Search and determinants of job search intensity in Turkey[1]

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Abstract

There are a few numbers of studies on job search behavior of unemployed individuals in the developing countries. The purpose of the present study is to examine the personal, household and labor market characteristics on the job search intensity of Turkish unemployed individuals. For this aim we use individual data obtained from the Household Labor Force Surveys of 2000 and 2001. The analyses are carried out for the full data as well as by considering residence dimension. The results indicate that urban residents are more likely to search more intensively than rural residents. It is also observed that females search less intensively than males. Increases in education level seem to increase the job search intensity. There is an inverse-U shaped relation between age and job search intensity. While living in the most developed regions of Turkey, i.e. Marmara and Aegean increase the intensity of job search, living in the least developed regions of East and South-East Anatolia decline the job search intensity. Increases in unemployment rate increase the job search intensity, but increases in the level of GDP declines the job search intensity. Further, there is an inverse-U shaped relation between population density and job-search intensity.

Key words: Unemployment, Job Search, Gender, Turkey.

JEL classification: J64, J16.

1. Introduction

Over the last decades there has been a large number studies on labor market issues with a particular attention given to unemployment and job search behavior of unemployed. Theoretical and empirical works on job search mostly focus on the relationship between the intensity of job search and the amount of received job offers, the measure to accept or reject the job offer (i.e. the reservation wage) and the labor market outcome (Try,2005, p.224). These studies have generally been carried out for the developed

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countries, such as McGregor (1983), Holzer (1988), Jones (1989), Wadsworth (1991), Osberg (1993), Forsythe (1995), Gregg and Wadsworth (1996), Saks and Ashforth (2000), Böheim and Taylor (2001), Addison and Portugal (2002), Eriksson (2002), and Sverko et al (2008). However, it has scarcely been analyzed for the transition countries, such as Smirnova (2003) and Roshchin and Markova (2004), as well as for the developing countries, such as Gustova and Cristobal (2004) and Wahba and Zenou (2005). Even though there are some studies on unemployment issue in Turkey such as Tansel and Tasci (2004), Tasci and Tansel (2005), to the best of our knowledge, there is no previous study which focuses on the intensity of job search in Turkey. Therefore, in this paper we will attempt to fill research gap in the literature.

In the literature, a number of theoretical approaches from the fields of economics and psychology have been used in explaining the job-search process of the unemployed individuals. Job search process is considered, as a "motivational self-regulatory" (Kanfer et al., 2001) or "goal directed" (Feather, 1992, p.328), course of action which may include three main steps. These are, according to Layard et al (1991, p.230), firstly, collection of information about the open vacancies or job opportunities, secondly, decision to or not to apply to these jobs, and finally, acceptance or refusal of a job offer(s) taken from the potential employer(s)[2]. Hence, during the process of job search an individual accumulates relevant information(s) on the existing job opportunities to have a best possible decision (see Barber et al. (1994) and (Lasaosa (1997)). This process is described by Osberg (1993, p.349) as similar to fishing activity in which fisherman makes a choice about "lure and location" to have a maximum likelihood of "*catching an acceptable fish*." Throughout the process of job search, a job-seeker is expected to gain knowledge of more efficient, useful and effective job search techniques using some individual and social resources such as time effort and money (Barber et al. (1994); and Try (2005)). And, basically, gathering the relevant information regarding the open jobs and obtaining a job offer relies on the job search intensity as well as the use of "correct" job search methods (Layard et al. (1991)). If s/he invests or expends more on the job seeking action, it is expected to increase the knowledge about the existing job possibilities or openings as well as the likelihood of getting a vacancy offer (Wadsworth (1991) and Böheim and Taylor (2001)). In this respect, further, motivational factors such as self-efficacy[3], self-esteem[4], financial

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[2] These steps are defined as the "preparatory and active" stages of the job search process by Blau (1993; 1994).

[3] Self-efficacy of a job seeker can be defined as the "confidence in his/her ability to successfully perform a variety of job search activities" (Wanberg et al. 1999, p.899) to obtain a desired employment outcome. Kanfer et al. (2001) finds positive relation between self-efficacy and job-search intensity.

need or hardship[5] together with attributions for employment, beliefs regarding the significance or "subjective value[6]" of job, and other factors related to personality (see Blau (1994), Feather (1992), Feather and O'Brien (1987), Kanfer et al. (2001)[7], Saks and Ashforth (1999) and Wanberg et al.(1999)) are all expected to affect the job search behavior, and therefore the intensity of job-search. Further, Vansteenkiste et al. (2005, p.272), using the "self determination theory", suggests that "motivation[8]" of individuals in a job search activity may be very high, while the rationale for this behavior may be noticeably vary across individuals. For example, seeking for a job is "an autonomous and personal choice" for some of the unemployed individuals because of the idea that finding a job will create a chance of developing their skills. However, for the some others seeking for a job is a "pressured and controlled" activity. For instance, their economic hardship, family responsibilities and the view of being considered as a "free-rider on social welfare" by the others creates pressure on these individuals (see Vansteenkiste et al., 2005). Furthermore, following the self-determination theory Vansteenkiste et al. (2004, p.347) point outs that unemployed individuals are expected to be amotivated (lack of intention or absence of motivation to engage in a particular action) if they believe that their job search activity will not generate the expected outcome[9].

For a given reservation wage, job search activity of an unemployed individual is expected to continue until the marginal benefit (i.e. obtaining a job offer and the wage being offered) is equal to the marginal cost (i.e. time, opportunity and financial costs) of job-search (Devine and Kiefer (1991)).

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[4] Kanfer et al.(2001) finds a positive relation between self-esteem and, job search intensity as well as job search effort. An individual with higher self-esteem is expected have short unemployment duration, more job-offers received, and higher probability of finding a job (Ellis and Taylor, 1983).

[5] Wanberg et al. (1999) and Kanfer et al. (2001) find that there is a positive relationship between financial need or economic hardship and job search intensity. Further, notice that there is negative relation between the job search intensity and, the amount of unemployment benefit received and their maximum duration. The higher is the unemployment benefits the lower is the intensity of job search as well as willingness to accept job offers.

[6] See Feather and O'Brein (1987) and Feather (1992). Feather and O'Brein (1987) find a positive relation between the subjective value of finding a job, which is given by the unemployed, and job search intensity. However, a person may not apply for a job because s/he does not anticipate getting it, even if s/he attributes a high value to hold this job (see Feather, 1992).

[7] Kanfer *et al.*(2001) suggest that extraversion, conscientiousness, agreeableness, openness to experience, and emotional stability, are all positively related to job search intensity as well as job search effort.

[8] According to Self-Determination theory there are three main psychological needs which motivate the behavior of individuals. These are autonomy, competence, and relatedness with others. For the detailed discussion on self-determination theory see Deci and Ryan (2000) and Ryan and Deci (2000 and 2002).

[9] Vansteenkiste *et al.* (2004) predicts that job search intensity declines with the increase in "amotivation".

The probability that an unemployed finds a "relevant job[10]" depends on his/her personal characteristics (including biographical, economical as well as motivational factors mentioned above), labor market conditions or economic situation in the country as well as in the geographical location. For instance, obtaining a job may be more difficult i.e. the risk of unemployment is quite high, in the regions where unemployment rate is high, where "degree of competition for jobs" (Layard et al., 1991, p.233) is high, compared to other regions. Conversely, finding a job may be easier in the low unemployment rate areas compared to the others. In this respect, residence of location (in terms of rural & urban, developed & non-developed and inner-city & suburban distinction) may also important determinants of job search effort and success of unemployed individual. For example, even the cost of living in the inner-cities is low compared to central part of cities, residing in inner-cities or "distance to jobs" prevents unemployed individuals from collection of information on job availabilities because of higher transportation and therefore higher job search costs (Smith and Zenou, 2003, p.130). Thus, living in inner-cities is expected to decline the job-search intensity and success and to increase the likelihood of becoming long-term unemployed (Smith and Zenou (2003), and Patacchini and Zenou (2006)). The similar expectations may also be relevant for the rural residing individuals, as compared to those living in urban areas.

The likelihood of finding a job can be considered as the product of the following two probabilities. The first one is intensity of the job search (and thus the likelihood of getting a job offer) and the second one is that the likelihood that the potential offer is accepted (Wadsworth (1991) and Eriksson (2002)). In this study, we concentrate on the first product, that is the intensity of job search and examine the effects of personal, household and labor market characteristics on the job search intensity of Turkish unemployed individuals. For this purpose, we use the data on individual job seekers obtained from the Household Labor Force Surveys of 2000 and 2001. For comparison purposes, the analyses are carried out for the full data as well as by considering rural urban difference. According to our general results, urban residents are more likely to search more intensively than rural residents. It is also observed that females search less intensively than males. Increases in education level seem to increase the job search intensity. There is an inverse-U shaped relation between age and job search intensity. While living in the most developed regions of Turkey, i.e. Marmara and Aegean increase the intensity of job search, living in the least developed regions of East and South-East Anatolia decline the job search intensity. Increases in

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[10] Relevance of a job can be explained by the "quality" and "security" of the job. One can measuse the quality of a job by means of wage, degree of job-match, job satisfaction, organizational commitment and turnover (see Wanberg et al. (1999) and Saks and Ashforth (2002)).

unemployment rate increase the job search intensity but on the other side increases in the level of GDP declines the job search intensity. Further, there is an inverse-U shaped relation between population density and job-search intensity.

In the remainder of this paper, a discussion on the data and definition of job-search intensity is provided. This discussion is followed by the presentation of the econometric model. Then, estimation results for the full data as well as for the data by urban-rural difference are discussed separately. In the final section some concluding remarks are presented.

2. Data, descriptive statistics and definition of job-search intensity

The data used in this paper come from the Turkish Household Labor Force Survey (HLFS). The HLFS is conducted by the Turkish Statistical Institute (TUIK). Each quarter, about 23,000 households are interviewed. The households covered in the survey are representative of the population in Turkey (SIS, 2001 and 2003). Our sample covers the period of 2000 (Q1, Q2, Q4) and 2001 (Q1,Q2). The HLFS survey aims to get information on the labor market status of working age population in Turkey. For this aim, the survey covers the information on unemployment, employment, working hours, economic activity, occupation, discouraged workers, seasonal workers, duration of unemployment, search method, educational status and marital status etc. (SIS, 2001, p.XX1). The data does not give information about income and related variables (i.e. wages in the current or last job and/or unearned income); this is the main shortcoming of the HLFS survey data. In this study we mainly utilize the information related to job search behavior of the unemployed individuals and the figures on socio-economic variables such as gender, marital status, age, residence and education.

In the survey, an unemployed individual is asked a number of questions related to his/her job search activity. If s/he states that s/he is searching for a job, s/he is then asked about the channels used for the job search activity. The survey allows the respondents to fill maximum of four alternative job search channels in an ordered form among the nine alternatives. These are "sought a job personally, asked friends or relatives to find a job for him/her, applied to the employment office, placed/answered job advertisements in newspapers, applied to workers agent and mediators, tried to supply equipment, credit and work place to establish his/her own business, and other" (see SIS, 2001 p.118). Then, the respondent is asked to state when s/he is used this (these) job search channel(s). If the respondent states that s/he used at least one of the job search channels during the last three months then s/he is defined as unemployed, otherwise not.

The general observations from the data are as follows. The first is that the main job search method is "personally job seeking", and about 92

percent of males' and 84 percent of females' report that they seek for a job by using this method as the first choice. Further, regardless of gender difference we observe that approximately 70 percent of unemployed individuals used more that one job search method. Among these individuals, about 94 percent of males and 91 percent of females used "through friends and relatives" as the second job search method.

An interesting observation is that the use of state "employment office" as job search method is not frequent among the unemployed individuals. The share of "employment office" in overall job search methods is about 9.41 percent in average, 8.2 percent for females and 9.8 percent for males, respectively. This is in contrast to what is being observed for the developed countries. For instance, the use of job centers as a job search method in average about 76 percent in the UK (Böheim and Taylor, 2001). Further, the share of the use of newspapers and advertisements as a job search method in overall job search channels is about 7.6 percent in average, 6.4 percent for males and 10.7 percent for females, respectively. This is again very low compared to developed countries (Böheim and Taylor, 2001). There may be a number of possible reasons for these observations. The first is that the role of employment office as well as newspapers and advertisements in placing the unemployed seem to be not important or not effective compared to the other job-search methods. The second is that there is a "lack of demand" for labor by the employers through the usage of employment office, newspapers and advertisements. The third is that an unemployed individual, contrary to most of the developed countries, is not required to register the employment office to find a job. The fourth is that to be eligible to unemployment insurance system, an unemployed should register the unemployment office, but this system just started in Turkey and no-benefits were being paid during the data period being used[11]. Hence, the incentives are not enough to increase extensive usage of employment office, and newspapers and ads by the job seekers in contrast to "developed countries". As a final notice, the shares of the other remaining job search methods are lower than 2 percent for each gender.

As noted before, to be defined as unemployed an individual should "use one of the job-search methods *during the last-three months"*, that is the "*activity criterion*" used in the definition of unemployment by TUIK. Naturally, there may some individuals who used one of the job search methods within the time which may less than three-months. Table 1 categorizes these individuals by considering gender and residence dimension. We observe that approximately 47 percent of males report that they used at least one of the job search methods during the last week. The corresponding number for females is about 40 percent that is lower than the

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[11] The collection of premium in the unemployment insurance system has started in mid-2000; however, the first benefit payments have been made in March 2002.

value for males. This may be indication of the fact that males are more actively searching for a job than females. Similarly, the same number for the urban resident individuals, with about 47 percent, is larger than that for rural ones, with about 37 percent. This may imply that urban residing job seekers are more active than the rural residing ones. Further, regardless of gender difference, more than 75 percent of individuals use at least one of the job search methods during the last month.

Table 1
Time Passed Since the Use of one of the Job-Search Methods by Gender and Residence[12]

Time	N	Average	Male	Female	Urban	Rural
Last-Week	3962	45,21	47,17	40,09	46,71	36,93
Last-Month but not Last Week	2843	32,44	30,63	37,17	31,62	37,01
2-3 Months	1958	22,34	22,19	22,74	21,67	26,06
	8763	100	100	100	100	100

To measure the intensity of job search researchers have used many alternatives in the literature. There appears to be no consensus on the definition of job search intensity. Some of the studies, such as Holzer (1988), Wiener et al (1999), Böheim and Taylor (2001), Smirnova (2003) and Roshchin and Markova (2004) use the number of job search methods used as a proxy for the job search intensity. Another alternative is the usage of the job search channels in a given period such as Wiener et al (1999). Alternatively, several others, like Saks and Ashforth (1999 and 2000) by utilizing the approach developed by Blau (1993), measure the intensity of job search by scaling the general effort made by job seeker[13]. Time spent for each of the alternative job search methods and the number of job applications made during the reference period is also used to measure the job search intensity (e.g. Jones, 1989, Barber at al (1994) and Taris et al, 1995). The HLFS survey, used in our analysis, does not allow observing directly job search intensity. Further, time or hours spent in each of the alternative job search methods are not asked to the respondents in this

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[12] One may wonder whether changing the time interval affects the results. However, it is not possible to check this, because of the fact that the data is only available with the format in the HLFS as appeared in Table 1.

[13] In this approach Likert-type scaling is used and respondents are asked to scale (starting from strongly disagree, i.e. "1" to strongly agree, i.e. "5") their job search activity in the following two questions: "Spent a lot of time looking for job opportunities" and "Devoted much effort to looking for a job" [Saks and Ashforth (2000, p.281)]. Similar approach is also used by Barber *et al* (1994) and Wanberg *et a*l (1999, 2000).

survey. Therefore, we have no information about this. The survey, as mentioned, allows us to observe the "number" and "timing" of the "usage of job search methods". We can utilize from these two observations in the construction of job search intensity index following the approach used by Ericsson at all (2002). Hence, there are two steps in the computation of job search intensity index. In the first step, we make use of the number of job-search strategies which the unemployed engaged. We give one point for each of the job search channels. Contribution of this step to the scale of the index is ranging from 1 (if the unemployed used only "one" of the job-search methods) to 4 points (if the unemployed used "four" alternative job-search methods). Thus a respondent would take a minimum (maximum) of one (four) point(s) from this part. In the second step, we give one or two extra points for "more active" individuals according to their usage time of the job-search channels. Contribution of the second step to the index is ranging from 0 to 2. Hence, the scale in this step was as follows: 0 (if the job-search method(s) used within the last 2-3 months, i.e. only the activity criterion of the unemployment definition is met), 1 (if the job-search method(s) used within the last month, but not in the last week), 2 (if the job-search method(s) used within the last-week). Thus, combining the first and second step scores we obtain a six-point scale ranging from 1 to 6. If an unemployed fills only one of the alternative job search channels and use this job search method in the period between second and third month, but not in the last month, then s/he gets only one point. Similarly, if an unemployed fills all the alternative job search channels and use at least one of them during the last week he gets total of 6 points. Thus, higher scores of the index be a symptom of more "active and diverse" job-search behavior. In the empirical analysis we use these scores for measuring the job search intensity index.

Table 2 reports the distribution and average of the job search intensity index by considering age group, gender and residence factor. We observe from the Table 2 that average job intensity for females is lower than that for males. The result is the same for each alternative age group, with the exception of "age 55 and over". Similarly, average intensity for urban resident individuals is larger than that for rural ones, except that of "age 20-24" group. Further, job search intensity seems to have an inverse-U shaped relation with age for males. It initially increases with age, then declines, and the highest value is observed for males in the middle age groups of "25-34 and 35-44". For females, the highest job search intensity is observed for the age group of "20-24". Similarly, there is an inverse-U shaped relation with age and job search intensity for the urban resident individuals.

Table 2
Average Job-Search Intensity by Age Group, Gender and Residence 2000-2001

	N	Total	Male	Female	Urban	Rural
age1519	1539	2,97	2,99	2,94	3,02	2,8
age2024	2268	3,09	3,11	3,06	3,09	3,1
age2534	2428	3,1	3,15	3,02	3,14	2,92
age3544	1.521	3,14	3,18	3,01	3,18	2,93
age4554	765	3,04	3,07	2,87	3,06	2,95
age55pl	242	2,87	2,87	2,89	2,9	2,68
Average		3,07	3,1	3	3,1	2,93

The observations of inverse-U shaped relation between age and job search intensity, where the lowest job search intensity is found to be for the two extreme age-cohorts (age "15-19" and "55 and over"), may possibly be explained by the following reasons. The individuals in their "earliest" part of labor market career (age 15-19) are less likely to search intensively for a job because of their lower labor market experience which reduces, first, their knowledge on job search channels and therefore the intensity of job search, second, their chance of employment. A further explanation for the lower job-search intensity among the 15-19 age-group may be their "lower" family and other responsibilities which creates less pressure and motivation on those individuals to use more time and more alternative job search methods toward seeking employment, compared to the unemployed individuals who are in the other age groups, except the oldest age group of "55 and over". On the other side, the middle-aged job seekers are expected to have larger "psychological stress, financial strain, and work commitment" than the younger-aged ones. Therefore, job search intensity is higher for the middle-aged individuals than for the younger-aged ones. The observation on the individuals who are in their late period of labor market career (i.e. age "55 and over") may possibly due to the fact that the individuals is this age-cohort have lower "weak labor force attachment". This may possibly be explained by the following reasons. The first is related to "age" characteristics that the individuals in the older ages are less active and may have "declining health and obsolete skills[14]" in the labor market than the individuals in the middle ages (age groups of 25-34 and 35-44). Therefore job search intensity of these individuals is lower than the middle ages. The second with respect to the lower job-search intensity of oldest age-group is related to employer side. The individuals in the older age groups, even though their labor market experience is higher than those for middle (as well as younger) ages, are not preferred by the employers because of their "shorter active labor market

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[14] See Sverko *et al* (2008: 3).

future" (Böheim and Taylor, 2001) or "lower returns". These disadvantages reduce motivation of older aged individuals to find a job and work, and therefore, negatively affect the job search behavior, and then reduce the intensity of job search. For the similar observations in the literature see for example, Eriksson (2002) and Smirnova (2003).

Table 3
Average Job-Search Intensity by Education Group, Gender and Residence
2000-2001

	N	Total	Male	Female	Urban	Rural
Non-Graduate	501	2,88	2,89	2,85	2,88	2,87
Primary School	3957	3,02	3,06	2,88	3,06	2,89
Middle School	1204	3,08	3,12	2,94	3,12	2,85
High School	1594	3,12	3,22	2,99	3,15	3,02
Voc. High School	828	3,24	3,26	3,22	3,28	3,09
Two-Year Un.	229	3,1	3,02	3,21	3,1	3,12
Four-Year Un.	450	3,17	3,11	3,25	3,16	3,55

Table 3 presents the average job search intensity by considering the difference in education level, gender and residence factor. As expected, regardless of gender and residence, we find the lowest job search intensity for the non-graduate individuals. We further observe that there is a general tendency of increase in job search intensity with increases in education level for females, with the highest intensity being observed for the "four-year and over university" graduates. This is an expected result since these individuals are expected to have higher capability and productivity rates, to have better equipped for job search, and to have better chances on the labor market. This may be because of the fact that education is used as a screening device by the employer, particularly in the formal and stable jobs. This makes them more confident in the process of job search, and therefore they have higher level of job-search intensity. An alternative explanation may be that, due to their higher education level, university graduated females may regard the existing "traditional" job opportunities, particularly in the informal sector with non-security, as inappropriate for them (Bulutay, 1995). Therefore unemployment among these individuals goes up. With the increase in unemployment the competition goes up for the other remaining vacant positions which make job-search intensity higher. An additional alternative explanation may be that the larger is the human capital (i.e. the skills acquired by the worker through education), the larger is the expected job openings as well as wages. However, once the unemployment is present for the highly educated individuals it is expected that this situation may create some depreciation in their human capital as well as decline in wages being offered, particularly with the increase in time spent in unemployment. These

negative effects are expected to be seen comparatively larger among the highly educated individuals than among the less educated ones. Consequently, the motivating factors for the higher educated individuals to make more job search effort and to reach the employment goal as soon as possible are relatively larger than that for the less educated individuals (Böheim and Taylor, 2001).

Regarding the results for males, the highest job search intensity is observed for the vocational high school graduates. Further, for males the intensity of job search for the middle school and high school graduates is larger than for the university graduates of both two and four years. These observations for men may possibly be explained by the fact(s) that the educational policies in the last decades make these schools weaker (and also there may be excess supply of labor with the same qualifications) in the labor market, therefore unemployed individuals in these education levels need to make more effort to find a relevant job. Regarding the results under residence difference, while the highest job search intensity for urban residents is observed for the vocational high school graduates, the highest value for the rural residents is observed for the university graduates.

In the following sections we initially provide the econometric model, then provide and discuss the estimation results.

3. Econometric model

Given the ordered nature of our dependent variable, i.e. job-intensity index, used in this paper, the most suitable econometric models are the "ordered" probit or logit. However, in the HLFS, the questions related to job search activities are asked only to unemployed individuals. Therefore, job-search intensity index is only available for these individuals. Thus, there is a sample selection problem. Since the estimations based only on unemployment criterion, i.e. ignoring the selection bias, may lead to biased and inconsistent results, one needs to tackle this problem. The most common approach employed in the literature to correct for sample selection is using the two-step estimation method developed by Heckman (1979), in which, one jointly models selection into the sample, i.e. unemployment, and the final outcome, i.e. job-search intensity. Hence, in this study, the effects of individual and labor market properties on the intensity of job search are estimated by using an ordered-probit model with considering sample selection problem[15].

There are two stages in this approach. In the first stage of the model we estimate the unemployment choice of the survey respondents as follows:

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[15] See Eriksson *et al* (2002) for a similar approach used in the context job-search literature. Further, notice that the estimation results with ordered-logit model with considering sample selection problem are available from the author upon request.

$$U_i^* = \beta_1' X_{i1} + \varepsilon_{i1} \text{ where } \varepsilon_{i1} \sim N(0,1) \tag{1}$$

where U_i^* is a dummy variable taking the value of 1 if the respondent is unemployed, zero otherwise; β_1 is a parameter vector; X_{i1} is a vector of covariates for individual i; and finally, ε_{i1} is a normally distributed error term with a zero mean and unit variance.

In the second stage of the model we estimate the determinants of job search intensity. If we define the job search intensity index as a latent variable where the values of this variable denote the ranking order denoted by JI^*. The ordered probit model can be written as:

$$JI_i^* = \beta_2' X_{i2} + \varepsilon_{i2} \text{ where } (\varepsilon_{i1}, \varepsilon_{i2}) \sim \text{bivariate normal } [0,0,1,\sigma_{\varepsilon 2},\rho] \tag{2}$$

where β_2 is a parameter vector, X_{i2} is a vector of covariates for individual i, $\sigma_{\varepsilon 2}$ is the standard deviation of ε_{i2}, and ρ is being the correlation between ε_{i1} and ε_{i2}. In the second equation $JI^* = JI$ can only be observed if $U_i^* > 0$, thus, the model becomes:

$$E[JI \mid U_i^* = 1] = \beta_2' X_{i2} + \rho \sigma_{\varepsilon 2} \lambda(\beta_1' X_{i1}) \tag{3}$$

where $\lambda(.)$ is the inverse Mills-ratio[16]. Estimation of the models can be carried out as follows: In the first stage of two-step method we use maximum likelihood estimation (MLE) method to estimate an ordinary probit model which yields consistent estimates of the parameters of the first equation (i.e. selection equation). In this stage we also obtain the inverse Mills-ratios for every observation using the results of the probit model (Greene, 1997: 978). In the final stage, we estimate the ordered-probit model with selectivity correction, by regressing JI^* on X_{i2}'s and $\hat{\lambda}_i$, again employing the MLE method (Greene, 1997:978; and Lee, 2001:386-389). To test the existence of sample selection bias, one can use a t-test on the coefficient[17] of inverse-Mills ratio in the second step. Null of no sample selection is rejected if this variable is statistically significant. Further notice that to identify the model, X_{i1}, the vector of covariates in the equation (1), includes all X_{i2}, the vector of covariates in the equation (2), but must also include one or more covariates that do not appear in X_{i2}.

4. Estimation results

Individual, demographic as well as the labor market characteristics are all expected to have an effect on the job search intensity of the unemployed

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[16] That is, $\hat{\lambda}_i = \phi(\hat{\beta}_1 X) / \Phi(\hat{\beta}_1 X)$ where, ϕ and Φ denote the standard normal density function and its cumulative distribution functions, respectively.

[17] That is, $\beta_\lambda = \rho \sigma_{\varepsilon 2}$.

individuals. For instance, in the current study, the effects of various characteristics such as gender, age, marriage, education, unemployment rate, population density[18], province level per capita GDP[19], status in previous job and occupation on job search intensity are estimated. We provide a complete list and definitions of the variables used in the analysis in Appendix Table 1[20]. In the following sections, we present and discuss the estimation results initially for the full data (see, section 4.1) and, then for the data by considering residence difference (see, section 4.2) to see whether they have different dynamics. The results are shown in Table 4[21] for the "full" (see column "1") as well as for the data by "residence" (see, column "2" for "rural" and column "3" for "urban").

4.1. Estimation results for the full data

It is observed from the "full" data estimates that there are statistically significant differences between urban and rural residents as well as between males and females. The positive sign of the urban variable implies that job seekers in the urban areas searching for a job more intensively than in the rural areas. This finding is in agreement with the expectation from the literature. The rationale for this expectation is that searching for a job in urban areas has lower costs compared to rural ones on account of "high density of employers and lower transportation costs" (Smirnova, 2003, p.25). Thus, the availability of more alternative job possibilities and, better and easier access to the information on these choices increase the intensity of job search in the urban areas relative to rural areas.

Further, the effect of female dummy on job search intensity is statistically significant and negative implying that job seeker females search less intensively than males. Hence, males are more active in job searching than females. This is consistent with the findings in the literature, such as Vesalainen and Vuori (1999) and Roshcin and Markova (2004). Further, negative and statistically significant sign of the interaction term "FemMar" indicates that being married female, as expected, declines the job-search intensity.

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[18] Population density" variable is included in linear and quadratic term to capture the concavity of the population density and job-search intensity relation. The idea to use this variable as an explanatory variable in the job search model context comes from Wahba and Zenou (2005). In that paper the authors find that that there is a concave relationship between population density and the likelihood of getting a job through friends and relatives. They also find a negative relationship between the rate of unemployment and the likelihood of getting a job.

[19] The variable captures the neighbourhood effects, in the same way as unemployment rate and population density does, and used by Heath (1999) as an explanatory variable in a job search model.

[20] Means and standard deviations of the variables used in the estimations are available from the author upon request.

[21] Estimation results for the "selection" equations for each alternative model are presented in Appendix Table 2.

Further, "being head of household" and "number of 5-years and lower aged children in the household", in contrast to our expectation, are not significant determinants of job-search intensity, with a negative and positive signs, respectively.

There is a negative relation between the number of earners in the household and job search intensity, but this variable is only significant at 10 percent significance level.

Moreover, the estimation results for the region dummies show that there are significant differences among the geographical regions of Turkey, at 5 percent significance level. We observe from the "full" data estimates that while individuals in the Aegean region are more likely to search intensively; individuals in the Black Sea, East-Anatolia and South-East Anatolia are less likely to search intensively, compared to the base region of Central Anatolia.

Regarding the effects of education level we observe that there are mostly significant variations among the educational categories and increases in education level seem to increase the job search intensity. This finding is compatible with the general observation in the literature, such as and Wanberg *et al* (1999), Böheim and Taylor (2001) and Roshchin and Markova (2004). In terms of the effects of age group dummies we observe from that there is an inverse-U relation between age and job-search intensity. Job-search intensity initially increases with the increase in age, and then declines. However, statistically significant effects are observed only for the two extreme ones, that is, "age 20-24 (age2024)" and "age 55 and over (age55pl)".

Further, in terms of the population density variable where the job-seeker lives we observe that increases in density initially increases and then declines the job-search intensity. Moreover, living in a more developed province, proxied here by the per-capita GDP for that province seems to decline the job-search intensity. Another observation is that, as expected, job-seekers who live in the high unemployment areas are more likely to search more intensively than in the lower unemployment areas. This is in contrast with the findings of Böheim and Taylor (2001) and Jones (1989).

Moreover, the coefficients of the occupation group dummies are mostly significant and positive at five percent significance level in the "full" data case. This finding indicates that individuals in the other occupation groups, except "administrative and managerial workers –occup2-" and "workers not classified by occupation –occup8-", are more likely to search more intensively than the base occupation group of "professional and related workers".

Table 4
Determinants of Job-Search Intensity in Turkey: Ordered-Probit Results

	Full	Rural	Urban
Urban	0.123***		
	[0.035]		
Female	-0.163***	-0,068	-0.168***
	[0.039]	[0.183]	[0.039]
FemMar	-0.272***	0,125	-0.330***
	[0.084]	[0.235]	[0.091]
Married	0,03	0,161	0,012
	[0.049]	[0.119]	[0.053]
numearners	-0.067*	0,008	-0.094**
	[0.039]	[0.090]	[0.045]
Head	-0,009	0,016	-0,024
	[0.061]	[0.163]	[0.065]
num.child5	0,014	-0,03	0,025
	[0.019]	[0.042]	[0.021]
Marmara	0.085*	-0,2	0.119**
	[0.049]	[0.139]	[0.054]
Aegean	0.327***	0.248*	0.339***
	[0.051]	[0.129]	[0.057]
Mediterrianean	-0,03	-0.222*	-0,016
	[0.044]	[0.122]	[0.049]
Black Sea	-0.109**	-0.365***	-0,078
	[0.051]	[0.132]	[0.056]
East Anatolia	-0.168***	-0,094	-0.209***
	[0.063]	[0.130]	[0.074]
South East Anatolia	-0.609***	-0.484***	-0.649***
	[0.063]	[0.154]	[0.069]
Primary School	0,062	-0,094	0.124**
	[0.054]	[0.118]	[0.060]
Middle School	0.112*	-0,067	0.172**
	[0.061]	[0.150]	[0.068]
High School	0.231***	0,045	0.294***
	[0.063]	[0.160]	[0.069]
Voc. High School	0.335***	0,053	0.412***
	[0.071]	[0.191]	[0.077]

Tablo 4 (continue)

Two-Year University	0.263***	0,157	0.326***
	[0.098]	[0.323]	[0.104]
Univ4pl	0.330***	0.607***	0.391***
	[0.085]	[0.233]	[0.091]
age2024	0.108**	0.245**	0.095*
	[0.045]	[0.120]	[0.050]
age2534	0.085*	0,041	0.105**
	[0.044]	[0.113]	[0.048]
age3544	0,066	0,001	0,073
	[0.052]	[0.140]	[0.056]
age4554	-0,084	0,036	-0,105
	[0.062]	[0.184]	[0.066]
age55pl	-0.269***	-0,174	-0.275***
	[0.095]	[0.307]	[0.100]
Density	0.001***	0.002***	0.001***
	[0.000]	[0.001]	[0.000]
Density-Square	-7.56e-07 ***	-1.14e-06***	-7.35e-07 ***
	[0.000]	[0.000]	[0.000]
GDP	-0.00007***	-0.00008*	-.00006***
	[0.000]	[0.000]	[0.000]
unemprate	3.847***	2.138*	4.326***
	[0.482]	[1.141]	[0.541]
occup2	0,133	0,229	0,142
	[0.148]	[0.606]	[0.152]
occup3	0.297***	0,042	0.337***
	[0.059]	[0.188]	[0.063]
occup4	0.242***	0,091	0.285***
	[0.063]	[0.176]	[0.069]
occup5	0.213***	-0,113	0.286***
	[0.063]	[0.146]	[0.070]
occup6	0.148**	0,192	0,147
	[0.073]	[0.130]	[0.103]
occup7	0.173***	0,103	0.213***
	[0.057]	[0.123]	[0.063]
occup8	0,114	-0,218	0,167
	[0.116]	[0.369]	[0.123]

Table 4 (continue)

statu2	-0,044	-0.309**	0,005
	[0.052]	[0.154]	[0.055]
statu3	0,057	0,378	0,028
	[0.188]	[0.343]	[0.206]
statu4	0,053	-1.253***	0,083
	[0.119]	[0.455]	[0.119]
statu5	-0.124*	-0,061	-0.127*
	[0.072]	[0.207]	[0.077]
statu6	-0,132	-0.276*	-0,085
	[0.087]	[0.156]	[0.118]
year2001	-0.076***	-0,023	-0.090***
	[0.023]	[0.063]	[0.025]
mills-ratio	0,143	-0,078	0.201**
	[0.095]	[0.275]	[0.101]
Observations	8763	1343	7420
LR chi2	631,426	137,715	568,819
Prob>chi2	0	0	0
Psedue R-Sq	0,027	0,035	0,028
Log-Likelihood	-12267,16	-1810,846	-10409,876

Notes: 1) Robust standard errors in brackets; 2)Estimates for the "cut points" are not reported to save and are available upon request.
3)* significant at 10%; ** significant at 5%; *** significant at 1%

4.2. Estimation results by residence

We present the estimation results for urban and rural residents in Table 4 (see column "2" for "rural" and column "3" for "urban"). The coefficient estimates of "female" dummy have negative sign in both equations of rural and urban, but it is statistically significant in the urban equation. This implies that females, particularly in the urban areas search less intensively than males. Being married seems to increase the job-search intensity for both urban and rural residents, but does not have statistically significant effect. Further, the number of earners in the household has a negative and significant affect on the job-search intensity of urban residing individuals. Thus, the more is the number of earners in the household the less (more) is the job search intensity in urban areas. Also, having small children(s) in the household does not have statistically significant impact on the job search intensity.

The coefficient estimates of the regional variables show that there are statistically significant differences among them. Individuals who live in the urban areas of Marmara and Aegean (i.e. more developed regions of the country) search more intensively, while individuals in the East and South-East Anatolia (i.e. least developed regions of the country) search less intensively for a job compared to base region of Central Anatolia. Our conclusion seems to change when we look at the results for the rural areas. Individuals who live in the Black and South-East Anatolia search less intensively in comparison to Central Anatolia. Further, the results presented in Table 4 indicate that all the education level dummies have significant and positive effects on the job-search intensity of urban residents. However, this result is true only for the four-year university graduates in the rural areas. Regarding the effects of age group dummies we observe that there is an inverse-U shaped relation between age and job-search intensity for both urban and rural residents, but they have mostly statistically significant effects for the urban resident individuals.

Moreover, there is an inverse-U shaped relation between population density and job-search intensity for both urban and rural resident individuals. Furthermore, for both urban and rural areas, while increases in per capita GDP decline the job-search intensity, increases in unemployment rate increase the job search intensity. We also find that while there is no significant variation between the occupational groups in the rural areas, there are mostly statistically significant differences between them in the urban areas. Urban resident individuals in the following occupation groups search more intensively than the base occupation category of "professionals and related workers". These are "administrative and managerial workers (occup3), "sales workers (occup4), "service workers (occup5)" and "non-agricultural workers (occup7)". Regarding the effects of status in employment, we observe that rural resident individuals working as "casual employee" and "employer" have significantly lower job search intensity than the "regular employees". However, none of the status in employment dummies shows significant variation in the urban areas.

4.2.1. Summary of the main findings and conclusions

This study examines the job search behavior of the unemployed individuals, with a particular attention given to job-search intensity, in Turkey. To investigate the role of individual and demographic characteristics in determining the job-search intensity, a two-step estimation method following the approach developed by Heckman (1979) is applied to individual level data obtained from the 2000-2001 Household Labor Force Surveys conducted by the Turkish Statistical Institute.

We find that females are less likely to search more intensively than males, i.e. females are less active in job searching activity compared to

males. This may be indication of the fact that females face more problems in the Turkish labor market compared to males. This may be attributable to the following factors which reduce job search intensity of females compared with males. The first factor is the cultural barriers not in favor of women. The second is the lower level of education, qualifications, work experience and marketable skills of women relative to men. Limited employment opportunities for women may be another factor that dampens the labor force participation as well as intensity of job search activity of them.

We further observe that, for both rural and urban residents, living in a more developed province declines the job search intensity. Likewise, local labor market conditions, proxied here by the unemployment rate, is an important determinant of job search intensity. Individuals, regardless residence difference, who live in the high unemployment areas, are more likely to search more intensively. This may be explained by the fact that there is high competition among the unemployed individuals for the open vacancies in the high unemployment areas. Therefore, individuals who are seeking work should use the alternative job search methods with high intensity to find a relevant job.

Furthermore, regardless of residence, we find that living in denser areas initially increase the job search intensity, and then decrease, i.e. there is an inverse-U shaped relation. This may be explained by the fact that individuals who live in the denser areas may possibly have more alternative job search networks and obtain more information about work availabilities; however this possibility may decline in the provinces where the population density is quite high as well as quite low. A further explanation for this observation may be that people in these areas have absolutely higher access to job search networks yet what is important is that these areas in Turkey more developed, that is to say, there are more vacant positions which make job search intensity higher as compared to other areas.

Moreover, our general observations on the choice of job search methods show that usage of the employment office is very rare among the unemployed individuals. In this respect, increasing the role of employment office in the labor market is an important policy issue for the policy designers of Turkey. Since employment office may play a key role between the unemployed and the employer. Doing this may involve a number of actions. Employment office may increase its relation with the employers. It can provide related training courses to develop skills required in the private sector. To encourage unemployed individuals to join these courses some benefits can be given. This can enhance the employability of the unemployed individuals. Further it can also increase the number of offices therefore it needs more personal and equipment.

As a final remark, obtaining a further data is expected to expand the findings of the current paper in various dimensions. To mention a few, such

as wage, family income, reservation wage and unemployment insurance will certainly constitute valuable information to corporate into the extension of this study. Further, one disadvantage of our search intensity index variable is that it is top-coded. The reason for this is that HLFS allows at most four job search methods to be chosen by the survey respondent. Having a data with all the available alternative job search methods as well as the time spent for each of the job search methods may overcome this shortcoming and would benefit for the future studies.

Appendix

Table 1
List of the Variables

1. "urban" is a dummy variable taking value 1 if a man or woman lives in a town of more than 20,000 inhabitants and 0 otherwise
2. "female" is a dummy variable taking value 1 if the sex is female and 0 otherwise
3. "married" is a dummy variable taking value 1 if the survey respondent is married and 0 otherwise
4. "FemMar" is an interaction dummy taking value 1 if the sex is female and marital status is married and zero otherwise.
5. "numearners" is the number of earners in the household
6. "head" is a dummy variable taking value 1 for the head of households, and 0 otherwise.
7. "num.child5" is the number of children (five years and lower aged) in the household
8. Region of residence is a set of seven dummies: Central Anatolia (base category), Marmara, Aegean, Mediterranean Black Sea, East Anatolia, and South East Anatolia.
9. Education consists of a set of six dummies: The reference category includes those who are illiterate plus those who are literate but did not graduate from a school. The other education categories are "Primary School", "Middle School", "High School", "Vocational (Voc.) High School", "Two-Year University", and "Four-Year University and over" ("Univ4pl").
10. Age is a set of six dummies:
    "age1519": Age 15-19 (base category)
    "age2024": Age 20-24
    "age2534": Age 25-34
    "age3544": Age 35-44
    "age4554": Age 45-54
    "age55pl": Age 55 and over.
11. "Density" is the population density of the province where the individual lives; "Density-Square" is the "square" of the population density.

12. "GDP" is the per capita Gross Domestic Product of the province where the individual lives.
13. "unemprate" is the local unemployment rate.
14. Occupation of the unemployed individuals consists of eight dummies:
    "occup1": Professional and related workers (base category),
    "occup2": Administrative and managerial workers
    "occup3": Clerical and Related Workers,
    "occup4": Sales Workers,
    "occup5": Service Workers,
    "occup6": Agricultural Workers,
    "occup7": Non-Agricultural Workers
    "occup8": Workers not classified by Occupation
15. Status in the last job for the unemployed individuals consists of six dummies:
    "statu1": Regular Employee (base category)
    "statu2": Casual Employee
    "statu3": Paid family Workers
    "statu4": Employer
    "statu5": Self Employed
    "statu6": Unpaid Family Workers
16. "year2001" is a dummy variable taking value 1 if the observation comes from the year of 2001, and 0 otherwise.

Variable used only in the selection into unemployment equation:
17. "fertsay" is the number of individuals in the household.

Appendix Table 2
Selection into Unemployment Equations

	Full	Rural	Urban
urban	0,002		
	[0.019]		
female	-0.212***	-0.627***	-0.141***
	[0.020]	[0.054]	[0.021]
FemMar	-0.370***	-0.414***	-0.370***
	[0.035]	[0.089]	[0.039]
married	-0.189***	-0.178***	-0.185***
	[0.026]	[0.060]	[0.029]
numearners	-0.535***	-0.416***	-0.577***
	[0.012]	[0.026]	[0.013]
head	-0.288***	-0.296***	-0.278***
	[0.025]	[0.060]	[0.027]
num.child5	-0.125***	-0.088***	-0.136***
	[0.011]	[0.026]	[0.012]
Marmara	0.198***	0.280***	0.177***
	[0.025]	[0.064]	[0.028]
Aegean	0.244***	0.243***	0.242***
	[0.026]	[0.059]	[0.029]
Mediterranean	0.068***	-0,068	0.066**
	[0.023]	[0.064]	[0.026]
Black Sea	0.193***	0.167**	0.181***
	[0.027]	[0.066]	[0.029]
East Anatolia	-0.112***	-0,029	-0.158***
	[0.032]	[0.067]	[0.037]
South East Anatolia	0.107***	0,053	0.107***
	[0.031]	[0.075]	[0.035]
Primary School	0.170***	0,05	0.189***
	[0.025]	[0.056]	[0.029]
Middle School	0.082***	-0,081	0.099***
	[0.029]	[0.069]	[0.033]
High School	0.241***	0.372***	0.218***
	[0.029]	[0.067]	[0.033]

Appendix Table 2 (continue)

Voc. High School	0.422***	0.525***	0.405***
	[0.033]	[0.084]	[0.037]
Two-Year University	0.511***	0.524***	0.509***
	[0.047]	[0.139]	[0.051]
Univ4pl	0.522***	0.322***	0.544***
	[0.037]	[0.124]	[0.040]
age2024	0.368***	0.382***	0.371***
	[0.022]	[0.053]	[0.025]
age2534	0.218***	0.130**	0.235***
	[0.025]	[0.064]	[0.028]
age3544	0,029	0,016	0,026
	[0.029]	[0.075]	[0.031]
age4554	-0.148***	-0.258***	-0.145***
	[0.033]	[0.085]	[0.035]
age55pl	-0.541***	-0.598***	-0.549***
	[0.040]	[0.102]	[0.043]
Density	-0.000***	0	-0.000**
	[0.000]	[0.000]	[0.000]
Density-Square	0.000**	0	0.000**
	[0.000]	[0.000]	[0.000]
GDP	0.000***	0	0.000***
	[0.000]	[0.000]	[0.000]
unemprate	3.985***	3.422***	4.243***
	[0.173]	[0.365]	[0.200]
occup2	0.225***	-0,275	0.277***
	[0.057]	[0.247]	[0.059]
occup3	0.335***	-0.214**	0.392***
	[0.030]	[0.106]	[0.031]
occup4	0.511***	0,095	0.565***
	[0.029]	[0.102]	[0.031]
occup5	0.574***	0.229***	0.632***
	[0.026]	[0.075]	[0.028]
occup6	0.202***	0,048	0.275***
	[0.037]	[0.081]	[0.048]

Appendix Table 2 (continue)

occup7	0.561***	0.314***	0.602***
	[0.022]	[0.067]	[0.024]
occup8	0.324***	-0,036	0.380***
	[0.062]	[0.189]	[0.066]
statu2	0.529***	0.540***	0.526***
	[0.019]	[0.051]	[0.020]
statu3	0.452***	1.103***	0.370***
	[0.107]	[0.297]	[0.116]
statu4	-0.461***	-0.684***	-0.443***
	[0.044]	[0.197]	[0.046]
statu5	-0.360***	-0.542***	-0.320***
	[0.029]	[0.077]	[0.032]
statu6	-0.281***	-0.363***	-0.239***
	[0.042]	[0.086]	[0.050]
year2001	0,006	0.081***	-0,011
	[0.011]	[0.028]	[0.012]
fertsay	0.099***	0.071***	0.107***
	[0.004]	[0.008]	[0.004]
Constant	-2.349***	-1.884***	-2.425***
	[0.050]	[0.103]	[0.054]
Observations	243707	56740	186967
LR chi2	9500,055	1963,997	7779,97
Prob>chi2	0	0	0
Psedue R-Sq	0,227	0,314	0,212
Log-Likelihood	-29182,614	-4361,891	-24605,013

Robust standard errors in brackets

* significant at 10%; ** significant at 5%; *** significant at 1%

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Özet

Türkiye'de iş arama ve iş arama yoğunluğunun belirleyenleri

İşsizlerin iş arama davranışı hakkında gelişmekte olan ülkeler üzerine literatürde az sayıda çalışma bulunmaktadır. Bu çalışmanın amacı, bireye ve yaşadığı haneye, ve de işgücü piyasasına ait özelliklerin Türkiye'deki işsizlerin iş-arama sıklığı veya yoğunluğu üzerine olan etkilerini incelemektir. Bu amaçla, Hanehalkı İşgücü Anketi 2000 ve 2001 yılı ham verileri kullanılmış ve analizler hem tüm veri hem de kır-kent ayırımı gözetilerek yapılmıştır. Çalışmanın bulgularına göre kentsel alanlarda yaşayanlar kırsal alanlara göre daha yoğun iş aramaktadırlar. Ayrıca, kadınlar erkeklere göre daha az yoğun iş aramaktadırlar. Ayrıca, eğitim düzeyi arttıkça iş arama yoğunluğu artmaktadır. Çalışmanın, bir diğer bulgusu ise, yaş ile iş arama yoğunluğu arasında ters-U ilişkisi olmasıdır. Ayrıca, Türkiye'nin daha gelişmiş bölgelerinde (Marmara ve Ege Bölgeleri) yaşamak iş arama yoğunluğunu artırırken, az gelişmiş yerlerde yaşamak (Doğu ve Güneydoğu Anadolu Bölgeleri) iş arama yoğunluğunu azaltmaktadır. İşsizlik oranındaki artış iş arama yoğunluğunu artırırken, GSMH seviyesindeki artış iş arama yoğunluğunu azaltmaktadır. Son olarak, nüfus yoğunluğu ile iş arama sıklığı arasında ters-U ilişkisi vardır.

Anahtar kelimeler: İşsizlik, iş arama, cinsiyet, Türkiye.

JEL sınıflaması: J64, J16.