Factors Affecting the Brain Drain from Iran

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ABSTRACT

This research has been conducted at the micro level and the data has been collected by way of survey questionnaires. The stratified sampling and the method of selection among classes are random. For the first stage, the data was analyzed by statistical analysis techniques and for the second and fourth stages (part one) the grading (weighting) technique was used. For the analysis of the third and fourth stages (part two), faculty members comments have been summarized.

The findings revealed that at the micro level, the most common factors associated with emigration are repulsion factors such as lack of civil liberties, dissatisfaction of existing status, neglect and low attention to professionals, lack of research facilities, political environment, not valuing knowledge, unemployment, lack of job security, and low hopes for the future. Attraction factors include higher salary, greater sense of freedom, putting the value of knowledge from those rulers and country officials, living with mental and emotional peace, higher hopes for the future, putting value to elites in developed countries, importance of job security, cultural and social freedom, and higher social status.

KEYWORDS: brain drain, political-social, academic-cultural, economic-employment factors .

1. INTRODUCTION

Historically, Iran's immigration process is divided into three clear periods. First, during the 1960s and 1970s, the victory of the Islamic revolution resulted from communication with western countries and the economic and cultural policies of the past system. Second, 1978 and 1979 began with the war between Iran and Iraq, and included most people who disagreed with the revolution. This process intensified while the Cultural Revolution erupted. Third, the new era of migration began in 1988 and has recently accelerated.

2. Statement of Problem

The term "brain drain" designates the international transfer of resources in the form of human capital, i.e., the migration of relatively highly educated individuals from developing to developed countries (2).

This term certainly and symbolically indicates the departure of professionals, experts, and owners of technology and higher skills, all considered the thoughtful brains and human capital of a country. By UNESCO's interpretation, the immigration of professionals is the abnormal form of scientific exchange between countries which is known to favor developed countries. The root and the main reason for this process are different stages of scientific and technological development requiring manpower at various levels of science and technology. Another reason is that the current acceptor states are looking for quick access to cheap human capital.

The human capital is a key, irrefutable factor in the economic and social development of any society. In fact, immigration of professionals transfers skilled manpower from their country of origin, typically third world countries, to developed countries. Developing countries are in absolute need of an experienced and professional workforce. The migration not only causes loss of human capital but also creates loss of cultural capital. Over time, this results in cultural back warding: cultural affiliation followed by political, social and economic affiliation. This causes dependency that becomes more severe and deepens day by day as the people from the source countries face new problems.

In the brain drain, the cost of training manpower is wasted because it does not foster the country's development. The immigration of educated professionals brings a loss of geniuses and leads to lack of mobility and solidity in innovation within communities. This thoroughly blocks forward progress as the created technological gap grows deeper. The back warding takes time and becomes historical, and is thus irreparable. The vacuum of scientific innovation solidifies through this elite migration continuum, causing back warding, lack of scientific development and consequently lack of economic development.

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The loss through brain drain is over 38 billion dollars due to immigration of 90 out of 125 Iranian Olympiad winners, and of all university graduates with two and three digit ranks in national conquers. Also, it should be considered that that the immigration of professionals from developing countries takes place during the most young and active period of age. The notion of young immigrants brings another advantageous point to immigration countries and a negative point for the countries of origin. Immigration of professionals and skilled workers results in inefficient people taking over the empty positions.

Given that in the investigation of a social reality, a single theory cannot explain all the dimensions of the issue and each of the theories and theatrical approaches analyzes only one specific dimension of the issue, varying approaches have been used in this study. The first approach is the new world system theory:

In this model; Waller stein introduces "historical capitalism" as a system that defines "unlimited capital accumulation", whereas the end goal of this economic policy leads to cultural exchange between countries and centers. Yet this transaction is not equal (13). As a result of economic exchange, net capital flows from many countries to the centre. In fact, the process of brain drain is considered as part of the overall process of capital accumulation. In world system theory, the difference in economic development of the surrounding countries and the centre leads to international migration.

3. **Background**
   ## 3.1. Gidden's Structuration Theory
   In this view, perpetrators are conscious beings, and are treated as such, as their actions reproduce structures that affect them (13). This migration model is considered the result of people interacting with social structures that are in place. The social structures help them to act and the individuals who are motivated also enjoy simulative interaction. Professionals create a society capable of change. If their world is not capable of change, they believe they must leave the country if their society does not accommodate this need for change. Once they are motivated to achieve progress and find better opportunities, people will emigrate. And in this theory; interaction with the structure of relationships is close. Migration is influenced by social structure, which also forms the structure of society (or causes a change), i.e., cause and effect are intertwined but it cannot be said which one has a stronger effect.

   ## 3.2. Rational Choice Marxism Theory or Game Theory
   This model believes that people are decent and are looking for maximum benefit. They are influenced by structural requirements because they make reasonable choices based on their actions. In this model, there is a correlation between decisions and actions. People have goals, beliefs, and emotions that lead them to act the way they do (13). Professionals emigrate to gain benefits and achieve goals such as high levels of knowledge and freedom to pursue these goals, because when professionals have decided to progress, naturally, they migrate to where that progress can be achieved.

   ## 3.3. Parsons' Theory of Structural Functionalism
   This theory puts forth the idea that migration results from a community's lack of adaptability. When behavior cannot adapt to global change, professionals (due to their need to adjust, something at odds with the system) are compelled to emigrate (13).

   ## 3.4. Marxism Theory
   In Marxism theory, through activists' awareness in their social status, changes can be produced (13). Professionals within a society are more aware of its social, political, and economic situation as well as its status in society. This population transforms and requires a change of location. Migration is one of these transformations to achieve true original position (including improved academic achievement situations). With the migration of the elite from their country of origin, this causes increased retardation in scientific development and lack of economic development. In contrast, the destination country makes progressive growth of production. There is advanced capitalist economic growth.

   ## 3.5. Habermas' Theory of Public Sphere
   The public sphere is an area in social life where people can gather and freely discuss and identify societal problems. This discussion influences political action (13). The public sphere is a discursive space in which individuals and groups congregate to discuss matters of mutual interest and, where possible, to reach a common judgment. The public sphere can be seen as a theater in modern societies in which political participation is enacted through the medium of talk and a realm of social life in which public opinion can be formed. The basic belief in public sphere theory is that political action is steered by the public sphere, and that the only legitimate governments are those that listen to the public sphere: Democratic governance rests on creating opportunities for citizens to engage in enlightened debate. Much of the debate over the public sphere involves the basic

theoretical structure of the public sphere, how information is deliberated, and what influence the public sphere has over society. Studies by specialists such as Carrington and Detragiache (12) revealed the following:
In another study, Meyer and Brown examined the brain drain in the global community of knowledge. They believe that assessment of brain drain or migration of scientists and engineers has always been a difficult task due to lack of comparable statistics between countries (8). Kelley (8) conducted research using OLS technique to find the reasons for fluctuations in immigration from Great Britain (as the origin country) to Australia (as destination country) from 1865 to 1935. He discovered a relation between a gap in the number of immigrants (that has a positive effect on the number of immigrants), and Australia's unemployment rate (that has a negative effect on the number of immigrants). Kelley concluded that the distance between immigrants was directly correlated with the number of immigrants while unemployment had a reversed relation (8). Michel et al. conducted a research study entitled "Brain Drain and LDCS growth: Winners and losers". Michel and his colleagues believe that the south to north flow of specialists' migration was mainly caused by economic motivation (3). Migrants from developing countries that enter developed and industrial countries become involved in economic activity, thus sending the amount of earned income as remittances to countries of origin. These remittances act as donations to the economy of poor countries, and help the growth of the economy of those countries (3). Fitzhugh Mullan , in the study entitled "The Metrics of the Physician Brain Drain", deals with the brain drain of doctors. The findings suggest that 23 to 28 percent of doctors in the United States, Canada, and Australia are international medical graduates. This study indicates that low income countries supply 40 to 75 percent of international medical graduates. India, the Philippines, and Pakistan are the leading source of these graduates. Great Britain, Canada, and Australia attract huge numbers of doctors from South African countries, and the United States also receives plenty of doctors from the Philippines. Nine out of 20 countries with high immigration factors are in sub-Saharan African or Caribbean countries. Moreover, relying on international graduates in the United States, Great Britain, Canada, and Australia reduces the supply of physicians in many low-income countries (4).

 One of the consequences of globalization is the growing migration of educated people. This is more or less visible as the dilemma for all countries. Many social scientists from immigrants' countries of origin consider this phenomenon as a social issue because the immigration of educated people creates many problems for the social economic systems of origin countries, and the origin countries face a vacuum of scientific elite, while the immigrant countries supply their human resources from third world countries. To comply with the global dilemma in Iran, the migration of educated people has grown extensively.

 The United Nations Development Program report reviewed the information of a team in China gathered between 1980 and 2005. The results of this study concluded that too much immigration caused harmful effects on the economic growth of their country of origin. This experimental evidence created some new documentation on the "brain drain" debate that recently received increasing attention (1).

 According to the new International Monetary Fund (2009), Iran now ranks first in the statistics for the elite from among 91 developing or underdeveloped countries in the world. This report shows that annually about 180,000 educated Iranians leave the country in the hopes of finding a higher standard of life and better job opportunities. This report adds that this educated elite immigration means the departure of 50 billion dollars annually.

 Leaving one's country behind sounds an alarm for authorities, not only because the country's brain drain with skilled manpower produces bottlenecks, but also because this makes Iran more dependent on other countries every day. The issue has necessitated research projects like this. The aim of this research is to measure factors influencing university graduates emigrating from Iran, and to determine the role of cultural, political, economic, social, and employment factors in what motivates this brain drain. Our goal is to discover what factors most spurred this brain drain; from the faculty members' point of view. According to the presented material about the outcome of brain drain, the problem can be looked at as a social problem.

4. METHODOLOGY

The study used a form of practical, cross-sectional investigation, employing Delphi method. Questionnaires in four steps were used to gather data.
The first stage used open questions and asked the faculty members to edit the repulsion and attraction factors affecting brain drain. After collecting the questionnaires and classifying opinions of faculty, 96 repulsion factors and 61 attractions factors were concluded. The second stage used the rankings method for the answers from the first phase, where 52 repulsion factors and 36 attraction factors were listed. Participants were asked to rank five repulsion factors and five attraction factors. The third stage, according to analysis of the second stage's data, asked faculty members to explain the cases differing from their opinions. By the end of the third stage,

disagreements were decreased and from a statistical point of view the distribution was found to be limited. Stage four was administered in three parts.

In the first phase of this study, 20 repulsion factors and 16 attraction factors were listed (these factors were not in the top ranks of the second stage) and participants were asked to select five repulsion factors and five attraction factors. The second stage asked participants to explain their reasons about factors that they had chosen. Participants were asked to rank ten repulsion factors and ten attraction factors (where five factors of both repulsion and attraction factors were identified in the second stage and the other five were ranked by participants in the first part of this phase). One was the highest score and ten was the lowest score. Finally, ten repulsion factors and ten attraction factors were identified.

4.1. Sampling

In this study, we used a random, stratified sampling method in choosing among classes. University scientific departments had been selected and among those departments the faculty members had been randomly selected. In the second stage, 130 participants (who were willing to participate in this present stage) filled out the questionnaires. For the third and fourth stage the number of respondents was 80.

4.2. Statistical Population

In this study, faculty members from the University of Tabriz and the entire University of Tabriz numbered around 1036. The sample was obtained from the Cochran method, where in the first stage 215-218 people answered the questionnaire and in the next steps the number of respondents declined. In the second stage, only 130 were willing to participate and in the third and fourth stages, 80 faculty members responded to the questionnaire (regarding the Delphi method).

In this formula, N represents population statistics, n is sample population and d represents accuracy of probability.

$$n = \frac{nt^2s^2}{Nd^2 + t^2s^2}$$ (Formula 1 - Formula Cochrane)

Where t = 1.96 and s² = 0.22 and d = 0.05.

4.3. Data collection methods

Questionnaires were used for gathering information for research data.

4.4. Data analysis methods

Data analysis was performed using SPSS software 11.5 version. (The weighting method was used to describe the qualitative characteristics, to calculate the percentage and frequency distribution and to describe influence factors.)

5. Research findings

A. Descriptive findings of the first phase:

In this section, the frequency distribution of variable dispersion from the University of Tabriz, Tabriz is reported.

C.1. Frequency Distribution based on gender:

Distribution of study subjects, based on gender, total sample, 215 people: According to the results observed in the sample, 37 women were surveyed (or 17 percent), compared to 177 men (or 82 percent).

B. Frequency Distribution of the repulsion and attraction factors in the first phase

Based on observed data, 96 repulsion and 61 attraction factors had been introduced by faculty members which were 0.7 for each member. According to these findings among repulsion factors (the factors that causes repletion of educated people from the country), the largest percentage was caused by lack of research facilities (14.4%) with first rank, employment of professionals in unrelated field of their proficiency (13.5%) second rank, financial and economic problems (11.6%) third rank, low income (10.2%) fourth rank, (8.8%) belonged to the lack of job security and not appropriate social-political atmosphere (both common), rank fifth. Based on information among attraction factors (factors that are attracting educated immigrants), first rank belonged to high income (13%), second rank was finding appropriate jobs in the field of proficiency (12.6%), third rank (12.1%) belonged to higher welfare and better financial situation, fourth rank (10.71%) belonged to continuing

education and fifth rank (9.8%) was spiritual life without concern for mental relaxation, cholera and achieving higher standards of life.

B.1   Frequency distribution of other repulsion factors (54 of the 96 cases are given):

a)   Political-economic factors:

Political-economic factors include: lack of civil liberties (thought, political, speech) (9.3%), not providing expectations of educated society (5.1%), stress, lack of emotional and psychological relaxation, lower hopes for the future (4.7%), social discrimination and corruption (4.7%), confrontation and conflict with society's dominant ideology, low social status of professionals and inappropriate dealing with professionals (2.8% jointly), lack of citizenship rights, dissatisfaction of the current status (2.3%), lack of safety, lack of respect for human values, lack of management planning within country (1.9% jointly), valuing religious appearances instead of education, closed social-political environment, non-existence of individual and social freedom, lack of freedom in clothing, lack of attention and neglect toward professionals, failure to put people in their original position (1.4% jointly), existence of cumbersome rules, the ruling political environment of universities, Iran's lack of sense of community, government interference into individual lives, human rights issues, anomalies such as problems in society, moral and behavioral, lawlessness, inability to achieve their desired life in Iran, humanities and social barriers to research areas (0.9%), political tensions, government intervention in all affairs, non-use of professionals in key positions, feelings of not being useful and of being lower than foreigners, the sense of relative deprivation, and low academic progress (0.5% jointly).

b)   Academic-cultural factors:

Academic-cultural factors include: lack of research facilities in the country (14.4%), continuing education (7.4%), cultural issues not acceptable for individuals (5.1%), lack of valuing knowledge (4.7%), not applying the accumulated science and inappropriate rating of professional capabilities (4.2%), lack of providing scientific needs (2.8%), lack of access to research materials (1.9%), poor quality of universities within the country (1.4%), lack of research opportunities, lack of attention to individual talents, and closed academic-cultural and art environment (0.9%), and no actual production of science in Iran (0.5%).

c)   Economic-employment factors:

Economic-employment factors include: employment of professionals in unrelated fields (13.5%), economic and financial problems (11.6%), low income (10.2%), job security (8.8%), unemployment and lack of economic–financial security (7% jointly), lack of government funding (3.7%), economic instability (3.3%), the same benefits and rights of individuals and non-activists and lack of facilities available to researchers (2.3% jointly), and lack of leisure–recreation facilities and lack of fair distribution of wealth (1.4% jointly).

B.2   Frequency distribution of other attraction factors (38 of the 61 cases are given):

a)   Political-social factors:

Political-social factors include: life without worries and with mental relaxation (9.8%), more freedom (8.4%), to obtain a better life (7.9%), greater civil liberties (think, thought, politics, speech) (7.4%), higher social status (6%), freedom in choosing personal lifestyle (2.8%), higher life expectancy (2.3%), respect towards professionals and freedom of individuals choosing clothing (1.4% jointly), futurism (in terms of economic, scientific, welfare, children's education), living higher standards of life (0.9%), life without fear, freedom, hope for the future, law equality, choice of lifestyle, government not interfering in personal affairs, and above all the respect for human rights and human values and people's characteristics), law abiding, family communication, male and female equal rights, equal opportunities for educational, and scientific and social (0.5%).

b)   Academic-cultural factors:

Academic-cultural factors include: continuing education in higher degrees (10.7%), scientific advances to achieve higher academic ranks, better and more research facilities (8.8%), developed countries valuing elite and educated people (4.7%), above-normal valuing of knowledge (2.8%), the potential magnitude of developed countries attracting professionals, developing their talents (1.9%), easy access to books and scientific–research articles and using higher and advanced

technology (1.4%), cultural needs and scientific application of accumulated knowledge (0.9%), and cultural issues and easy access to research material (0.5% jointly).

c) Economic-employment factors:
Economic-employment factors include: high income (13%), obtaining appropriate, specialized jobs (12.6%), higher welfare and better financial facilities (12.1%), employment (5.1%), providing social and scientific facilities to professionals (3.3%), good job reaching success (2.8%), high job security (1.9%), and greater value of foreign money (0.5%).

C. Questionnaire's second stage:

At this stage, respondents were asked to rank the repulsion factors (the top five of 52 factors where the highest was assigned rank one and the lowest was assigned rank five) and the attraction factors (top five among 36 with rank one assigned to the highest and rank five to the lowest). To avoid long text, we only present some of the factors. Based on the obtained data, it can be seen that lack and neglect of consideration from repulsion factors with average 17.73 ranked one, low income with average 17.70 ranked two, unemployment with average 17.50 ranked three, lack of scientific-research facilities with average 15.81 ranked four, and dissatisfaction with the status quo with average 15.70 ranked five. From the attraction factors, high income with average 23.75 ranked one, living without worries and mental relaxation with average 20.71 ranked two, higher value for science and knowledge with average 19.80 ranked three, and the potential magnitude of developed countries attracting professionals with average17.15 ranked four, and scientific progress and achieving higher academic degrees with average 14.26 ranked five.

C.1. Frequency distribution of repulsion factors in second phase (average):
a) Political-social factors:
Political-social factors include: lack of attention and neglect towards specialists (average17.73), dissatisfaction with the status quo (average 15.7), life without worries and with mental relaxation (average15.43), lack of civil liberties (think, thought, political, speech) (average14.28), inappropriate rating of professional capabilities (average 11.6), lower hopes for the future (average 11.13), lack of supply of educated expectations in society (average 9.98), social discrimination and corruption (average 7.55), valuing religion rather than education (average 7.43), political thought conflicting with society's ruling ideology (average 6.56), not placing people in their original position (average 6.23), low social status of professionals (average 6.18), cannot achieve their desires living in Iran (average 5), laws and obstacles (average 4.85), lack of human rights (average 3.4), lack of management planning within the country (average 2.43), political environment dominated by universities (average 2.15), and barriers to research in the field of humanities and social sciences (average 0.83).

b) Scientific–cultural factors:
Scientific-cultural factors include: lack of research facilities in the country (average 15.81), lack of attention to the talents of the individual (average 5.06), non-application of accumulated science in Iran (average 4.53), cultural issues not accepting of people (average 4.28), poor quality of science in universities within the country (average 4.23), not providing for needs of science (average 3.65), and not honoring scientific knowledge (average 3.60).

c) Economic-employment factors:
Economic-employment factors include: low income (average 17.7), unemployment (average 17.5), lack of job security (average 10.61), and employment experts in fields unrelated to their proficiency (average 3.7).

C.2. Frequency distribution of attraction factors in second phase (average):
a) Political-social factors:
Political-social factors include: life without worries and mental relaxation (average 20.71), greater civil liberties (think, thought, politics, speech) (average 13.08), freedom in choosing personal lifestyle (average 12.11), higher life expectancy (average 10.43), higher social status (average 8.76), higher standard of living (average 8.58), to obtain a better life (average 8.33), cultural-social freedom (average 6.53), freedom of individuals choosing clothing (average 4.96), respecting professionals (average 4.58), and equal opportunities for education, scientific and social (average 3.4).

b) Academic-cultural factors:

Academic-cultural factors include: above-normal value of knowledge (average 19.8), developed countries valuing elite and educated people (average 17.15), scientific advances to achieve higher academic ranks (average 14.26), scientific application of accumulated knowledge (average 9.2), better and more research facilities (average 6.85), developing their talents (average 7.51), easy access to books and scientific–research articles (average 4.48), easy access to experienced professors and professionals (average 4.3), the potential of developed countries attracting professionals (average 3.61), and cultural issues (average 2.7).

c) Economic-employment factors:

Economic-employment factors include: high income (average 23.75), employment (average 13.6), providing social and scientific facilities to
professionals (average 12.28), obtaining appropriate specialized jobs (average 3.65), and high job security (average 2.93).

C.3. Analysis of second phase (weighting grading methods):

Weighted grading techniques were used to rank factors based on the average between rank one and rank five. According to the results of this phase of research, it can be concluded that repulsion factors such as low prosperity and financial facilities, lack of scientific research facilities available in the country, and professionals do not do migrate; therefore, their immigration is due to the problems that arise from these deficiencies.

From the attractions it can also pointed out that developed countries generally value professionals with high-income, mental relaxation and scientific advances.

D. Analysis of third phase of research:

(Summary of opinions of faculty of Tabriz University and Tabriz Azad University):

In the third stage, the questionnaires were different than the questionnaires of participants in the second stage. Respondents were asked to explain their opinions that were not in the five best ranks in the second phase and explain why their opinions were different than the majority and sometimes give examples to address the issue.

At this stage we summarized the opinions of university faculty members, and also those who did not respond to some questions because they thought this option was clear. (Due to the large number, we comment on only the following):

Table 1: Collected faculty opinions about the causes of repulsion

Repulsion Factors	Comments Summary
Stress and lack of mental tranquility and intellect	– Does not provide the necessary conditions for working without stress, living without fear, no fear of buying (lack of hope for the future), fun without fear, etc. – The pressures of life, and lack of job insecurity, hope for future career, and economy, creates stress and problems for educated people.
Lack of job security	– Relationship between their future career and political beliefs. – If someone disagrees with the policies of the regime, perhaps the first thing that is threatened after his life is his job. – Frequent changes in policies and employment laws (the laws are changed with any legislation or administrative changes).
Low hope for the future	– Being uncertain about economic policies, social community – In Iran, personal and national turbulence and uncertainty in many individual and social domains creates a feeling in people that the future more or less is a reflection of the past and there is therefore less hope for the future. – This comes from the general situation of such a society.
The extent of civil liberties (think, thought, politics, speech)	– The political environment is dominated by universities and the community is made of unsatisfied protesters. People get harassed. – Lack of civil liberties causes arrears of a country. – Discrimination and oppression in many cases is comprehensive development and stability is impossible. – Human needs are not purely limited to financial needs. Cultural needs of society must also be considered as an important issue which is partly subject to civil liberties.
Different political thinking with the community (reciprocity and conflict expert opinion with the ruling ideology on society).	– This confrontation and conflict between professionals and the ruling ideology of the society is caused by entering the ideology into the professional field. – People with certain political beliefs sometimes contrast with ideological governing of the community and this causes the persecution of these people.
Religion rather than education is valued.	– What is important in professional employment is the appearance of the individual applicant, not his expertise.

	– The value is given to religious appearances instead of education and the reason of having religious appearances alongside education is to lower the value of science. – Because religious commitment takes priority over expertise, knowledge is in the service of ideology, not to serve the people.
Social discrimination and corruption	– The first principle of survival of generations is performed in Iranian society. – Discrimination against women and viewing women as worthless humans in scientific and academic environments, etc. – Unequal access to positions.
Lack of respecting human rights	– This questionnaire is answered in the environment in which essentially there is no such law and respondents have fears of possible consequences. – In society, there is no value for basic human rights including freedom of people in choosing religion, clothing type, etc. – Human rights means freedom of speech, after speech, having an attorney, having public health and public education. These freedoms are not the same for all. – There is a lack of respecting human rights, especially rights of women, children and religious minorities, ethnic discrimination, which is caused by oppression.
Low scientific quality of domestic universities	– Lack of adequate facilities and funding for science centers. – The low academic quality of universities also comes from the political environment. – The set of domestic universities are not adequate facilities, including hardware and software. – Top of Form – Lack of updated resources and lack of employment in the real and scientific tasks and activities is not a safe and welcoming atmosphere for the elite.
Political environment dominated by universities	– For example, being appointed heads of colleges and preferred political activities (e.g. being Basij member) to the scientific activities. – The main cause of low prosperity of universities is the political environment.
Lack of freedom in choosing the type of clothing coverage	– In Iranian society, women are forced to wear the clothes that they sometimes hate.
People not being in the real and original position that they deserve	– Professionals are not in specialty occupations and posts related to their work. – Authorities do not have the necessary expertise. – In many cases, progress and development of people is not functional of expertise and abilities of individuals. People with lack of the expertise and capabilities are chosen through networking, not based on important criteria of scientific and technical decision making. A waste stream occurs. – The professions of national authorities do not match with their positions.

Table 2: Collected faculty opinions about the causes of attraction:

Attraction factors	Comments summary
To obtain a better life	– Reliable planning for future for jobs and living in welfare conditions. – Everyone dreams of better lives.
Comforts: providing social and academic facilities to experts	– The current society does not provide optimum social welfare facilities (for normal life) and scientific facilities toward research to university graduates. – Western society provides comforts for professionals to provide them with peace of mind to do research.
High hopes	– In democratic societies there are clear high hopes for the future. Economic factors set social and cultural welfare in developing countries as the cause of hope for the future. – Mental and physical health conditions are one of the criteria for hope where current conditions do not follow such properties. – Locating in these countries creates a path to better futures in all aspects, compared to Iran. – If hope is high, the community is definitely much more perseverant.
There are more civil liberties	– In democratic societies there are clear civil liberties and equality of rights between men and women, whites and non-whites (at least in theory and law). This attractive and definite existence of civil liberties creates a stronger sense of participation and thus more happiness for the individual and society.
Law abiding	– Law can make everything in the society for all people predictable. Especially in an educated society, obeying the law is expected. – Abiding the law clearly means that justice and fairness is important in social satisfaction. – Law and law abiding are the main factors that attract the educated class in specialized areas because law enforcement results in inner satisfaction in people.
Living with high standards	– Access to communications facilities including ultra high speed internet, easy and economical transportation, achieving minimum life standards in shorter time, more civil liberties, economic support from the government for citizens of the state, civil rights and human rights, equality rights of women and men.
Higher welfare facilities and better financial situations	– High income provides material well-being and financial opportunities. – Not having financial concerns allows for focus on science and research which means that people with peace of mind work on scientific research. – People in developing countries have almost negligible facilities and lower levels of welfare, while people abroad have far better salary and facilities.
Freedom of people to choose the type of clothing	– Individuals are free to choose their clothing, without these choices being imposed from above them.
Freedom of individuals is a personal lifestyle choice.	– The framework of personal lives is specific to individuals, and others should not be involved, but it is not true in Iranian community – Citizens respect each other's rights and the rights are institutionalized rules. Therefore, this causes psychological safety and everyone can reach their true potential. – Government interferes in the field of study (humanities).
Equality of men and women	– Women and men have equal rights and justice,(for example, in divorce). Both contribute equally to their children. In Iran, it is not so.

E. Fourth stage (Delphi Method):
This phase is composed of three parts. First, portions of the respondents were asked to rank the factors of attraction and repulsion that had not already been rated in previous steps (20 repulsion factors and 16 attraction factors, according to the researcher recognition which ranked five cases for each factor).
In the second stage, the respondents were asked to provide reasons for engaging in different views. In the third part of this phase, respondents were asked to rank the factors that had been selected in the second phase and the factors they had selected. At the end, ten repulsion factors and ten attraction factors having the greatest effect of brain drain were identified.

E.1. Part one of ranking repulsion and attraction factors from the fourth phase:

E.1.1 Rating repulsion factors:
Based on the data it can be considered that the first rank belonged to the lack of civil liberty with mean 33.23. Second rank is not honoring knowledge with average 16.31. Third rank was low hope with mean 15.1. Fourth rank was not placing people in their real and original position with an average 13.48. Fifth rank was the difference between political think and the community with mean 11.45. The political environment was dominated by universities with an average 10.76 in ranking sixth, and twentieth rank (last rank) belonged to non-applicable scientific accumulations with an average of 3.83.

E.1.1.1 Frequency distribution of repulsion factors in phase four, part one:

a) Political-Economic Factors:
Political-economic factors include: lack of civil liberties (think-thought, political, speech) (average 33.23), lower hopes for the future (average 15.1), failure to put real people in their original position (average13.48), differences of political thought with the community (confrontation and conflict of opinion) (average 11.45), the ruling political environment of universities (average 10.76), and valuing religious appearances instead of valuing education (average 9.81).
b) Factors of scientific-cultural:
Scientific-cultural factors include not honoring scientific knowledge (average16.31), and non application of accumulated scientific knowledge (average 3.83).
c) Economic-employment factors:
Economic-employment factors include lack of job security (average 10.33) and employment of experts in fields unrelated to their proficiency (average 4.35). (These factors have not been in the top five factors).

E.1.2 Rating attraction factors:
According to the results it has been found that the top five factors belonged to greater civil liberties (average 39.06), higher life expectancy (average 17.95), high job security (average 14.25), higher social status (average 12.9), and cultural-social freedom (average 12.83) from rank one to five respectively. The last factor with rank 16 belongs to easy access to books and scientific–research articles (average 3.76).

E.1.2.1. Frequency distribution of attraction factors in fourth phase, part one of research:
a) Political-social factors:
Political-social factors include greater civil liberties (average 39.06), higher life expectancy (average 17.95, higher social status (average 12.9), cultural-social freedom (average 12.83), and higher standards of living (average 10.78).

b) Economic-employment factors:
Economic-employment factors include high job security (average 14.25).

E.2. Part two of analysis of fourth phase of research:
(Summary of opinions of faculty of Tabriz University and Tabriz Azad University):
In this stage, the respondents were asked to explain why they selected these repulsion and attraction factors and they helped us in the final analysis and conclusion. (Here because of the volume of comments we will refrain from listing them).

E.3. Part three of ranking the repulsion and attraction factors from phase four:

In the last stage, the respondents were asked to provide the top five ranks of repulsion and attraction factors from the ranking in part two. They were also asked to rank the top five repulsion and attraction factors and write all the results in a table. At the end, they were asked to re-rank these repulsion and attraction factors from one to ten. At the end, ten repulsion factors and ten attraction factors having the greatest effect of brain drain were identified.

E.3.1   Frequency distribution of repulsion factors from part three of fourth phase:

According to the results it was found that the top five factors belonged to lack of civil liberties (average 31.18), dissatisfaction of the status quo (average 26.7), low income (average 19.97), lack of attention to the talents of the individual (average 18.9), lack of scientific-research facilities (average 16.69), differences of political thought with the community (confrontation and conflict of opinion) (average 11.80), not honoring scientific knowledge (average 11.79), unemployment (average 11.52), lack of job security (average 10.74), lower hope for the future (average 10.69), and failure to put real people in their original position (average 9.82) from rank 1 to 11 respectively. The last rank (rank 25) belongs to lack of actual production of science in Iran (average 1.61).

E.3.2.1   Frequency distribution of repulsion factors of fourth phase (part three):

a)   Political-social factors:

 Political-social factors include lack of civil liberties (think-thought, political speech) (average 31.18), dissatisfaction with the status quo (average 26.7), lack and neglect of attention to professionals (average 18.9), lower hope for the future (average 10.69), not placing people in their real original position (average 9.82), differences of political thought with the community (confrontation and conflict of opinion) (average 11.80), the ruling political environment of universities (average 9.53), valuing religious appearances instead of education (average 7.76), no abiding law (average 5.58), cumbersome rules (average 4.46), stress and lack of mental and intellectual tranquility (average 4.60), lack of management planning within the country (average 3.72), cannot achieve their desired life in Iran (average 3.95), and barriers to research in the field of humanities and social sciences (average 5.63).

b)   Scientific-cultural factors:

Scientific-cultural factors include lack of scientific-research facilities in the country (average 16.69) and not honoring scientific knowledge (average 11.79).

c)   Economic-employment factors:

 Economic-employment factors include low income (average 19.97), unemployment (average 11.52), and lack of job security (average 10.74).

E.3.2   Frequency distribution of attraction factors in part three, fourth phase:

According to the results it has been found that the top five factors belong to high income (average 30.91), greater civil liberties (average 30.63), higher value of science and knowledge (average 26.27), developed countries valuing elite and educated people (average 23.17), life without worries and with mental relaxation (average 18.80), scientific accomplishments and achieving higher academic degrees (average 12.58), higher life expectancy (average 10.45), higher job security (average 9.84), cultural-social freedom (average 9.04), and higher social status (average 8.17) from rank 1 to 10 respectively. The last factor with rank 21 belongs to easy access to books and scientific-research articles (average 1.46).

E.3.2.1   Frequency distribution of attraction factors in fourth phase, part three of research:

a)   Political-social factors:

 Political-social factors include greater civil liberties (average 30.63), life without worries and with mental relaxation (average 18.80), higher life expectancy (average 10.45), higher social status (average 8.17), cultural-social freedom (average 9.04), higher standards of life (average 5.97), and freedom in choosing a personal lifestyle (average 4.91).

b)   Cultural–scientific factors:

 Cultural-scientific factors include higher value of science and knowledge (average 26.27), developed countries valuing elite and educated people (average 23.17), scientific accomplishments and achieving higher academic degrees (average 12.58), and equal educational and social-science opportunities, (average 7.69).

c)   Economic-employment factors:

 Economic-employment factors include high income (average 30.91), high job security (average 14.25), and employment (average 6.92).

6. Results and research findings:

It should be noted that based on the existing theories that this research has expressed about the brain drain, all theorists agree that these factors affect migration of the elite (political-social, scientific-cultural, and economic-employment).

7. Discussion and conclusion about the research findings using Delphi method:

In the final fourth stage, factors were divided into two groups: repulsion factors and attraction factors (in micro level) which were analyzed as follows:

A. Repulsion factors:
In total, lack of civil liberties (average 31.18), dissatisfaction with the status quo (average 26.7), low income (average 19.97), lack and neglect of attention to professionals (average 18.9), lack of scientific-research facilities in the country (average 16.69), differences of political thought with the community (confrontation and conflict of opinion) (average 11.80), not honoring scientific knowledge (average 11.79), unemployment (average11.52), lack of job security (average 10.74), and lower hope for the future (average 10.69) are ranked one to ten, respectively.

B. Attraction factors:
In total, high income (average 30.91), greater civil liberties (average 30.63), higher value of science and knowledge (average 26.27), developed countries valuing elite and educated people (average23.17), living without worries and with mental relaxation (average18.80), scientific accomplishments and achieving higher academic degrees (average12.58), higher life expectancy (average10.45), high job security(average 9.84), cultural-social freedom (average 9.04), and higher social status (average 8.17) are ranked one to ten, respectively.

Theories that explain the political, social, economic-employment and scientific-cultural factors (which drew the brain drain) included Parsons' structural functionalism, Wallersteins' modern world-system theory, structuration theory, game theory, Marxism theory, and public sphere Habermas.

In all these theories, migration occurs because of inefficient social, political and economic structures. These structures are not responsive to the demands and needs of educated professionals. Thus, professionals are in conflict with social structures, and because they find themselves unable to remit these structures to an efficient system, they are forced to migrate. In inefficient structures, commitment and expertise change positions. Based on research conducted in recent years, factors affecting brain drain have been identified and listed as follows:

Richard Adams, in a paper addressing the study of brain drain has expressed that the migration of people from developing countries is increasing and more immigrants are graduates. This phenomenon is caused by the geographic neighborhood of origin, destination of countries, and population size, especially the educated population in the origin country (Adams , 2003).

Paul Gottlieb (10) in a study of urban areas with large numbers of U.S. residents aged 25-34 discovered that growth rates of skilled workers in this age group correlated exactly with access to education more than is needed for this age.

Henrik Olesen (11) studied this subject in an article entitled "Migration, return and development". He believes that the immigration of educated is an economic migration and is useful for the development of poor countries, because of funds, trade, liberalization, or remittances the same FDI. Immigrants send money, and these donations inject the economy. Thus, migration is a progress factor and must continue. Studies show that immigration is a growing trend, and rich countries need this process (11).

In a research study entitled "Brain drain Competition Policies in Europe: a Survey", Olson noted that the brain drain acts in two directions. Key strategies and mechanisms are found in these, which lead in attracting the elite, in creating a clear and flexible academic system, and in improving the immigration process. Signposts use better information on the municipal level, market, providing tax Cassette, especially providing active support for international researchers, scholars, scientific workers, and international marketing. Finally, the effects of these policies in Europe by the existing examples effectively reverse the brain drain and attract scholars. They are the developing countries that offer talent to developed countries such as countries in Europe and America (15).

de la Croix and Docquier (6) investigated the brain drain and the two countries that share the characteristics likely to lead to poverty alleviation, reducing brain drain, or increasing poverty

and brain drain. After determining the specific parameters, they found that the majority of countries are balanced and aligned to higher income visible to other countries. In 22 countries, poverty developed and brain drain increased because of neglect and low efficiency of the system. In 25 other countries, the records show the worst history for the growing economic functions. These results have a strong correlation with the assumptions including mechanisms in attraction of brain drain.

Stark (14) stated that the important reasons developing countries suffer from the lack of human resources is that the growth of human resources is less than the losses caused by immigration. The researcher stated that if the young scientists leave their countries, the old faculty members may reduce the quality of training and research. Developed countries would benefit from the positive consequences of immigration of educated people, because the product per capita of workers and their welfare increase. At the end he states that immigration should be accepted because it improves their income.

Entezarkheir (17) , in the study of immigration and brain drain factors among Iranians who immigrated to Canada during 1970- 2000, included the number of variable factors that cover the graduates and non-graduates (skilled immigrants and non-skilled): Iranian national income, number of students, the number of newspapers and scientific journals , the changes in the government system and war, Canadian unemployment rate in 1970 and 2000, economic sanctions, and speculation which tries to conceal factors surrounding brain drain and immigration. She suggested the role of migration from Iran as a cause of economic recession as well as the growth of population in comparison with Canada as a destination (17).

Kuhn and McAusland (5) comment in their article, which examines the issue of brain drain. They also proved that "Skilled immigrants have driven improvement in the design products which will then be consumed by the nations that gave birth to those immigrants (5). They also proved that compared to the utility models of useful brain drain, our presented results and interpretations lead to massive savings, output-oriented training, and voluntary return of immigrants .Instead, they are driven purely by differences in market size that induces skilled emigrants to design better products or production processes abroad than at home (4).

Stephen Castles and Sean Loughna devoted a year to investigating brain drain issue and its effect on the economy. They states that immigrants mostly immigrate due to economic reasons, but they take advantage of the asylum process to achieve their goals.

This research stated rather than economic factors, other factors such as minorities and ethnic conflict, war, human development under these adversities affect the immigration phenomena (9).

8. Proposed solutions

In this section, we propose solutions which focus on both the research and practical aspect of this issue.

Proposed solution for practical aspects

Governments ought to create a safe and stress-free environment for professionals. In all the large cities, research institutes shall be established that help professionals and researchers work in their field. Governments also shall provide more facilities to professionals and support researchers. Solving the economic problems and providing welfare and financial support to professionals and improving their financial situation and standard of living, their financial security and indexing their salary to account for inflation in either Euro or Dollar currency. Respect to civil liberties and providing a safe environment which has been addressed in the country's constitution. Society should respect all opinions and allow people to participate in political arguments without worry about the consequences. It should provide more education and research facilities to the universities. Society should pay attention to the main obstacles to attracting professionals in key position of the country and, the full coordination of all relevant institutions in this field.

Proposed solution for research aspect

Research activities should not be only theoretical but also practical; more concentrate should focus on the realities that pave the way for migration of university graduates, and identify more of these factors to be addressed to solve this problem in society. And through these efforts, educated people should be kept from migrating (not to force them but to encourage them to stay).

In practice, the problem of brain drain is sometimes a double-edged sword; given its negative and positive consequences, researchers need to study the positive aspects of the brain drain and how to use these positive aspects toward solving scientific-research problems in order to be able to exploit the capabilities of this large scientific society outside of the country.

9. Limitations

In this study, we were faced with obstacles and limitations, among them:
- – Lack of access to accurate statistics of the elite's leaving from Iran (in urban and rural centers) in the Centre of Statistics and various Internet sites.
- – Lack of the cooperation of Tabriz university officials to give permission to distribute the questionnaire.
- – The disassociation of university officials regarding the political view of this research.

10. Conclusion

Based on the theories used for this investigation and the results obtained, it can be concluded that political factors lead in importance regarding brain drain. As political structures limit general freedom and there is no political space for civil society allowing debate and discussion, professionals get discouraged and leave. Emigration increases as already ideologically infected structures become more so with government intervention. When a society's political structure is ideological, other social apparatuses become ideologically charged as well, which leads to the slow dying out of society.

These are immediate causes of many forms of macro-level social corruption, including dishonesty, financial corruption, etc. With a society that has reached such a structure or speeds up the tendency, we should expect acceleration in the pace of migration to other developing countries with stronger democracies. (It should be taken into account that a society's structures are interdependent and interact with one another, thus sharing the consequences.)

The theories used for the present research has also found that another effective factor leading to immigration is the professionals' motivation for progress. They need professional stimulation with long-term future benefits; therefore, they leave their homeland. Countries with high levels of brain drain reflect a stronger cultural backwardness among the community, as compared to other countries.

REFERENCES

1. Brain Drain, Brain Gain and Economic Growth in China, Human Development Research Paper, 2009
2. Brain Drain and LDCs' Growth: Winners and Losers, Department of Economics Bar-Ilan University, 2002
3. Brain Drain and LDCs, Growth: winners and losers, France, CADRE university of Lille, 2002
4. Brain Drain Competition Policies in Europe: a survey*Working Papers 534, Dipartimento Scienze Economiche, Universita' di Bologna,* 2005
5. Consumers and the Brain Drain: Product and Process Design and the Gains from Emigration *Journal of International Economics,* University Of California, 2009
6. *Do Brain Drain and Poverty Result from Coordination Failures,* Department of Economics, University College London, CReAM Discussion Paper Series 1009, Centre for Research and Analysis of Migration (CReAM), 2010
7. How Big is the Brain Drain?*IMF Working papers,* 19981-27
8. International Migration and Economic Growth: Australia*THE Journal of Economic History,* 1965, 1865-1935
9. International Migration , Remittances and the Brain Drain: A study of 24 labor- Exporting countries*Policy Research Working paper,* PRMPR, world Bank3069, 2003
10. *Labor Supply Pressures and the "Brain Drain": Signs from Census 2000,* Center for Urban and Metropolitan, Policy 2004
11. *Migration ,Return and Development*Center for Development Research Study,Migration Development Links, 2003
12. *Modern Sociological Theory*4th Ed.New YorkMcGraw Hill Companies, Inc.1996
13. www.unesco.org/shs/most.Scientific Diasporas:Anew Approach to the Brain Drain*world Conference on Science, UNESCO-ICSU*Budapest, Hungary, 1999
14. *The Economics Of Brain Drain Turned on its Head,* University of Vienna and university of bonna, Center for Development Research, 2002
15. The Metrics Of the Physician Brain Drain*The new England journal of Medicine,* The George Washington University School Of Public Health and Health Services, october2005
16. *Trends in Asylum Migration to Industrialized Countries:1990-2001,* Discussion paper No. 2003/31UNU-WIDER2003
17. Why is iran experiencing migration and brain drain in Canada?, *34th Annual Conference of the Atlantic Canada Economic Association,* 2005