

Turkey and Brain Migration: Policies Formed from Push and Pull Perspectives and Effects on Brain Drain

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Abstract

Brain drain, which is defined as the departure of well-educated human capital to another geography, was noticed by England, which lost its qualified power to other countries in 1945 and increased rapidly after the 1960s with the effect of globalization. Countries such as the USA, UK and Germany have developed important brain drain policies from a push and pull perspective. Turkey has also developed important policies such as university reforms. In the following periods, within the scope of Five-Year Development Planning, although TÜBİTAK 2232 developed policies to pull reverse brain drain and Turquoise Card to pull foreign brain migration, Turkey was late in putting the brain drain on its political agenda. In this thesis, “Turkey and Brain Migration: Policies Formed from a Push and Pull Perspectives and Effects on Brain Drain” is examined and chronologically from its own historical depths, starting from the early republican period, mainly within the scope of the Five-Year Development Planning. Turquoise Card and TÜBİTAK 2232 reverse brain drain policies are also included. The effect of Turkey's brain migration policies, including the push and pull effect, is analyzed. In addition, the strengths, weaknesses, opportunities and dangers of these effects were evaluated with SWOT analysis. Additionally, the Brain Drain Policy has been conceptualized. This study was compiled from his thesis titled “Turkey and Brain Migration: Policies Formed from Push and Pull Perspectives and Its Effects on Brain Drain”

Keywords: Brain Drain; Development Planning; Brain Migration Policy; Turquoise Card; TÜBİTAK Reverse Brain Drain

INTRODUCTION

Migration is an objective process that has left its mark on all life and history, starting with the contact of the first human communities with each other. It is a trigger for mutual interaction of different societies with their social, cultural and economic characteristics. Also, if the relations and interactions between different human communities and civilizations - who are on the move - can be accepted as a way of globalization, migration may well be counted as an important dynamic for globalization. With its lexical meaning, migration is defined as "the movement of individuals or communities from one country to another, or from one settlement to another, due to economic, social or political reasons" (Türk Dil Kurumu, 2020).

Referring to the temporary or permanent settlement of people in a place different than their home country or geography, migration took place as voluntary or forced movements from one geography to another until the 19th century. However, the nature of migration changed over time due to global developments such as transportation, communication and technological advancements. This change in nature also led to variation of migration types. Variation is a multifaceted concept. The migration phenomenon became exposed to this variation as observed in the constantly changing production patterns, commerce, culture, ideas, opinions, aesthetic criteria, religions, arts and artisanship. In the academic world, variation of migration is categorized differently according to its reason of formation. The basic variation includes one marked by the purpose of migration: economic and non-economic migrations. There are other categorizations of migration: voluntary and forced migration (according to factors triggering migration); temporary and permanent migration (according to the time of migration movement); transit and settlement migration (according to last settlement); legal and illegal migration (according to legal status) and qualified and unqualified migration/brain drain (according to migrants' characteristics). Among several migration types, specifically brain drain continues to change shape in the international field depending on the conditions of this age. Brain drain refers to losing part of qualified human resources to migration along with their social and economic benefits to society. Everett S. Lee, an influential migration theorist, put forward a theoretical framework for push and attraction causes of migration. Lee argues that "The places of emigration have push and pull social, economic, cultural, climatic or geographical characteristics. Pushing causes refer to obstacles and

opportunities between two places that have positive or negative effects on migration" (Piche, 2013:141). According to Portes, one of the strongest triggering factors of those transformations was the Cold War. "With the effect of post-Cold War globalization and knowledge intensive technological transformation, brain power - also called brain capital - became vital in the phenomenon of migration" (Portes, 1995:1-40).

As Portes notes, towards the end of 1960-1989 and particularly with globalization in the post-Cold War era, states started to become interdependent in their financial, capital and knowledge-based relations. This interdependency can be defined as financial, economic, social and communicational interaction and adaptation process between societies, human communities, states or companies. As in any transformation, those post-Cold War paradigms of global change also influenced the nature of migration. In this vein, advancing means of transportation and communication made every corner of the world more easily accessible, and social relations around the world reached a much more advanced level than in previous eras. The globalization of social activity manifested itself in the development of global connections and international division of labor. The phenomenon of globalization also led to vital transformations in qualified human resource movements, i.e. it emerged as an important factor in growing migration waves to developed countries. Thus, it is not surprising that brain drain continues to increase and change shape due to several reasons in the 21st century - referred to as the digital transformation age in global terms.

Indeed, data on the number of migrants throughout years demonstrates that the amount of international migrants increased by 51 million from 2010 to 2019, totaling 272 million. In 2020, international migrants constituted 3.5% of the global population in contrast to 2.8% in 2000. 74% of international migrants are of working age; their age ranges between 20 and 64. 52% are male and 48% female (IOM, 2020: 3).

United Nations Department of Economic and Social Affairs (UN-DESA) stated in its 2020 survey that there were close to 272 million international migrants. The United States of America (USA) is the most attractive country with nearly 58 million immigrants compared to other countries across the world in terms of brain drain. The United States is followed by Saudi Arabia and Germany with an immigrant population of more than 17 million (UN, 2020). As a result, this situation has required nations to renew their migration policies in a facilitating way. "Especially the countries of the Organization for Economic Development and Cooperation (OECD), where brain drain is

intense, follow policies that fully facilitate brain drain to foreign countries. Among them, 2/3 of the brain drain is to North America. For example, the share of the USA is 51%" (Bakırtaş & Kandemir, 2010:18).

Considering the Turkish example, "Between 1980-2010, and particularly after 2010, Turkey's total migration increased by over 2 million. In this number, the rate of brain drain was between 12 to 15%" (Karaduman & Çoban, 2019: 7). Another data on the brain drain in Turkey is a study conducted by the Ankara Chamber of Commerce (ATO). According to this study, Turkey is the 11th largest sending country among the 32 countries that experience brain drain. It loses about 60% of its well-trained brains (ATO, 2008). This is the overall picture of Turkey in terms of "Brain Capital". "In another study focusing on the main dynamics of the brain drain in Turkey, it is stated that brain drain started in the 1960s in Turkey with doctors, engineers and scientists, making Turkey 24th among 34 countries experiencing the largest wave of brain drain" (Kaya M. , 2009: 40).

It is observed that in brain drain, not only academicians but also businesspeople and entrepreneurs in the private sector want to benefit from high life standards abroad and move their companies to foreign countries. As a matter of fact, the World Wealth Report Institute's (HNWI) "Millionaire Migration 2018" suggests that Turkey is the country with the highest rate of emigration after China, Russia and India compared according to population and the number of millionaires. As the table below shows, China ranks first with losing 15,000 wealthy investors in 2018; Russia ranks second with 7,000 emigrants and India ranks third with 5,000. Turkey, on the other hand, lost 4000 millionaires totaling 10%, compared to its population (Gonçalves, 2018: 3).

This increase in migration waves and the changing nature of migrations evolving into brain drain have affected both individuals and various disciplines and fields of social sciences. In this regard, migration has brought certain social, economic and political issues for both source and target countries, in addition to the pursuit of political solutions in the international scale. While the world has been undergoing a historical process with digital transformation based on information, this has also been forming new capital elements. A determining factor in this process is brain drain, as stated in Meyers and Harbison's study, "Manpower and Economic Growth". They underline that "Information becomes the most important capital and 'Brain Capital' comes forward in competition". Therefore, high-quality human power is referred to as "strategic human capital"

(Harbison & Myers, 1964: 22). As brain capital became a competition element for countries' development, brain power movement was inevitable. Thus, there was a need to produce reasonable policies to attract this power. "To take a share from this competition in the light of these developments, some countries started to apply the "push and pull" approach to attract qualified people, increase brain capital through brain drain from other countries by means of alternative policies and resources" (Poros, 2011 :198).

Considering these developments in a global sense, Turkey also needed to produce compliance policies and projects. Erichsen and Öztürk reiterated the importance of this need in their study, "Turkey as a Place of Refuge" as follows:

"For developing countries such as Turkey, the need for brain capital has become urgent in terms of adapting to global competition and innovation. However, Turkey was late to take action in pulling and pushing brain drain in order not to suffer from brain drain. Nevertheless, Turkey managed to create a pull factor by asylum policies implemented in 1933 by accepting scientist who had been forced to migrate to various countries. These scientists were supported in producing scientific works in Turkey" (ERICHSEN & Öztürk, 1999: 34).

On July 6, 1933, Minister of National Education of the time, Dr. Reşit Galip emphasized the importance of migrant brainpower for countries as follows:

"As Istanbul 500 years ago, the leading scientists and artists of Byzantium left the country. Most of them went to Italy and started the Renaissance there. Now is the time for Europe to give back what it took from us. We hope that you will bring innovations to our homeland, so that we will keep up with the modern age and show the new generations the way to progress with modern science. On this occasion, we express our thanks and respects in the name of all our nation" (Hirsch, 2005: 167).

Despite not recorded in history as brain drain or attracting brain power, this demonstrates that in its founding years, Turkey managed to become an attraction center for German, Hungarian or other scientists fleeing Nazism from 1933 to 1945 thanks to its facilitating policies for asylum seekers. In the study known as "University Reform and German Scientists Migrating to Turkey: Pull and

Push Factors in the context of International Migration" (2019), Görgün comprehensively explains the pull policies of Turkey in its foundation years:

"Many scientists of Jewish origin who left Germany and are outside Turkey are facing the fear of having their work permits revoked or being deported. This has indirectly created an impetus for them to come to Turkey. Indeed, Turkey provided these immigrants with important opportunities in terms of bureaucratic, legal procedures, official permits and university reforms in those years" (Görgün, 2019: 789).

Brain drain phenomenon started in the 1945s - the beginning of the Industrial Revolution. With the onset of the Cold War, it turned into a major problem for countries in the global scale. After 1960, Turkey started to lose its qualified human resources to several countries being mainly the United States, Germany and the United Kingdom. During those times, countries including the USA and Germany overcame this issue more easily by noticing it in theoretical sense between 1960 and 1970. As a matter of fact, these countries had developed various policies and projects on brain drain from a push-and-pull perspective. As will be seen later in the study, it is possible to argue that migration and brain migration policies are important factors affecting migration. On the other hand, it is not possible to rule out systematizing the data and information on brain power migration in accordance with global changes. The aforementioned countries rank first among the countries attracting the highest amount of qualified labor force today's world. Yet, Turkey has been late in putting brain drain on its political agenda as a crucial problem. As mentioned before, Turkey is the largest sender of migrants among the 32 countries experiencing brain drain in the world. In fact, it is the 11th largest country in brain drain in the world, as it loses about 60% of its well-trained people.

Considering the current state in the 21st century, it can be observed that migrations have been increasing exponentially given the political, economic, climatic and geographical changes. For example, millions of Syrians have been subjected to forced international migration due to internal conflicts in countries including Syria, Iraq and Lebanon beginning in 2011. According to the data of the UNCHR (United Nations High Commissioner for Refugees), the number of Syrian refugees is 5,626,914, including 3,574,800 who have taken refuge and registered in only five neighboring countries as of August 2019. When about 1 million Syrians who have taken refuge in Europe and

countries such as Canada and the United States are added to this number, it is understood that the number of Syrians who have fled their country after 2011 is at least 6.6 million (UNCHR, 2021).

Furthermore, migrations and the flow of qualified human resources continue in today's world. As a matter of fact, the first quarter of 22.02.2022 started with Russia's intervention in Ukraine, leading to global repercussions. This intervention of the Russian Federation has been condemned by the European Union as an attitude that undermines the sovereignty and territorial integrity of Ukraine (Council of EU/Declaration, 2022). This intervention has soon turned into a conflict between the two countries, leading millions of Ukrainian citizens to forcefully leave their country. In addition, thousands of qualified foreigners (students, academicians, software developers, businesspeople, etc.) working and studying in Ukraine left the country. On 25.02.2022, the United States and Europe declared that they recognize flexibility in asylum policies for refugees coming from Ukraine and that their doors are open. What is the difference between the attitudes of the United States and Europe towards refugees from Afghanistan, Syria, Iraq, etc. and Ukraine? Is this discrimination or not? These questions come to mind in this case. It is possible to say that this phenomenon will necessarily be the subject of other research.

Such mass migrations and social problems, indeed, impose countries the obligation to produce suitable policies in some way. As such, there emerges a need for certain alternatives to solve problems. For example, European countries have adopted the trend of prohibiting illegal immigration in their migration policies. However, in order to attract qualified migrants to their borders, they have also developed various policies aimed at pulling brain drain from other countries. It should be noted that, although there is no comprehensive international data on brain drain among forced migrations yet, it is known that not only unskilled labor, but also qualified brain migrations take place around the world.

Thus, the world is witnessing different triggers that change the nature of brain drain and shift its structure beyond push-pull factors such as wars, conflicts, natural disasters, political, cultural and technological developments. In the light of this assumption, it can be said that one of these triggers

is the accelerating effect of COVID-19 (Corona), which began in 2019 and continues to have a global impact by changing variants to the present day¹.

Along with this effect, humanity is witnessing another era called "digital transformation" marked by radical changes in which production, forms of relationships, the nature of brain drain, and country policies. Indeed, the process of digital transformation has changed people's lives, businesses, production and social and communal relations. As stated in the main theme of the Economic Summit of the Turkish Industrialists' and Businessmen's Association (TÜSİAD), "digital transformation leads to a change not in the rules of the game, but in itself and even in its structures" (KobiEfor, 2021: 14).

The need to adapt to this transformation has further increased the importance of brain power or brain capital. For countries, the need to reconsider their policies and projects has been apparent in order to ensure attracting brainpower. In the face of these phenomena, it was inevitable that the migration factors would also undergo a relative change in terms of time and space. As a matter of fact, countries such as the United Kingdom, the United States, and Germany, tackled the issue of brain drain on their political agenda early, and they are now the first choice of qualified people from other countries experiencing brain drain. The United States and Germany developed and systematized a policy of brain drain, and thus, they are the first-choice countries today for people to go and settle. This still applies today. In this context, surveys conducted with qualified human resources (25-29 age group) who want to go abroad showed that 70% of them stated that the United States and Germany were the first choice as the target country (Baran, 2021). According to another fact, "Germany is the top country that parents prefer for themselves or their children" (Kaya, Rottman N, Gökalp Aras, & Mencüte, 2021: 151).

As mentioned above, Turkey ranks 11. in losing brain power across all the countries of the world, thus in the 1960s, it developed policies to attract qualified brains to the country as part of its

¹ In this regard, it is also notable to mention the Corona-virus Disease (COVID-19) that first broke out in China's Wuhan and Hubei states on December 31, 2019 with respiratory tract symptoms (fever, cough, shortness of breath) and first reported to the WHO on January 13, 2020. It is a lethal pandemic defined by a series of research on a group of patients (WHO- COVID-19, 2020: 1).

development plans. This can be evaluated from the perspective of pull and push factors affecting brain drain.

However, Turkey was late to take the problem of brain drain into its political agenda from the perspective of push and pull factors. Despite the latest TÜBİTAK policies and Turquoise Card application in Turkey's political agenda, there is not any holistic effort to reveal Turkey's brain drain policies and their effects. Moreover, statistical data of Turkey in this regard seems complicated (printed or electronic), confusing in terms of history, unmapped and confusing. In this context, data are available only through surveys, analysis of surveys and the loss of brain capital, as well as policy development to prevent this loss. Another problem is that there are almost no studies evaluating the effect of TÜBİTAK's Reverse Brain Drain Policies on pulling brain drain as well as its Turquoise Card policy.

In summary, it can be seen that countries that realized brain drain as a problem early on and developed policies from a push-and-pull perspective on this issue, started to record and systematize immigrant movements according to the conditions of their age, managed to attract brain migration to their lands. Hence, it can be uttered that brain migration policies created according to pull and push factors have a tremendous effect on qualified labor force migration based on whether they are systematized or not. In another sense, brain drain policies of countries are also one of the important factors affecting migration

RESULTS

Turkey's Brain Migration Policies Formed From Push and Pull Perspectives

The immigration and brain migration policies of the Republic of Turkey are also influenced by the policies of the Ottoman Empire, of which it is a continuation. Qualified manpower migrations, which coincided with the last periods of the Ottoman Empire, at the beginning of the eighteenth century, with the Great Balkan migrations (1773) and since the second half of the 19th century due to the First World War, played an important role in the formation of today's Turkey and the formation of its building blocks.

“Apart from this, the process of coming from outside experts has started and they have started to educate people equipped with knowledge. In the meantime, in order to speed up the process, II. After 1826, Sultan Mahmut probably sent about a hundred Ottoman youth to education in the West” (Belge, 2004:47).

After the Tanzimat Edict (1839), sending students abroad was reinforced with various programs. Despite that; There are also push factors. For example, the tendency of the Ottoman Empire's reform efforts to overflow from the military field and spread to the social-cultural field was perceived as a threat to the field of activity of the ulama. In the modernization period of the Ottoman Empire, Tanzimat, Young Turks; Neo-Ottomanism movement, constitutional declarations etc. As such, there are breaks in the processes of modernization and transition to social organization. “The Tanzimat period is the period when this intellectual break was most evident” (Akça, 2010:123-129).

The remarkable point in the immigration management policy of the Ottoman Empire is the Immigrant Commission policy, which was developed to settle the immigrants safely.

The immigration policies of the Early Republican Period, on the one hand, were aimed at the efforts of establishing a nation-state with a scientific-based structuring in the period between 1923 and 1950, and on the other hand, in the direction of creating a national identity and belonging. In a scientific-based nation-state structure, attention was paid to taking the cultural values of Europe

and for this, Balkan and Jewish scientists were tried to be benefited to the maximum extent. However, within the framework of the understanding of creating a national identity and belonging, pushing policies have also been developed in which it is stipulated that the right to immigrate to Turkey is given only to "residents or nomads of Turkish descent". Since the first years of the Republic, it has developed policies to train and pull the qualified manpower, which will bring about the development of the country that has just come out of the War of Independence. For example; "Until the law numbered 1416 was enacted in 1929, industrialization was initiated by the state in 1925. Etibank, MKE, MTA, SEKA, Sümerbank, Türkiye Çimento Fabrikaları A.Ş. Türkiye Şeker Fabrikaları Inc. Organizations such as these sent students abroad to train the qualified workforce and managers they needed" (Ulu, 2014: 495-525). This situation shows that when the scholarship students sent abroad complete their education and return home, employment opportunities are also offered in terms of creating attraction according to the branch they are studying on behalf of.

The most important brain migration policy of the Republic in terms of attracting qualified brain power and getting concrete data is the University Reform Laws. Here, it is seen that Mustafa Kemal Atatürk's farsightedness came into play again. Mustafa Kemal Atatürk; "The university reform was initiated in 1931 due to this need, which stands out as the country aims to reach world education standards as quickly and with high quality as possible.

"Academics are at the forefront of these people whose number was determined as those who migrated to Turkey between 1933-1945. Considering their contribution to the university reform in Turkey, these people were invited and were in the majority among the newly established university and faculties of European foreign scientists. In addition to their families, these scientists brought their assistants, technicians and assistant lecturers with them" (ERICHSEN, Christopher , & Günter, 2016:21).

However, although pulling policies were developed during the Atatürk period, pushing policies were also developed in Turkey. An example of this is "The pushing factors of the passport law numbered 3519, which took strict measures against Jews fleeing the Nazi regime with two laws enacted one after the other in 1938 and limited their entry to Turkey..." (Corry, 2012:183-187). It has also been the case that the attractive policies produced by Turkey have been made contradictory with itself in terms of pushing. For example, Faist argues that these policies are made

pushing. The University reform laws developed by Atatürk for the scientists fleeing the Nazi persecution are an important brain power attracting policy and have very important effects on the scientific structuring of the new republic. “Because even though Turkey embraced Jewish scientists during the Hitler era and received some brain drain from the Turkic Republics in the last ten years, especially with the dissolution of the Soviet Union, it would not be correct to say that it made good use of it” (Faist, 2013:1646).

In the early Republic of Turkey, since 1929, it has implemented policies to send students abroad and attract students and qualified manpower. These policies have been able to continue until today by renewing themselves, albeit partially. For example; “The general trend of the resettlement policy from the foundation of the Republic to the 1960s was to increase the population. After reaching a certain level of satisfaction in the population, this trend has changed with the urbanization, industrialization and the rise of democracy culture in Turkey.

In these periods, internal migration from the village to the city is more intense. In terms of attracting foreign brain drain, it is seen that policies to attract foreign investor power are produced, for example, “With the Foreign Capital Incentive Laws enacted in 1950-51 and 1954, there were years where all economic and political assurances were given, encouraging foreign capital to come”(Kazgan, 2004:79). In addition, since the second half of the 20th century, the first international migration policy, the Geneva Convention Relating to the Legal Status of Refugees, was made in 1951, when the immigration problem crossed the borders of the country and became an international problem. “Turkey signed the Geneva Convention in 1961 (with Law No. 359) by making reservations. The Geneva convention is an important development that shapes Turkey's migration policies. Despite these developments, “International migration events in Turkey took place in the form of ethnic and religious-based population movements until the 1960s, and in the form of labor migration after 1960.

Since 1963, Turkey has made some determinations about brain drain and tried to develop targets and policies within the scope of the development plans, which are prepared and implemented for five years. Since 1963, eleven development plans have been put into effect. In development plans, the problem of brain drain has been dealt with in the process from the First Five-Year Development Planning to the Eleventh Development Planning. It has been observed that efforts and concrete

steps have been taken to produce and develop strategies and policies on developing centers of attraction that can be centers of attraction for both pulling brain migration and qualified manpower.

Starting from the First Five-Year Development Period; The most important attempt to create a center of attraction is the establishment of Organized Industrial Zones. Another important step was the establishment of the Turkish Academy of Sciences (TUBITAK), which would be the main attraction center for Brain Drain pull policies. In addition, policies for sending students abroad have been developed in order to close the deficit of faculty members and to produce science in other institutions. In this direction, within the scope of the second five-year development planning, the multidisciplinary TÜBİTAK Marmara Research Center (TÜBİTAK MAM) was established in Gebze in 1972 to conduct research in applied sciences.

Third, on the other hand. During the Five-Year Development Planning period; “For the first time on October 21, 1976, Turkey has implemented a project called TOKTEN project through TUBITAK in order to bring back the trained manpower who went abroad or, if not, to bring them to Turkey from time to time within a program...” (Yücel, 1992:80). It is also a pushing reason for the governments of this period to put foreign exchange revenues on their political agendas, not the brain power drain problem. Abadan Unat also underlines this fact; “Although qualified labor migration was also criticized by DPT and the Union of Chambers of Commerce of Turkey at that time, it was still encouraged to earn foreign exchange income” (Abadan Unat, 2017:80).

Concrete steps including the implementation of the policies to pull brain drain developed within the scope of the Fourth and Fifth Development Plans; With the support of TÜBİTAK-TÜRDOK, relations are established with technological information centers belonging to international organizations in different countries. Again, as a concrete step towards these periods, the determination of technology areas to be prioritized and also the legalization of the Science and Technology Policy and the establishment of the Science and Technology Supreme Council (with the 1983-2003 document). Free Zones is the enactment of the law (IV. Five-Year Development Plan, 1990).

The concrete policy of pulling brain power in Turkey during the Sixth Five-Year Development Planning period is the communiqué on the Foreign Capital Framework Decision issued in 1995. According to this Communiqué, “Foreign administrative and technical personnel to be employed

by private sector organizations in Turkey are granted a work permit if the personnel have sufficient technical and administrative knowledge...” (VI. Five-Year Development Plan, 1990).

In the Seventh Five-Year Development Plan, studies will be carried out in order to attract qualified brainpower in information technology and especially in the field of software in order to be able to compete at the international level, and the decision to develop training programs for the needed brainpower in this regard is taken (VII. Five-Year Development Plan, 1996).

It is the law numbered 4817, which was enacted in 2003, during the Eighth Five-Year Development Planning period, for the registration of foreign migrations according to their qualifications. In addition, within the scope of this plan, it is aimed to establish a registration system to determine the social and economic characteristics of immigrants coming from abroad. In this context, it has been decided to make legal arrangements for the establishment of the Central Population Administration System (MERNIS) in order to carry out public services effectively and to monitor population movements...”(DPT, 2000: 80-229). On the other hand, the fact that the republic has determined a long-term strategy until 2023, the 100th anniversary of its establishment, and that a science and technology plan has been prepared with the participation of relevant institutions under the coordination of TÜBİTAK are important developments (XIII. Five-Year Development, P. (2000).

In the Ninth Five-Year Development Plan, within the framework of the law numbered 2232, since 2010, it is the most concrete reverse brain drain policies in terms of returning to the country within the scope of TUBİTAK, which has been developed to produce science and support science projects in Turkey.

The Tenth Five-Year Development Plan is to give TUBİTAK the coordination of the action plan regarding the components of the program in a concrete step in the transformation programs. In addition, it has been held responsible for implementing policies and actions for the need for qualified labor from abroad by institutions such as the former Ministry of Labor and Social Security, İŞKUR, YÖK, Ministry of Development, Presidency for Turks Abroad and Related Communities. Another transformation is; The status of the General Directorate of Migration Management is changed and it is connected to the Ministry of Environment, Urbanization and Climate Change as the 'Immigration Administration'.

In the Eleventh Five-Year Development Plan, the latest current brain drain policies developed by Turkey within the framework of development plans from a push and pull perspective are the Turquoise Card and TÜBİTAK Reverse Brain Drain pull policies developed in 2017 to attract foreign brain power (XI. The Five-Year Development Plan, 2019:143). The Turquoise Card application started to be implemented in September 2021 and was given to 2 Foreign Citizens in 2021-2022.

The 2232 Return to Homeland Program, also known as the brain, drain reversal program, initiated by TÜBİTAK since 2010 is Turkey's latest recent to pull brain drain policy. This program turned into “2232- International Leading Researchers Program” in 2018. The aim of these programs is to encourage qualified individuals, primarily Turkish scientists, who have working abroad experience to come to Turkey.

According to the information compiled from TÜBİTAK BİDEB statistical data within the scope of TÜBİTAK's 2232 – A- International Leading Researchers Program, the number of scientists who returned to the country has reached 579 (BİDEB/Statistics, 2021).

DISCUSSION

Academic Views on Turkey's Brain Migration Policy Problems

As mentioned above, Turkey was late to consider the push and pull factors of brain drain in its political agenda and failed to make brain drain policies regular, mapped and systematic. Considering that this has led to gaps in the literature, foreign sources can be well integrated into this research for better comprehension. For instance, Erichsen worked on brain drain from Turkey to Germany in the study referred to as 'Turkey as a Place of Refuge' and argued that, for developing countries such as Turkey, the need for brain capital has become urgent in terms of adapting to global competition and innovation. "However, Turkey was late to consider the pull and push factors in attracting human capital in order not to suffer from brain drain. Nevertheless, Turkey managed to create a pull factor by asylum policies implemented in 1933 by accepting scientist who had been forced to migrate to various countries. These scientists were supported in producing scientific works in Turkey" (Erichsen & Öztürk, 1999:33).

It is another pushing force for the failure of considering qualified labor force that the government of the period did not take brain drain as a problem on its political agenda issue, but instead, focused on foreign exchange revenues. Abadan Unat also underlines this fact: "Although qualified labor migration was criticized by the State Planning Organization and the Union of Chambers of Commerce of Turkey at that time, it was still encouraged in order to generate foreign exchange income" (Abadan Unat, 2017: 80).

Having significant academic research on Turkey's brain migration policy development issues, Fatma Başaran stated the following regarding the lack of mapping records and statistics of brain drain and the lack of literature with scientific research in this field:

"It is understood that there are no records or statistics on brain drain. Systematic information collection activities should be started on this issue. Issues related to brain drain should be the subject of scientific research as soon as possible. The activity initiated

by TÜBİTAK with the State Planning Organization in this regard is worth appreciation, however it is not enough. There is a need, for instance, to identify the extent to which qualified people work in their area of expertise (for the country's development) and the regional distribution of specialized labor force as well as the balance of expertise, etc.” (Başaran, 1972: 151).

There is a shortage of studies on the concept of brain drain policies in Turkey and even in the international literature, as there is no comprehensive and integrated research. However, there are opinions about solving the problem of migration and brain drain policies. For example, the following opinion underlines that creating and systematizing brain migration policies is related to push and pull factors affecting brain drain "A general policy should be drawn up on migration from Turkey to other countries, and this policy should be integrated with the national development strategy. The main principle of the anti-brain drain policy to be determined should be to provide scientists with 'encouraging' conditions and opportunities to study and develop here freely without harming their foreign contacts" (Kurtulmuş, 1992: 220).

In this regard, there is a lack of qualified labor force in Turkey in the following fields: information technologies, manufacturing industry, space and aviation, defense industry and R&D. As a concrete step towards brain drain policies, on the other hand, Turkey prepared development plans to stop brain drain from the country and become an 'attractive' center and target country for brain migration. For this purpose, on 14.03.2017, it amended article 11 of the International Labour Law Convention, and put into effect the Turquoise Card application in order to increase the qualified workforce in the country. Article 5 of the relevant law specifies who will receive the Turquoise Card.

Moreover, since 2010, various policies have been implemented to contribute to science and provide support for science projects in Turkey. One of these policies is the Turquoise Card policy, as stated, and the other is TÜBİTAK's policy no. 2232 for returnees to prevent brain drain. The Turquoise Card is a policy implemented to benefit from international qualified labor force and ensure that they stay in Turkey within the framework of the International Labour Code No. 6735 accepted on July 28, 2016 to manage labor force coming to Turkey through migration.

Migration Theories

According to the perspectives of migration theories, it is a set of ideas put forward to perceive migration, the reasons for migration or migrant behavior. The immigration laws introduced by Ravenstein were also the first of the early theories of immigration. In addition to economic reasons, Ravenstein also attributed importance to environmental factors, educational opportunities and living costs at the destination of immigrants as factors affecting migration. However, it is observed that the main reason for migration is the desire to reach better economic conditions (Ravenstein, E.G, 1885: 184-199). The theory put forward by Lee is the most comprehensive theory among the early migration theories and it is the theory that can explain migration in the widest way. Although this theory is still valid today, almost all new generation Mobility Theory, Migration Systems, Network Approaches, World Systems, Social Capital Theory, Cumulative etc. form the basis of their theory.

The Concept of Brain Drain: Definition and General Characteristics

It can be uttered that brain drain is a phenomenon that has been around since the moment humanity started to produce information. However, this phenomenon began to be the subject of research only during the Cold War in the 1960s, when information began to be processed. According to Kagermann, the third Industrial Revolution in the 1970s is the successor to the Cold War era. "The Third Industrial Revolution is also called the information technology era, beginning after World War II and developing rapidly after the 1970s, when production was digitalized" (Kagermann, Helbing, Hellinger, & Whilst, 2013:13).

Another definition includes the following aspects: "Brain drain is a condition in which well-educated, thinking, producing, qualified people move to another country when they are most productive for the purpose of research or work and they do not have the intention to come back" (Kaya M. , 2009: 35). According to another academic opinion, brain drain is not only the movement qualified labor force to another geography, but also choosing more developed countries where people can benefit from their talents: "Brain drain is generally defined as the movement of well-educated human capital from developing to developed countries by external migration (Görgün, 2019: 36).

Conceptual Framework in the Context of Everett Lee's Push and Pull Theory

In his article "Theory of Migration", Lee took Ravenstein's approach forward in the sense of relativism and defined migration as "a permanent or semi-permanent change in the place of life in general". Lee puts the following four factors as the basis for his analysis:

In this definition by Lee, there is no mention of the distances of the places to migrate, whether migration is mandatory, and whether migration is internal or external.

According to Lee's migration theory, "a good climate is defined as a 'pull' factor and a bad climate is defined as a 'push' factor for migration". Moreover, a place with good educational opportunities is a pull (+) effect for people who have young children, while for a landlord without children it is a push (-) factor due to the high property tax rates. On the other hand, the idea of living in the same place will not create a push or pull effect on the perception of a single individual who does not have a property as they will not be subject to tax payment, and the place that is planned to be lived will have a neutral value in the eyes of this individual" (Lee E. S., 1966: 48).

Besides the individual perception in the equation that constitutes the pushing factors of migrations, the pull factor in mass perception is explained in Lee's theory as follows: the poverty of the sending country, the economic, sociological and political situation of the cities at that time creates the mass perception. Similarly, better perception of the economic, sociological and political factors in the receiving country or city compared to the source country or city will lead to the formation of a mass pull factors (Lee E. S., 1966: 47-57).

In terms of the masses, beyond the pulling factors such as geographical and regime style of the country to which one is going or to be settle of course, the economic conditions such as salary and income are among the first determinants. Lee explains this actor as follows; high population density, low wages and economic instability in underdeveloped regions push individuals living in this region to move away from the region, while individuals perceive developed regions with high wages and job opportunities as pull factors for migration" (Lee E. S., 1966: 47-57)

Policies for Brain Drain in the World

The technology-based development of the Industrial Revolution after World War II increased the importance of qualified human resources to raise the levels of innovation and productivity of all

countries. "This situation became continuous in the 1945s and 1950s. Moreover, qualified human resources started to flow to developed countries. Although qualified people started to settle in the United Kingdom, there, the country first understood the importance of the need to raise brain power in 1960, when the social and economic vulnerabilities caused by brain drain were most reflected as a risk to the United Kingdom" (Krige & Agar, 1997:172).

The fact that the United Kingdom realized the problem of brain drain and put it on its political agenda, that the US made its brain drain policies sustainable, and the transition to an information economy after the 1970s prompted other developing and developed countries to seek policies for attracting qualified human resources. On the other hand, considering the fact that the process of transformation into an information economy began in parallel with technological transformations after the 1970s, this had significant reflections on policies facilitating brain migration in the search for qualified human resources at the international level. As an example of this reflection, the following determination of the OECD is important: "Especially developed countries provide facilities for high-skilled labor force through immigration policies in order to meet the need for high-skilled labor force" (Bassols , 2002: 2).

In fact, the migration policies implemented by developed countries to attract brain drain are another important reason for the international influx of expert workforce in the world. For example, the basis of the migration policies for highly skilled labor in the OECD countries can be summarized as follows:

- Meeting market shortages
- Meeting the human capital stock needs
- Promoting information exchange by expert workforce

Increasing innovation and inventions in the economy (Dumont & Lemaitre , 2005: 17)

On the other hand, policies related to the circulations of migration in terms of brain power are an issue that is on the agenda of many countries internationally today. These are:

1. Support for highly qualified labor migration, in particular, facilitating the entry and stay of investors, entrepreneurs and successful international graduate students.

2. Limitation of low- and middle-skilled migrants' entry to the country by a scoring system of admission etc.; reducing the number of migrants working in non-qualified sectors by introducing the obligation of a foreign language, higher education and a minimum salary requirement; ensuring short-term entry of low- and middle-skilled migrants into the country through bilateral agreements and programs.

3. Taking strict measures against irregular migration; supervision of intermediary organizations that facilitate the entry of irregular migrants into the country and increasing penalties against employers who employ irregular migrants.

4. Restriction of family reunification by raising income conditions and creating language and other adaptation tests for family members (European Migration Network, 2011: 12-17).

In addition, the Green Card developed by the USA, which is one of the countries that pull the most brain migration in the world, and the Blue Card developed in the EU directive and used by Germany in the most functional way are important policies developed to pull brain migration.

As seen in the example of the USA and Germany, it can be said that there is a positive relationship between systematic and self-renewing brain drain policies and pushing and pulling the brain drain. On the negative side; Poor lifestyle and wages in the country of origin, limited research and study opportunities, etc. are the driving factors that trigger brain drain. In this context, the fact that these countries do not produce effective policies to solve such problems benefits the countries that develop brain drain policies. Despite all these developments, one problem is that there is no full definition of the brain drain policy in the literature. To conceptualize the brain drain policy; In this study, the brain drain policy can be conceptualized as follows: **Brain Migration Policy:** Brain Migration Policy; **Brain Drain Policy:** It can be conceptualized as all attractive policies and procedures developed and implemented by countries, regardless of color, class or identity, in order to educated qualified human resources, to eliminate the pushing factors that cause brain drain, and to pull foreign brainpower, in accordance with the international universal brain migration governance.

CONCLUSION

Turkey has developed important brain migration policies from a push and pull perspective with the University Reforms in the early period, it has not been able to make an effective attack in pulling brain migration, including the Turquoise Card and TUBITAK 2232 reverse brain drain policy. With the TÜBİTAK 2232 Program, 579 Reverse Brain Drains were brought to Turkey. Between 2010-2021, TURKUAZ Card, developed in 2016, was given to 2 foreign brainpowers. Turkey is also late in putting the Brain Drain issue on its political agenda as a problem. There are also contradictions between the factors that increase the pull factors developed by Turkey and the push factors.

Today, migration policies and brain drain as a sub-branch of this concept are shaped around the policies and interests developed by states in the economic, political and security fields. At the same time, factors preventing migration and push-pull factors have gained great importance in an environment where the borders have been lifted for educated brain powers. Studies on migration and the policies produced by states clearly show that countries try to increase pull factors while trying to minimize the barriers. However, countries are also trying to reduce their push factors. But push factors such as climate change, wars, majoritarian and oppressive governments that do not respect freedoms also significantly affect the brain drain.

Instead, although many international studies on brain drain have contributed to the literature, there is no settled conceptual framework for brain drain policies. To conceptualize the Brain Drain Policy in this study, *Brain Migration Policy*; Brain Migration Policy; Brain Drain Policy: It can be conceptualized as all attractive policies and procedures developed and implemented by countries, regardless of color, class or identity, in order to educated qualified human resources, to eliminate the pushing factors that cause brain drain, and to pull foreign brainpower, in accordance with the international universal brain migration governance.

Due to its location, Turkey is the first stop for immigrants because it is a country in the middle of conflict areas and is in the middle of the developed west and the underdeveloped east. The point to be noted here is that the immigrants who prefer Turkey are mostly unqualified and unskilled

immigrants. Qualified and highly skilled immigrants generally apply directly to developed countries and are accepted due to the reduction of pull policies and factors preventing migration. Brain drain, which is one of the most important problems faced by Turkey, directly hinders the development level of the country. The proliferation of push factors, the elimination of the barriers to migration by developed countries for educated people and the production of pull policies cause a significant number of educated people from Turkey to migrate to developed countries. Considering the figures, Turkey ranks 11th among the countries that loss the most brain drain. In order to prevent this situation, Turkey could not develop regular, discriminatory policies, including TÜBİTAK Reverse Brain Drain and Turquoise Card Foreign Brain Migration Pulling policies. Moreover, Turkey did not include the Brain Drain issue as a problem in his political agenda. Turkey should immediately eliminate the push factors in order to pull brain migration and not to lose its educated and skilled manpower. It is possible to say that Turkey should establish Brain Migration Policy Commissions or a Ministry of Immigration and Brain Drain Policies, which will create urgent Brain Migration Policies, in order to provide more pull factors than developed countries offer.

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