

# Job Networks in İzmir: Why are Migrants Different?

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Abstract:

The aim of this paper is to investigate the network effect on the probability of job finding. This paper uses a specific data set from the Izmir region, prepared by the Turkish Statistical Institute for a specific project carried out by Izmir University of Economics in cooperation with the Izmir Chamber of Commerce, the Izmir branch of the Turkish Statistical Institute and the Turkish Labour Institute. Izmir is the third biggest city in Turkey, which attracts both skilled and unskilled migrants, and has been one of the preferred destinations of migrants. The relative success of migrants in employment relates to the job search channels they use. We differentiate job search channels into formal/individual and network forms. The latter refers to the job referral or job information diffusion through relatives and acquaintances. We find that migrants enjoy a comparative advantage in the usage of the network channel. Moreover, this network advantage is more robust for less educated workers.

Keywords: Social networks, migrants, Izmir

JEL codes: J15, J61, D83

## 1. Introduction

Unemployment is a major concern to majority of the residents in İzmir, the third biggest city in Turkey. People often use various channels to improve the likelihood of finding a job. These include both formal and informal channels. Predominantly the informal channels involve connections due to family, extended family, and friends. Information on job openings and personal referral may spread on such social networks.

Formal channels include registering in the government employment office (İŞKUR) for job matching, reviewing ads, and applying to a firm individually. Individual/formal channels require a set of qualifications on the job seekers.

There exist no firm knowledge on the issue of which channels are more effective for the migrants. Highly educated migrant workers use formal channels more than informal channels. The less educated workers, be the migrants or not, prefer informal channels.

We differentiate the resident workers and the migrants. Social networks are more important for migrants in general. We proxy network size/quality by the “migrant” dummy variable. The limitations of such an approach is deserved to be noted. Nevertheless, there are institutional features that make our choice defensible. First, being highly educated or not, the networks will differ. Migrants enjoy higher density of social network if geographically they are located in close ranges and cumulative stock of existing migrants attract more neighbours using home-city connections through time. However, as various studies point out if the migrants have higher unemployment rates, and then the newcomers can also suffer from high unemployment. In our study we observe that unemployment rates for migrants and residents are equal.

Table 1 Unemployment rate and rate in total population of migrants and residents in Izmir

	Unemployment Rate	% of total population
Migrant	17.12%	41.35%
Resident	17.12%	58.65%

Source: Authors' own calculations from the data

Table 1 shows that migrants in Izmir have a greater presence in the labor market than their position in the total sample. They constitute % 47 of the labor force even though they are % 41 of the entire sample. In terms of employment, they also make up %47 of the total.

Migrants face lower cost when they decide to use networks to seek for employment due to their localization<sup>1</sup> and the home-city connections that they belong to. Such networks are more efficient for low qualified jobs, while they are not sufficient for high qualified employment. As shown in Figure 1 and 2, jobs found by social networks pay less.

For the highly educated workers, the quality of the network, and the personal qualifications of the individual worker are also as important as the size and the density of the networks. Resident workers are expected to benefit from better knowledge of the firms and jobs on demand. Highly educated migrant workers also face lower relative benefits of using social networks, thus are more likely to prefer formal/individual job search channels.

We control for workers' characteristics and job characteristics as the data availability allows us to do so. The main contribution of our study is to test empirically the effects of social

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<sup>1</sup> Migrant coming from the city tend to live close to each other in the city they move to. For example in Izmir in Balçova region mostly migrants from Manisa and Aydin, in Bornova district migrants from Manisa and Konya, in Buca district migrants from Konya and Manisa, in Cigli region migrants from Erzurum and Manisa, in Gaziemir region migrants from Mardin and Afyon, in Guzelbahce district migrants from Balikesir and Manisa, in Karsiyaka district migrants from Manisa and Erzurum, in Konak region migrants from Mardin and Manisa, and in Narlidere region migrants from Diyarbakir and İcel live.

networks proxied by migrant status on the probability of finding a job in a local but large labor market in Izmir.

The outline of this paper is as follows: The next section is devoted to the literature review. In section 3, we give a brief explanation about the characteristics of migrants in Izmir and in section 4, we describe the data. The model is explained in section 5, while section 6 presents the estimation results. Section 7 concludes.

## **2. Related Literature**

Jackson and Calvo-Armengol (2004, 2007) provide the benchmark theoretical models and insights. There are externalities both in terms of job information transmission and long-term employment opportunities. Thus employed workers tend to cluster and create a positive feedback loop among each other in terms of learning job openings and passing that info to the connected agents.

Munshi (2003) examines the social networks effects on the Mexican migrants' employment opportunities in US. The higher the number of existing migrants from a particular local area, the greater the likelihood of employment for the new comers from the same locality. The stock of migrants in a locality has a positive influence on the likelihood of finding a job for the newcomers, due to social networks effects.

The closely related study is of Wahba and Zenou (2005). They study the impact of population density (as measured by the population per inhabited square kilometer) on the probability to find a job using social networks in Egypt. They find that the probability to find a job through friends and relatives increases and is concave with population density. This effect is stronger

for the uneducated than the educated. Finally, the probability to find a job through friends and relatives decreases with local unemployment rate.

Zenou (2012) provides findings in relation to whether migrants or residents in France and UK use social networks more successfully while searching for employment. The most successful workers who find their jobs through their social networks are the non-French Europeans. This result is confirmed in our findings as well in case of Izmir. Although non-European immigrants use their social networks more intensively, they have a lower chance of finding with this method as compared to direct applications. In United Kingdom, on the other hand, “although Indians, Pakistanis, Bangladeshis and ‘Others’ used personal networks the most , there is little evidence that they benefited from this method more so than whites.”.

We use migrant status as a distinction in terms of social network use. In particular we focus on uneducated/unskilled migrants who are more likely to use informal channels and social networks in order find employment. Moreover, we will proxy the quality of the social network by the status of the parents.

### **3. Are Migrants Different?**

The recent developments in the labor markets in Turkey provide mixed but generally negative signals. After the global crisis, the unemployment rates increased throughout the country, and especially in İstanbul and İzmir. İstanbul could recover but İzmir continued to suffer from much higher than average unemployment rates.

Table 2 Unemployment Rates

NUTS2 Regions	Unemployment rate (%)						
	2005	2006	2007	2008	2009	2010	2011
TR10 (istanbul)	11.5	11.4	10.4	11.2	16.8	14.3	11.8
TR31 (izmir)	13.9	12.0	10.5	11.8	16.2	15.1	14.7
<b>Overall unemployment rate (TurkStat)</b>	<b>10.6</b>	<b>10.2</b>	<b>10.3</b>	<b>11.0</b>	<b>14.0</b>	<b>11.9</b>	<b>9.8</b>

Source: TurkStat

Education level is an important determinant of the usage of network channels. We expect less educated people to use network channels more as they do not have the necessary qualifications to find a job on their own or using other channels. Table 3 shows the percentage of people that use network channels while looking for a job.

Table 3 Education distribution of people that use networks

Networks	Migrants		Residents	
	Educated	Less Educated	Educated	Less Educated
	13.58	23.05	16.96	16.46

Source: Authors's own calculations

Less educated migrants tend to seek for a job via networks more than the educated ones, while among the residents there is not a big difference between educated and less educated ones in terms of using networks. The migrants that have lower education level prefer to use networks more as they are ready to accept low qualified jobs. Such migrants tend to choose the cities that they have more network and live closer to their network and accept the jobs that their countrymen or relatives find for them.

Another important factor that might differ between migrants and residents is their earnings. Moreover, it is also important to see whether there is a difference in wage distribution between the ones that used network to find their jobs and the ones that did not.

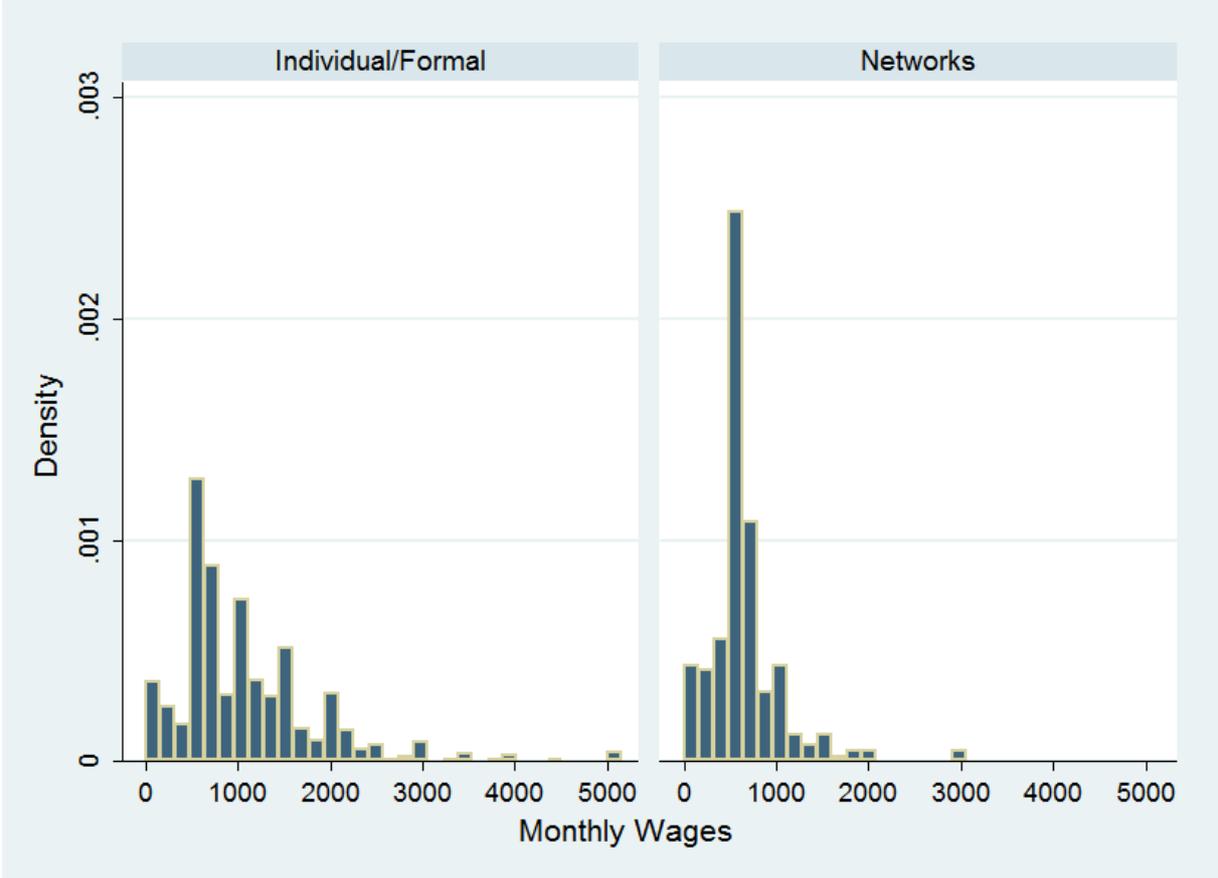
Table 4 Average monthly wages of migrants vs residents

	<b>Migrant</b>		<b>Resident</b>	
	Average	Max	Average	Max
Using Network	659,3152	3000	621,3115	3000
Not Using Network	1100,6030	7500	860,5601	25000

Source: Authors' own calculations

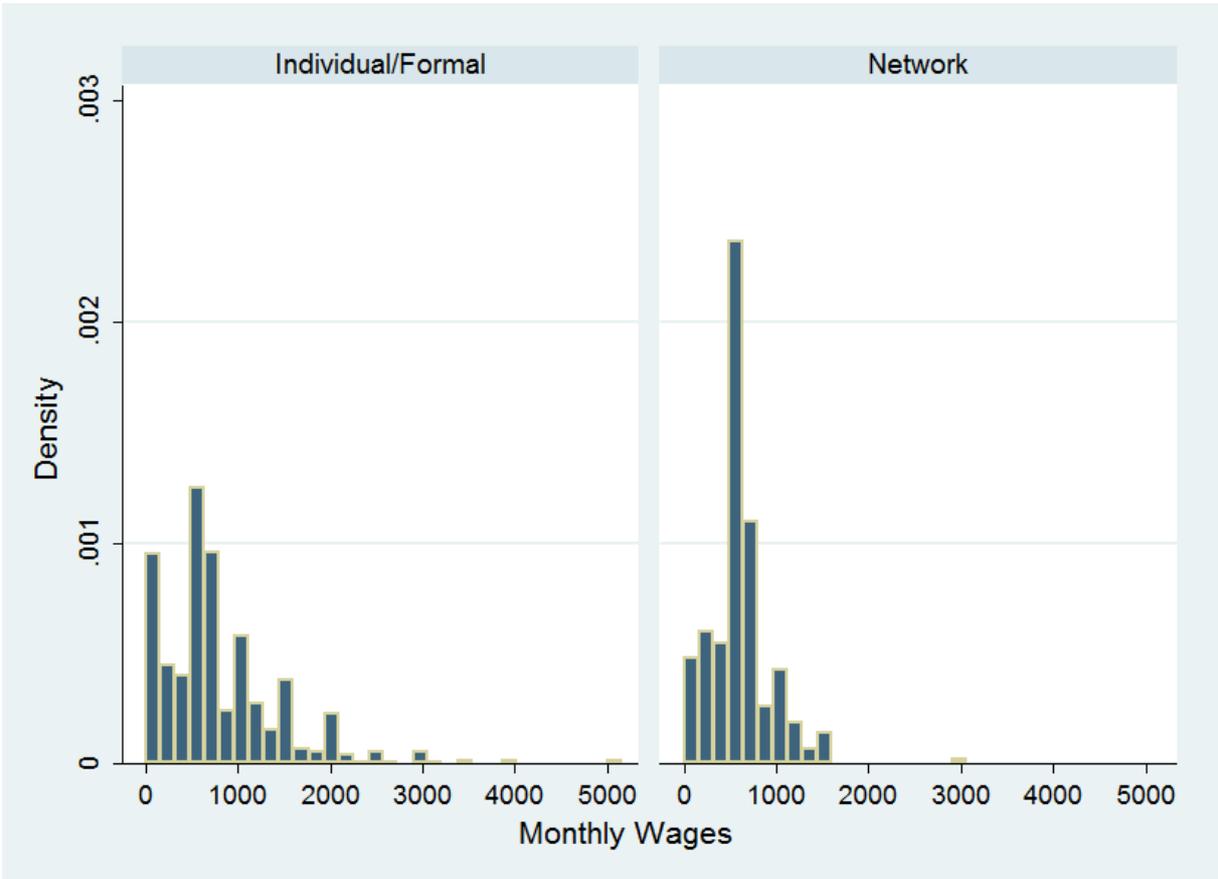
Both table 4, and figures 1 and 2 show that residents earn more than migrants on average. Moreover the ones that find their job via networks earn less be them migrant or not. It can be concluded that networks are great help in finding less qualified jobs.

Figure 1: MonthlyWages of Migrants



The scene is similar for the resident workers. If they find jobs individually/formally, then the monthly wages are better.

Figure 2: MonthlyWages of Residents



Lastly, it is important to know from which cities the migrants of Izmir come from. Table 5 shows that Izmir does not receive too many migrants from the eastern part of Turkey unlike other big cities that has been receiving high number of migrants from east. Migrants that come from big cities like Istanbul, Ankara, and Bursa are more likely to be high skilled, and high educated. Such migrants tend to use formal channels more and end up finding better paid jobs.

Table 5 Where do migrants come from? (2010)

Origin	Total Migrants	# of migrants in Izmir
Turkey	2360079	111255
İstanbul	336932	11177
Manisa	35497	9785
Ankara	13344	7046
Aydın	29923	5926
Balıkesir	35162	4504
Muğla	2885	3643
Konya	56729	3685
Diyarbakır	44858	2982
Bursa	5722	2774
Antalya	61662	2752
Denizli	23468	2495

Source: TURKSTAT

#### 4. Data

This paper uses a specific data set from the Izmir region, prepared by the Turkish Statistical Institute for a specific project carried out by Izmir University of Economics in cooperation with the Izmir Chamber of Commerce, the Izmir branch of the Turkish Statistical Institute and the Turkish Labour Institute.

Table 6- Summary Statistics

Variable	Mean	Std. Dev.	Min	Max
<b>Netjob</b>	<b>0.176</b>	<b>0.38</b>	<b>0</b>	<b>1</b>
Sex	0.6836	0.4651	0	1
Age	37.0165	11.4025	15	65
Age <sup>2</sup>	1500.199	887.6565	225	4225
Migrant	0.4730	0.4993	0	1
Education	2.11	1.28	0	5
Single	0.2783	0.4482	0	1
Divorced	0.0359	0.1861	0	1
Size	3.7346	.03910	1	11
Father's Education	1.1168	1.0687	0	5
Qualified Father	0.1264	0.3324	0	1
Self Employed Father	0.1549	0.3619	0	1
Qualified Worker Father	0.2298	0.4207	0	1
Unqualified Worker Father	0.1634	0.3698	0	1
lnWage	6.66	0.695	2.30	10.12
SGK	0.67	0.47	0	1
Firm Size	0.48	0.49	0	1

As the Table 6 illustrates the average worker is predominantly male, educated between primary school and intermediate high school, middle aged and married. Migrant workers are slightly less in number than the resident workers.

## 5. Econometric Model

Since our main concern is to differentiate the effect of the migrant status on the likelihood of using informal job search channel (social networks) to find jobs and to succeed we model the determinants of finding employment through social networks. We suppose that the probability of success is a logistic function in which  $S=1$ , if an employed worker successfully found a job through “relatives and friends” and  $S=0$  if an employed worker found her job by using all other job search channels (i.e. individual/formal channels). Therefore, we focus on probability of using social networks conditional that worker is employed.

$$P(S_i = 1 | E_i = 1) = \frac{e^{\beta x}}{1 + e^{\beta x}}$$

$$P(S_i = 0 | E_i = 1) = \frac{1}{1 + e^{\beta x}}$$

We use explanatory variables concerning individual, household, work and network characteristics (proxied by migrant status, father’s education and job status).

## 6. Results

We first examine whether migrants have a comparative advantage in using social networks to find jobs conditional that the end result is a success. Table 6 confirms our expectations. Compared to resident workers and keeping all other characteristics at their average values,

migrants are %5.5 more likely to use social networks and find jobs successfully. The difference between columns (I) and (II) is whether we control the quality of social networks proxied by the job status of workers' fathers. We infer from these results in column (II) at Table 6 that if fathers are qualified workers in public or private sector, the likelihood of finding jobs through social networks increase. We argue that given the same job offer rate qualified fathers are more effective in purchasing the firms or other employees to hire their children.

Table 6 Probit Results (Marginal effects)

	I	II
Sex	-0.0233 (0.0156)	-0.0246 (0.0156)
Age	-0.0181 (0.0037) ***	-0.0184 (0.0037) ***
Age <sup>2</sup>	0.0001 (0.0000) ***	0.0001 (0.0000) ***
Migrant	0.0559 (0.0142) ***	0.0568 (0.0142) ***
Single	0.0214 (0.0212)	0.0183 (0.0211)
Divorced	0.0094 (0.0413)	0.0048 (0.0407)
Size	0.0019 (0.0050)	0.0018 (0.0050)
Education	-0.0332 (0.0067) ***	-0.0359 (0.0068) ***
Father's Education	-0.0152 (0.0081) *	-0.0214 (0.0092) **
Qualified Father		0.0596 (0.0337) *
Self Employed Father		0.0105 (0.0235)
Qualified Worker Father		0.0400 (0.0211) **
Unqualified Worker Father		0.0253 (0.0215)
N	3009	3009
Pseudo R <sup>2</sup>	0.0874	0.0897

Note: \*, \*\*, and \*\*\* indicate statistical significance at 10, 5 and 1%, respectively.

In Table 7, we divide our sample into two by education levels. The most important finding is that the effect of social networks proxied by migrant status on job finding becomes insignificant for the “Higher Educated” workers. Moreover, father’s various job status indicators also lose significance for the educated workers. In contrast, for the “Less Educated” workers, the results we obtain for the whole sample do not change. We conclude that social networks and fathers’ job status matter for the less educated workers, and qualification of the father does not matter in high qualified jobs.

Table 7 Probit Results according to education (Marginal effects)

	<b>Total</b>	<b>Less Educated</b>	<b>Higher Educated</b>
Sex	-0.0246 (0.0156)	-0.0526 (0.0227)**	0.0103 (0.0207)
Age	-0.0184 (0.0037)***	-0.0163 (0.0049)***	-0.0271 (0.0064)***
Age <sup>2</sup>	0.0001 (0.0000)***	0.0001 (0.0000)*	0.0002 (0.0001)***
Migrant	0.0568 (0.0142)***	0.0840 (0.0198)***	0.0167 (0.0201)
Single	0.0183 (0.0211)	-0.0156 (0.0296)	0.0253 (0.0273)
Divorced	0.0048 (0.0407)	-0.0206 (0.0515)	0.0552 (0.0681)
Size	0.0018 (0.0050)	-0.0012 (0.0064)	0.0095 (0.0084)
Education	-0.0359 (0.0068)***		
Father’s Education	-0.0214 (0.0092)**	-0.0216 (0.0156)	-0.0211 (0.0104)**
Qualified Father	0.0596 (0.0337)*	0.1543 (0.0641)***	-0.0001 (0.0386)
Self Employed Father	0.0105 (0.0235)	0.0125 (0.0325)	-0.0229 (0.0328)
Qualified Worker Father	0.0400 (0.0211)**	0.0461 (0.0282)*	0.0067 (0.0326)
Unqualified Worker Father	0.0253 (0.0215)	0.0244 (0.0263)	0.0211 (0.0398)
N	3009	1801	1208
Pseudo R <sup>2</sup>	0.0897	0.0785	0.1156

Note: \*, \*\*, and \*\*\* indicate statistical significance at 10, 5 and 1%, respectively.

In Table 8, we delineate the effects of wages on conditional probability of successfully using social networks to find jobs. The results shed light on the nature of jobs that could be found through social networks. As the wage goes up for both less educated and higher educated the likelihood of using social networks and successfully finding jobs decline. As we expected networks are mainly used for less qualified jobs.

Table 8 Probit Results according to education controlling for wage (Marginal effects)

	<b>Total</b>	<b>Less Educated</b>	<b>Higher Educated</b>
Sex	-0.0331 (0.0176)*	-0.0876 (0.0284)***	0.0218 (0.0197)
Age	-0.0163 (0.0041)***	-0.0174 (0.0056)***	-0.0180 (0.0065)***
Age <sup>2</sup>	0.0001 (0.0000)**	0.0001 (0.0000)*	0.0001 (0.0001)*
Migrant	0.0454 (0.0148)***	0.0629 (0.0215)***	0.0161 (0.0194)
Single	0.0041 (0.0216)	-0.0331 (0.0320)	0.0178 (0.0258)
Divorced	-0.0096 (0.0395)	-0.0434 (0.0508)	0.0403 (0.0631)
Size	0.0021 (0.0053)	0.0024 (0.0070)	0.0002 (0.0083)
Education	-0.0244 (0.0076)***		
Father's Education	-0.0149 (0.0096)	-0.0135 (0.0171)	-0.0136 (0.0101)
Qualified Father	0.0471 (0.0340)	0.1283 (0.0653)**	0.0187 (0.0332)
Self Employed Father	0.0150 (0.0249)	0.0182 (0.0358)	-0.0087 (0.0336)
Qualified Worker Father	0.0401 (0.0222)*	0.0415 (0.0303)	0.0187 (0.0332)
Unqualified Worker Father	0.0162 (0.0223)	0.0124 (0.0284)	0.0193 (0.0390)
lnWage	-0.0815 (0.0122)***	-0.0730 (0.0163)***	-0.1014 (0.0177)***
N	2726	1572	1154
Pseudo R <sup>2</sup>	0.1151	0.0971	0.1540

Note: \*, \*\*, and \*\*\* indicate statistical significance at 10, 5 and 1%, respectively.

Controlling for wages, the male workers are less likely to find and accept job offers through social networks. For the less educated this negative gender effect is more relevant as the

coefficient increased more than two-fold. It might be because of the fact that usually male workers find a job and migrate, and after they migrate they use their networks to find a job for their wives.

Table 9: Probit Results According to Education Controlling for Wages and Work (Marginal effects)

	Total		Less Educated		Higher Educated	
	I	II	I	II	I	II
Sex	-0.0322 (0.0176) *	-0.0248 (0.0174)	-0.0822 (0.0283) ***	-0.0620 (0.0276) **	0.0220 (0.0196)	0.0211 (0.0197)
Age	-0.0157 (0.0042) ***	-0.0157 (0.0042)	-0.0156 (0.0057) ***	-0.0159 (0.0056) ***	-0.0187 (0.0065) ***	-0.0189 (0.0065) ***
Age <sup>2</sup>	0.0001 (0.0000) *	0.0001 (0.0000) **	0.0001 (0.0001)	0.0001 (0.0001)	0.0002 (0.0001) **	0.0002 (0.0001) **
Migrant	0.0451 (0.0148) ***	0.0406 (0.0148) ***	0.0639 (0.0214) ***	0.0551 (0.0213) ***	0.0177 (0.0194)	0.0188 (0.0195)
Single	0.0038 (0.0216)	0.0044 (0.0215)	-0.0345 (0.0318)	-0.0320 (0.0315)	0.0182 (0.0258)	0.0187 (0.0259)
Divorced	-0.0106 (0.0394)	-0.0093 (0.0392)	-0.0465 (0.0503)	-0.0411 (0.0498)	0.0420 (0.0635)	0.0425 (0.0637)
Size	0.0019 (0.0053)	0.0023 (0.0053)	0.0017 (0.0070)	0.0027 (0.0070)	0.0005 (0.0083)	0.0005 (0.0083)
Education	-0.0233 (0.0077) ***	-0.0250 (0.0077) ***				
Father's Education	-0.0146 (0.0096)	-0.0144 (0.0095)	-0.0115 (0.0171)	-0.0143 (0.0170)	-0.0141 (0.0101)	-0.0143 (0.0101)
Qualified Father	0.0455 (0.0339)	0.0429 (0.0336)	0.1260 (0.0652) **	0.1164 (0.0644) **	0.0072 (0.0387)	0.0075 (0.0387)
Self Employed Father	0.0150 (0.0249)	0.0197 (0.0252)	0.0203 (0.0359)	0.0314 (0.0368)	-0.0076 (0.0337)	-0.0086 (0.0336)
Qualified Worker	0.0405 (0.0222) *	0.0407 (0.0222) *	0.0423 (0.0304)	0.0418 (0.0302)	0.0183 (0.0331)	0.0180 (0.0331)
Unqualified Worker	0.0160 (0.0223)	0.0161 (0.0223)	0.0109 (0.0283)	0.0134 (0.0281)	0.0179 (0.0388)	0.0181 (0.0388)
Father lnWage	-0.0771 (0.0129) ***	-0.0823 (0.0130) ***	-0.0599 (0.0172) ***	-0.0663 (0.0173) ***	-0.1077 (0.0188) ***	-0.1052 (0.0191) ***
SGK	-0.0192 (0.0182)	-0.0444 (0.0200) **	-0.0522 (0.0234) **	-0.1024 (0.0258) ***	0.0276 (0.0257)	0.0326 (0.0258)
Firm Size		0.0647 (0.0160) ***		0.1304 (0.0244) ***		-0.0160 (0.0219)
N	2726	2726	1572	1572	1154	1154
Pseudo R <sup>2</sup>	0.1155	0.1218	0.1003	0.1195	0.1550	0.1556

Note: \*, \*\*, and \*\*\* indicate statistical significance at 10, 5 and 1%, respectively.

In Table 9, we further control for work characteristics such as social security coverage and firm size. Migrant status as a proxy for the social network keeps its significance for the less educated. However, the job status of the father becomes insignificant except for publicly employed fathers for the less educated workers.

Conditional on being employed, migrants have more success than residents in finding jobs through social networks. The share of migrants in the labor force (about 47%) implies that migrants are not really a minority group. Both residents and migrants use social networks for job finding, but migrants are relatively more successful even controlled for individual characteristics such as age, gender, education level, marital status, and household size.

## **7. Conclusion**

The aim of this paper is to investigate the network effect on the probability of job finding. Since our main concern is to differentiate the effect of the migrant status on the likelihood of using informal job search channels (social networks) to find jobs and to succeed we model the determinants of finding employment through social networks. Therefore, we focus on the probability of using social networks conditional that employment status is reached, and use explanatory variables concerning individual, household, work and network characteristics (proxied by migrant status, father's education and job status).

We first examine whether migrants have a comparative advantage in using social networks to find jobs conditional that the end result is a success, and we find that is indeed the case. Later, we divide our sample into two subsamples according to the education levels. The effect of social networks proxied by migrant status on job finding becomes insignificant for the "Higher Educated" workers. In contrast, for the "Less Educated" workers, the results we obtain for the whole sample do not change. We conclude that social networks and fathers' job

status matter for the less educated workers. Moreover, we add the controls such as wages, social security coverage and firm size to our analysis. The results shed light on the nature of jobs that could be found through social networks. As we expected the networks are mainly used for less paid jobs.

We note that the main limitations of our study are largely due to the unmeasured social network variable for which we have used migrant status. If social network effects are more important for the less educated migrants we should differentiate the relative effects of weak and strong links in the migrants' network. Unfortunately data does not allow us to do so. In the future with a more relevant dataset we plan to disentangle the relative significance of maintaining strong links versus weak links for the migrants, be them less educated or higher educated.

The results of this paper show that the usage of networks mostly depends on the education level and the residency. Migrants tend to use social networks more for low paid jobs. We suggest İŞKUR to revize its job matching policies taking into account these factors.

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