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TRANSITION FROM EDUCATION TO FIRST REAL JOB IN TURKEY: AN EMPIRICAL RESEARCH ON THE ULUDAĞ UNIVERSITY ECONOMETRICS DEPARTMENT GRADUATES*

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Abstract

In recent years, unemployment has become a fundamental problem regardless of the level of development of the country. The unemployment rates in Turkey are constantly at a high level and for whatever reasons; it has not been possible to make the reduction to the desired low levels. In particular, there is a continuous increase in the total unemployment figures of unemployed who have never entered the labor market.

This study aimed to determine the critical factors that increase employment opportunities for Econometrics department graduates in Turkey. There was particular focus on the variables that may explain the determinants of finding a first real job for graduates from the Econometrics Department. Logistic regression was estimated from the collected data. The research findings show that the variables of business experience, additional education, social community, education type, age, and family stimulus show statistical significance in finding a first real job.

Key Words: *First Real Job, Unemployment Duration, Labour Market, Logistic Regression.*

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Türkiye'de Eğitimden İlk Gerçek İşe Geçiş: Uludağ Üniversitesi Ekonometri Bölüm Mezunları Üzerinde Bir Ampirik Araştırma

Özet

Son yıllarda, ülkenin gelişmişlik düzeyi ne olursa olsun işsizlik önemli bir sorun haline geldi. Türkiye'nin işsizlik oranları sürekli yüksek bir düzeydedir ve her nedense arzu edilen düşük düzeylere indirilmesi mümkün olmamaktadır. Özellikle, emek piyasasına hiç girmemiş işsizlerin toplam işsizlik içindeki görünüşünde sürekli bir artış vardır.

Bu çalışma Türkiye'deki Ekonometri bölümü mezunlarının istihdam fırsatlarını artıran kritik faktörlerin belirlenmesini amaçlamıştır. Özellikle, Ekonometri bölümü mezunları için ilk gerçek işi bulmanın bileşenlerini açıklayabilecek değişkenler üzerinde odaklandık. Toplanan verilerden Lojistik regresyon tahmin edildi. Araştırma sonuçları, iş deneyimi, ek eğitim, sosyal topluluk, eğitim türü, yaş ve aile teşviki değişkenlerinin ilk gerçek işi bulmada istatistiksel önem taşıdığını göstermektedir.

Anahtar Kelimeler: *İlk Gerçek İş, İşsizlik Süresi, Emek Piyasası, Lojistik Regresyon.*

1. INTRODUCTION

Unemployment[1] is one of the major topics studied by labour economists. In studying the problem of unemployment, it is a matter of great importance to find empirically the determinants of the duration of unemployment (Chuang, 1999: 677). In addition, transition from education to first real job is an important issue for university graduates.

The aim of this study was to establish and evaluate the determinants of the duration of findi188ng a first real job for university graduates using a Logistic regression model. A real job is defined as being one for which hours worked per week are at least thirty and which lasts for at least three months (Wolpin, 1987: 808). The former restriction "at least thirty hours" implies full-time employment and the latter restriction "at least three months" implies that vacation work is excluded. Chuang (1999: 678) also defined a real job as a job for at least 30 hours per week thus ruling out part-time jobs. A questionnaire was administered to graduates from the Econometrics Department 2000–2006 in the Faculty of Economics and Administrative Sciences of Uludağ University. To find the significant factors a Logistic

[1] Although, the definition of unemployment may differ by country, generally unemployment refers to the share of the labor force that is without work but available for and seeking employment (www.worldbank.org.tr, access date April 4, 2011).

regression model was estimated from the data gathered from the questionnaire.

This paper is organized as follows: Section 2 gives a descriptive analysis of unemployment. Section 3 presents an overview of previous literature. The analysis method is presented in Section 4. Data, estimation results and evaluations of the findings are presented in Section 5 and finally, the summary and conclusions are given.

2. DESCRIPTIVE ANALYSIS OF UNEMPLOYMENT

Labor force statistics are given in official websites of organizations such as the Organization for Economic Co-operation and Development (OECD), World Bank and countries'statistical institutes (e.g., Republic of Turkey Turkish Statistical Institute (Turk Stat)).

The descriptive statistics help in the understanding of the structure of employment and unemployment of the related nations. Economic fluctuations and crises can be read parallel to the figures of the statistics. Moreover, comparisons can be made between age groups, educational levels of a country and between two or more countries, whether there are different structures or not. Here, we present some descriptive analyses of the labor force in Turkey and some other countries. Figure 1 presents values and distribution of annual unemployment rates of Turkey for the period between 2000 and 2009.

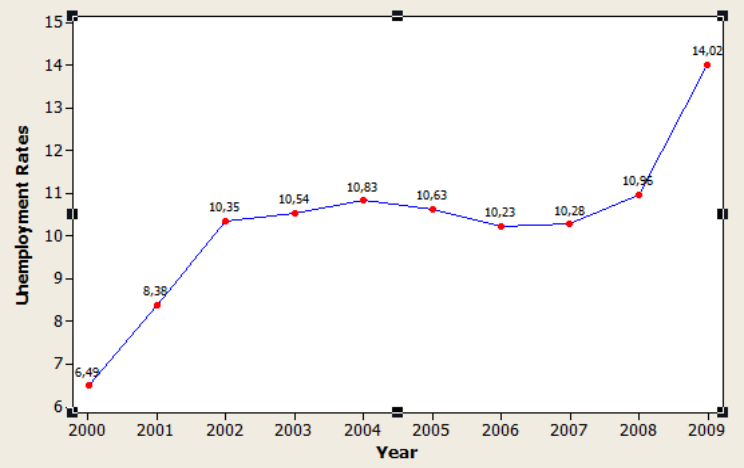

Figure 1.
Annual Unemployment Rates of TURKEY[2]

[2] The data are gathered from Organization for Economic Co-operation and Development (OECD) official web (www.oecd.org (accessed April 4, 2011).

Two sharp increases in the annual unemployment rates of Turkey between 2000 and 2009 can be seen in 2001 and 2008. These two significant points indicate two major economic crises.

In 2001, Turkey was faced with an economic and financial crisis, worse than had ever been previously experienced (Taşçı and Tansel, 2005:3). The negative effects of this crisis affected the Turkish economy and were reflected in economic indicators. The total unemployment rate increased from 6.49% in 2000 to 8.38% in 2001 and then to 10.35% in 2002 (See Figure 1). The total unemployment rate then reached a plateau and remained constant until 2008.

The global economic crisis, which started in the USA and then spread to Europe, started to affect Turkey at the end of 2008. The main reason for the rapid increase in unemployment rates was the negative effect of the global economic crisis. The total unemployment rate increased from 10.96% in 2008 to 14.02% in 2009 (See Figure 1).

The effects of these two crises were naturally reflected in economic indicators, especially within the context of this study, in youth[3] labor force employment and unemployment rates. The values and distribution of annual youth unemployment[4] and employment rates in Turkey for the period between 2000 and 2010 are summarized in Figure 2.

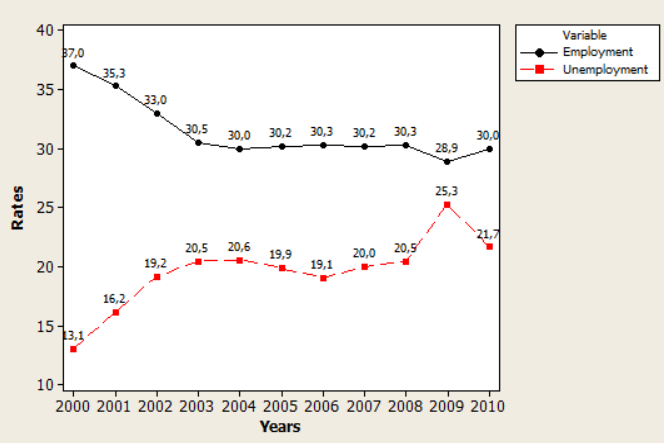

Figure 2.
Annual Youth Unemployment and Employment Rates of TURKEY (% of total labor force aged 15-24)[5]

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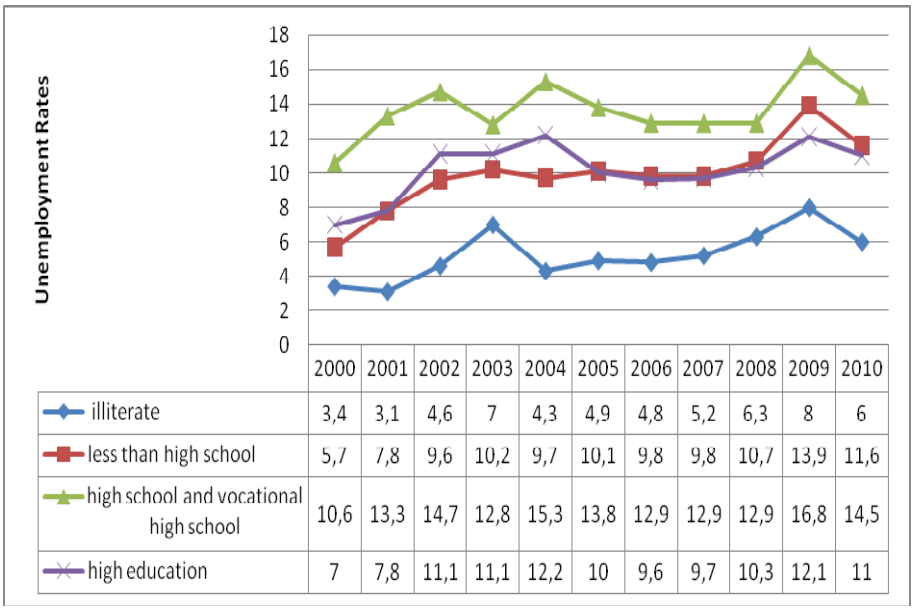
[3] Turkey's youth defined as between 15 and 24 years of age (World Bank Report, 2008: ii).

[4] Youth unemployment refers to the share of the labor force ages 15-24 without work but available for and seeking employment.

[5] The data are gathered from World Bank official website (www.worldbank.org (accessed April 4, 2011)).

Figure 2 shows that youth unemployment rates increased from 13.1% in 2000 to 20.5% in 2003. On the other hand, employment rates decreased from 37.0% in 2000 to 30.5% in 2003. Parallel to the total unemployment increase in 2008, youth unemployment rates also increased from 20.5% in 2008 to 25.3% in 2009. Figure 3 presents values and distributions of annual unemployment rates in Turkey according to educational level.

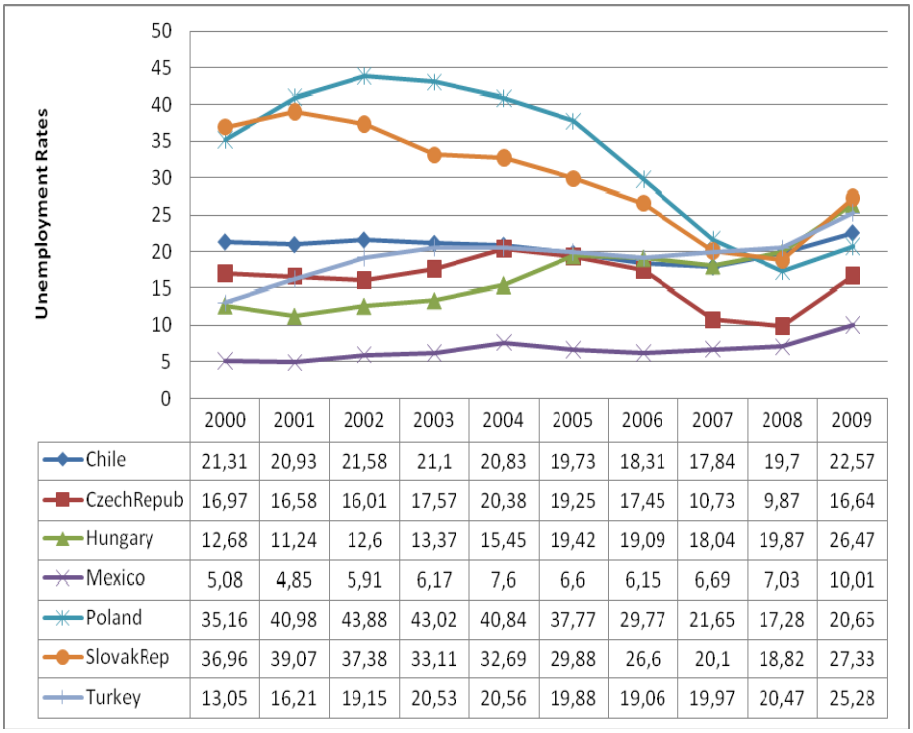


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
illiterate	3,4	3,1	4,6	7	4,3	4,9	4,8	5,2	6,3	8	6
less than high school	5,7	7,8	9,6	10,2	9,7	10,1	9,8	9,8	10,7	13,9	11,6
high school and vocational high school	10,6	13,3	14,7	12,8	15,3	13,8	12,9	12,9	12,9	16,8	14,5
high education	7	7,8	11,1	11,1	12,2	10	9,6	9,7	10,3	12,1	11

Figure 3.
Annual Unemployment Rates of Labor Force of TURKEY according to educational level (percentage of total labor force aged 15+ by educational level)[6]

In Figure 3, high school and vocational school unemployment rates seem to be higher than other categories for all periods between 2000 and 2010. Figure 4 presents values and distributions of annual youth unemployment rates of Turkey and of other countries with similar economic properties.

[6] The data are gathered from Republic of Turkey Turkish Statistical Institute (Turk Stat) official web (www.tuik.gov.tr (accessed April 5, 2011)).



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Chile	21,31	20,93	21,58	21,1	20,83	19,73	18,31	17,84	19,7	22,57
CzechRepub	16,97	16,58	16,01	17,57	20,38	19,25	17,45	10,73	9,87	16,64
Hungary	12,68	11,24	12,6	13,37	15,45	19,42	19,09	18,04	19,87	26,47
Mexico	5,08	4,85	5,91	6,17	7,6	6,6	6,15	6,69	7,03	10,01
Poland	35,16	40,98	43,88	43,02	40,84	37,77	29,77	21,65	17,28	20,65
SlovakRep	36,96	39,07	37,38	33,11	32,69	29,88	26,6	20,1	18,82	27,33
Turkey	13,05	16,21	19,15	20,53	20,56	19,88	19,06	19,97	20,47	25,28

Figure 4.
Annual Youth Unemployment Rates of TURKEY and Some Other Countries (% of total labor force aged 15-24)[7]

Comparisons show that only Mexico youth unemployment rates were lower than Turkey for the period between 2000-2009. Czech Republic youth unemployment rates were also lower than Turkey between 2002-2009, and the rate in Hungary was lower than Turkey between 2000-2005. Poland and Slovak Republic youth unemployment rates seem to be higher than Turkey for the period between 2000-2007.

The Turkish economy has important structural problems such as establishing sustainable growth and increasing employment. In addition, there are significant uncertainties in unemployment data measurements. High levels of population growth, migration from rural to urban areas and the high proportion of young population are the general reasons why unemployment rates cannot be reduced to below a certain level. The above-mentioned structural problems are the low level of total employment and

[7] The data are gathered from Organization for Economic Co-operation and Development (OECD) official website (www.oecd.org (accessed April 5, 2011)).

particularly the unemployment of the educated population in urban areas. The skills and knowledge base of the labor force have to be improved, indicating a need to concentrate on technical schools. There is a particular need to educate, intermediate level staff as required by the economy.

3. PREVIOUS LITERATURE

Several published studies have focused on the problem of youth unemployment in Turkey, making points related to the reduction of youth unemployment and the need to improve national employment policies. Ercan (2007) highlighted the International Labour Organization (ILO) report on youth employment in Turkey, which explained that the main problem is related to the transition from school to working life. In addition to this, the United Nations Development Programme (UNDP) 2008 Turkish youth report about human development in Turkey supports the ILO report findings that had been highlighted by Ercan (2007) in that the main problem of youth employment are the general difficulties faced in the transition from school to working life. The World Bank Report (2008) also emphasized that young people have trouble in the transition from school to the labor market in Turkey (World Bank Report, 2008: ii).

The common conclusion of these reports is the need for preparation and urgent application of a youth policy to deal with present unemployment problems. Belen (2008) recommended that this policy include the views of different youth categories, non-governmental organizations (NGO), academics, private sector, media, unions and youths. The problems of transition from school to work should comprise a major part of this youth policy. In this context, the findings related to a decrease of unemployment, unemployment duration, duration to first job and the increase of employment and studies on these issues are of great significance.

There are relatively few studies about the determination of the duration of the first real job in unemployment literature. Many studies such as Şenses (1994), Bulutay (1995), Van den Berg & Van Ours (1999), Jenkins & Serano (2004), Taşcı & Tansel (2005) and Pollman-Schult & Büchel (2005) analyze unemployment duration using the hazard function, which determines the individual's chance of getting out of unemployment. In a recent study, Ogawa & Tansel (2005) estimated a relationship between education level and efficiency for Turkish individuals with logit regression. However, none of the above studies examined the determinants of the duration to finding a first real job. The only researchers that have examined this topic are Wolpin (1987), Eckstein & Wolpin (1995), Chuang (1999), Lassibille et al (2001) and Andrews et al (2002).

Wolpin (1987) used sample data of high school graduates from the National Longitudinal Surveys of Youth Cohort that was surveyed in USA in 1979. The researcher studied the transition from school leaving to first job using a sample of 144 graduates from high school in 1979. The distribution of the duration to the first real job of the sample was as follows: 45 of 144 graduates found a first real job within a week of graduation, 17 in 2 to 13 weeks, and 14 in 14 to 26 weeks. These results show that approximately 53% of the graduates found their first real job within six months. Wolpin (1987) estimated the logarithmic linear models for the wage function. The researcher concluded that only 1% per week reduces the expected duration of unemployment from 46 weeks to 20 weeks.

Eckstein & Wolpin (1995) used sample data of high school graduates from the National Longitudinal Surveys of Youth Cohort that was surveyed in USA in 1979–1986. The researchers focused on four school groups; high-school non-completers, high-school graduates, college-non completers and college graduates. They concluded that the distinguishing element of the duration of unemployment is related to the probability of the wage differences.

Chuang (1999) explored the determinants of unemployment duration for college graduates in Taiwan. The researcher used data that were drawn from the 'College Graduate Youths'Employment Status Survey of 1984 and 1985 by the National Youth Commission of Taiwan. The results showed that 2726 (82%) of 3324 1984 and 1985 college graduates in Taiwan found their first real job within six months. Chuang (1999) estimated an unemployment duration model. The researcher concluded that personal characteristics (including education) and job search variables are the significant determinants for out-of-work duration for unemployed college graduates while family background variables show little effect.

Lassibille et al (2001) used a data set drawn from *Encuesta Socio-Demografica* conducted by the *Instituto Nacional de Estadistica* in Spain in 1991. The researchers explored the labor market entrance of Spanish school leavers and the relationship between education and work in the early stages of working life. The age of 52% of the total participants of the survey was 16–30 years. The results showed that 39% of the 16–30 aged participants found their first job within six months. Researchers estimated multinomial logistic regression for the probability of employment and concluded that human capital (education and business experience) exerts a strong influence on the duration of unemployment.

Andrews et al (2002) used data obtained from the Lancashire Careers Service related to young people aged 16–19 in 1988–1991 in Lancashire, England. Researchers estimated multinomial logistic models for

training preference, training destination and a competing risk model for unemployment duration. They concluded that ethnicity, qualifications and individual disadvantage covariates have a significant impact across all three sets of regressions. Table 1 summarizes the overviewed literature for the duration of finding a first real job after graduation.

Table 1.The First Real Job Durations in the Literature

Researcher(s)	Total Number of Sample	Percentage of graduates who found first real job in less than six months
Wolpin (1987)	144	53.0%
Chuang (1999)	3324	83.0%
Lassibille et al. (2002)	78000	52.0%

As can be seen from Table 1, more than half the graduates in these studies found their first real jobs within a six month period.

4. METHOD

Standard methods of simple and multiple regressions are utilized when the dependent and independent variables are continuous (Cox, 1958: 215). On the other hand, when the dependent variable is categorical, logistic regression is more proper than the standard methods (Leech, Barrett, & Morgan, 2004: 109).

There are alternatives to logistic regression model such as probit model and discriminant model. These models have some weak points when compared to a logistic model; for example the estimation of the parameters of probit model is not as easy (Clearly & Angel, 1984) and probit model parameter estimates can not be interpreted as easily. In discriminant analysis, independent variables are assumed to be normally distributed which is not possible in practice. For example, the gender variable is discrete, as value one for female and two for male, so can not be normally distributed. The comparisons of these weaknesses and strengths led us to use a logistic regression model. Similarly, Lassibille et al (2001) and Andrews et al (2002) also used logistic regression models in their studies (See literature section).

In general, logistic regression models diverge into two models; multinomial and binary logistic regression models. This divergence is directly related with the categories of dependent variable. If the dependent variable has more than two categories then the model is called a multinomial logistic regression model and if the dependent variable is a dichotomous

variable then the model is called a binary logistic regression model8. The dichotomy of a dependent variable means that the related circumstance occurs (variable takes value "one") or does not occur (variable takes value "zero") (Walker & Duncan, 1967). The logistic regression model with k explanatory variables $(X_1, X_2, ...X_k)$ can be expressed with the following equation:

$$P_i = E(Y = 1|X_i) = \frac{1}{1 + e^{-(\beta_1 + \beta_2 X_i + \beta_3 X_2 + ... + \beta_k X_k)}} \quad (1)$$

In this model, P_i is the probability of the particular choice of the i^{th} individual, namely Y's probability of taking zero and one. Consequently, this model is nonlinear in independent variables and in parameters (Gujarati, 2003: 595). This nonlinear form can be transformed into linear form by proper transformation steps9 and then parameters can be estimated with proper estimation methods. Because of the non-linearity of the explanatory variable(s) and parameters in the population regression function, the Ordinary Least Square (OLS) estimation can not be performed either (Stock & Watson, 2007: 397) but there are other estimation techniques[10] which can be performed. Morgan & Teachman (1988) proposed the ML (Maximum Likelihood) estimation method in cases where explanatory variables have continuous variables.

5. DATA, ESTIMATION RESULTS AND EVALUATIONS

The aim of this study was to determine the factors affecting the duration of finding a first real job for university graduates using a Logistic regression model. The focus was particularly on Econometric department graduates of Faculty of Economics and Administrative Sciences of Uludağ University. The empirical strategy that was followed in this study was organized as follows:

1. **A questionnaire was prepared** taking into consideration the variables that are used in literature and the opinions of academics

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8 In this study, binary logistic regression model is used because dependent variable has two categories.

9 For the sake of simplicity, the transformation process was not given. See Gujarati (2003) for details.

10 Some estimation techniques are as follows: WLS (Weighted Least Squares), ML (Maximum Likelihood) and Minimum Chi-Square.

from the Department of Labor Economics and Industrial Relations of Uludağ University.

2. **A pilot survey was administered** to twenty Econometric department graduates, and then a final version of the survey was formulated.
3. **Sample data were collected**[11] and **input** to the computer. Some of the respondents'data had to be excluded for various reasons, such as unanswered questions.
4. **Descriptive statistics were calculated** and **presented.**
5. **Several binary logistic regression models with one independent variable were estimated** separately to determine whether they were separately statistically significant or not.
6. **Statistically significant independent variables were determined** through twenty-nine variables.
7. **Several binary logistic regression models with multiple independent variables were estimated** to determine the most proper model.
8. **Finally,** several comparisons were made and the most proper model was determined.

5.1. Data

Table 2 presents the descriptive statistics of the independent variables:

[11] One of the difficulties that we encountered was in finding participants to reply to the graduates'questionnaire. For ease of exposition, we benefited from the records of graduates on the Turkish web site "www.ekonometri.org". In March and April 2007 we contacted approximately 200 graduates by e-mail from this source. 139 out of 200 replied to the questionnaire. 17 of the 139 replies were excluded for various reasons (e.g. some questions were unanswered and some of the graduates had graduated previous to the time of our study). We used a sample of data from 122 graduates out of 139 who had graduated from the Econometrics Department of the Faculty of Economics and Administrative Sciences of Uludağ University 2000–2006. These data were analyzed with SPSS 13.0 package programme.

Table 2. Descriptive Statistics of the Data

GENDER	Value	Number	*Percent*
Female	0	68	*55.7*
Male	1	54	*44.3*
HIGH SCHOOL			
State	1	64	*52.5*
Anatolian College	2	22	*18*
Science	3	2	*1.6*
College	4	9	*7.4*
Engineering College	5	11	*9*
Others	6	14	*11.5*
MOTHER'S EDUCATION LEVEL			
Non-university graduate	0	105	*86.1*
University graduate	1	17	*13.9*
FATHER'S EDUCATION LEVEL			
Non-university graduate	0	89	*73*
University graduate	1	33	*27*
SCHOOL ATTENDANCE			
Irregular	0	78	*63.9*
Regular	1	44	*36.1*
SOCIAL COMMUNITY			
Non-participation	0	48	*39.3*
Participation	1	74	*60.7*
SPORT CLUBS			
Non-participation	0	65	*53.3*
Participation	1	57	*46.7*
TRAINING COURSE			
No	0	59	*48.4*
Yes	1	63	*51.6*
BUSINESS EXPERIENCE			
No	0	71	*58.2*
Yes	1	51	*41.8*
GRADUATION YEAR			
2000	1	8	*6.6*
2001	2	9	*7.4*
2002	3	15	*12.3*
2003	4	36	*29.5*
2004	5	24	*19.7*
2005	6	17	*13.9*
2006	7	13	*10.7*
EDUCATION TYPE			
Evening	0	39	*32.0*
Day	1	83	*68.0*
GRADUATION DEGREE OUT OF 100			
Below 80	0	114	*93.4*
More than 80	1	8	*6.6*
ADDITIONAL EDUCATION			

No	0	44	*36.1*
Yes	1	78	*63.9*
SATISFACTION	Value	Number	*Percent*
Dissatisfied	0	46	*37.7*
Satisfied	1	76	*62.3*
SECTOR			
Public	0	8	*6.6*
Private	1	114	*93.4*
WORKING HOURS			
Not 8 hours	0	98	*80.3*
8 hours	1	24	*19.7*
JOB SEARCH METHODS EFFECT			
Relatives	1	52	*42.6*
Magazines	2	10	*8.2*
Employment agency	3	0	*0*
Job Creating Private Agency	4	0	*0*
Internet	5	39	*32.0*
Other	6	61	*17.2*
RELATIVES EFFECT			
No	0	88	*72.1*
Yes	1	34	*27.9*
FAMILY STIMULUS			
No	0	57	*46.7*
Yes	1	65	*53.3*
ECONOMETRICS DEPARTMENT EFFECT			
No	0	91	*74.6*
Yes	1	31	*25.4*
FOREIGN LANGUAGE			
Below intermediate level	0	86	*70.5*
Above intermediate level	1	36	*29.5*
COMPUTER LEVEL			
Below intermediate	0	47	*38.5*
Above intermediate	1	75	*61.5*
MARITAL STATUS			
Not Married	0	118	*96.7*
Married	1	4	*3.3*
FAMILY INCOME EFFECT(Per month)			
Less than 1500 TL	0	38	*31.1*
More than 1500 TL	1	84	*68.9*
RESIDENCE EFFECT			
Not in the one of the biggest 5 cities of Turkey	0	34	*27.9*
In the one of the biggest 5 cities of Turkey	1	88	*72.1*
GEOGRAPHICAL REGION EFFECT			
Not Marmara region	0	19	*15.6*
Marmara region	1	103	*84.4*

In Table 2, the four columns show the independent variables, the category values, the frequencies and the percentages of the values respectively. For instance, 55.7% of the total 122 graduates are female and 44.3% male. Some independent variables that can be confusing are defined as follows:

- *Social community* is defined as student clubs such as an art club, music club, dance club, mountain club and suchlike. We tried to measure the social activities role as to whether or not it affects the duration of finding a first real job. Zero means the Econometrics Department student did not participate in any social activities such as art club, music club, dance club, or mountain club during his/her student life. A value of one means that they did participate in these kinds of activities.
- *Additional education* is education such as Master degree, Ph.D. degree, Microsoft Certificates etc.
- *Satisfaction* shows the individual satisfaction of the graduated student with the education received in Uludağ University Econometrics Department.
- *Relatives'effect* is a positive effect from family members that helped the individual to find his/her first real job.
- *Family stimulus* is the degree of encouragement given by parents to help their child find a job[12].
- *Econometrics Department Effect* was added as we tried to measure whether being an Econometrics Department graduate helped in finding the first real job.
- *Residence Effect* was given as an explanatory variable as most commercial activity takes place in the five largest cities of Turkey; Istanbul, Izmir, Ankara, Bursa, and Adana. There are greater employment opportunities in those cities.
- *Marmara Region* has more employment opportunities than the other six geographical regions.
- *Education type* refers to the type of education applicable to the Turkish university system where classes may be held either during the day (9.00-15.00) or in the evening (17.00-21.00).

[12] For example, parents encourage them to look at advertisements, to talk about company requirements, to arrange job interviews, to give emotional support etc.

The dependent variable is the duration of finding the first real job. The categories of dependent variable are zero and one. "Zero" indicates that the graduates found their first real job in more than six months. "One" represents that the graduates found their first real job within six months. Table 3 summarizes the descriptive statistics of the dependent variable:

Table 3. The First Real Job Durations by Gender

Duration/Gender	Female	Male	Total	*Percent*
〉 6 months	18	18	36	*29.5*
≤ 6 months	50	36	86	*70.5*
Total	68	54	122	*100.0*

As can be seen from Table 3, 70% of the graduates found their first real job within six months. These findings support the findings shown in Table 1. Therefore, it can be concluded that the six-month period can be used as a threshold for the statistical model dependent variable.

5.2. Estimation Results

Several binary logistic regression models with one independent variable were estimated separately to determine whether they were separately statistically significant or not. The estimation results are shown below in Table 4:

Table 4. Binary Logistic Regression Model Estimations with One Independent Variable[13]

	$\hat{\beta}_2$	Standard Error	d.f.	Odds Ratio	*p*
EDUCATION and EXPERIENCE					
High School [D]	-	-	5	-	*0.991*
School Attendance [D]	0.505	0.407	1	1.657	*0.214*
Social Community [D]	0.787	0.404	1	2.197	*0.052***
Sport Clubs [D]	-0.617	0.409	1	0.540	*0.131*
Training Course [D]	0.065	0.397	1	1.067	*0.871*
Business Experience [D]	1.468	0.473	1	4.340	*0.002**
Education Type [D]	0.898	0.477	1	2.455	*0.059****
Graduation Point [D]	0.243	0.842	1	1.275	*0.773*
Additional Education [D]	-0.505	0.407	1	0.603	*0.214*
Satisfaction [D]	-0.445	0.423	1	0.641	*0.294*
Econometrics Department [D]	-0.031	0.457	1	0.970	*0.946*
Foreign Language [D]	0.317	0.450	1	1.373	*0.481*
Computer Level [D]	0.513	0.403	1	1.670	*0.203*
Graduation Year [D]	-	-	6	-	*0.441*
Duration Of Graduation [C]	-0.204	0.144	1	0.816	*0.157*
PERSONAL					
Gender [D]	-0.329	0.399	1	0.720	*0.410*
Marital Status [D]	-	-	1	-	*0.999*
Age [C]	0.259	0.105	1	1.295	*0.014***
FAMILY BACKGROUND					
Mother's Education Level [D]	0.354	0.610	1	1.425	*0.562*
Father's Education Level [D]	0.585	0.482	1	1.795	*0.225*
Family Income [D]	0.497	0.418	1	1.644	*0.234*
JOB PREFERENCE					
Sector [D]	-1.496	0.760	1	0.224	*0.049***
Working Hours [D]	-0.223	0.487	1	0.800	*0.647*
Wage [C]	-	-	1	-	*0.888*
Job Search Methods Effect [D]	-	-	3	-	*0.288*
ENVIRONMENT					
Relatives Effect [D]	-0.742	0.427	1	0.476	*0.082****
Family Stimulus [D]	-0.617	0.409	1	0.540	*0.131*
Residence Effect [D]	-0.006	0.443	1	0.994	*0.988*
Geographical Region Effect [D]	0.116	0.539	1	1.123	*0.830*

[13] **D** denotes that the explanatory variable is discrete. **C** denotes that the explanatory variable is continuous.* denotes that the parameter is statistically significant at one percent significance level. ** denotes that the parameter is statistically significant at five percent significance level. *** denotes that the parameter is statistically significant at ten percent significance level.

The estimation results show that business experience is statistically significant at one percent significance level. Age and sector variables are statistically significant at five percent significance level.

Several binary logistic regression models with multiple independent variables were estimated to determine the most proper model. Finally, several comparisons were made and the most proper model was determined. The estimation results are shown below in Table 5:

Table 5. Binary Logistic Regression Model Estimation with Multiple Independent Variables [14]

VARIABLES	$\hat{\beta}$	Standard Error	d.f.	Odds Ratio	*p*
Education Type	-1.256	0.544	1	0.285	*0.021***
Family Stimulus	-1.016	0.512	1	0.362	*0.047***
Additional Education	1.150	0.534	1	3.159	*0.031***
Business Experience	1.575	0.568	1	4.830	*0.006**
Age	-0.405	0.134	1	0.667	*0.003**
Social Community	0.863	0.500	1	2.370	*0.084****
School Attendance	-0.546	0.525	1	0,579	*0.298*
Constant	10.599	3.363	1	40080	*0.002**

The estimation results show that age and business experience were found to be statistically significant at one percent significance level. Education type, family stimulus, and additional education were found to be statistically significant at five percent significance level. Social community was found to be statistically significant at ten percent significance level. But, school attendance was found to be statistically insignificant. The Hosmer-Lemeshow test statistic's p value was found to be 0.508, which means that the fit of the goodness of the explanatory variables is good.

5.3. Evaluations For Significant Factors

- *Business experience:* Business experience indicates experience that has been gained in the real business world and has more effect on finding the first real job within six months than the other significant variables. The odds ratio of business experience is 4.830. This means that the graduates with business experience

[14] * denotes that the parameter is statistically significant at one percent significance level. ** denotes that the parameter is statistically significant at five percent significance level. *** denotes that the parameter is statistically significant at ten percent significance level.

are 4.83 times more likely to find employment compared to those without such experience. It is obvious that employers prefer to employ experienced staff, which could lead to a situation of employers avoiding training costs.

- *Additional education:* The odds ratio of additional education is 3.159. This means that the graduates with additional education are 3.159 times more likely to find employment compared to those without such education. Additional education indicates post-graduate education (Master degree, Ph.D. degree, Microsoft Certificates, etc.). The continually increasing demands of employers can be seen most clearly in newspaper human resource supplements, business advertisement papers, job search pages on the internet and other job search sources. When these sources are analyzed, it is observed that most professional positions require a first degree. Although a first degree has become a prerequisite in the transition into working life, our results show that additional qualifications such as Master, Ph.D., and Microsoft Certificates are also important. The foremost reason for this is that companies wish to recruit the most appropriate staff in a competitive market. This choice increases the flexibility of companies. Flexibility, speed and adaptability are of the essence in today's global marketplace. Cycle and turnaround times continue to shrink. How quickly and effectively an organization can change the things that do not work, or improve those that do, is critical to keeping it competitive and profitable (Flannery, Hofrichter and Platten 1996:18). To control/use working styles, hours and employees related to the enterprise demands, yield a considerable advantage to the enterprise in the harmonization of the enterprise to a varied environment. This aspect conforms to the result that additional education increases the chances of getting a job.
- *Social community:* The odds ratio of social community is 2.370. This means that the graduates who joined to social community are 2.370 times more likely to find employment compared to those who did not join to social community. Participating in social activities or being a part of a social community can help to establish new friendships and networks which can lead to employment opportunities. Besides, it helps to enlarge individual's social environment, it also develops interpersonal skills which can be beneficial for the individuals in job interviews.

- *Education type:* Education type takes the value of 1 for day. The odds ratio is 0.285, which is less than one. This means that the graduates of the day program are less likely to find employment compared to evening program graduates. This is consistent with the fact that the beta coefficient is negative. Although the content of the education and professors are the same, the difference or advantage may be due to students who receive evening education having the opportunity to work and gain experience in the daytime.
- *Age:* The odds ratio is 0.667, which is less than one. This means that the older graduates are less likely to find employment compared to younger graduates. It can be concluded that companies prefer to recruit younger staff so it is easier to find a job at a younger age for both genders. Completion of compulsory military service may therefore be more appropriate for males immediately after graduation.
- *Family stimulus:* Family stimulus takes the value 1 for the graduates who did have family stimulus. The odds ratio is 0.362, which is less than one. This means that the graduates who did have family stimulus are less likely to find employment compared to those who did not have family stimulus. Family stimulus in the job search process may sometimes mean that family members put pressure on the job search process in a negative (harmful domination) or positive (supportive) manner. This subject is a matter of debate as there might be various socio-cultural factors to be considered. However, in this study it was found that without family stimulus econometric department graduates were able to find a first real job within six months.

6. SUMMARY AND CONCLUSION

The aim of this study is to establish and evaluate the determinants of the duration of finding a first real job for university graduates using a Logistic regression model. To this purpose, an evaluation was made of factors that may have had an effect on finding the first real job within six months for 122 Econometric department graduates of the Faculty of Economics and Administrative Sciences of Uludağ University. The estimation results show that age and business experience were found to be statistically significant at one percent significance level. Education type, family stimulus, and additional education were found to be statistically significant at five percent significance level. Social community was found to

be statistically significant at ten percent significance level. But, school attendance was found to be statistically insignificant.

Business experience has more effect on finding a first real job within six months than other significant variables. The odds ratio of business experience (4.830) indicates that the graduates with business experience are 4.83 times more likely to find employment compared to those without such experience. The odds ratio of additional education (3.159) indicates that the graduates with additional education are 3.159 times more likely to find employment compared to those without such education.

The odds ratio of social community (2.370) indicates that the graduates who joined to social community are 2.370 times more likely to find employment compared to those who did not join to social community. The odds ratio of education type (0.285) indicates that the graduates of the day program are less likely to find employment compared to evening program graduates. The odds ratio of age (0.667) indicates that the older graduates are less likely to find employment compared to younger graduates. The odds ratio of family stimulus (0.362) indicates that the graduates who did have family stimulus are less likely to find employment compared to those who did not have family stimulus.

Business experience, additional education, social community, education type, age and family stimulus are the elements that can be considered as micro-level factors. These factors may help to direct university graduates in finding their first real jobs. In all countries, the employment prospects for youth depend on two cornerstones – an education system that produces skilled young people and a labor market that generates good jobs (World Bank Report, 2008: ii). For many young people, skill deficiencies are a barrier to entering the labor market (World Bank Report, 2008: ii). Better employment prospects will require education reforms that prepare all young people with the skills needed to qualify for good jobs after leaving school (World Bank Report, 2008: ii). In addition to skills deficiencies young people also identify a lack of information as a problem in making the transition from school to work (World Bank Report, 2008: iii). However, the other side of the coin is that at the macro-level. Turkey has important structural problems such as establishing sustainable growth and increasing employment. Low levels of total employment and especially the unemployment of the educated population in urban areas are some of the structural problems that are faced. There is also a high population growth rate, migration from rural to urban areas and proportionately high young population in Turkey. The Turkish economy should take steps to provide employment, with a co-ordinated approach to solving these problems. In other words, micro factors and macro factors should be considered

simultaneously. It is stated in the World Bank Report (2008) that if the youth of Turkey are not well prepared for the world of work and if the labor market does not generate more and better jobs for them, then this large youth cohort will be the source of social and economic pressures and tensions. Finally, the micro factors that were determined by this study (business experience, additional education, social community, education type, age and family stimulus) should be taken into consideration in the formation of macroeconomic policies in Turkey.

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