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² The original study also covered Turkish students studying in overseas universities. The results of the survey on student return intentions were published in a separate article that appeared in the journal *Career Development International* (see Tansel and Gngr, 2003).

Return intentions of university-educated Turkish expatriates

Introduction

Migration, both internal and across borders, is nothing new for Turkey. A significant amount of rural-to-urban migration takes place within Turkey's borders, and is driven in large part by the greater employment and educational opportunities available for families in urban areas. Paralleling this, a significant number of highly educated individuals from Turkey choose to take advantage of overseas employment opportunities. A great proportion of them are part of the phenomenon of student non-return, which means they have also gone through a period of training and education in their country of destination. This reflects in part the lack of opportunities for specialized study within the higher education system in Turkey, as well as the value placed on obtaining a "foreign" education in the domestic labour market.

The Turkish experience is similar to that of countries such as Greece (Psacharopoulos and Papakonstantinou, 2005) where a large, unmet demand for higher education has led to record numbers of students studying abroad. The great demand for higher education is the result of a number of related factors. A high population growth rate and massive rural-urban exodus has increased enrollments over all levels of schooling in Turkey and created pressure on the higher education system. The demand for higher education partly reflects the value families place on university education as a means for achieving social mobility and prestige. In addition, the expectation of greater economic returns in terms of higher salaries also provides a strong incentive for investing in university education (see Tansel and Güngör, 2003 for further details and related references).

The Turkish approach to manpower planning has been haphazard, and lacking a clear vision of how to integrate a skilled workforce with advanced overseas training into the domestic labour market. The university system absorbs much of the supply of individuals

with advanced tertiary degrees. Unfortunately, other sectors of the economy do not always offer the kind of jobs that fulfill the expectations of university graduates, especially those with advanced degrees. While the “rise” of the banking sector in the 1990s created jobs for university graduates from a diverse group of disciplines, the subsequent crisis in banking and finance led to a reversal of fortune. Unemployment levels reached unprecedented levels in the post-1980 period of liberalization. The unemployment of the university-educated workforce became a serious concern for the first time after the economic crises in November 2000 and February 2001, where one out of every three educated worker became unemployed. The sectors that were hit hardest by these crises were banking and finance, followed by industry and services (Işığık, 2002).

The aim of this article is to provide new evidence on the characteristics of Turkish professionals residing overseas and the factors that are important in their decision to return home or work abroad. With this aim, we present the results of a survey conducted in 2002, which deals with the return intentions of university-educated Turkish professionals residing abroad. The article thus presents information that will be useful to policymakers in Turkey and other developing countries with similar experiences. The findings indicate that many of the university-educated expatriates are those who stayed abroad to work after completing their studies, rather than professionals with work experience in Turkey.

Methodology

The results presented in this article are obtained from an internet survey of Turkish professionals conducted by the authors during the first half of 2002. The survey universe is comprised of Turkish scholars and professionals working at a full time job abroad and possessing a tertiary-level degree. No geographical limitations were set for the targeted group, although the search for individuals through university directories and professional associations concentrated mainly on institutions in North America. 1224 usable responses

were obtained from a combination of internet search and referral or “snowball” sampling methods (Atkinson and Flint, 2001), where those who were contacted initially helped distribute the cover survey letter to their friends or colleagues who met the survey criteria.

Respondent profiles

Three-quarters of respondents are under the age of 40, with a majority being in the 26-35 age group. Female respondents, who constitute 28 percent of the sample, are generally younger than male participants: 47.2 percent are in the 21-30 age category compared to 32.1 percent for males. Traditionally, both educational and migration opportunities have been greater for men in Turkey. The younger profile of the female participants may be explained by the better educational and career prospects they face in comparison to previous generations.

About 70 percent of respondents are residents of the United States. The remainder reside mainly in Western Europe, Canada and Australia. This is due to fact that a considerable amount of effort was spent in collecting e-mail addresses from the United States and Canada. The stay duration of respondents are given in Table I. Slightly more than half of females (55 percent) have stayed in their current country of residence for five years or less. The same share for males is only 43 percent. A third of respondents for the total group have a stay duration of between 6 and 15 years. These figures indicate that that the sample is tilted toward those with relatively shorter stay durations.

[Take in Table I]

Socio-Economic Background of Respondents: Parental Educational Levels

Parental educational attainment levels are an important indicator of the socio-economic status of respondents. Table II presents the breakdown of parental educational attainment levels by gender, which reveals that the respondents’ parents are, in general, highly educated.

In the case of female respondents, nearly half of all mothers and three-quarter of fathers hold a tertiary level degree. For male participants, this is somewhat lower: a third of mothers and a little more than half of fathers hold tertiary level degrees. By contrast, the average years of schooling for Turkey's 25 years of age and older population in 2000 is 5.7 years³, which corresponds to a little above the primary level of schooling. It is clear from these figures that the respondents come from relatively well-to-do families who were able to invest in the higher levels of education in Turkey. Given that Turkey has one of the worst income distributions in the world and ranks among the top twenty countries in terms of income inequality (Sönmez, 2001), it is apparent that the existing opportunities for investing in education, both in Turkey and abroad, are concentrated among the more educated and wealthier households.

[Take in Table II]

Family Considerations

The majority of respondents (58.7 percent) are married, and more than a quarter are married to a foreign spouse. Family considerations are expected, therefore, to play a prominent role in return intentions, since mobility becomes a family decision. Not surprisingly, marriage to a foreign spouse reduces return intentions considerably, while marriage to a Turkish spouse has a more ambiguous effect on return intentions: more than two-thirds of respondents with foreign spouses indicate they are not likely to return, compared to one-third for respondents with Turkish spouses.

There is also considerable family support for the initial decision to go abroad and for the decision to settle abroad. Three-fifths of respondents have indicated that their families were "very supportive" in the initial decision to study abroad, while about 10 percent indicated that they were "not very supportive" or "not at all supportive". On the other hand, less than a

³ Calculated from SIS (2003b), Table 3.9, p. 51.

third of participants indicate that their family “would definitely support” them in the decision to settle permanently outside Turkey. Thus, a higher proportion of families were supportive of the decision to study abroad compared to the decision to settle abroad.

Educational Background & Impact of Foreign Language Instruction

Foreign language instruction⁴ prevails in the public Anatolian and science high schools as well as many private high schools. Students and parents believe that high schools with foreign language instruction will provide an important advantage in terms of getting placed into the more prestigious universities in Turkey. However, those who oppose foreign language instruction and the adoption of foreign course curricula in schools believe that this facilitates the acculturation process and exacerbates the brain drain by making it easier to settle abroad. Indeed, more than half the survey participants (55.4%) have graduated from high schools with foreign language instruction.

Figure 1 presents the institutions from which respondents have received their undergraduate degrees. It is not surprising that many of the respondents have earned their degrees from universities that have foreign language instruction, such as Middle East Technical University (METU), Boğaziçi University and Bilkent. It is also important to note that an important share of respondents hold foreign undergraduate degrees (11.5%). The remaining respondents constituting the “other” category are graduates of various universities in Turkey and abroad, each of which constitutes less than three percent of the share of the total sample.

The significant share of foreign undergraduate degree holders may be attributed to a large degree to the unmet demand for higher education, since only about a third of applicants to higher education institutions are able to be placed in a university program each year (YÖK,

⁴ This is a hotly debated topic in Turkey. While knowledge of one or more of the major foreign languages is acknowledged as necessary to keep up with the innovations and developments in the world and to interact effectively with international colleagues, there are those who believe that foreign languages can be taught successfully in the Turkish high schools as separate courses appended to the regular curriculum (see, for example Doğan, 1996 and 1998). At the university level, a majority of new private or “foundation” universities have adopted English as the language of instruction.

2004: p. 32). Pressure from the centralized university entrance examination adds to the anxieties felt by students and makes foreign educational opportunities more appealing for those whose families can afford it. There is also indication that the filtering and recruitment of promising students by foreign educational institutions occurs early on, especially through established high schools, such as Robert College in İstanbul. Because of their international reputation, these high schools attract some of the best students in the country.

[Take in Figure 1]

Highest Degree Held and Fields of Study

A majority of respondents hold a masters degree (41 percent); this is followed by those with doctorate (3 percent) and bachelor's degrees (22 percent). The most common field of study at all levels of education is the engineering and technical sciences, followed by economic and administrative sciences. These two broad fields account for 84, 89 and 70 percent of respondents with bachelors, masters and doctoral degrees, respectively. The mathematical and natural sciences, and the medical and health sciences also accounts for a significant proportion—more than one-fifth—of doctorate holders. The greater share of respondents in technical fields is possibly the result of the greater demand for technical skills in the country of residence.

Table III gives the level and country of highest degree of respondents. More than two-thirds have obtained their highest degrees from a foreign country and this is generally at the masters or doctoral level. Of those who received their highest degree from Turkey, more than half hold a bachelors degree, about a third hold a masters degree and only one in seven hold a doctorate. Thus, non-returning students compared to the migration of professionals may be a greater concern in terms of numbers. The 1968 survey study by Oğuzkan (1971, 1975) indicates that student non-return is not a recent phenomenon for Turkey: the majority of the

150 Turkish PhD holders participating in the Oğuzkan's study had earned their last degree from a foreign university.

[Take in Table III]

Initial versus Current Return Intentions and the Time Frame of Return

Initial return intentions at the outset may be important for the subsequent decision to migrate or return to Turkey. Initial return intentions represent the participants' initial views about returning to Turkey prior to going abroad and serve as a gauge for previous attitudes. Half of all respondents (51.6 percent) indicated that they intended to return prior to leaving Turkey, while only 12 percent indicated they left without the intention of returning. The remaining 36.4% of respondents were undecided.

In terms of current return intentions, about a quarter of the respondents taking part in the professionals survey have indicated that they have definite return intentions, while slightly more than a third are less certain about returning. Another third indicate that it is unlikely for them to return, while about 7 percent say they will definitely *not* return.

The relationship between initial and current return intentions is presented in Table IV. According to the gamma and Kendall's tau-b statistics—two measures of ordinal-ordinal association (Agresti, 1984)—a strong, positive relationship exists between initial and current return intentions: current return intentions are more likely to be in favor of remaining abroad when initial intentions are also to stay.

[Take in Table IV]

Respondents by Occupation and Job Activities

A little over one-fifth of the sample of professionals is working in educational occupations, almost entirely at the university level. The sample is roughly equally divided between “management”, “computer & mathematical science”, “architecture & engineering”, “education” and the remaining occupations. The first four broad occupation groups thus

account for about 80 percent of the total sample. The remaining fifth is divided mainly between those in business and finance and those in the life, physical and social sciences.

Table V presents the occupation groupings by return intention. A significant chi-square statistic indicates that return intentions differ by occupation classification. However, much of this variation appears to be between education (academe), where return intentions are weakest, and the other groups. In Table VI, the two strongest (DRP and DRNP) and weakest (RU and DNR) return intention categories are combined together, and the occupation groups are sorted according to the two new return intention categories. Respondents working in education and in “other” occupations are the least likely to return, while those in business or finance are the least likely to indicate non-return intentions. In terms of definite return plans, those in the education/academic occupations appear to have the weakest return intentions: only one-fifth of respondents in education are definitely planning to return. The proportion of respondents with definite return plans does not appear to be significantly different from each other in the other occupations: approximately 30 percent have definite return intentions.

[Take in Table V and Table VI]

Table VII presents the percentage of time spent on various job activities by respondents. These job activities are the same as those in the US National Science Foundation’s Survey of Doctorate Recipients. One-fifth of respondents spend more than half their time on computer related activities, which is not surprising since a good proportion of participants are in computer related occupations. More than a third of respondents spend the majority of their time in research and development activities. These activities constitute highly specialized work that may be difficult to find in Turkey. One would, therefore, expect return intentions to decrease with increases in the R&D content of the overseas job. However, there is no

discernible positive or negative association between the R&D intensity of job activities and return intentions (Table VIII).

[Take in Table VII and Table VIII]

Work Experience and Overseas Training

Previous work experience, in Turkey or abroad, is likely to be an important determinant of return intentions. The great majority (70 percent) of the survey participants have held one or more full-time jobs in Turkey. Work experience in Turkey could have two possible effects on return intentions. Respondents who have held a full time job in Turkey have firsthand knowledge of the work environment and work conditions in Turkey and are, therefore, able to make comparisons based on this information. Those who judge work conditions to be worse in Turkey are more likely to remain abroad. Having work experience in Turkey may also increase the chance of return since individuals with previous experience in Turkey can perhaps re-adapt more easily to an environment they already have knowledge about.

Full-time overseas work experience is also expected to be important in determining who is more likely to return to Turkey. Many of the respondents (about 30 percent) have only one to two years of overseas job experience. The sample, in general, is tilted toward those with fewer years of job experience. Return intentions are expected to decrease with an increase in the number of years of work experience in the host country.

Transfer of knowledge and technology may be difficult when the training received abroad is highly specific to an organization or to an industry that is not developed in the home country. When the advanced education and training received abroad is geared toward the labour market needs of the host country, this is believed to lower the incidence of return, since graduates with foreign degrees expect to be more productive and receive higher incomes in the country where they received their education and training (Chen and Sue, 1995). To determine the impact of different types of work experience (on-the-job training) and formal

training, questions were asked on the type of training received abroad—whether general, specific to industry or specific to the current organization. The tabulations for on the job training and formal training are given in Table IX and Table X respectively.

[Take in Table IX and Table X]

Only 3.5 percent of respondents have received formal training that is specific to the organization they are working for. This is somewhat higher (about 10 percent) for informal on the job training. There does not appear to be a significant relationship between the type of training and return intentions, as one would expect.

Respondents by Type of Organization

Close to half (46 percent) of respondents are working in multinational corporations, while 17 percent are working in other private firms. Slightly less than a third are working in a university (22 percent), research center (3 percent), or in a hospital/medical center (3 percent). Return intentions are weaker for those working in an academic environment: 46 percent are either unlikely to return or definitely not considering returning, compared to 36 percent for the non-academic group (Table XI). Many (43 percent) found their current job while already in their current country of residence, while 30 percent were located in Turkey and close to 30 percent were located in another country (Table XII). Figure 2 shows the channels respondents have used to find their current job and their first full-time job abroad. It is clear that in both cases many respondents have used their own initiative to contact potential employees by sending their CVs. A greater proportion of respondents (30 percent) who found their full time job while in Turkey or in a third country have made use of informal channels (e.g., friends and colleagues) compared to those who found their current jobs while in their current country of residence. This points to the importance of information exchange through informal channels for taking advantage of work opportunities at a global level.

[Take in Table XI and Table XII]

[Take in Figure 2]

Positive Contributions to Turkey During Stay

The extent of positive contributions to Turkey during the stay abroad is given in Figure 3. Most respondents believe they contributed by increasing knowledge about Turkey in the country they are staying. About 40 percent are involved in lobbying activities on behalf of Turkey. Over one-third believe they have helped increase professional contacts between their colleagues in their host countries and colleagues in Turkey. Over a third has also donated to Turkish organizations (36 percent). Some (mostly those in academe) have participated in conferences and teaching activities in Turkey, which is a potential route for knowledge transfer. Those in academe also help Turkish students find scholarships in their institutions. Some of the respondents have been very active in terms of increasing contacts and knowledge transfer between their current residence and Turkey, as the comments of one university professor clearly shows:

I spent six weeks in Turkey in 2000 visiting eight universities (including METU) and the TUBITAK research centre, giving 25 lectures on my research programs. Over the past year, I had two visiting scientists from Anadolu University in my lab working on joint projects. We are looking at organizing a conference next year in Eskisehir. Another colleague of Turkish origin who is currently in USA has organized two NATO summer schools in Kemer and I attended both as a presenter. Another colleague organized a conference in Istanbul in 1996 and is organizing another one in 2001 in Istanbul again, which I will be attending. I am working towards increasing my collaborations with colleagues in Turkey and act as a resource for them. I currently have a PhD student who is a graduate of METU.

On the other hand, others believe the right environment in Turkey must be created before their knowledge and skills can be put to efficient use:

I am involved in risk capital. I would like to do this in Turkey when the right conditions for entrepreneurship are created and when my own economic situation strengthens. Then I can be of greater use to Turkey through the experience I have gained and my personal network in Silicon Valley. I will do everything that I can for Turkish entrepreneurs in

Turkey who have new ideas or inventions. I believe that a database for linking Turkish businessmen and entrepreneurs in and outside Turkey will be very useful.

I do not believe that we can help Turkey from where we are... Turkey needs to create the environment to attract the talent abroad. Then again, many people [in Turkey] wouldn't want their positions to be challenged by "outsiders".

[Take in Figure 3]

Further Analysis of Return Intentions

Stay Duration and Return Intentions

We make use correspondence analysis⁵ to examine the relationship between stay duration, initial return intentions and current return intentions in this section. Simple correspondence analysis (CA) gives a visual depiction of the relative proximity between the categories of two categorical variables as measured by the chi-square distance. Figure 4 illustrates the relationship uncovered by CA between the responses given by survey participants on their initial and current intentions about returning to Turkey, and their length of stay in the current country of residence. The boxed categories represent current return intentions, while the remaining points represent the categories of the combined "stay duration" and "initial intention" variables. The initial intention variable has three categories—return, uncertain, and stay—that are indicated by R, U, and S respectively.

[Take in Figure 4]

Two things are noteworthy: first, initial intentions are positively associated with current return intentions, and secondly, return intentions weaken with the length of stay. For example,

⁵ This is a very useful inductive method for analyzing and interpreting the associations in large datasets comprised of categorical variables. This methodology allows the associations between the categories of a set of variables to be described in terms of a small number of dimensions. It is thus similar to principal components analysis, which is used to uncover common dimensions among a set of continuous variables. One of the advantages of correspondence analysis is that it doesn't require making any restrictive assumptions about the characteristics of the dataset (see Clausen, 1998 for further details).

survey participants who have stayed for less than a year in their current country of residence and who have also indicated an initial intention to return are associated with definite return plans. Return plans weaken for the group with initial return intention when the length of stay increases to between one and five years, and further still when the duration of stay is longer than five years. The same pattern holds for those who were initially uncertain about returning; as stay duration increases, the likelihood of returning declines. Those with an initial intention of not returning (staying) lie close to the “unlikely to return” and “definitely not return” categories regardless of stay duration.

Return Intentions by Location of Highest Degree and Work Experience

In Figure 5, correspondence analysis is used to reveal the response pattern of three separate groups in terms of their current intentions about returning to Turkey. The three groups are 1) those who have obtained their highest tertiary-level degree from a Turkish university, represented by *HDTUR*; 2) those holding their highest degree from a foreign institution and whose first full time job after completing their studies is located outside Turkey, whether in the same city or same country as their studies or in another country [*HDFOR(samecity)*; *HDFOR(samecountry)*; *HDFor(dif_country)*]; and 3) those with a foreign highest degree who initially returned to Turkey to work after completing their studies and then went abroad to work, represented by *HDFOR(Turkey)*.

[Take in Figure 5]

The upper-left cluster of Figure 5 reveals that those who have obtained their highest degree from a Turkish university appear to be closely associated with definite return intentions. The second group, forming the bottom left cluster, represents the phenomenon of student non-return—those who have remained abroad to work after completing their studies. The members of this group appear less definite about their return intentions; the co-ordinates

of the points representing this group lie close to the “return probable” and “return unlikely” points. The third group forming the center-right cluster differs from the other two in that it comprises those who returned to Turkey to work at a full-time job immediately after completing their studies at a foreign university and who then decided to go abroad again to work. The members of this group appear more likely to indicate that they will definitely not return to Turkey. If intentions translate into reality, it would appear that the migration of professionals—or brain drain in the traditional sense—as measured by those whose highest degree is from a Turkish university, is less of a concern than non-returning students for Turkey’s brain drain problem. Even more troublesome is the third group of returning students who have experienced working in Turkey after completing their studies; they appear to be the least likely to return to Turkey.

Return Intentions by Level of Highest Degree

Disaggregating the three groups by level of highest degree (bachelors, masters, or doctorate) also reveals interesting information. Figure 6 presents the correspondence analysis of return intentions for respondents differentiated by their level and location of highest degree (*FOR_bach*, *FOR_mast*, *FOR_PHD*; *HDTUR_bach*, *HDTUR_mast* and *HDTUR_PHD*) and whether they initially started work in Turkey or a foreign country after completing their studies (*workTUR*, *workFOR*). Since the level of highest degree is an indication of the level of specialization achieved by the respondent through formal study, a pattern of non-return for students with foreign doctorate degrees will provide some confirmation that specialized training in a foreign country has an adverse impact on return intentions.

[Take in Figure 6]

Figure 6 shows that respondents with a foreign highest degree, regardless of level, are more disinclined to return than those holding degrees from Turkish universities. Respondents

with foreign doctorate degrees who also have some work experience in Turkey after completing their studies constitute the group that is least associated with return intentions.

The following comments by a university professor are insightful:

I come from a family of professors and I lived in a university campus (lojman) ... all my life in Turkey. I have seen some cases of failed attempts to return to Turkey after getting a degree abroad. People come back after 5-10 years and get a university position, but re-adaptation is not very easy. Your own country becomes harder to adapt to than US was when you left Turkey years ago. Turkey is easier to live in if you haven't seen the other side and what's worse is that the changes Turkey goes through "culturally" is a lot faster than what you can find here in the US.

Reasons for Going

Respondents in each survey were also asked to choose the *most important* reason for their initial decision to pursue international education or employment opportunities (Figure 7). Taking advantage of educational opportunities was selected as the most important reason by many respondents, because many believe that international study programs offer higher quality education in their chosen field of study compared to universities in Turkey. Thus, one-sixth of survey participants chose "the prestige and advantages associated with study abroad" as the most important reason for going abroad. This was followed by "other" reasons, the need for change, lifestyle preference, and the lack of facilities and necessary equipment for carrying out research in Turkey.

[Take in Figure 7]

Some of the participants did not feel that the categories presented to them adequately represented their reasons for going, and a substantial number of respondents (13 percent) chose the "other" category. The "other" reasons included: gaining international work experience / global business vision; being part of an inter-company transfer; being invited by the foreign country employer; being frustrated with corruption in Turkey and wanting to be part of a more professional work environment; to postpone / delay / shorten the military

service obligation; to get an “acceptable” doctorate; the belief that little value is placed on science / technology / knowledge / academics in Turkey; to be able to use the latest technology not available in Europe; disagreements, etc. with the Higher Education Council in Turkey; to work with and learn from the best in their chosen field of specialization; more opportunities for international recognition and mobility, higher quality undergraduate and post-graduate education; political and social disorder in Turkey prior to 1980; and wanting to be in an economically stable country. While some of these reasons are similar in spirit to the categories presented in the survey, they provide somewhat more detailed explanations for why participants have chosen to go abroad. Below is a sample of some of the explanations in the participants’ own words:

At the university I worked in Turkey, research opportunities and support were very insufficient, and the overall atmosphere was negative for scholarly activities.

[I left because of the] lack of organization and planning in Turkey, having to struggle with daily things, lack of trust in people and institutions, [and] lack of optimism for the future in Turkey.

It was difficult to get an academic job in Turkey, so I decided to study in the US.

METU [Middle East Technical University] would not let me teach as Assistant Professor and wanted me to do a second dissertation for Associate.

Bogazici [University] requires a PhD from abroad to employ as an assistant professor.

At the time I wanted to be a professor at Bogazici University and thought that I needed a PhD from the USA for that.

Working environment in Turkey is simply not professional, and very political.

[I left in order] to stay on the technical track (it’s impossible to work as an engineer and survive in Turkey).

I had no career prospects in Turkey’s bleak technology sector.

Most of the faculty had left Turkey due to [the] political atmosphere at the time, leaving no qualified professors in the universities to advance my studies.

[I wanted to use] my existing skills more efficiently, [and be] able to use my creativity.

Some participants also viewed overseas experience as a personal challenge to grow as individuals in the absence of “a family support structure”, and some as a way to discover their “professional abilities and limitations, in a high paced, competitive, international environment.” For respondents of the student survey, the opportunity to receive better quality education and to get away from the stress of preparing for the nationwide university placement exam (ÖSS) also figure in as important reasons. It is worth noting that many respondents believe that they will have better employment opportunities in Turkey in terms of both workplace quality and better positions if they acquire overseas study and work experience.

The top three reasons for going abroad are listed in Table XIII according to the highest degree completed. Although there is substantial variation among the respondents in their reasons for going abroad, the top three reasons nevertheless account for about half of all respondents in each category. The need for change and lifestyle factors are given greater importance by bachelor’s and master’s degree holders, while those with doctorate degrees give importance to research-related factors. These findings indicate that the initial purpose or factors that are important for deciding to study or work overseas differ according to level of specialization in higher education and in terms of gender. Female respondents are more constrained by family considerations, while bachelor’s and master’s degree holders are motivated to a greater degree by lifestyle preferences.

Reasons for Not Returning

Table XIV presents the reasons for not returning in terms of various push and pull factors.⁶ Economic instability is the top push factor: 84 percent of professionals indicate that economic instability is either an “very important” or “important” reason for not returning. This is to be expected since unemployment among high school and university graduates reached nearly 30 percent in the aftermath of the February 2001 economic crisis according to the State Institute of Statistics Household Survey results. Bureaucracy (79.4 percent), unsatisfactory income levels (68.4 percent), political instability (64.7 percent) and lack of opportunities for advancing in occupation (61.7 percent) follow as factors that are relatively more important. Less than a quarter of respondents chose an “unsatisfactory social and cultural life in Turkey” as an important push factor. Many of those who marked the “other” category included corruption (bribery, partisanship, nepotism) and, in the case of male respondents, compulsory military duty as important push factors.

[Take in Table XIII]

The top pull factors complement these results. The majority of Turkish professionals indicate that a higher salary in the host country is a “very important” or “important” pull factor (79.1 percent). Three-quarters also indicate that a more organized / ordered environment and greater opportunities for advancement in occupation are very important pull factors.

A common view expressed in the survey by those who have chosen an academic career is that there is a lack of value given to science and to academics in Turkey, and many carry the fear that they will find themselves in an “unproductive environment” when they return. The following comments illustrate the dilemma faced by respondents contemplating return:

⁶ “Push” factors are those characteristics or circumstances of the home country that prompt a person to migrate to another country, while “pull” factors are the characteristics of the receiving country that provide incentives for individuals to settle in the receiving country.

Everyone should realize [the] fact that we stay abroad because of the lack of scientific advancements and economic instability in Turkey. Like the movie says, “If you build it, they will come...” If the government / industry / institutions work together and build a good structure, why should we work for another country?

I advise many Turkish students who work for their PhD, either with me or in my institution, or field of work (Experimental Physics). My advice to them is to stay rather than to return. [...] The research budget of Turkey is negligible compared to many developed countries. That translates directly to the fact that there cannot be a sustained, competitive, internationally recognized research programs in Turkish institutions. Yet, this is precisely why young people spend 5-to-10 years extra after their Bachelor's degree to get their PhD's. So in a way, returning is tantamount to negating all of your hard work. Once the importance of original creative work is understood, and appreciated by the society, and the required resource allocations are made by the politicians, the situation will remedy itself over a period of time, like a decade.

Unfortunately, many respondents contemplating an academic career after completing their studies abroad are hesitant about working in newly created state universities in Turkey, even when they have a compulsory service requirement. Many believe the private or foundation universities offer them better conditions.

After finishing my doctoral studies in the United States, I visited the university where I have a compulsory service requirement and spoke with the department head and the rector. I wanted to find out about what they thought about my returning and what kind of opportunities they could offer me. I was told, both directly and implicitly, that there was no reason why I should return, there were no opportunities they could offer me and that I would be more useful to them if I stayed in the United States. When I asked if they could provide a computer, the department head said I would be lucky if I could find a chair and table. I really do want to return to Turkey. Not to a state university, but a private one.

You need to assess the importance of and contributions made by private universities in Turkey. My main reason for wanting to return to Turkey is to join one of these institutions. I have already contributed to Sabanci and Koc University programs. Facilities provided in Turkish private universities are as good as abroad but they need to be scrutinized by independent academic groups in order to maintain and enhance quality of teaching and research.

While many academic participants would be willing to work in state universities with established reputations, there is no guarantee that those who return will be employed in one of these institutions.

As I had a firm belief of returning and giving back what was given to me by my country after my PhD in 1975, I taught at ODTU in 1975-77, and Bogazici, 78-80. I returned to USA because of political turmoil; moved to Sydney to join my partner in 1989. I am now an academic living abroad; in 1993, I came and presented myself to ODTU and Bogazici;

had I been offered a job, we would have moved back.. I still maintain very close contact, and participate in training and development [activities].

The respondents' comments give more detailed explanations for why many of the educated are choosing not to return to Turkey. It is usually a combination of factors that keep professionals and students abroad. There are also generational differences in the reasons for not returning. Below are some of these explanations as well as suggestions for remedies.

I believe the most important factors of brainpower not returning to Turkey are: 1) money and increased likelihood [for promoting] your career abroad; 2) economic and political stability and order abroad. However, the social environment and culture of foreign countries are very different from that of Turkey, and most people I know would return immediately if they knew the situation [was] more stable and predictable, and that they knew they would be financially secure.

I think the main factor [in not returning] is, lack of good jobs, lack of opportunities. People move away and they get treated so much better professionally and they get used to the salary and the opportunities other countries have to offer that they don't consider going back. Why would you move back and take a job cut, a pay cut and make your life more difficult. People move to make things better not worse.

My personal belief is that the most important reason is the business climate; and mostly the lack of entrepreneurial culture. My school (METU), TUBITAK and others [have spent] a lot of effort on technoparks, etc but nothing came out of them because they are isolated efforts.

In the early years (1970s) terror in Turkey was the main factor causing us to stay in [the] USA. Later on, political instability and lack of opportunities in our fields. But, overall, government policies to encourage growth of private sector, especially in terms of regulations, taxation, bureaucracy, corruption kept us working in USA rather than returning. Later on, after a year of living in Turkey, 1992-3, we decided to return to USA since we had two elementary school children and we felt we could not get them into acceptable private middle education schools, and comparably we could find better quality schools in USA for them.

Please add the mandatory military service as a reason to work abroad. For me, the main reason [for continuing to live] in the States is the business environment (lack of professional environment) and corruption.

Due to the fact I will not be able to find a job (a job close to this one) in Turkey, It will not be easy to [return]. I design, analyze and construct and manage the wireless sites.

I think that the brain drain argument implies two things: First, what I know is not known in Turkey; second, Turkey would be interested in implementing what I know. Turkey has professionals who are very capable. However, the majority of Turkish people and the governments are not listening to them. Under these circumstances, what would be the contribution of a Turkish professional to Turkey, if she returned to Turkey? Not much, I think.

I was planning to return to Turkey but ... the crisis in banking delayed my decision again. Another main reason not to return is the education of my children. Each time you decide to go back you remember the race they have to enter for their higher education.

I think this is a great concern to Turkey and that there are no strategic planning to recover any of the brain drain. While most of us would like to entertain the possibility [of coming] back, even for lesser opportunities, there is no structure that creates platforms for capturing the value of brains outside of Turkey. I would even say that there is some resentment and/or resistance to such attempts.

Anecdotal evidence further indicates that the inability to find satisfying work is a relevant factor in looking for overseas jobs in the non-academic private sector. Many university graduates do not work in their field of study, but in unrelated sectors as noted by one respondent:

There should be a question asking if the person is practicing the profession he/she has studied. A lot of people, particularly those who have studied liberal arts, do not practice their professions and do unrelated things to make a living (they may be practicing their studies as a hobby or 2nd job, etc).

Lack of planning or knowledge when making study or work decisions also appears to contribute to the drive to go abroad to work or study among young people in Turkey. It is not difficult to imagine that a considerable number of young people are influenced by their peers and by societal pressures (e.g., conform to society's norms) to do what is acceptable in terms of career and life choices:

I think making a decision to go abroad is just like choosing a major for your college degree. You do not know much about what is waiting [for] you, until you get into it. For the college degree you choose whatever is most popular, or whichever one is the hardest to get into. And once you are done with your degree, the next definition of "success" is going abroad to get your Masters degree.... Sometimes in this rush, you forget why you started it all.

I believe that the most important reason people do not return is the fact that they are caught up in daily activities and never look at the big picture.

I personally feel confusion about returning because I really am not aware of the opportunities in Turkey in many fields. Resources and professional information and information for potential future are not very clear and accessible in and about Turkey. I wish there would be more aggressive and promotional governmental and professional activities in Turkey to bring people back.

As these responses illustrate, much of Turkey's brain drain problems may be attributed to a lack of planning at the individual level through the education and career choices people

make (which is of course a response to the current education system and labor market conditions) and lack of planning at the national or institutional levels.

Conclusions

The article provided the results of an internet survey of university educated Turkish professionals residing overseas. Overseas work and study opportunities are seen by participants as a means for investing in themselves and as a way to increase their value in the marketplace in their home country Turkey and abroad. The quality of both the work environment and the greater career and study opportunities appear to carry weight in the decision to go overseas. For those contemplating an academic career, overseas experience is often a requirement for tenure positions at some of Turkey's best universities, and this acts as a significant "push" factor.

Respondents' parents are, in general, highly educated and they come from relatively well-to-do families compared to average educational attainment levels for Turkey as a whole. Many of the respondents have earned their degrees from universities that have foreign language instruction. In terms of numbers, non-returning students seem to be of greater concern than the migration of professionals.

The study finds a strong, positive association between initial return intentions and current return intentions, although this is weaker for those who initially intended to return to Turkey. In addition, return intentions weaken considerably when stay duration increases. Student non-return compared to professional migration also appears to be more significant, since participants with foreign degrees appear less likely to return.

Economic instability and crisis are at the forefront of the recent discussions of the Turkish brain drain. The recent economic crises in Turkey have affected not only the unskilled labour force, but educated, white-collar workers as well. This, in turn, appears to have had a negative impact on the return intentions of university-educated professionals working abroad.

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Table I
Stay Duration of Respondents by Gender (%)

Stay Duration	Male	Female	Total
< 1 year	10.4	8.1	9.7
1 - 5 years	32.7	46.1	36.4
6 - 10 years	25.0	24.1	24.8
11 - 15 years	11.3	9.0	10.6
15 - 20 years	5.2	3.5	4.7
20 - 25 years	9.0	6.4	8.3
25 - 30 years	4.3	1.7	3.6
> 30 years	2.2	1.2	1.9
Total percent	100.0	100.0	100.0
Total number	879	345	1224

Table II
Respondents by Parental Educational Attainment Levels (%)

Education Level	Mother		Father	
	Male (n = 844)	Female (n = 339)	Male (n = 840)	Female (n = 339)
Below primary	10.6	4.7	3.2	0.6
Primary	19.2	13.6	11.7	7.4
Middle	9.6	6.5	5.4	5.3
High	27.0	30.4	15.0	13.9
Bachelors	26.7	32.7	42.4	37.5
Masters	4.2	7.4	11.9	19.5
Doctorate	2.7	4.7	10.2	15.6
Not known	0.1	0.0	0.2	0.3
Test of Independence	$\chi^2(7) = 28.70^{***}$		$\chi^2(7) = 28.48^{***}$	

Notes: *** p < 0.001, ** p < 0.005, * p < 0.010; Cell percentages sum to 100 across columns; n is the sample size excluding missing responses.

Figure 1
Alma Maters of Respondents (%) ($n = 1224$)

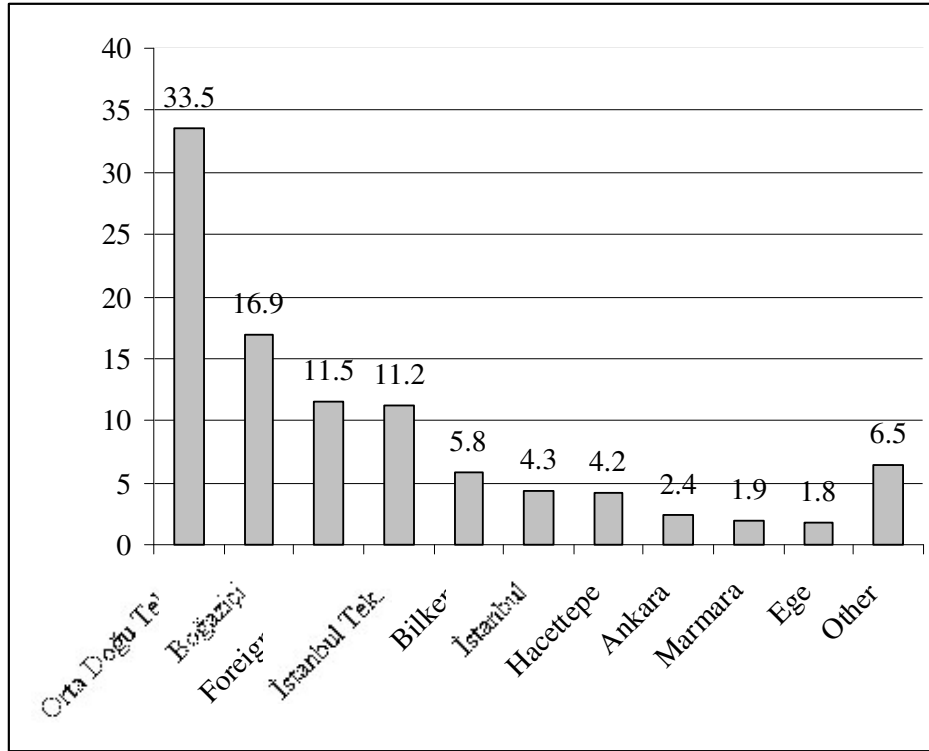


Table III
Highest Degree by Level and Country (%)

Highest Degree	Highest Degree Obtained in	
	Foreign Country	Turkey
Bachelors	7.3	55.9
Masters	45.5	29.8
Doctorate	47.2	14.4
Total percent	100.0	100.0
Total number	841	383
Test of independence	$X^2(2) = 369.90^{***}$	

Note: *** $p < 0.001$, ** $p < 0.005$, * $p < 0.010$

Table IV
Initial and Current Return Intentions (%)

Current Intentions	Number	Initial Intentions		
		Return (<i>n</i> = 631)	Undecided (<i>n</i> = 446)	Stay (<i>n</i> = 147)
Definitely return, plans	54	83.3	14.8	1.9
Definitely return, no plans	272	74.3	23.2	2.6
Return probable	416	51.7	43.3	5.1
Return unlikely	401	36.7	42.9	20.5
Definitely not return	81	27.2	28.4	44.4
Total	1224			
Test of Independence		$\chi^2(8) = 232.16^{***}$		
Measures of ordinal-ordinal association:		gamma = 0.5776; ASE = 0.032 Kendall's tau-b = 0.3921; ASE = 0.024		

Notes: *** *p* < 0.001, ** *p* < 0.005, * *p* < 0.010; Cell percentages sum to 100 across rows; ASE refers to the asymptotic standard error.

Table V
Broad Occupation Groups and Return Intentions (%)

Occupation	Number	DRP	DRNP	RP	RU	DNR
Managerial	253	3.2	22.5	35.2	34.0	5.1
Business / Finance	87	2.3	29.9	40.2	26.4	1.2
Computer & Math	255	4.3	26.3	35.3	27.5	6.7
Arch / Engineering	234	4.7	23.1	35.0	29.9	7.3
Social & Life Sciences	83	3.6	25.3	32.5	31.3	7.2
Education	263	5.7	14.5	32.7	38.4	8.8
Other	49	8.2	18.4	14.3	51.0	8.2
Total	1,224	54	272	416	401	81
Test of significance:		$\chi^2(7) = 46.85^{***}$				

Notes: *** *p* < 0.001, ** *p* < 0.005, * *p* < 0.010; Cell percentages sum to 100 across each row.
DRP = "definite return plans"; DRNP= "definite return, no immediate plans"; RP="return probable";
RU="return unlikely"; DNR="definitely not return"

Table VI
Occupation Categories Sorted by Highest Percentage of Return
and Non-Return Intentions

Occupation	% with definite return intentions	Occupation	% unlikely or definitely not returning
Business / Finance	32.2	Other	59.2
Computer & Math	30.6	Education	47.2
Social & Life Sciences	28.9	Managerial	39.1
Arch / Engineering	27.8	Social & Life Sciences	38.6
Other	26.5	Arch / Engineering	37.2
Managerial	25.7	Computer & Math	34.1
Education	20.2	Business / Finance	27.6

Table VII
Percentage of Time Spent on Various Job Activities (valid $n = 1186$)

Activities	<20%	20- 40%	40- 60%	60- 80%	80- 100%	>50%	Top ^a Activ.
Teaching	77.3	11.1	8.9	1.8	0.9	6.7	13.7
Applied Research	67.2	19.1	8.6	2.5	2.5	9.1	17.6
Basic Research	79.1	12.7	4.7	2.5	1.1	5.8	10.0
Development	73.8	15.4	7.3	1.4	2.3	6.6	14.0
Computer Related	64.5	12.1	9.5	4.9	8.9	19.4	26.6
Administrative Activities, Supervision	80.8	11.6	4.8	1.1	1.7	5.5	10.5
Professional Services	84.2	2.8	3.5	3.3	6.2	11.6	14.0
Quality Control, Production Management	95.3	2.5	1.1	0.6	0.5	1.8	3.2
Accounting, Contracts	97.0	1.9	0.6	0.3	0.3	0.8	1.7
Marketing, Consumer Services	91.4	4.3	1.9	0.6	1.8	3.7	6.0
Other	95.2	1.3	1.3	0.8	1.5	3.0	4.0
Research & Development (2+3+4)	35.2	18.4	20.1	12.4	14.0	35.5	45.6

Notes: R & D activities are applied and basic research and development.

^aTop activity is defined as the activity that respondents indicate they spend most of their time on compared to other activities.

Table VIII
Return Intentions and R&D Intensity of Job Activities (%) (valid $n = 1186$)

Return Intentions	R&D Intensity					Total
	<20%	20-40%	40-60%	60-80%	80-100%	
Definitely return, plans	4.6	5.1	3.8	4.1	4.8	4.5
Definitely return, no plans	24.7	19.7	16.4	21.1	28.3	22.2
Return probable	35.3	32.1	34.9	30.6	36.8	34.2
Return unlikely	27.8	36.2	38.7	39.5	25.9	32.7
Definitely not return	7.7	6.9	6.3	4.8	4.2	6.4
Total percent	100	100	100	100	100	100
Total number	417	218	238	147	166	1186

Notes: R&D intensity of job is defined in terms of the percentage of time spent on the job on R&D related activities. Cell percentages sum to 100 across columns; $\chi^2(16) = 23.95^*$ where * indicates significance at the 10 percent level.

Table IX
Type of On the Job Training and Return Intentions (%) (valid $n = 1213$)

Return Intentions	Type of On the Job Training				Total
	None	General	Industry	Organiz.	
			Specific	Specific	
Definitely return, plans	5.2	2.6	4.3	5.4	4.4
Definitely return, no plans	19.9	25.7	24.4	19.8	22.3
Return probable	32.1	36.1	35.4	35.1	34.1
Return unlikely	35.3	30.4	30.3	32.4	32.7
Definitely not return	7.6	5.2	5.7	7.2	6.6
Total percent	100	100	100	100	100
Total number	524	230	353	111	1,213

Notes: Cell percentages sum to 100 across columns; $\chi^2(12) = 11.40$

Table X
Type of Formal Training and Return Intentions (%) (valid $n = 1213$)

Return Intentions	Type of Formal Training				Total
	None	General	Industry	Organiz.	
			Specific	Specific	
Definitely return, plans	5.2	3.7	3.7	7.0	4.4
Definitely return, no plans	19.8	24.9	23.7	20.9	22.3
Return probable	34.6	31.9	35.2	32.6	34.1
Return unlikely	33.2	32.9	32.3	27.9	32.7
Definitely not return	7.2	6.6	5.2	11.6	6.6
Total percent	100	100	100	100	100
Total number	485	301	384	43	1,213

Notes: Cell percentages sum to 100 across columns; $\chi^2(12) = 8.87$

Table XI
Return Intentions by Whether Respondent is

Working in an Academic or Related Environment

Return Intentions	Academic	
	No	Yes
Definitely return, plans	4.0	5.5
Definitely return, no plans	24.5	16.4
Return probable	34.7	32.2
Return unlikely	30.9	37.4
Definitely not return	5.8	8.6
<i>n</i>	876	348

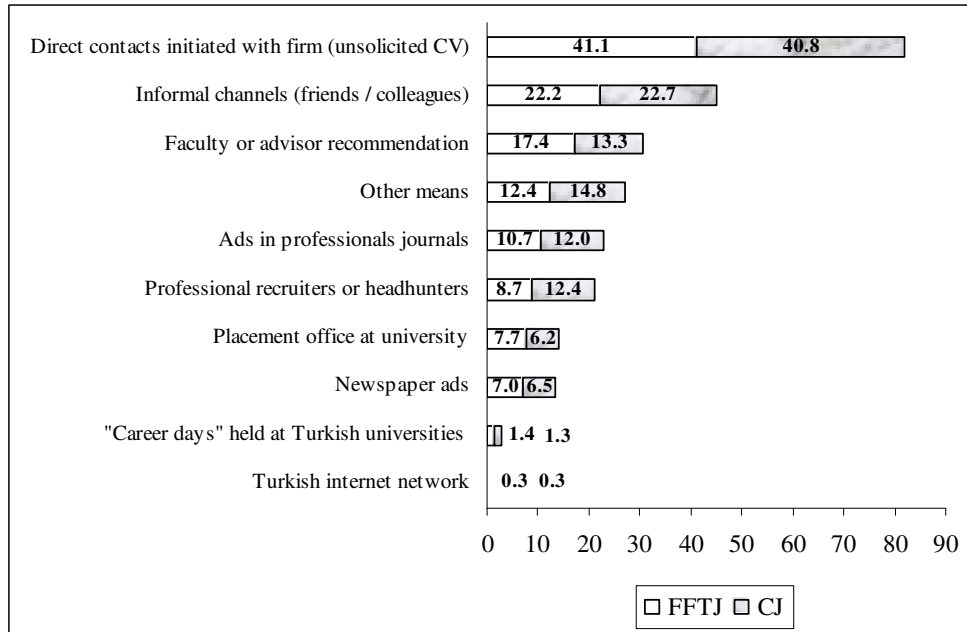
Notes: Columns sum to 100; Academic refers to those working in a university, research center or hospital/medical center; $\chi^2(4) = 15.23^{***}$ where *** denotes significance at the 1 percent significance level.

Table XII

Location Where Current Job was Found

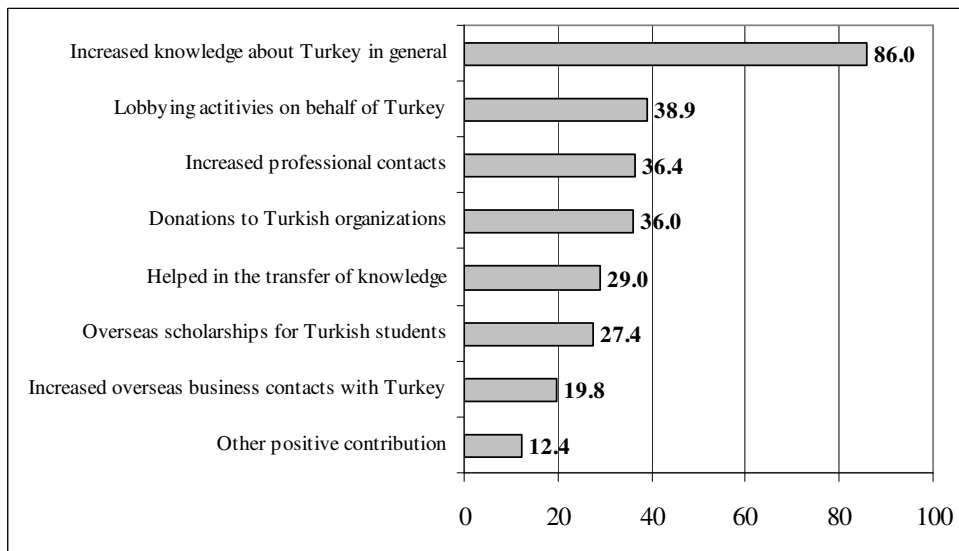
Location	<i>n</i>	%
Current country of residence	520	42.9
Turkey	357	29.5
Third Country	334	27.6
Total	1211	100.0

Figure 2
Channels for Finding First Full-Time Job Abroad (FFTJ)
and Current Job (CJ) (%)



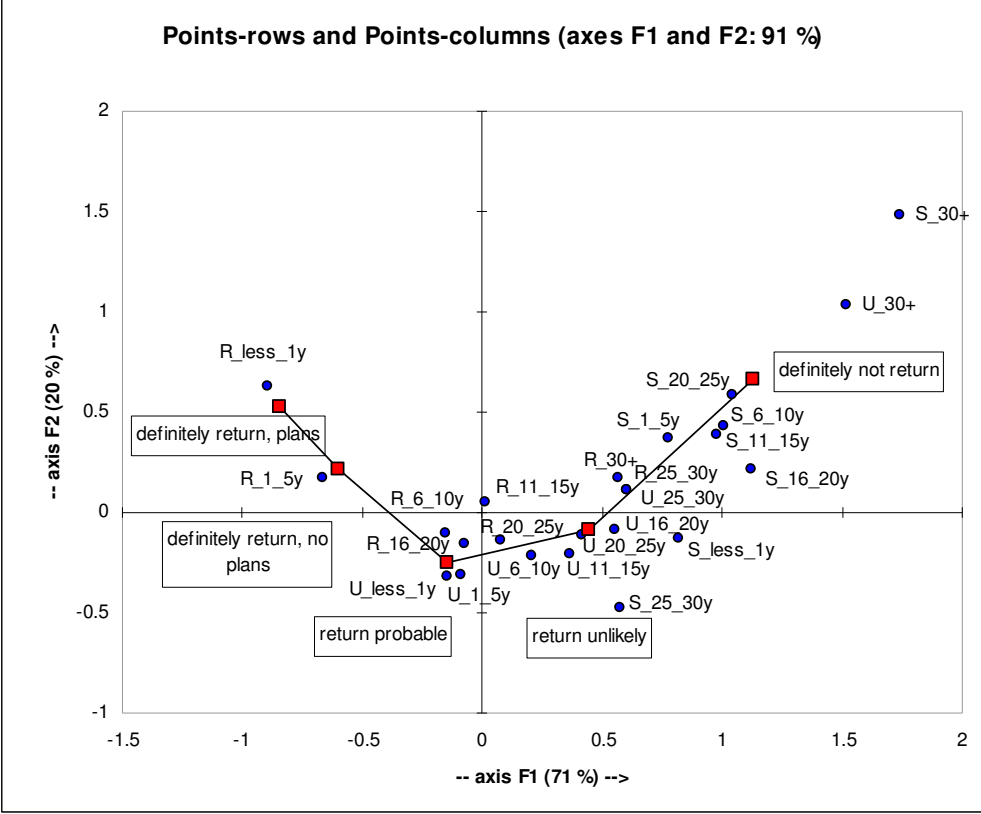
Note: The figures do not sum to 100 since more than one channel could be picked.

Figure 3
Positive Contributions to Turkey During Stay (%) (*n* = 1099)



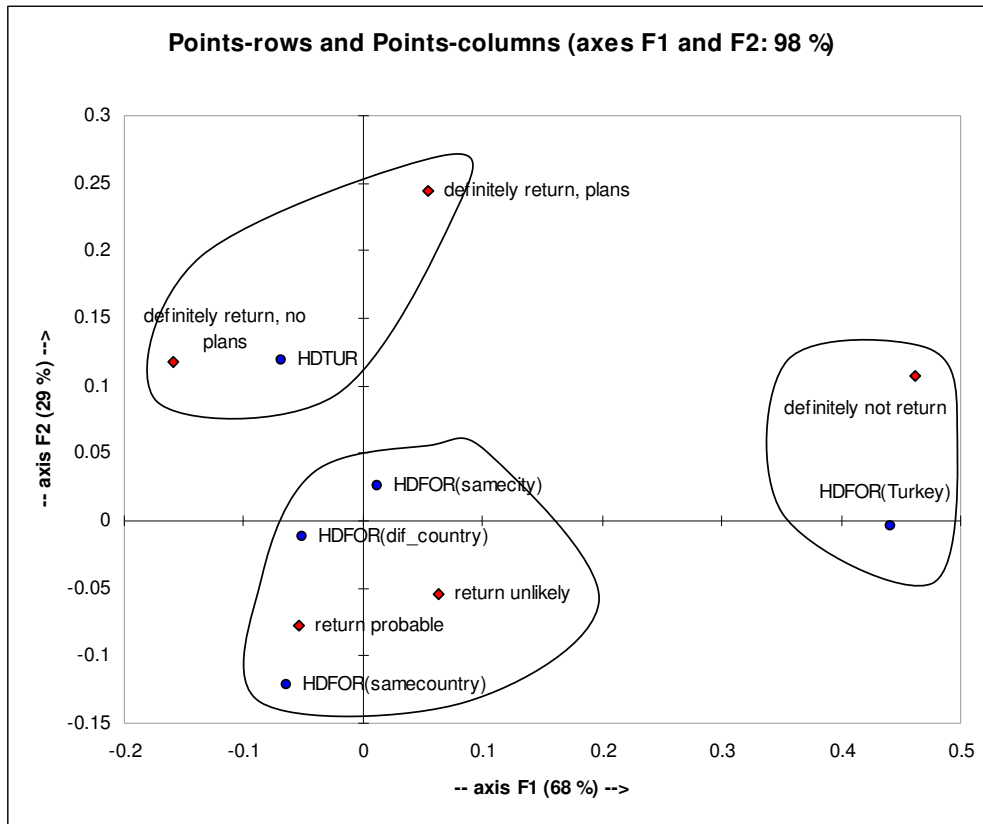
Note: The percentages do not add to 100 since more than one item could be picked.

Figure 4
 Correspondence Analysis of Initial and Current Return Intentions
 and Stay Duration



Notes: The boxed categories belong to the current return intentions variable;
 Initial return intentions are represented by R="return", U="unsure", and S="stay".

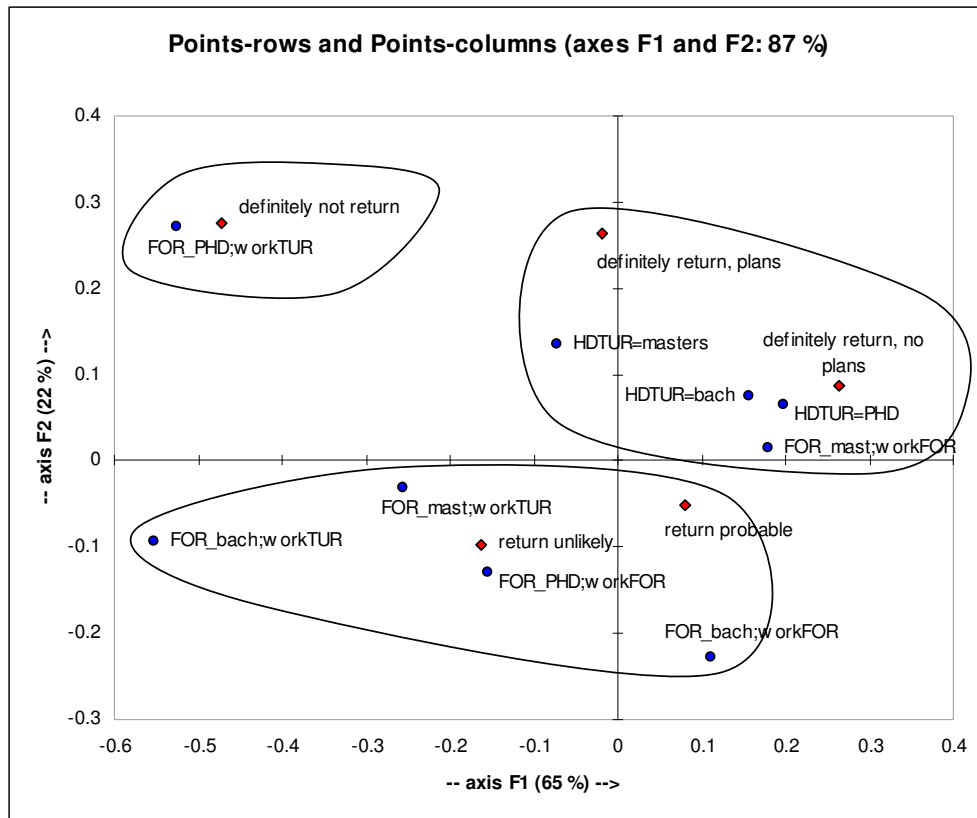
Figure 5
Correspondence Analysis of Return Intentions, Highest Degree
and Location of Initial Work Experience



Notes: HDTUR: Highest degree is from a university in Turkey
HDFOR: Highest degree is from a foreign university
Location of initial work experience after earning highest degree abroad is indicated in paranthesis as follows:
(samecity): Same city and country as that of highest degree;
(samecountry): Same country, but different city from that of highest degree;
(dif_country): Different country than that of highest degree;
(Turkey): Initial work location is in Turkey.

Figure 6

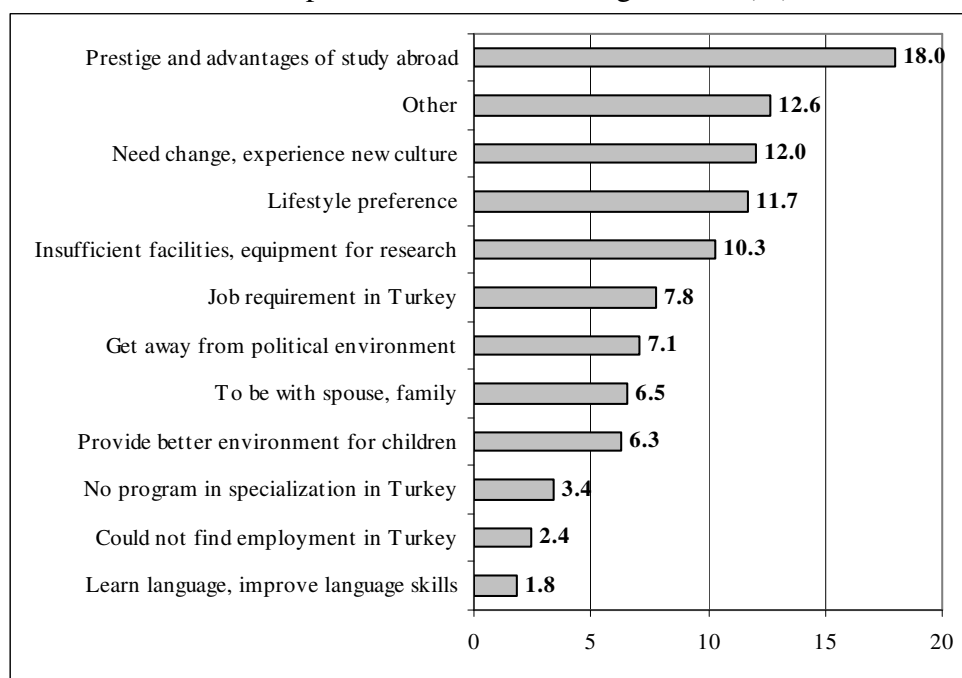
Correspondence Analysis of Return Intentions and Level of Highest Degree



Notes: HDTUR=bach: Highest degree is a bachelor's degree from a university in Turkey;
HDTUR=masters: Highest degree is a master's degree from a university in Turkey;
HDTUR=PHD: Highest degree is a PHD degree from a university in Turkey.

FOR_bach: Highest degree is a bachelor's degree from a foreign university;
FOR_mast: Highest degree is a master's degree from a foreign university;
FOR_PHD: Highest degree is a PHD degree from a foreign university;
which are further differentiated by whether respondent started their first full time job in Turkey (workTUR) or abroad (workFOR).

Figure 7
Most Important Reason for Going Abroad (%)



Notes: Respondents were asked to choose the most important factor. There are 28 nonresponses; ($n = 1196$).

Table XIII
Top Reasons for Going Abroad by Highest Degree

Highest Degree	%
<i>bachelors (n = 266)</i>	
Need change, experience new culture	20.7
Lifestyle preference	13.9
Other	10.9
<i>masters (n = 489)</i>	
Prestige and advantages of study abroad	21.3
Need change, experience new culture	13.3
Lifestyle preference	12.9
<i>doctorate (n = 441)</i>	
Prestige and advantages of study abroad	19.3
Insufficient facilities, equipment for research in	18.6
Other	15.2

Notes: 1196 out of 1224 participants responded to this question; n is the number of valid responses.

Table XIV
Evaluation of Various Push and Pull Factors

PULL FACTORS (valid $n = 1189$)	Very Imp.	Imp.	Some-what	Not Imp.	Not at all	Not Applic.
A. High occupational income	39.2	39.9	12.3	3.3	1.1	4.2
B. Greater opportunity to advance in profession	44.9	31.2	10.2	4.0	1.6	8.1
C. Better work environment (flexible work hours, relaxed setting, etc.)	40.5	30.8	12.7	5.5	2.5	8.1
D. Greater job availability in my area of specialization	35.2	30.8	11.8	6.6	2.5	13.2
E. Greater opportunity for further development in area of specialty	38.4	31.5	10.5	5.1	1.9	12.5
F. A more organized and ordered environment in general	44.8	31.6	13.9	2.5	1.9	5.3
G. More satisfying social and cultural life	11.8	14.8	23.5	14.9	14.2	20.8
H. Proximity to important research or innovation centres	19.7	22.3	19.5	11.1	6.1	21.4
I. Spouse's preference to stay or spouse's job being in current country	18.0	13.0	11.8	7.1	8.9	41.2
J. Better educational opportunities for children / want children to continue their education	21.5	15.9	12.6	5.7	5.9	38.4
K. Need to finish or continue with current project	6.7	8.5	12.5	9.1	15.5	47.7
L. Other	4.4	0.4	0.4	0.0	0.1	94.7
PUSH FACTORS (valid $n = 1189$)	Very Imp.	Imp.	Some-what	Not Imp.	Not at all	Not Applic.
A. Low occupational income	37.6	30.8	16.0	4.7	1.9	9.1
B. Little opportunity for advancement in occupation	31.5	30.1	12.3	8.0	3.2	14.9
C. Limited job opportunities in my field of expertise	29.4	23.6	13.7	9.4	5.0	18.9
D. No opportunity for <u>advanced</u> training in my field	16.6	19.5	18.5	11.9	6.8	26.7
E. Being far from important research centres and from new advances	20.8	18.8	17.8	11.5	8.4	22.7
F. Lack of financial resources and opportunities to start up my business	15.1	14.0	16.7	12.5	8.3	33.4
G. Less than satisfying social and cultural life	10.0	14.6	15.7	12.6	17.6	29.5
H. Bureaucracy, inefficiencies in organization	54.5	24.9	10.6	3.4	1.6	5.1
I. Political pressures, discord	41.6	23.1	14.4	5.4	4.5	11.1
J. Lack of social security	35.0	24.1	15.2	7.7	4.9	13.2
K. Economic instability, uncertainty	59.6	24.1	9.7	2.2	1.2	3.3
L. Other	10.3	1.5	0.2	0.0	0.1	87.9