MS/PhD Program, Electrical MS/PhD Program, Computer MS/PhD Program and Biomedical MS Program under ITU Institute of Science and Engineering [13].

At present, in the administrative structure, the faculty has four main departments as Electrical Engineering, Electronics and Communication Engineering, Computer Engineering and Control Engineering with a large number of academic staff and plenty of sub research groups. The significant characteristic of this faculty and its departments is their academic culture, where all their staff graduated from their own undergraduate programs.

C. The departmental characteristics

The characteristics of the departments are shown in Fig. 1 subjectively reflects the diversification of the staff's academic origin of the electrical engineering department which represents the behavior of the electrical-electronics faculty is undiversified in both before and after 1982. That means they have an academic culture formed with pure their own alumni. Although industrial engineering department has staff with mechanical engineering origin before 1982, the academic background of staff of becomes less diversified with increasing academicians graduated in industrial engineering. Management engineering department which was highly diversified in origin of their academicians now has academic staff with B.S. degrees in management engineering.

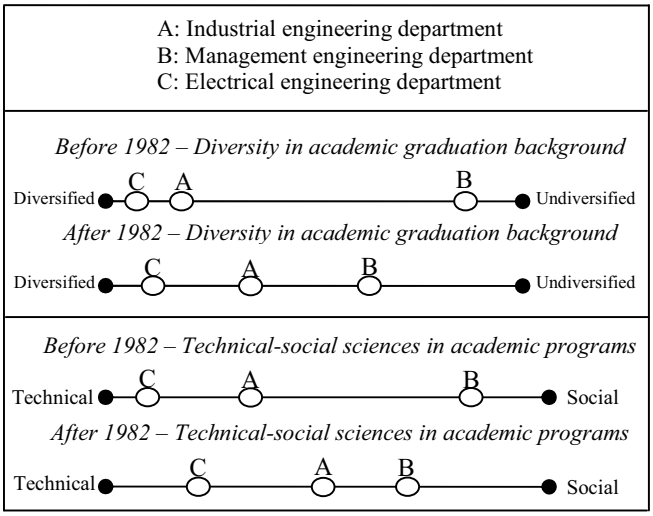


FIG. 1 CHARACTERISTICS OF THE DEPARTMENTS

When analyzing the technical fields of the studies in the undergraduate and graduate programs implemented by the departments, Fig. 1 reflects that electrical engineering department seems the most technical while management engineering was close to social sciences on the opposite and industrial engineering is in the middle. However, before 1982 when industrial engineering was operating under the mechanical engineering faculty, the courses consist of more technical areas in total while there are more courses related with social sciences in the program curricula. Management engineering department which was providing economics and law courses to the engineering students at that time has the courses totally in social sciences. But now its management

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engineering program has many engineering courses due to providing an engineering diploma.

As the departments have differences compared to each other, although they all provide engineering courses in higher education in the same university, the perception of bureaucracy would be different too. In the study, the hypothesis is built as there should be difference between the academic groups of departments or between the groups with different demographic characteristics in the perception of bureaucracy.

IV. Methodology

The questionnaire used in Hall's "Organizational Inventory" instrument is employed for comparing the perceived bureaucracy between the academic staff of the departments in the management faculty of Istanbul Technical University. The aim of the analysis is search for the difference of the perceived bureaucracy between two departments of the faculty. The data of the academic staff responses were collected and analyzed to find out if there is a difference between the groups of staff working in industrial engineering department and management engineering department by the dimensions of bureaucracy.

At first, the scores of the respondents were calculated by taking the average value of the items for each dimension so that every respondent has one average score for each dimension and one general average score. The reason for considering this approach is that although the data of the responses is taken in interval (likert) scale, the average values are in a ratio scale. Therefore the sample size can be considered as sufficient for the data set that is in ratio scale. Later the reliability is checked and some of the data is removed to obtain a data set with a high reliability. Before employing the t-test for the comparison, a normality test is employed to check if the data set fits the normal distribution. The results and interpretations of empirical analysis are stated in the following sections.

A. Sample and Data Collection

The questionnaire involves 62 questions, which are grouped under six dimensions mentioned before as Hierarchy of Authority (HA), Rules and Regulations (RR), Division of Labor (DL), Procedural Specifications (PS), Impersonality (IM) and Technical Competence (TC). In addition to these items, the academic title, graduation branch and working time of the participants were asked as demographic characteristics, which are shown in Table II. The answers for the questionnaire items are designed as appropriate for the five point likert scale. There are 80 respondents involving 54 respondents from management faculty consisted of 34 people from industrial engineering department and 20 respondents form management engineering department as well as 26 respondents from electrical-electronics faculty. After the data collection, the means of the groups of the departments are compared in all dimensions and in some dimensions differences are found in the perception of bureaucracy.

TABLE II
DEMOGRAPHIC CHARACTERISTICS IN THE COLLECTED DATA

Academic titles		
	Management Faculty	**Electrical-Electronics Faculty**
Professor	7	4
Associate Professor	4	3
Assistant Professor	5	6
Lecturer	3	3
Research Assistant	35	10
TOTAL	54	26
Working time (years)		
	Management Faculty	**Electrical-Electronics Faculty**
Over 25	5	4
15 - 25	11	10
5 - 15	7	6
Under 5	31	6

B. Data Analysis

Before the evaluation of the response scores for each dimension, the reliability is checked for items for each dimension in both groups. In reliability analysis if the alpha coefficient is between the value 0.40 and 0.60, the scale has a low reliability and if the alpha coefficient is between the value 0.60 and 0.80 the scale can be considered quite reliable [14]. When the data sets are analyzed, it is obvious that, some sets of data exist with low reliability for particular dimensions.

In the next step, "corrected-item total correlation" and "alpha if item deleted" values were examined. If the corrected-item total correlation is negative or even lower than 0.25, the item should be removed from the data set [14]. Therefore some items are removed to increase the alpha coefficient over 0.60 for a good reliability. The items; HA 6 for the hierarchy of authority dimension, and DL 8 and DL 10 for the division of labor, were deleted because of the low values of their corrected-item total correlation. The rules and regulations, procedural specifications, impersonality, and technical competence dimensions have a good reliability so that there is no need for an item removal in these data sets. In Table III the Cronbach's alpha values are shown as before and after the items were removed for the dimensions. The means of the respondent scores for each dimension are shown in Table IV after the items were removed for reliability.

TABLE III
ALPHA COEFFICIENT VALUES OF THE DATA SETS

	Cronbach's Alpha values	Cronbach's Alpha values (after items are removed)
HA	0.581	0.619
DL	0.516	0.604
RR	0.656	0.656
PS	0.642	0.642
IM	0.610	0.610
TC	0.675	0.675
Overall	0.745	0.742

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TABLE IV
MEAN VALUES OF THE DATA SETS (AFTER ITEMS ARE REMOVED)

	Management Faculty	Electrical-Electronics Faculty
HA	2.751	2.728
DL	2.873	3.068
RR	2.636	2.545
PS	2.912	3.006
IM	2.747	3.054
TC	3.344	2.879
Overall	2.877	2.880

The data set should also fit the normal distribution to employ the t-test to compare the groups. As a result, before the comparison, a normality test is performed to search for normality of the variables that show respondent average values for the dimensions. The first group of the sample consists of 54 respondents and the second group consists of 26 respondents. If the number of respondents is lower than 29, Shapiro-Wilks test can be used and if the number of respondents is equal to or greater than 29 Kolmogorov-Smirnov test can be used [14]. The results of significance for the distributions of the respondent average scores was checked for each dimension and overall. The results of significance are shown for the distributions of the average scores of respondents for each dimension and overall are shown in Table V. The findings report that all the data sets of the dimensions fit the normal distribution except dimension of technical competence for the group of electrical-electronics faculty.

TABLE V
TESTS OF NORMALITY

	Faculty	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
HA_Avg.	1	.099	54	.200*	.978	54	.420
	2	.158	26	.093	.942	26	.149
DL_Avg.	1	.102	54	.200*	.984	54	.694
	2	.126	26	.200*	.954	26	.294
RR_Avg.	1	.108	54	.167	.977	54	.367
	2	.115	26	.200*	.963	26	.460
PS_Avg.	1	.082	54	.200*	.980	54	.512
	2	.108	26	.200*	.967	26	.547
IM_Avg.	1	.073	54	.200*	.978	54	.426
	2	.104	26	.200*	.982	26	.915
TC_Avg.	1	.126	54	.032	.976	54	.357
	2	.158	26	.094	.964	26	.484
AVG_Avg.	1	.065	54	.200*	.981	54	.562
	2	.115	26	.200*	.978	26	.837

a. Lilliefors Significance Correction
*. This is a lower bound of the true significance.

C. Finding and Results

The means of the groups of the faculties are compared by performing t-test on the data sets of average scores of the respondents for each dimension. The results are shown in Appendix A. The results indicate that there is a significant difference in a significance level of %5 between the means of the groups in the dimensions; impersonality and technical competence, but a significant difference is not found for the hierarchy of authority, division of labor, rules and regulations, and procedural specifications dimensions. In addition when the average values for all items of the respondents are compared for both groups, significance in difference is valid.

A multiple comparison analysis is applied to compare three departments of industrial engineering, management engineering and electrical engineering. The results with a significance level of %5 indicate that there is a significant difference between industrial engineering department and management engineering department in the dimensions of hierarchy of authority, rules and regulations, impersonality and overall average. Besides industrial engineering department has significant difference in the dimension of impersonality and technical competence like the faculty comparison. In addition a significant difference arises between management engineering and electrical engineering only in the dimension of rules and regulations. When considering the whole, there is no significant difference found in the means of three departments in the dimensions of division of labor and procedural specifications.

TABLE VI
RESULTS OF THE MULTIPLE COMPARISONS OF THREE DEPARTMENTS

Tukey HSD

Dependent Variable	(I) Department	(J) Department	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
HA_Avg.	1	2	-0.4748	0.1379	.003	-0.8045	-0.1452
		3	-0.1524	0.1275	.460	-0.4571	0.1523
	2	1	0.4748	0.1379	.003	0.1452	0.8045
		3	0.3224	0.1456	.075	-0.0255	0.6703
	3	1	0.1524	0.1275	.460	-0.1523	0.4571
		2	-0.3224	0.1456	.075	-0.6703	0.0255
DL_Avg.	1	2	-0.0136	0.1436	.995	-0.3567	0.3295
		3	-0.1997	0.1327	.295	-0.5169	0.1176
	2	1	0.0136	0.1436	.995	-0.3295	0.3567
		3	-0.1861	0.1515	.441	-0.5482	0.1761
	3	1	0.1997	0.1327	.295	-0.1176	0.5169
		2	0.1861	0.1515	.441	-0.1761	0.5482
RR_Avg.	1	2	-0.5209	0.1090	.000	-0.7812	-0.2605
		3	-0.1027	0.1007	.567	-0.3434	0.1381
	2	1	0.5209	0.1090	.000	0.2605	0.7812
		3	0.4182	0.1150	.001	0.1434	0.6930
	3	1	0.1027	0.1007	.567	-0.1381	0.3434
		2	-0.4182	0.1150	.001	-0.6930	-0.1434
PS_Avg.	1	2	-0.2456	0.1166	.095	-0.5243	0.0331
		3	-0.1853	0.1078	.205	-0.4430	0.0724
	2	1	0.2456	0.1166	.095	-0.0331	0.5243

		3	0.0603	0.1231	.877	-0.2339	0.3544
	3	1	0.1853	0.1078	.205	-0.0724	0.4430
		2	-0.0603	0.1231	.877	-0.3544	0.2339
IM_ Avg.	1	2	-0.3171	0.1186	.025	-0.6006	-0.0336
		3	-0.4246	0.1097	.001	-0.6867	-0.1625
	2	1	0.3171	0.1186	.025	0.0336	0.6006
		3	-0.1075	0.1252	.668	-0.4067	0.1917
	3	1	0.4246	0.1097	.001	0.1625	0.6867
		2	0.1075	0.1252	.668	-0.1917	0.4067
TC_ Avg.	1	2	0.0232	0.1739	.990	-0.3925	0.4388
		3	0.4738	0.1608	.012	0.0895	0.8581
	2	1	-0.0232	0.1739	.990	-0.4388	0.3925
		3	0.4506	0.1836	.043	0.0119	0.8894
	3	1	-0.4738	0.1608	.012	-0.8581	-0.0895
		2	-0.4506	0.1836	.043	-0.8894	-0.0119
AVG _Avg	1	2	-0.2581	0.0633	.000	-0.4094	-0.1068
		3	-0.0985	0.0585	.218	-0.2384	0.0414
	2	1	0.2581	0.0633	.000	0.1068	0.4094
		3	0.1597	0.0668	.050	0.0000	0.3194
	3	1	0.0985	0.0585	.218	-0.0414	0.2384
		2	-0.1597	0.0668	.050	-0.3194	0.0000

After comparing faculties and departments, demographic factors are compared. The groups are compared by considering the factors as; senior academicians – teaching assistants, working time (shorter than 15 years and longer than 15 years) and the academic education background of same - different programs of the departments.

The first comparison analyzes if there is a difference in the perception of bureaucracy between the lecturers and teaching assistants. The results of t-test as seen in Appendix B show that a significant difference arises only in the dimension of impersonality.

In the demographic variable of working time, the data set is divided into two groups. The first groups involve the staff working in the department for less than 15 years and the other group consists of the staff working more than 15 years in the same department. T-test is employed and the Appendix C shows the results of the analysis where only impersonality dimension creates a significant difference between two groups in the significance level of %5. Also the same test is repeated for two groups involving the staff working shorter than 5 years and longer than 5 years. Even though the output result values are different the same result is found as the only difference occurs in impersonality dimension. Therefore it can be understood that the perception of bureaucracy is independent from time according to this result.

The last analysis searches for the difference between the academic background characteristics. The data is split in two and first group involves the staff has the graduation degree from the department's own program while second group is formed with the academic staff comes from a different discipline. The results state that in three dimensions significant differences are found for the significance level of %5. Rules and regulations, impersonality and technical competence create a difference between the academic groups in the perception of bureaucracy.

All findings are stated in Table VII, showing the dimensions that create significant differences between the various groups of the data sets according to the factors that are examined. In all analysis there is a difference between the groups for the impersonality dimension in the %5 significance level. Therefore it can be said that impersonality dimension is a distinguishing factor for the perception of bureaucracy between the academic groups.

TABLE VII
RESULTS OF THE ANALYSIS (P=%5)

Factor	Comparison	HA	DL	RR	PS	IM	TC
Faculties	Electrical-Electronics					X	X
Depart-ments	Management Industrial Eng.-Management Eng.	X		X		X	
	Industrial Eng.-Electrical Eng.					X	X
	Management Eng.-Electrical Eng.			X			
Academic Position	Lecturers Teaching Assistants					X	
Working time	More than 15 years Less than 15 years					X	
Academic graduation background	Same program Different program			X		X	X

"X" indicates that there is a significant difference for this dimension

V.CONCLUSION

The paper is aimed to search for the perceived bureaucracy in the academic departments of the university. The dimensional approach is considered and Hall's Organizational Inventory which is a more widely used instrument in the literature. Various statistical test are employed for comparing the perceived bureaucracy between the staff of Istanbul Technical University from the faculty of electrical-electronics and the faculty of management and as well as the staff of their departments; industrial engineering, management engineering and electrical engineering separately as a case. In addition demographic variables such as academic position, academic graduation background and working time are used as factors in comparisons to find out if there is a significant difference between the academic staff groups in the perception of bureaucracy.

The results of the empirical analysis of the questionnaire responded by 80 respondents point out that there is a significant difference in the perceived bureaucracy between the faculties in the university in terms of impersonality and technical competency dimensions of bureaucracy. Also the dimensions create difference between departments of industrial engineering and electrical engineering part of these faculties. Furthermore in all analysis there is a significant difference for the impersonality dimension. Thus this makes the impersonality dimension a distinguishing factor for the perception of bureaucracy in the academic groups of the same university.

As a managerial implication, the managers of the academic units or faculties should know the specific characteristic properties of their subunits or departments and they also should know the whole bureaucratic system can be perceived

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differently by the staffs who work in similar units with different characteristics. When an academic manager performs an action concerning with the bureaucratic system he/she should estimate the different perceptions by the staff and should find solutions for directing the applications according to these perceptions.

For future research, the questionnaire can be responded by the administrative staff of the university and faculty and an analysis can be performed to compare the academic staff and administrative staff in the perception of bureaucracy.

APPENDIX

APPENDIX A
T-TEST FOR THE COMPARISON OF THE FACULTIES

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
HA_Avg.	Equal variances assumed	2.871	.094	.188	78	.851	.0235	.125	-.225	.272
	Equal variances not assumed			.203	60.036	.840	.0235	.116	-.208	.255
DL_Avg.	Equal variances assumed	.108	.743	-1.610	78	.111	-.195	.121	-.435	.046
	Equal variances not assumed			-1.574	46.719	.122	-.195	.124	-.443	.054
RR_Avg.	Equal variances assumed	1.788	.185	.864	78	.390	.090	.104	-.118	.298
	Equal variances not assumed			.952	63.539	.345	.090	.095	-.099	.279
PS_Avg.	Equal variances assumed	1.114	.295	-.935	78	.353	-.094	.101	-.295	.107
	Equal variances not assumed			-1.012	60.733	.316	-.094	.093	-.281	.092
IM_Avg.	Equal variances assumed	.256	.614	-2.943	78	.004	-.307	.104	-.515	-.099
	Equal variances not assumed			-2.984	51.269	.004	-.307	.103	-.514	-.101
TC_Avg.	Equal variances assumed	.261	.611	3.178	78	.002	.465	.147	.174	.757
	Equal variances not assumed			3.378	57.980	.001	.465	.138	.189	.741
AVG_Avg.	Equal variances assumed	1.257	.266	-.049	78	.961	-.003	.059	-.120	.114
	Equal variances not assumed			-.053	59.893	.958	-.003	.055	-.112	.106

APPENDIX B
T-TEST FOR THE COMPARISON OF THE LECTURERS AND TEACHING ASSISTANTS

	Levene's Test for Equality of Variances	t-test for Equality of Means

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									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
HA_Avg	Equal variances assumed	1.305	.257	1.516	78	.134	.1759259	.1160629	-0.055	0.407
	Equal variances not assumed			1.543	76.989	.127	.1759259	.1140343	-0.051	0.403
DL_Avg	Equal variances assumed	2.305	.133	-.051	78	.959	-.005952	.115978	-0.237	0.225
	Equal variances not assumed			-.049	60.294	.961	-.005952	.120465	-0.247	0.235
RR_Avg	Equal variances assumed	3.063	.084	-.399	78	.691	-.0394805	.0989621	-0.236	0.158
	Equal variances not assumed			-.414	77.884	.680	-.0394805	.0954490	-0.230	0.151
PS_Avg	Equal variances assumed	.078	.781	-.980	78	.330	-.0933862	.0952559	-0.283	0.096
	Equal variances not assumed			-.996	76.662	.323	-.0933862	.0937936	-0.280	0.093
IM_Avg	Equal variances assumed	7.472	.008	-2.462	78	.016	-.2463203	.1000518	-0.446	-0.047
	Equal variances not assumed			-2.563	77.590	.012	-.2463203	.0961119	-0.438	-0.055
TC_Avg	Equal variances assumed	.221	.639	1.264	78	.210	.1837491	.1454195	-0.106	0.473
	Equal variances not assumed			1.278	75.927	.205	.1837491	.1437767	-0.103	0.470

APPENDIX C
T-TEST FOR THE COMPARISON OF THE WORKING TIME

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
HA_Avg	Equal variances assumed	2.628	.109	.924	78	.358	.1109259	.1200126	-.1280008	.3498526
	Equal variances not assumed			.980	72.137	.330	.1109259	.1131642	-.1146555	.3365073

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DL_ Avg	Equal variances assumed	5.063	.027	-.246	78	.807	-.029167	.118798	-.265675	.207341
	Equal variances not assumed			-.222	44.531	.825	-.029167	.131118	-.293328	.234995
RR_ Avg	Equal variances assumed	3.186	.078	-.234	78	.816	-.0237576	.1014737	-.2257762	.1782611
	Equal variances not assumed			-.252	74.452	.802	-.0237576	.0942332	-.2115024	.1639873
PS_ Avg	Equal variances assumed	.366	.547	-1.498	78	.138	-.1450000	.0968257	-.3377651	.0477651
	Equal variances not assumed			-1.550	67.805	.126	-.1450000	.0935573	-.3317004	.0417004
IM_ Avg	Equal variances assumed	10.428	.002	-2.614	78	.011	-.2667677	.1020552	-.4699440	-.0635914
	Equal variances not assumed			-2.889	77.242	.005	-.2667677	.0923270	-.4506051	-.0829303
TC_ Avg	Equal variances assumed	.269	.606	1.731	78	.087	.2557143	.1477171	-.0383679	.5497965
	Equal variances not assumed			1.777	66.288	.080	.2557143	.1438776	-.0315232	.5429518

APPENDIX D
T-TEST FOR THE COMPARISON OF THE ACADEMIC GRADUATION BACKGROUND

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
HA_ Avg	Equal variances assumed	.514	.476	-.104	78	.918	-.0129392	.1247166	-.2612309	.2353525
	Equal variances not assumed			-.102	47.422	.919	-.0129392	.1268082	-.2679844	.2421060
DL_ Avg	Equal variances assumed	3.411	.069	1.032	78	.305	.125890	.122010	-.117012	.368793
	Equal variances not assumed			1.183	69.842	.241	.125890	.106394	-.086315	.338095
RR_ Avg	Equal variances assumed	1.629	.206	-2.693	78	.009	-.2702927	.1003597	-.4700934	-.0704919
	Equal variances not			-2.575	44.241	.013	-.2702927	.1049701	-.4818134	-.0587720

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	assumed									
PS_Avg	Equal variances assumed	.233	.631	.287	78	.775	.0290836	.1014564	-.1729005	.2310677
	Equal variances not assumed			.287	49.588	.775	.0290836	.1013550	-.1745358	.2327030
IM_Avg	Equal variances assumed	.078	.781	2.626	78	.010	.2768929	.1054478	.0669625	.4868232
	Equal variances not assumed			2.588	47.689	.013	.2768929	.1069767	.0617656	.4920202
TC_Avg	Equal variances assumed	2.748	.101	-2.670	78	.009	-.3976055	.1489335	-.6941093	-.1011016
	Equal variances not assumed			-2.843	58.292	.006	-.3976055	.1398367	-.6774891	-.1177219

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