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20 July 2017

Online at <https://mpa.ub.uni-muenchen.de/80290/>
MPRA Paper No. 80290, posted 21 July 2017 15:48 UTC

**Why Don't Highly Skilled Women Want to Return?
Turkey's Brain Drain from a Gender Perspective**

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Abstract

This study examines the gender dimension of the brain drain in Turkey to argue that gender inequality in sending countries can be a push factor for women. Considering how the political, social and cultural atmosphere damages gender equality in Turkey due to a shift toward a conservative, authoritarian regime over the last decade, the paper uses an online survey to analyze the gender gap in the return intentions of Turkish professionals and students living abroad. The findings clearly reveal a gender gap in return intentions regardless of other main factors such as age, study field/occupation or marital status. The study also highlights the significant correlation between the gender gap in migration decisions and gender inequality in Turkey's labor market.

Key Words: Brain drain, gender, skilled workers, students, migration

JEL Classification: F22, J16, J61

¹ This study uses the survey results of the project called "The Return Intentions of Turkish Doctoral Students in the US: Challenges, Opportunities, and Policy Recommendations in the Context of Economic Development," funded by the Presidency for Turks Abroad and Related Communities. Email: aelveren@bu.edu

1. Introduction

The international literature on the gender dimension of migration of highly skilled women is rather sparse. Existing studies show that there has been a steady increase in the number of high skilled female migrants in OECD countries, explained by the rise in women's schooling rate and increasing tendency to move (Dumont et al. 2007; Docquier et al. 2007; Docquier et al. 2012). Docquier et al. (2009) claim that educated women are better able than uneducated women to escape from sexual discrimination in their countries of origin. Feminist literature argues that gender disparities in education, labor force participation rates, and income levels in origin countries are important push factors for skilled female migrants.

Only a few studies have even partially focused on the topic in Turkey. However, considering the increasing gender inequality in Turkey due to a shift towards a more authoritarian regime with Islamic roots over the last decade, it is important to investigate Turkey's brain drain with a particular focus on its gender dimension. The main question is whether there are differences between highly skilled women and men migrants regarding their decisions to emigrate and work abroad, and, if so, whether they mention different push and pull factors. To this end, this study quantitatively analyzes the return intentions of students and professionals living abroad to provide a comprehensive picture of gender inequality in Turkey. We show that the push factors emphasized by women respondents and gender disparities in Turkey's labor market mirror each other.

We examine the gender dimension of the brain drain by using survey data from 200 Turkish students and professionals living abroad who responded to two comprehensive online questionnaires conducted between late 2015 and early 2016.

Our findings support most of the previous findings of the literature, and suggest that some have become more significant over time. For instance, political instability has become a more dominant push factor than other push factors. The key finding of this work, however, is that Turkish women have a higher tendency than men to emigrate and remain abroad, and that this is more because of push factors than pull factors. One particularly significant push factor in the migration decisions of these highly skilled women is the high level of gender disparity in Turkey, which disadvantages women in education and labor markets.

The following section reviews the literature on the gender dimension of brain drain along with empirical studies of the brain drain in Turkey and its gender dimension. The third section presents the results of the quantitative analysis while the fourth section discusses the results to provide a comprehensive picture of gender inequality in Turkey. The final section summarizes the findings.

2. Gender Dimension of Brain Drain

2.1. International Literature on the Gender Dimension of the Brain Drain

According to one recent study, the number of highly skilled women migrants in OECD countries increased from 5.7 million to 14.4 million between 1990 and 2010 to surpass the number of highly skilled men migrants (Pekkala Kerr et al. 2016, p.5).

Analyses of the causes of this development have investigated both push and pull factors. Among the push factors, the gender gap in education play an important role in that the strong growth towards the end of the 20th century in the proportion of more highly skilled women emigrants among the total number of skilled migrants is considered to be mainly related to the rise in women's schooling levels and their increasing tendency to move at (Dumont et al. 2007; Docquier et al. 2007). Newer data from Docquier et al. (2009) on numbers of emigrants and rates of emigration show that highly skilled women are emigrating at a higher rate than men. More specifically, the average migration rates of females with post-secondary education are 17 per cent higher than those of males, and this is also strongly correlated with the gender gap in educational attainment of the source population, reflecting unequal access to education. They argue that educated women are better able than uneducated women to escape gender discrimination in their countries of origin.

Bang and Mitra (2011) reached similar conclusions regarding the role of access to education in comparing the brain drain for men and women. Looking at gender bias in access to education and in outcomes like labor force participation rates and income levels, they found that bias in access to educational opportunities and higher female fertility rates are both important push factors. In countries where women have more equal access to education and lower fertility rates, women brain drain rates are lower and vice versa in countries with a wider gender gap in education and higher fertility rates. Finally, they found that the quality of political institutions

affects brain drain of both genders similarly. However, critical approaches to brain drain discourse from a feminist perspective argue that, even when political conditions are considered as a factor influencing decision making, neither gender differences in the experience of political, social and cultural conditions nor the career aspirations of highly skilled women are adequately taken into account (Parvati 2009).

To fill the gap in the gender-specific aspects of the brain drain literature, Nejad (2013) looked at the effects of women's rights on the gender gap in highly-skilled migration. She argued that although women in countries with very low levels of women's rights lack the freedom to migrate, just a small increase in a country's women's rights index increases the female brain drain rate. Nejad and Young (2014) then explored women's rights as a determinant of the female brain drain rate relative to that of men, using women's economic, social and political rights indices from the CIRI Human Rights Dataset and migration flows across OECD and non-OECD countries. They concluded that when women's rights levels are higher in the destination country than the origin country, highly-skilled women are more likely to migrate than men.

The influence of women's rights in origin and destination countries on women's migration decisions is not limited to highly skilled female migrants. Using Gallup World Polls between 2009 and 2013, and measuring gender discrimination in terms of the proportion of female respondents stating that women in their country are not treated with respect and dignity and their desire to migrate, Ruysen and Salomone (2015) claim that "[o]verall we find that women who do not feel treated with respect and dignity in their country have a stronger desire to move out. Perceived gender discrimination hence positively affects the size of potential female migration" (p.6-7). However, highly skilled, employed and secular women are more likely to turn their plans into action (ibid p.13). One concrete example is the case of Iran. After Khomeini and the Islamic government took power in Iran, the number of individuals with tertiary education and special skills emigrating from Iran increased enormously with a large proportion being women escaping religious and ideological restrictions and gender-based discrimination (Chaichian 2011).

The gender dimension of the migration decision has been noted other studies as well. Nowak (2009) argued that worsening socio-economic conditions in Ghana led to flexibility in gender norms toward migration among female nurses. Focusing on scientists and engineers and

students, Zweig and Changgui 1995 showed that Chinese women are less likely to want to return from the US to China as they have more opportunities for career advancement in the US (cited in Murakami 2009). Murakami (2009) also notes that a similar situation in the case of Japan, in line with Ono and Piper (2004).

Spadavecchia (2013) claims that women from Sub-Saharan Africa move to Europe to escape from an environment shaped by strict gender roles that confine them to the household and restrict their access to credit, land and means of production. A very similar situation is noted by Reynolds (2006) for professional women in Nigeria. Klüsener et al. (2015), using a data set prepared by Statistics Lithuania covering Lithuania's entire population in 2011 and linked with data on emigration, found that persistent gender inequality is one possible factor why highly educated women are more likely to emigrate than their male peers. Finally, Alberts and Hazen (2005) report the effect of differing gender roles between the US and the home countries of international students on their (non-)return intentions.

Some researchers, on the other hand, argue that gender inequality is not a significant push factor. Based on original indices for gender inequality in labor market and migration data provided by Docquier et al. (2009) covering 1991-2001, Baudassé and Bazillier (2014) did not confirm the theory that gender inequality in origin countries can be a push factor for women., Similarly, based on data obtained from Botswanan students in their final year in tertiary education between October 2002 and January 2003, Campbell (2007) found no significant gender differences in intention to emigrate. The study also found that men are more likely to prefer to migrate alone. Bartolini et al. (2017), based on a survey conducted in 2013, also failed to find any general gender differences in migration decisions. Finally, Rangelova (2006) showed that, although there is no noticeable differences between men and women in their purposes for migrating, women are more likely to resettle abroad than men. The study also found that Turkish women are more likely to migrate than other ethnicities, specifically from the Bulgarian and Roma communities.

2.2. Literature on the Brain Drain in Turkey

During the 1960s, Turkey was a sending country for western European labor markets, especially Germany, to fulfil their demand for low-skilled manual workers. The general characteristics of

this migration can be explained in terms of traditional push and pull factors (Martin 1991), with the dominant feature of the migrant workers being their low skill levels. More specifically, according to Docquier et al. (2007, p.18), out of the top 30 migrant sending countries, Turkey was the fifth largest in 2000 but fourth to last in proportion of skilled emigrants. These comprised only 9 per cent of Turkey's total emigrants, and of these only 36.5 per cent were women – the lowest rate of all 30 countries. Turkey also had the worst figures considering migratory movements in terms of countries of origin and destination, with only 6.3 per cent of Turkish migrants in Germany in 2000 being highly skilled, of which 45.8 per cent were women (Docquier et al. 2011). The USA is another important destination country for the brain drain from Turkey. Of the OECD countries, which are the preferred destination countries for highly skilled migrants, the USA, United Kingdom, Canada and Australia received 70 per cent in 2010, with the USA alone taking 41 per cent (Pekkala Kerr et al. 2016, p.4). The USA is also the most preferred destination country for highly skilled migrants from Turkey. According to an International Institute of Education Report, there were 10,691 Turkish students in the USA during the 2015/16 academic year, making Turkey the thirteenth largest source country, while 469 Turkish students on temporary visas took doctorate degrees in 2015 (387 science and engineering, 82 other fields), rising from 390 in 2005, ranking sixth after China, India, South Korea, Iran and Taiwan.

Despite a sizeable literature on Turkey's migration issue, few studies have focused on the brain drain specifically, including empirical research to investigate the migration of highly skilled workers.

Empirical studies provide a detailed picture of the brain drain in Turkey (see Elveren 2016 for a comprehensive analysis). Early studies from the late 1960s and early 1970s found that the key reason for intending to migrate or remain abroad was low wages in Turkey, although greater opportunities to specialize, and hierarchical authority and political pressures in Turkey were mentioned (Dirican et al. 1968; Kösemen 1968; Oğuzkan 1971; The Turkish Chambers of Engineers and Architects 1972; Uysal 1972).

During the 2000s, new research provided a more comprehensive analysis, dealing with more aspects of migration and applying statistical methods. In addition to low wages and career concerns (Öztürk 2001; Güngör and Tansel 2014; Akman 2014), participants often mentioned

lack of respect for science and academics in Turkey, lack of freedom of expression, workplace dissatisfaction and political instability as main push factors (Öztürk 2001; Güngör and Tansel 2008b; Gökbayrak 2009; and Pazarcık 2010).

Finally, over the last decade, while wage differentials between resident countries and Turkey specifically or life standards in general have become secondary factors, political instability and lack of academic freedom or dissatisfaction with general science policy or Turkey's higher education system have become major push factors in emigrants' decisions to stay abroad. Esen (2014), for example, reports that stayers value research opportunities more than their wages, given that Turkey's private universities currently provide a better deal once salary and fringe benefits are considered. For non-returners, lack of academic freedom, fewer academic opportunities and political instability outweigh Turkey's recent economic growth (ibid).

Although none of these studies offers a gender perspective on the brain drain, a few nevertheless provide important, contrasting findings on gender differences in migration and/or return decisions. For example, Akman (2014) found that male students are more likely to intend to work and settle abroad; Mollahaliloğlu et al. (2014) reported that the male physicians are 1.5 times more likely to wish to live abroad; Öztürk (2001) found that female students were not significantly more likely to return to Turkey after graduating than male students; finally, Gökbayrak (2009) could not show gender differences in return decisions due to the limited number of female respondents.

According to Güngör and Tansel (2008a), women students show less tendency to return to Turkey than men, perhaps due to the gender gap in Turkey's labor market and less freedom in social life (p. 3073). On the other hand, Güngör and Tansel (2008b) report that familial issues are more important than individual ones for female professionals ones regarding return decisions while Güngör and Tansel (2014) showed that females are more likely to report their intention to stay abroad than males.

3. A Survey on the Brain Drain in Turkey

Data was collected using two on-line questionnaires, accessible for about 5 months from late 2015 to early 2016: a 46-item questionnaire in English for professionals and a 53-item

questionnaire in both Turkish and in English for students. The questionnaires were mainly based on Güngör (2003) for comparison purposes.

Detailed descriptive statistics and questionnaire responses for the 116 students and 84 professionals who replied to all questions in the relevant survey are presented below in order to measure their intentions (not) to return.

Both groups of emigrants are relatively young, with 82 per cent of students younger than 30 and 77.4 per cent of professionals younger than 40 years old. There is a relatively equal gender distribution: 41.4 (58.6) per cent of students and 33.3 (66.7) per cent of professionals are female (male), with 38 per cent of all participants being female and 62 per cent male. This reasonably balanced distribution enabled us to investigate further possible differentiation.

While 63 per cent of professionals come from İstanbul, Ankara or İzmir, only about 40 per cent of students were born in these three cities. The rest (about 60 per cent) of students come from 46 different provinces across the country. A significant percentage of both students (86.1 per cent) and professionals (82.1 per cent) reside in the US, followed by the UK, Canada and other major European countries.

Regarding qualifications, 42.2 per cent of students' highest degree are master's degrees while 30.2 per cent hold a bachelor's degree and 18.1 per cent a Ph.D. degree. Only 8.3 per cent of professionals only hold a bachelor's degree while 61.9 per cent have a Ph.D. and 26.2 have master's degrees. Of the professionals, 41.7 per cent hold academic positions while 58.3 per cent have non-academic positions. Only 17.9 per cent of professionals received their highest degree from an institution in Turkey, with 73.8 per cent gaining their highest degree in the USA. Conversely, 64.7 per cent of students earned their highest degree in Turkey, compared to 26.7 per cent from the USA.

Respondents were drawn from both natural science and social sciences, and not restricted to a few occupational categories like doctors or engineers. While 56.4 per cent of students are in natural sciences, 43.6 per cent are in social sciences. For professionals, the same ratios are 60.7 per cent and 39.3 per cent, respectively. This relatively balanced distribution of fields allowed us to investigate possible differentiations between these two broad fields.

Our study confirms previous general findings on intentions to migrate and return decisions. One of the most significant results is the positive relationship between initial and

current return decisions (see Table 1), which confirms the findings of Gökbayrak (2009) and Güngör and Tansel (2008a, 2008b, 2014).

Table 1: Correlations between initial current return intentions

<i>Sample</i>	Pearson	Spearman	Kendall
All	0.370***	0.361***	0.320***
Students	0.456***	0.441***	0.397***
Professionals	0.257**	0.311***	0.287***
Male	0.376***	0.370***	0.325***
Female	0.368***	0.336***	0.304***

Note: *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.

Table 1 shows that there is a significant positive relationship between current and initial return intentions for all occupation groups and genders according to three basic correlation tests. Table 2, however, shows that although there is a positive correlation between ‘stay duration abroad’ and ‘initial non-return intention’ for students and females, that relationship, as expected, is more significant between ‘stay duration’ and ‘current non-return intention’ for all groups. This highly significant result demonstrates the impact of time spend abroad on non-return decisions, supporting Güngör and Tansel (2008a, 2008b, 2014).

Table 2: Correlations between initial and current non-return intentions and stay duration

<i>Sample</i>	Initial non-return intention			Current non-return intention		
	Pearson	Spearman	Kendall	Pearson	Spearman	Kendall
All	0.166**	0.132*	0.114*	0.339***	0.310***	0.256***
Students	0.245***	0.209**	0.183**	0.394***	0.398***	0.331***
Professionals	0.050	0.020	0.014	0.283***	0.240**	0.204**
Male	0.092	0.063	0.052	0.297***	0.289***	0.236***
Female	0.293**	0.238**	0.211**	0.408***	0.318***	0.270***

Note: *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.

As expected, age and initial return decision is not significantly correlated. However, for all groups except professionals, age is positively associated with current non-return decision (Table 3), which is also in line with GÜNGÖR and TANSEL (2008a, 2008b, 2014), presumably because the costs of migration may be higher for older people, as argued by GÜNGÖR (2003).

Table 3: Correlations between initial non-return intention and age group

<i>Sample</i>	Pearson	Spearman	Kendall	Pearson	Spearman	Kendall
All	0.074	0.430	0.037	0.412***	0.414***	0.352***
Students	-0.057	-0.076	-0.067	0.236**	0.237**	0.206**
Professionals	0.135	0.130	0.118	0.104	0.089	0.080
Male	0.071	0.043	0.037	0.408***	0.416***	0.348***
Female	0.078	0.043	0.037	0.430***	0.421***	0.371***

Note: *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.

The study's second main finding is that both students and professionals who received their degree from a foreign university are more to not intend to return, which also supports GÜNGÖR and TANSEL (2008a, 2008b, 2014), although this is not true for initial return intentions. Third, social science graduates (both students and professionals) graduates are more likely to intend to return than natural science graduates.

Finally, there is a highly significant negative correlation between length of experience abroad and current return intention. That is, those who have spent more time abroad are less likely to intend to return; those who initially decided to stay abroad are likely to intend to stay currently, and this decision becomes stronger over time.

Our study also reveals some significant gender differentiations. One difference is that current non-return intentions are significantly higher than initial non-return intentions for women.

Table 4 shows the differences between initial and current stay intentions by occupational group and gender. While the proportion of male students intending to stay increased by 50 per cent (from 13.2 to 17.7 per cent), it increased by almost 100 per cent for female students (from 14.6 to 27.0 per cent). Similarly, the proportion of male professionals intending to stay increased by 100 per cent (from 23.2 to 50 per cent), the increase was over 250 per cent for female

professionals (from 17.9 to 64.3 per cent). It seems reasonable to argue that women are more likely to appreciate living abroad due to the greater opportunities there (or the lack of opportunities in their home country).

Table 4: Initial and current return intentions (%)

	Initial return intentions					
	Students			Professionals		
	Male	Female	Total	Male	Female	Total
Return	57.4	45.8	52.6	42.9	57.1	47.6
Undecided	29.4	39.6	33.6	33.9	25.0	31.0
Stay	13.2	14.6	13.8	23.2	17.9	21.4
	Current return intentions					
Return	54.4	35.5	46.5	7.1	3.6	6.0
Undecided	27.9	37.5	31.9	42.9	32.1	39.3
Stay	17.7	27.0	21.6	50	64.3	54.7
<i>n</i>	68	48	116	56	28	84

The second finding is that females are more likely to go abroad again. Those who reported their intention to return were also asked if they planned to return abroad again. Table 5 presents the answers to this question by gender.

Table 5: Plan to go abroad again by occupation and gender (%)

	Students			Professionals			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Yes	24.5	43.8	31.8	10.7	20.0	13.2	19.8	38.1	26.0
Maybe	52.8	43.8	49.4	75.0	40.0	65.8	60.5	42.9	54.5
No	22.6	12.5	18.8	14.3	40.0	21.2	19.8	19.1	19.5
<i>N</i>	53	32	85	28	10	38	81	42	123

Students: Chi Squared (2) = 3.744; Professionals: Chi Squared (2) = 4.169; Total: Chi Squared (2) = 5.163* **Note:** * refers to significance at the 10% level.

Notably, a higher proportion of students (31.8 per cent) than professionals (13.2 per cent) intend to return. There is also a significant difference between genders for both students and professionals. While 24.5 per cent of male students plan to return abroad, 43.8 per cent female students do. Similarly, nearly twice as many female professionals plan to go abroad again than male professionals (20.0 versus 10.7 per cent).

The third finding, perhaps the most significant one, is the difference in the emphasis that female and male students give regarding push factors. Tables 6 and 7 show two important points. First, while there are no differences between the push and pull factors reported by male and female professionals (except for two cases), there are highly significant gender differences for students. Second, particularly for students, the differentiation is far clearer for push than pull factors.

Table 6: Push and pull Factors rated as 'important' or 'very important' (%)

	Students			Professionals		
	Male	Female	Chi Squared	Male	Female	Chi Squared
PUSH						
Low income in my occupation	57.6	66.7	0.932	61.1	64.3	0.079
Little opportunity for advancement in occupation	65.2	86.7	6.418**	55.6	82.1	5.702**
Limited job opportunity in specialty	60.6	75.6	2.691	59.3	75.0	1.999
No opportunity for advanced training	43.9	66.7	5.556**	37.0	60.7	4.177**
Away from research centers and advances	63.6	80.0	3.430*	53.7	57.1	0.088
Lack of financial resources for business	30.3	42.2	1.668	35.2	28.6	0.365
Less than satisfying social/cultural life	30.3	48.9	3.930**	35.2	39.3	0.135
Bureaucracy, inefficiencies	71.2	80.0	1.096	79.6	78.6	0.013
Political pressures, discord	66.7	84.4	4.382**	85.2	89.3	0.267
Lack of social security	48.5	68.9	4.539**	61.1	57.1	0.121
Economic instability, uncertainty	58.1	84.4	8.094***	81.5	89.3	0.842
PULL						
Higher salary or wage	68.2	64.4	0.168	66.7	78.6	1.262
Greater advancement opportunity in profession	80.3	88.9	1.452	77.8	85.7	0.740

Better work environment	65.5	77.8	2.042	66.7	82.1	2.188
Greater job availability in specialization	72.7	77.8	0.362	70.4	78.6	0.632
Greater opportunities to develop specialty	77.2	88.9	2.444	79.6	71.4	0.697
More organized, ordered environment	65.2	80.0	2.875*	77.8	85.7	0.740
More satisfying social/cultural life	37.9	53.3	2.592	50.0	39.3	0.851
Proximity to research and innovation centers	68.2	80.0	1.895	59.3	64.3	0.196
Spouse's preference or job	28.8	35.6	0.568	48.2	50.0	0.025
Better educational opportunities for children	25.8	60.0	13.112** *	64.8	67.9	0.076
Need to finish /continue with current project	25.8	44.4	4.205**	31.5	25.0	0.374
<i>N</i>	66	45		54	28	

Note: *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.

Table 7: Push and pull factors rated as 'important' or 'very important' (%) (students and professionals)

	male	female	Chi Squared
PUSH			
Low income in my occupation	59.2	65.8	0.833
Little opportunities for advancement in occupation	60.8	84.9	12.539***
Limited job opportunities in specialty	60.0	75.3	4.748**
No opportunity for advanced training	40.8	64.4	10.070***
Away from research centers and advances	59.2	71.2	2.859*
Lack of financial resources for business	32.5	37.0	0.406
Less satisfying social/cultural life	32.5	45.2	3.133*
Bureaucracy, inefficiencies	75.0	79.5	0.503
Political pressures, discord	75.0	86.3	3.528*
Lack of social security	54.2	64.4	1.945
Economic instability, uncertainty	69.2	86.3	7.234***
PULL			

Higher salary or wage	67.5	69.9	0.117
Greater advancement opportunity in profession	79.2	87.7	2.262
Better work environment	65.8	79.5	4.087**
Greater job availability in specialization	71.2	78.1	0.973
Greater opportunities to develop specialty	79.3	82.2	0.419
More organized, ordered environment	70.8	82.2	3.134*
More satisfying social/cultural life	43.3	48.0	0.390
Proximity to research and innovation centers	64.2	74.0	2.002
Spouse's preference or job	37.5	41.1	0.247
Better educational opportunities for children	43.3	63.0	7.034***
Need to finish /continue with current project	28.3	37.0	1.572
<i>N</i>	120	73	

Note: *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.

The findings in Table 6 and 7 deserve a closer look as there is a clear overlap between the factors that women emphasize statistically significantly more than men and the gender gap in Turkey's labor market, particularly regarding "little opportunities for advancement in occupation", "limited job opportunities in specialty" "no opportunity for advanced training", "less satisfying social/cultural life", "political pressures, discord" and "economic instability, uncertainty".

Regarding pull factors, it is striking, but perhaps not unexpected, that while "better educational opportunities for children" is an important pull factor for only 25.8 percent of male students, it is considered important by 60 percent of female students.

Finally, we used a regression analysis to test if being female affected return intentions. The results presented in Table 8 suggest a weak association between being female and non-return intention. According to Model 1, initially expressing intention to stay, being initially undecided and having support from the family increase the likelihood of non-return intentions. Similarly, being professional, being female, staying abroad for longer and being in a higher age group also increase non-return intentions. Model 2, which included all pull and push factors, indicated that being female and staying abroad for longer time do not significantly increase the probability of non-return intentions. All other the significant variables in Model 1 were significant in Model 2

as well. Model 2 shows that those who emphasize the push factors of low income in one's occupation and bureaucracy, inefficiencies and the pull factors of greater job availability in specialization and better educational opportunity for children are more likely to express non-return intentions.

Table 8: A Regression Analysis of non-return intentions

	Model1	Model 2
Female	0.497* (0.280)	0.369 (0.332)
Age	0.399** (0.180)	0.444** (0.202)
Age2	-0.005** (0.003)	-0.006** (0.003)
Initial return decision (undecided)	1.021*** (0.303)	1.351*** (0.347)
Initial return decision (stay)	1.990*** (0.439)	2.465*** (0.484)
Stay duration	0.087** (0.042)	0.059 (0.049)
Family support	0.514*** (0.148)	0.509*** (0.174)
Professional	0.765* (0.411)	1.013** (0.447)
<i>Push Factors</i>		
Low income in my occupation		0.960** (0.440)
Little opportunities for advancement in occupation		-0.259 (0.520)
Limited job opportunities in specialty		-0.457 (0.438)
No opportunity for advanced training		0.028 (0.438)
Away from research centers and advances		0.124 (0.452)
Lack of financial resources for business		-0.251 (0.341)
Less satisfying social/cultural life		0.341 (0.374)
Bureaucracy, inefficiencies		0.771* (0.459)
Political pressures, discord		0.332

		(0.544)
Lack of social security		-0.572 (0.388)
Economic instability, uncertainty		0.165 (0.482)
<i>Pull Factors</i>		
Higher salary or wage		-0.242 (0.437)
Greater advancement opportunity in profession		0.763 (0.592)
Better work environment		-0.241 (0.442)
Greater job availability in specialization		1.080** (0.489)
Greater opportunities to develop specialty		-0.128 (0.540)
More organized, ordered environment		-0.299 (0.446)
More satisfying social/cultural life		0.233 (0.380)
Proximity to research and innovation centers		0.025 (0.413)
Spouse's preference or job		-0.133 (0.346)
Better educational opportunities for children		0.692* (0.374)
Need to finish /continue with current project		-0.486 (0.358)
Observations	199	192

Note: *, ** and *** refer to significance at the 10%, 5% and 1% levels, respectively.

4. The Gender Gap and Gender Inequality in Turkey

As reported above, this study found a strong overlap between the push and pull factors that females emphasize in Table 7 in and the gender gap in Turkey's labor market. In this section, we explain how gender inequality in Turkey is a major push factor for females in Turkey regarding decisions to emigrate and not return once they are abroad.

Gender Gap and Women's Rights in Turkey

According to the UN Human Development Index 2016, Turkey ranks 71st with an index value of 0.767 (0.724 for females and 0.797 for males) among countries with high human development. In the Gender Development Index (2015), Turkey has an index value of 0.908, placing it in the fourth group comprising countries with medium to low gender equality in HDI achievements. Besides gender differences in expected and mean years of schooling, there is a major gap in estimated gross national income per capita (in 2011 PPP \$) of 10,648\$ for females and 27,035\$ for males.

Regarding the Gender Inequality Index (2015), Turkey has a value of 0.328, placing it 69th. More specifically, whereas 43.5 per cent of females have at least some secondary education, 64.8 per cent of males do. The labor force participation rate is 30.4 per cent for females but 71.4 per cent for males. This huge gender disparity in labor force participation helps explain the massive gender gap in gross national income per capita mentioned above. Finally, women hold only 14.9 per cent of parliamentary seats, highlighting the low level of women's political representation in Turkey.

Because Turkey's EU candidanship requires harmonization with the EU acquis during the accession period starting in 2004, the government in Turkey has revised the legislature from the perspective of gender equality, removing almost every discriminatory aspect in laws and directives. Nevertheless, discriminatory mentalities and practices continue. Thus, indices dealing with gender inequalities need to go beyond legal regulations to capture the real dimensions of inequalities. According to the country scores and sub-indices in the OECD Social Institutions & Gender Index Synthesis Report (2014), Turkey has a low level of discrimination regarding discriminatory family codes, restricted physical integrity, and restricted resources and assets but a high level of discrimination against daughters and restricted civil liberties (p.62).

The report also notes that challenges remain across OECD countries regarding unpaid care work, on which women spend on average more than twice as much time as men. However, in Japan, Korea and Turkey, this increases to five times more (ibid, p.26) The unequal distribution of paid and unpaid work between men and women in Turkey is the leading injustice in the country's social structure, which has both economic and political consequences,

manifested in low female employment, a large gender wage gap and low female political representation.

In the Gallup and ILO survey on women and work, differences in the answers given by men and women to various questions show men's conservative, gender-based perceptions of the division of labor regarding women's employment in Turkey. While 34 per cent of Turkish women wanted to work in a paid job, 12 per cent wanted to stay at home and 53 per cent said they wanted both. In contrast, only 28 per cent of men preferred that the women in their family work in a paid job, while 32 per cent preferred that they stay at home and 34 per cent preferred both. Even 18 per cent of men with tertiary education wanted women in their family to stay at home (p. 205). These values place Turkey among countries with the largest gender gaps in opinion about women's work. Whereas the percentages of women who would like to have paid jobs or do both paid work and care for the home are 70 per cent globally and 87 per cent for women in Turkey, for men, they are 66 per cent globally and 62 per cent for men in Turkey, revealing a gap of 25 per cent (p.18).

According to the Polity IV Index 2016, Turkey is a country with open anocracy. This categorization of Turkey as a regime of partial democracy and partial dictatorship has shifted further towards authoritarianism following the constitutional referendum on the 16th of April 2017, accepted by 51.4 per cent of voters, but which took place under a state of emergency. According to the Venice Commission, these constitutional amendments will excessively concentrate executive power in the hands of the president, weaken parliamentary control of that power and curtail the independence of the judiciary vis-à-vis the president. These political developments may also increase the brain drain from Turkey as educated people prefer to live in more democratic and politically stable environments as well as to have freer, westernized lifestyles, individually and socially.²

The international indicators regarding women's rights and gender equalities mentioned above highlight the gender disparities in Turkey that disadvantage women in education and labor markets as important factors in the migration decisions of highly skilled females. To deal with

² Turkey has been experiencing a substantial brain drain since 2016, especially with the (seemingly permanent) state of emergency after the military coup attempt. Several sources report the alarming situation of Turkey's brain drain. See Arslan (2016), Bulut and Cindemir (2016), Estukyan (2016), Gazete Duvar (2017), Kamiloğlu (2016), Kınıklioğlu (2014), T24 (2016) and Yedikardes (2017).

this issue more comprehensively, we can look at more detailed comparative statistics on tertiary education and professional occupations for men and women in Turkey.

Education

The gender gap in education in Turkey manifests itself with the following TurkStat gender indicators. In 2015, in the population aged 25 years and older, for every 100 female primary school graduates there are 76 men; for every 100 female high school graduates there are 151 men; and for every 100 female higher education graduates there are 136 men. That is, fewer women than men were able to attend secondary and tertiary education. However, since the adoption of 8-year compulsory schooling in 1997 and 12-year compulsory schooling in 2012, enrolment rates of female students has started to increase.

Although females comprise 45.9 per cent of all higher education students, their enrolment rate overtook males' in 2015 with 42.6 per cent versus 39.2 per cent so a gender balance in the number of higher education students can be expected in the coming years. Unsurprisingly, however, higher education fields are gendered. Whereas there are 57 men for every 100 women in language and literature, there are 237 men for every 100 women in technical sciences. However, although women are unsurprisingly concentrated in health sciences, social sciences and art, it is interesting to see that female students outnumber male students in mathematics and natural sciences in Turkey with 100 women for every 72 men. Another interesting statistic is the share of female students in engineering, manufacturing and construction with 29.4 per cent and medicine 49.4 per cent, as these areas tend to be rather difficult for female students to access in many countries. Similarly, 30.8 per cent of master's degree students in engineering, manufacturing and construction are currently women. This has long historical roots in Turkey in the ideological approach of successive governments after the foundation of the Republic in 1923 who considered that improving women's social and political status and supporting their rights in higher education and employment in professional jobs was integral to Turkey's westernization process. Adopting a rationalist, positivist world view, they promoted natural and technical sciences and influenced women from middle upper-class families in their choices of these study fields (Acar 1983).

The current education data is consistent with the literature on the female brain drain pointing to factors like the gender gap in educational attainment and the rise in women's

schooling levels, especially in tertiary education. In Turkey, the existing gender gap has encouraged the rather limited number of highly skilled women to migrate, and we can expect this tendency to strengthen with the increasing enrolment of female students in higher education. Conditions conducive for women's choices in natural and technical sciences facilitate the realization of their migration intentions.

The survey data in this study are also consistent with the distribution of female students' study fields, with engineering and technical sciences taking the biggest share among both professional women and men. Given the demand of developed countries for professionals in engineering and related disciplines, being educated in these fields encourages women's migration from Turkey. We can therefore assume that this may be the main source of the female brain drain in Turkey if these women are frustrated with career opportunities in Turkey due to various forms of gender discrimination in Turkey's labor market.

Labor market

As mentioned above, women's labor force participation (LFP) rate is very low in Turkey in comparison to OECD countries, despite increasing from 23.3 per cent in 2004 to 32.5 per cent in 2016. It is a manifestation of a rigid gender-based division of labor in which women tend to be responsible for household and care activities whereas men earn the family's income. However, the LFP rate in Turkey increases with level of education, being 27.2 per cent for women with less than secondary education, 33.7 per cent for secondary school graduates and 71.3 per cent for tertiary education graduates. The difference between these rates relates to women's abilities to reconcile family and work responsibilities in Turkey. Whereas women with higher education earn relative high wages, which enables them to hire care workers or pay for private kindergartens, low educated women with low wages usually have to quit their jobs once they have children due to Turkey's lack of affordable public child care facilities (İlkkaracan 2012).

However, this increase in average labor force participation rate with education level is also closely related to higher female unemployment rates, which is particularly high for educated women, resulting in a huge gender gap. In 2016, Turkey's unemployment rates for high school graduates was 10.5 per cent for males but 21.1 per cent for females, and for higher education graduates it was 8.8 per cent for males and 16.9 per cent for females. That is, women's unemployment rates are almost double those of men's. Furthermore, between 2004 and 2016, the

number of unemployed women increased by 113 per cent but the rise was only 14 per cent for men. Such high unemployment rates for educated women may therefore influence their migration decisions.

The occupational distribution of employment coincides with the labor force participation characteristics of women. Given the economic, political and cultural obstacles facing low educated and unskilled women, their labor force participation rate is low as discussed above. As more highly educated women have joined the labor market at a much higher rate, in 2016, 15.4 per cent of all women were in professional occupations, compared to 8 per cent of men. Consequently, women represented 45.9 per cent of all employees in professional occupations, which matches the percentage of female university students. However, only 15.1 per cent of managers are women, indicating that educated women face serious obstacles in their career advancement, which may influence women's migration decisions.

Another indicator of gender inequality is the gender gap in earnings in Turkey. In 2015, this was 20.8 per cent in total earnings in favor of men, varying according to status in job. The ratio of female income to male income was 54.9 per cent for self-employed workers, 72.1 per cent for employers and 86.8% for waged workers. Women in Turkey also earn less than men at all levels of education, with the average annual earnings of women with higher education being 76.7 per cent of men's. According data from the Household Budget Survey data, 40 per cent of the gender wage gap of female university graduates is due to discrimination (Cudeville and Gürbüzler 2007).

In Turkey, a conservative religious party, the Justice and Development Party (JDP) has been in power since 2002. A critical assessment of the government's female employment policies indicates that it has replaced previous egalitarian rhetoric with a focus on the importance of the family for social continuity, giving women responsibility for maintaining and protecting the family. Accordingly, to preserve a gender-based division of labor, the government has proposed flexible work options for women, like part-time work and female entrepreneurship, which result in precarious forms of employment (Toksöz 2016).

Violence against women

The percentage of women experiencing violence in Turkey at some point in their lives was 41.9 per cent in 2008 and 37.5 per cent in 2014. Despite this decrease, the rate remains very high, which shows how violence is a serious problem in Turkey that violates women's basic human rights. Considering the probability of suffering physical or sexual violence in relation to education level, 43.4 per cent of women who are not educated or who have not completed primary education experienced violence in 2014 while for women with high school or higher education the rate was 24.7 per cent. Despite this decrease with women's education level, violence remains a problem that cuts across all social groups and strata in Turkey, regardless of women's level of welfare or education.

Murders of women represent the gravest form of violence, annihilating their right to life. At least 1,411 women were killed between 2010 and 2016, with 53.6 per cent of offenders being husbands or ex-husbands, 18.8 per cent male relatives and 14.2 per cent boyfriends or ex-boyfriends. Of these murders, 234 murders were committed during an ongoing separation or divorce process while 141 murders occurred although the women had applied to an official institution for protection in the face of harassment or threats, which shows the inadequacy of measures taken by the public authorities to prevent violence against women.³ Although the JDP government has taken legal and institutional measures to combat violence against women, their consistent implementation depends on a gender equality mentality, which is lacking in the JDP as a religious conservative party. Rather, their equality understanding is limited to a legal equality, seeing motherhood as the most important role of women and strengthening family as their priority. However, male violence against women in Turkey cannot be combatted without concrete steps towards economic, social and political gender equality (Aslan-Akman, Tütüncü 2013).

Ruysen and Salomone (2015) report that women prefer to migrate when they think that they are not treated with respect and dignity. Although the problem of violence against women has not yet been explicitly considered in migration studies, it is reasonable to argue that women's risk of facing violence in Turkey along with the sexist rhetoric of public authorities is likely to strengthen educated women's desire to emigrate.

³ <http://bianet.org/english/gender/134394-bianet-is-monitoring-male-violence>

5. Conclusion

This study examined the return intentions of emigrant Turkish students and professionals, with a special focus on the gender dimension, which has not received enough attention in both Turkey and international studies. The study's findings, which are based on data from 116 students and 84 professionals who responded to two comprehensive questionnaires, support most of the previous findings in the literature while also providing some new and contrasting results. In particular, this study has clarified that political instability in Turkey is a key factor in these respondents' return decisions, and that there are positive relationships between an intention not to return and time spent abroad, having a degree from a foreign, English-medium institution and previous work/travel/study experience abroad.

Our findings confirm that previous findings remain valid, and that some have become more significant. For instance, political instability as a push factor becomes more dominant than other push (and pull) factors. In addition, retrogressive changes in Turkey regarding the role of women in society (increasing pressure on women in the public sphere and trying to confine women to the private sphere) have made educated Turkish women more likely than men to migrate and intend not to return.

However, the key finding in this study is that more women currently prefer to stay abroad than men, and that this is more because of push factors than pull factors. We conclude that this is a clear reflection of the way Turkey's current socio-political situation is strongly influencing women's decisions to migrate and not return. Increasing gender disparities in Turkey that disadvantage women in education and labor markets are significant push factors in the migration decisions of highly skilled females. We also conclude that increasing authoritarianism and Islamization will perpetuate this tendency, causing a huge brain drain for Turkey.

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