

UNIVERSITY OF LJUBLJANA
SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

**AN ANALYSIS OF THE FACTORS AFFECTING BRAIN DRAIN OF
YOUNG PEOPLE FROM NORTH MACEDONIA**

Ljubljana, December 2019

SHEVAL MUAREMI

AUTHORSHIP STATEMENT

The undersigned Sheval Muaremi, a student at the University of Ljubljana, School of Economics and Business, (hereafter: SEBLU), author of this written final work of studies with the title “An analysis of the factors affecting brain drain of young people from North Macedonia”, prepared under supervision of doc. Tamara Pavasović Trošt, PhD

D E C L A R E

1. this written final work of studies to be based on the results of my own research;
2. the printed form of this written final work of studies to be identical to its electronic form;
3. the text of this written final work of studies to be language-edited and technically in adherence with the SEBLU's Technical Guidelines for Written Works, which means that I cited and / or quoted works and opinions of other authors in this written final work of studies in accordance with the SEBLU's Technical Guidelines for Written Works;
4. to be aware of the fact that plagiarism (in written or graphical form) is a criminal offence and can be prosecuted in accordance with the Criminal Code of the Republic of Slovenia;
5. to be aware of the consequences a proven plagiarism charge based on the this written final work could have for my status at the SEBLU in accordance with the relevant SEBLU Rules;
6. to have obtained all the necessary permits to use the data and works of other authors which are (in written or graphical form) referred to in this written final work of studies and to have clearly marked them;
7. to have acted in accordance with ethical principles during the preparation of this written final work of studies and to have, where necessary, obtained permission of the Ethics Committee;
8. my consent to use the electronic form of this written final work of studies for the detection of content similarity with other written works, using similarity detection software that is connected with the SEBLU Study Information System;
9. to transfer to the University of Ljubljana free of charge, non-exclusively, geographically and time-wise unlimited the right of saving this written final work of studies in the electronic form, the right of its reproduction, as well as the right of making this written final work of studies available to the public on the World Wide Web via the Repository of the University of Ljubljana;
10. my consent to publication of my personal data that are included in this written final work of studies and in this declaration, when this written final work of studies is published.

Ljubljana, December 09th, 2019

Author's signature: _____

TABLE OF CONTENTS

INTRODUCTION	1
1 UNDERSTANDING BRAIN DRAIN	4
1.1 Theories about brain drain	4
1.2 Extent of brain drain globally.....	5
1.3 Brain drain and economic development	5
1.4 Pros and cons of brain drain.....	8
1.4.1 Brain drain as ‘brain gain’	9
1.4.2 Brain drain as ‘brain waste’	11
1.5 Reasons skilled people decide to migrate.....	12
1.6 Push and pull factors on brain drain	12
1.6.1 Globalization	12
1.6.2 Poverty.....	13
1.6.3 Socio- economic factors	13
1.6.4 Corruption.....	14
1.6.5 Political situation	15
2 BRAIN DRAIN PROBLEM FROM NORTH MACEDONIA	15
2.1 Facts about migration in North Macedonia	15
2.2 Brain drain problem from North Macedonia	16
2.3 Macroeconomic analysis of the Republic of North Macedonia	18
2.4 Push and pull factors in North Macedonia.....	22
2.4.1 Globalization	23
2.4.2 Poverty.....	24
2.4.3 Socio-economic factors	26
2.4.4 Corruption.....	26
2.4.5 Political situation	27
2.4.6 Youth policy	28
2.5 ‘Brain gain’ or return of migrants back to North Macedonia	31
3 METHODOLOGY.....	33

3.1	Research framework	33
3.2	Research method.....	34
3.3	Limitations	36
4	QUESTIONNAIRE RESULTS	37
4.1	Demographic variables.....	37
4.2	Summary of reasons and factors for brain drain in North Macedonia-	50
4.3	Recommendations.....	53
	CONCLUSION.....	53
	REFERENCE LIST	56
	APPENDICES	63

LIST OF FIGURES

Figure 1: Top countries with international migrants	5
Figure 2: The relationship between brain drain and economic development.....	6
Figure 3: Emigration rate by education level	17
Figure 4: Comparison of GDP between North Macedonia and main destination countries	19
Figure 5: Comparison of GDP/ capita of Switzerland, Germany, France, and Italy with the GDP/capita of North Macedonia	23
Figure 6: Evolution of IWP rate (in percentage) for the whole population, waged employees and the self- employed in North Macedonia in the period (2012-2016)	24
Figure 7: Ratio of young people in the total population on 1 st of January 2017	28
Figure 8: Reasons migrants would consider returning home	32
Figure 9: Framework on research analysis.....	33
Figure 10: Question: What is your ethnicity?	38
Figure 11: Demographics: Citizenship.....	39
Figure 12: Current level of study	39
Figure 13: Place of current (2018-2019 school year) study	40
Figure 14: Country of study for students currently studying outside of North Macedonia	41
Figure 15: Plans after studying abroad (for students who are currently studying outside of North Macedonia).....	41
Figure 16: University of expected graduation	42
Figure 17: Current field of study	43
Figure 18: Question 18: What is the highest level of education from your parents?	44
Figure 19: Level of satisfaction with the quality of education in N. Macedonia.	45
Figure 20: Preference for living in North Macedonia or other country after university studies.....	46

Figure 21: Most important things that should be done in North Macedonia to motivate young people to stay	48
Figure 22: Level of agreement with Likert statements regarding climate in North Macedonia versus foreign countries	50

LIST OF TABLES

Table 1: Selected economic indicators for countries in Southeast Europe.....	7
Table 2: People who wish to emigrate from Southeast European countries	8
Table 3: Selected macroeconomic indicators (2009-2020)	21
Table 4: IWP rate for employed people by age, in North Macedonia 2012-2016	25
Table 5: IWP rate for employed people by educational level, in North Macedonia 2012-2016	25
Table 6: North Macedonia's ranking on corruption (2012- 2018)	26
Table 7: Number of enrolled students in undergraduate studies (2010-2018)	29
Table 8: Number of enrolled students in postgraduate studies (2010- 2018).....	30
Table 9: Number of enrolled students in postgraduate studies (2010- 2018).....	31
Table 10: Plans and preparation after studying abroad	42
Table 11: Correlation between the level of study and preparation to move.....	46
Table 12: Factors affecting respondent's decision on whether to leave the country.....	47
Table 13: Correlation between the next plan after studies and country of studies.....	8
Table 14: Correlation between the level of education of mother and the decision to permanently move to another country	8
Table 15: Correlation between the education level of father and the decision to permanently move abroad.....	10
Table 16: Correlation between gender and attitude.....	11

LIST OF APPENDICES

Appendix 1: Povzetek (Summary in Slovene language).....	1
Appendix 2: Questionnaire questions.....	2
Appendix 3: Remittance flows (1990- 2019)	7
Appendix 4: Remittances to Europe and Central Asia in 2017.....	7
Appendix 5: Correlation between the next plan after studies and country of studies!	8

Appendix 6: Correlation between the level of education of mother and permanently move to another country	8
Appendix 7: Correlation between the education level of father and the decision to permanently move abroad	10
Appendix 8: Correlation between gender and attitude	11

LIST OF ABBREVIATIONS

EU – European Union

IOM – International Organization for Migration

IWP – In-work poverty

OECD – Organization for Economic Co-Operation and Development

UK – United Kingdom

UNODC – United Nations Office on Drugs and Crime

US – United States

WHO – World Health Organization

INTRODUCTION

Migration is as old as humanity and is only increasing in intensity (Murru, 2008). The number of international migrants worldwide is increasing constantly, from 75 million in 1960, 190 million in 2005 (Docquier & Rapoport, 2012), and to 258 million in 2017, regarding United Nations (2018) report. This means that in only twelve years (from 2005 to 2017), the number of migrants increased by 68 million. Of the total number of international migrants, some relocate to other countries due to war and poverty (usually from one developing country to another), while others move from developing to economically developed countries. Of the 258 million international migrants in 2017, for instance, around 147 million or nearly 57 percent emigrated to developed regions, and the other 43 percent were hosted by developing countries (United Nations, 2018). Based on Bell, Alves, Silveirinha de Oliveira, and Zuin (2010), there are three types of international migration: 1) labor migration, which includes highly skilled labor migration and unskilled low wage labor and temporary migration; 2) forced migration (refugee movements), and 3) international retirement migration characterized by rich and retired citizens who have the financial power to buy property abroad and move there. Accordingly, when examining reasons why people might choose to migrate, researchers have identified two groups of factors that cause migration: so-called “push factors” such as violence, persecution, unemployment and other economic and social reasons, and so-called “pull factors” such as better standard of living, working conditions, better infrastructure, functional democracy, etc. (Murru, 2008).

Human capital is one of the main assets of a country, and each country has a strategy on how to invest in education in order to improve the skills and knowledge of their workers. Usually, the more developed a country is, the more it invests in education. On the other hand, a decrease or loss of human capital occurs via a phenomenon known as brain drain, which is typically accompanied by losses in economic growth. The term ‘brain drain’ was created by the British Royal Society to refer to the emigration of scientists and technologists from the United Kingdom to the United States and Canada during the 1950s and 1960s (Gibson & McKenzie, 2011, p. 108). The term has since been used more broadly, meaning the emigration of the highly skilled individuals of a nation (Gibson & McKenzie, 2011). Docquier, Lohest, and Marfouk (2007) define brain drain as the international migration of skilled workers. Beside developing countries that nowadays are facing this problem, also industrially developed countries such as Germany, Canada and the United Kingdom are worried about losing talented workers (Docquier, Lohest & Marfouk, 2007).

Brain drain is a problem that is present all around the world. In Lebanon, for instance, Nabih Berri, the parliament speaker, called brain drain “the biggest problem we face in Lebanon” and called the emigration process of high- skilled workers a “transmitted disease among the youth” (Gibson & McKenzie, 2011, p. 107). Similarly, Indian economist and former Prime Minister Manmohan Singh said: “Today we in India are experiencing the benefits of the

reverse flow of income, investment and expertise from the global Indian diaspora. The problem of ‘brain drain’ has been converted happily into the opportunity of ‘brain gain’” (Gibson & McKenzie, 2011, p. 108). Brain drain is associated with many problems, both for the sending country, as well as for the migrants leaving their home countries. For migrants themselves, not all educated and highly- skilled migrants end up working on their professional field, a phenomenon which is called “brain waste” (Mattoo, Neagu, & Özden, 2008). Based on an article published by The Economist Newspaper (2017), on a country level, high levels of emigration of skilled workers have negative implications for the economic growth, public finances, and population growth of the sending country. Migration determinants might be different in each country, especially when it comes to the migration of educated people (Kazlauskienė & Rinkevičius, 2006). The international migration of young educated people results from the complexity of the economic, social, political or cultural factors (Portes, 1976).

On the other hand, researchers have also examined the positive sides of emigration. Some economists have examined whether brain drain could also have positive effects on the sending country. Beine, Docquier, and Rapoport (2008) present a range of positive effects that highly- skilled workers can have, such as the creation of the network in the field of science and business, additional skills and practices acquired in the host country, remittances etc. Horvat (2004), discusses also the so-called brain gain, for which he says that migrants who return, beside the human capital, which is one of the major benefits for sending countries, they also bring the social and financial capital, which was accumulated while migrants were living and working abroad. Financial capital includes all the savings in money while social capital may be all professional contacts that migrants achieved to create with people of different backgrounds and who might be productive for the sending country, e.g.: as a foreign investor (Horvat, 2004). Remittance flows in low and middle-income countries had a tremendous increase since 1990 (see Appendix 5) while in 2017 remittances had an increase of 8.5 percent and excluding China's remittances would be much higher than Foreign Direct Investment (hereafter: FDI) (KNOMAD, 2018).

In 2017 remittance flow sent to Europe and Central Asia had an estimated increase by 20.9 percent compare to the previous year (KNOMAD, 2018). As is shown in the figure in Appendix 6 largest remittance recipients in 2017 are the Russian Federation and Ukraine, followed by Romania and Serbia (KNOMAD, 2018). As of percentage of GDP, Kyrgyzstan and Tajikistan are the biggest remittance recipients 35.2 percent and 30.7 percent, respectively which is 1/3 of country GDP (KNOMAD, 2018).

In North Macedonia specifically, migration as a phenomenon is not new. Before, most of the people who emigrated from North Macedonia, unfortunately, were young people, that could not afford higher education, and were obliged to be physical workers in western countries such as Switzerland, Germany, Italy, France, etc. Nowadays, the emigration phenomenon is still going on, the only difference is that those who decide to emigrate are young people who hold a bachelor's or master's degree and tend to have a job or better job

opportunities in the same countries as their predecessors. Results indicate that North Macedonia's citizens are highly skilled, professionals and educated people, very successful all around the world, but unfortunately most of them, achieve their success in foreign countries and only a few of them decide to return back home (Janeska, 2015, p. 22). Migration is linked to loss of investments in human capital and creative work, the social policy and economic condition of the country (Dinkovski & Markovska-Simoska, 2018). Where remittances are concerned, based on the analysis of only 22 percent of the remittances from abroad come in formal way in North Macedonia using bank transfers and other money transfer operators, while the other 77 percent of the money, enters by delivery through friends, relatives, self-delivery etc. In 2011, Macedonians working abroad sent back home 1.3 billion euros, while the country attracted 222 million euros in FDI in 2010 (Marusic, 2011).

The purpose of this master's thesis is to provide a comprehensive and accurate situation of the brain drain problem in North Macedonia. I will also try to understand the main reasons for brain drain in North Macedonia.

The goals of this master's thesis are:

1. to provide a basic overview of the brain drain problem in general, and identify the main 'pull & push' factors of brain drain;
2. to accurately analyze the extent of the brain drain problem in North Macedonia using various data sources;
3. to identify the 'pull & push' factors for brain drain among youth leaving North Macedonia;
4. to determine whether youth leaving Macedonia have intentions of returning to Macedonia ("brain gain") at some point in the future.

Using secondary and primary data, I show the factors and attempt to determine the reasons for this problem in North Macedonia and the economic consequences that this problem might cause for the country and for the whole society. Secondary data were collected from different literature published on different books, reports, articles, scientific and popular journals, reports of different international news agencies, web sites, magazines and also official data such as government publications, indexes, data from statistical offices of North Macedonia and also hosting countries. In order to collect primary data, a questionnaire was prepared on the platform lka.si and it was spread on social media where 1026 people responded. The analysis of the data was done using the features for basic- statistics and graphic representation of the platform lka.

The remainder of this master's thesis is organized in the following manner. Chapter one (1) consists of the main theoretical approach of the brain drain problem in general. It also includes the positive effect of it known as 'brain gain' and also the counterpart known as 'brain waste'. Chapter two (2), becomes more specific, and describes the brain drain problem from North Macedonia and gives quantitative data on migration in North Macedonia. The

empirical analysis is divided between Chapter three (3) which describes the methodology part of the research and Chapter four (4) in which the interpretation of the results and findings can be found. Chapter five (5) gives the recommendation part and in the end is the conclusion, with all references used and appendices.

1 UNDERSTANDING BRAIN DRAIN

1.1 Theories about brain drain

The term 'brain drain' was created by the British Royal Society to refer to the emigration of scientists and technologists from United Kingdom (hereafter: UK) to the United States (hereafter: U.S) and Canada during the 1950s and 1960s (Gibson & McKenzie, 2011, p. 108). Gibson and McKenzie (2011) state that this buzzword now is used in more broad terms, meaning the emigration of the highly skilled individuals of a nation.

Beine, Docquier, and Rapoport (2008), in their paper "Brain drain and human capital formation in developing countries: Winners and Losers" define the term 'brain drain' as an international transfer of resources but in the form of human capital, and mainly this transfer of resources is among the highly educated people, migrating from developing countries to developed ones. These authors (Beine, Docquier & Rapoport, 2008), came to the conclusion that there are causes of the growing phenomenon of the brain drain, in the supply and demand side. For the sending countries or supply side as it is called by Beine, Docquier, and Rapoport (2008), motivation for a growing brain drain comes from the globalization of the economy, and this globalization has increased the tendency of the human capital to move and look for more, rather than be stuck in home country, where the economy and opportunities are not the same as in developed countries. On the other hand, demand side, which are host countries, mostly developed ones, have gradually introduced immigration policies for high- qualitative people from developing countries, and now they are in competition with each other to attract the global talents; for example, Australia and Canada started to implement these kinds of immigration policies since the 1980s (Beine, Docquier & Rapoport, 2008). Austria changed settling and staying law in 2017, with the purpose of making it easier for foreigners to have access in the working market in Austrian region and also increased the working hours for student to twenty hours a week and once they graduate have the opportunity to stay for one more year in Austrian territory to look for a job (WFD, 2019). On the other hand, Estonia announced "Working in Estonia" strategy in order to attract young highly- skilled professionals (WFD, 2019).

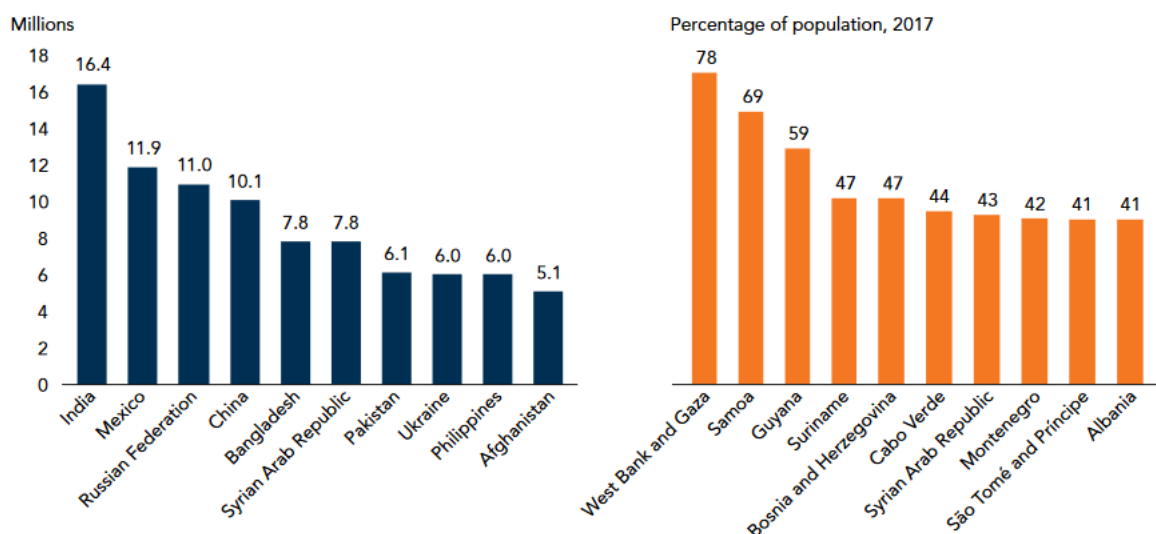
Robyn Iredale (1999, p. 90) is another contributor in brain drain topic and in his paper "The need to import skilled personnel: Factors favoring and hindering its international mobility" supports the idea that brain drain category is not well defined and says this: "*it should include all highly- skilled specialists, independent executives and senior manager, specialized technicians or tradespeople, investors, physicians, and business people, "keyworkers" and*

sub-contract workers”. In other words, Iredale tends to be more specific when it comes to the definition of the brain drain category and specifically mentions the profiles that might be part of the brain drain. On the other hand, Maurizio Murru (2008) defines brain drain as: “*a symptom of more serious diseases: poverty, inequalities, under-development*”.

1.2 Extent of brain drain globally

India is the first country that has most migrants (approx. 16.4 million) followed by Mexico and the Russian Federation (see Figure 1). On the other hand, as percentage of population West Bank and Gaza is the first one with seventy-eight percent of its population, followed by Samoa and Guyana. Among these countries, there is also Albania ranked in the tenth position with forty- one percent of the population being migrants in 2017 (KNOMAD, 2018).

Figure 1: Top countries with international migrants



Source: (KNOMAD, 2018).

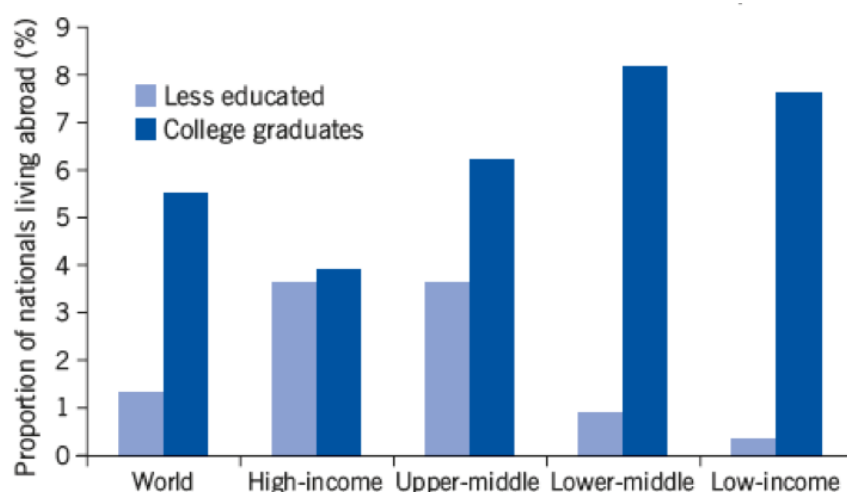
All around the world brain drain is increasing, between 1960 and 2010, the world’s migrant stock increased from seventy-four million to 188, faster than world’s population growth, so based on this the share of the world’s population who are international migrants went from 2.7 to 2.8 percent (Gibson & McKenzie, 2011).

1.3 Brain drain and economic development

Docquier (2014), in his paper “The brain drain in developing countries” describes that the number of foreign-born people in rich countries, from 1960 until now, has tripled and at the same time the emigration of high-skilled people from poor countries has accelerated. Based on Docquier (2014), brain drain and the economic development are two independent processes, which might affect each- other such as: when the emigration rate is high, then

brain drain affects economic development negatively; on the other hand, a lack of economic development motivates the high- skilled people to leave the country. Docquier (2014) also shows this graphically in Figure 2 below.

Figure 2: The relationship between brain drain and economic development



Source: Docquier (2014).

The proportion of nationals living abroad is shown in the graph above. In this graph, Docquier (2014), shows the proportion of individuals that are college graduates and of those with less education in the world and also in high-income, upper-middle, lower-middle and low-income countries. College graduates from lower-middle-income countries have the biggest proportion of living abroad while being followed by nationals of low-income countries. At the same time, less educated people from these two categories of countries, have the least proportion of living abroad, which means that educated people cannot see a future in their home country and decide to emigrate, while less educated people do not have the same opportunity. On the other hand, there is not much difference between college graduates and less educated people in high-income countries. The proportion of nationals living abroad in both groups is around four percent, half of the lower-middle countries. Based on the World Bank (2019h) database, for the 2019 fiscal year, low-income countries are classified those with a GNI per capita of \$995 or less in 2017; lower-middle-income countries are those with a GNI per capita between \$996 and \$3.895; upper-middle-income countries are considered those economies with a GNI per capita between \$3.896 and \$12.055 while high-income countries are those with a GNI per capita of \$12.056 and more. North Macedonia is part of the upper-middle-income countries with a GNI per capita of \$4.880 in the fiscal year 2017 (World Bank, 2019h), slightly above the minimum limit.

Docquier, Lohest, and Marfouk (2007) in their paper “Brain drain in developing countries” define brain drain as the international migration of skilled workers. Beside developing countries that nowadays are facing this problem, also industrially developed countries such as Germany, Canada, and the UK are worried about the talented workers (Docquier, Lohest

& Marfouk, 2007). Based on the same paper by Docquier, Lohest, and Marfouk (2007), brain drain is more emphasized in small and poor countries where the level of schooling is low. First, to have a better understanding, I would like to describe three levels of schooling. Low-skills workers have a primary education; medium- skill workers have secondary education and high-skill workers have post-secondary education, so more specifically, brain drain is defined as “the emigration of high- skills workers” (Docquier, Lohest & Marfouk, 2007, p. 195). Another interesting fact is that ninety percent of high- skill workers that come from countries that are not part of the Organization for Economic Cooperation and Development (hereafter: OECD) live in OECD countries (Docquier, Lohest & Marfouk, 2007). This is because of the economic development of OECD countries. On the below-shown Table 1, there are shown countries where people emigrate from, including their GDP per capita, the unemployment rate of young people, the average rate of earnings and poverty risk and social exclusion rate.

Table 1: Selected economic indicators for countries in Southeast Europe

Country	GDP per capita \$	Unemployment rate of young people as %	Average net earnings €	Poverty risk and social exclusion rate as %
Serbia	5,800	3.30	379	39.0
Bulgaria	7,530	12.20	339	40.2
Croatia	12,424	25.40	720	27.8
North Macedonia	5,174	40.80	349	41.4
Romania	9,768	13.10	385	37.3
Hungary	13,158	9.50	542	26.7
Montenegro	7,076	28.20	479	n.d.

Source: WFD (2019).

As is shown in Table 1 provided by WFD (2019), North Macedonia is in a very bad situation compare to other Southeast European countries. It has the lowest GDP per capita of \$ 5.174 followed by Serbia and Montenegro at \$ 5.800 and \$ 7.076 respectively. One of the main reasons why young people leave North Macedonia is because they do not see the economic future and this is proven in the above-shown table, where North Macedonia’s unemployment rate of young people is 40.8 percent which means that is 12.3 times higher than its neighboring country Serbia. North Macedonia, unfortunately, has the highest rate in the region and indeed this is a very serious problem. Again, when it comes to poverty risk and social exclusion, North Macedonia has the worst rate in the region, but only Croatia and Hungary are half better than North Macedonia, with around twenty-six percent. Average net earnings are the lowest in North Macedonia and Bulgaria, with € 349 and € 339, respectively. The highest average net earnings are found in Croatia € 720.

In an article published by Radio Slobodna Evropa (2019), citizens of Southeast Europe countries were surveyed in the question if they would like to leave their country or stay at it.

The results are shown in Table 2, where seventy-three percent of citizens of North Macedonia declared they would like to leave the country. The first country on the list is Serbia with seventy-five percent while Croatia and Romania are ranked very down with thirty-four percent and thirty percent respectively. This means that not only North Macedonia is facing the emigration problem but the whole region of Southeast Europe. The main problem is that North Macedonia is among the countries where the problem is very emphasized and indeed people, especially young educated people see no economic future in it.

Table 2: People who wish to emigrate from Southeast European countries

Country	Wants to leave as %	Wants to stay as %
Serbia	75.00	25.00
Macedonia	73.00	27.00
Albania	66.00	34.00
Slovenia	65.00	35.00
Montenegro	63.00	37.00
Bosnia & Herzegovina	62.00	38.00
Kosovo	58.00	42.00
Bulgaria	34.00	66.00
Croatia	34.00	66.00
Romania	30.00	70.00

Source: Radio Slobodna Evropa (2019).

1.4 Pros and cons of brain drain

Docquier (2014) lists some pros and cons of brain drain phenomenon as following:

1. Pros: income- maximizing level in developing countries is positive, meaning that brain drain in these countries is beneficial; brain drain encourages education, stimulated remittance flows; appropriate policies might help to maximize the benefits of brain drain and minimize the negative effects;
2. Cons: fiscal loss; above a certain level brain drain can reduce the stock of human capital and create a crisis.

Later in his paper, Docquier (2014) brings the following questions: “What drives the brain drain, and how can we quantify it”? As drivers of brain drain, Docquier (2014) mentions poverty and lack of economic development together with discrimination, lack of freedom and political repression motivate the people, especially the young educated ones, to leave the country. Based on Docquier (2014), brain drain is composed of two multiplicative components: 1) the average emigration rate (which is the mean of all high-skilled people, in the same time characteristic of the middle- income countries); 2) the index of positive selection in emigration process. Docquier (2014) explains the method of how to calculate this index (see equation 1) as follows:

$$= \frac{\text{total number of college graduates emigrating}}{\text{total number of college graduates among natives}} \quad (1)$$

1.4.1 Brain drain as ‘brain gain’

Indian economist and former Prime Minister Manmohan Singh said: “Today we in India are experiencing the benefits of the reverse flow of income, investment and expertise from the global Indian diaspora. The problem of ‘brain drain’ has been converted happily into the opportunity of ‘brain gain’ “ (Gibson & McKenzie, 2011, p. 108).

Beine, Docquier, and Rapoport (2008) presents a range of positive effects that highly- skilled workers can have, such as the creation of the network in the field of science and business, additional skills and practices acquired in the host country, remittances, etc. People’s life, in general, is divided into two periods to make two important decisions: to invest in education while they are young or to emigrate in the period of adulthood (Beine, Docquier & Rapoport, 2008). Besides this, Beine, Docquier, and Rapoport (2008) introduces the idea that people that remain in sending countries will be affected positively by people who leave, taking into consideration the fact that they will be motivated by the return to education, which is higher than in sending countries, and in this way people will be more motivated to invest in education at home, and this is called ‘beneficial brain drain’. Can we say that education is one of the determinants whether to emigrate or not? Docquier and Marfouk in 2006 did an analysis that shows that emigration tendencies are five to ten time higher for people who have more than twelve years of education than workers who have less than twelve years of education (Beine, Docquier & Rapoport, 2008). Anyway, Beine, Docquier, and Rapoport (2008) declares that in-country perspective, it is not important how many people achieve to have higher education, the important thing is how many of them achieve to stay and not leave the country. Only in this way they can contribute to their home country and society. Based on Beine, Docquier, and Rapoport (2008) analysis, countries that combine low levels of human capital and low rates of migration of highly- skilled individuals end up having a positive net effect.

Beine, Docquier, and Rapoport (2008) states that people are risk-neutral and try to maximize their income, giving the example of unskilled workers who prefer to stay at home and not migrate, in this case, their income would be w , on the other hand, people who are high-skilled would prefer to migrate to developed countries and their income would be w^* , which definitely is higher than w ($w^* > w$).

Usually, developing countries that face the brain drain problem lack policies and incentives that will motivate highly- skilled people to not leave. As mentioned above, Canada and Australia since in the 1980s started to plan strategies how to invite the highly- skilled people in their country (Beine, Docquier & Rapoport, 2008), on the other hand, Croatia a developing country in 2003 started to adopt policies and incentives by creating a two million dollars biological research institute in the former palatial summer residence of Marshal Tito, in order

to encourage the young highly- skilled professionals who left the country to return and contribute in Croatia (Tung & Lazarova, 2006). On the other hand, Tung and Lazarova (2006), on their paper about brain drain versus brain gain show that the UK presented a plan of twenty million pounds to attract Britain professionals who are leaving the country and also to attract other foreign highly- skilled professionals to move to the UK and also U.S businesses are concerned about the visa restrictions after September 11, because it became harder for her to hire highly- skilled professionals from outside of the U.S. Michael Porter (1990), on his book “The Competitive Advantage of Nations” specifically emphasizes this: “ *A nation’s success largely depends on the types of education its talented people choose, where they choose to work, and their commitment and effort*”. Tung and Lazarova (2006) state that in order to facilitate economic growth and development, governments need highly-educated people with managerial and technological skills. Horvat (2004), is another contributor to the brain drain topic, with special emphasis on southeast Europe, states that educated people are a rare resource and usually less developed countries are the ones who suffer more when this profile of people decides to leave.

Horvat (2004) discusses also the so-called brain gain, for which he says that migrants who return, beside the human capital, which is one of the major benefits for sending countries, they also bring the social and financial capital, which was accumulated while migrants were living and workings abroad. Financial capital includes all the savings in money while social capital may be all professional contacts that migrants achieved to create with people of different backgrounds and who might be productive for the sending country; e.g.: as a foreign investor. Horvat (2004) also lists three major feedback effects that might occur because of the migration of highly- skilled individuals: 1) skills and work experience of returned migrations, which might boost the productivity; 2) those who still work abroad as migrants, still keep contributing money via remittances that they have and mostly they send that money back home; 3) productivity and development of developing countries can be increased by the transfer of knowledge and technology from developed countries.

In his research paper, Horvat (2004) highlights the importance of the presence of skilled people, where he says that in order developing countries to have economic development the presence of highly- skilled individuals is required, to implement, manage and control all processes that will take the country in progress and implement transition reforms.

“Sending countries” should encourage highly- skilled individuals to take part in the brain gain process instead of trying to hold them, by introducing long- term policies to assure the development of the country (Horvat, 2004). In this way, highly- skilled individuals will be able to bring all the best practices from abroad and implement them in their home country but should be taken into consideration that this is a long process and the results cannot be seen immediately.

1.4.2 Brain drain as 'brain waste'

Not all educated and highly- skilled migrants end up working on their professional field, a phenomenon which is called "brain waste" (Mattoo, Neagu & Özden, 2008). This phenomenon is present all around the world. Nabih Berri, a parliament speaker of Lebanon defined brain drain as "the biggest problem we face in Lebanon" and called the emigration process of high- skilled workers a "transmitted disease among the youth" (Gibson & McKenzie, 2011, p. 107). Authors Gibson and McKenzie (2011), also define brain drain as the emigration of high- skilled workers and provide analysis on their paper called "Eight questions about brain drain". Another definition calls brain drain "as obviously a loaded phrase, involving implicit definitions of economic and social welfare, and implicit assertions about facts" and this is because the term 'drain' carries strong implications about loss (Gibson & McKenzie, 2011).

Brain drain has a negative effect on those countries in which the migration rate of the highly-skilled individuals is more than 20 percent and the proportion of the people with higher education is above five percent (Beine, Docquier & Rapoport, 2008).

One of the most direct costs that home country has when facing brain drain problem is that they lose the funds spend in education of young people, which the home country spent for eight, twelve, sixteen ever over twenty years in education for them, and with their emigration this becomes a cost or in the worst-case scenario an investment for receiving country because they did not spend anything and receive educated people (WFD, 2019). Based on WFD (2019) report, one of the more emphasized negative consequences of brain drain is the decrease of GDP, due to the reduced number of taxpayers, decrease in consumption, a decrease of spending in the home country and other components. On the other hand, besides the material losses, the home country can have also loss of creative capital which might represent the future innovators and implementers of new ideas (WFD, 2019). Besides this, there is also an increase of troubles in health and insurance funds because of the emigration of young people, who were supposed to contribute as potential employees in the future (WFD, 2019).

Docquier (2014) also emphasizes the above mentioned negative consequences as the adverse effects of brain drain problem such as following: 1) high- skilled emigrants do not pay taxes in their home country, which affects the budget of the country; in some countries, education is subsidized by the government and some of the high- skilled individuals emigrate without being able to repay the debt; 3) the induce of shortages of manpower in several key activities, where there is lack of engineers, doctors, and nurses, undermining the ability to adopt the new technologies in the country or to deal with health crisis; 4) brain drain might create the technological gap between developed countries and developing ones because high- skilled individuals usually concentrate in the most advanced economies, and this helps developed countries in their technological progress.

1.5 Reasons skilled people decide to migrate

Iredale (1999) mentions two categories of people who migrate: the first category includes all those highly- skilled individuals who look for the highest-paid or most rewarding employment, in this way they try to maximize return on investment in their education/ training, while in the second category Iredale (1999) puts all other highly- skilled individuals who want to take their skills where they think is better for them in order to be more productive and to enjoy better work conditions.

Horvat (2004) believes that besides the economic reason there are also other motives why highly- skilled individuals decide to emigrate, such as political, ethnic and religious prosecution, bad governance, war, etc. Except for all above- mentioned reasons, (Horvat, 2004) expresses the idea that for developing countries in the continent of Europe, also the EU enlargement is one of the main reasons why highly- skilled individuals tend to emigrate and move to European developed countries.

1.6 Push and pull factors on brain drain

1.6.1 Globalization

Globalization is perceived as a phenomenon that is applied to different processes and it is considered very vague and out of human control (Stalker, 2000). A lot of scientists agree that globalization is not a phenomenon and has been going on for more than half a millennium, linked to the expansion of the capitalist systems around the world (Dokos, 2017). Regarding Czaika and de Haas (2014, p. 284), globalization can be defined as: *“widening, deepening and speeding up of worldwide interconnectedness in all aspects of contemporary social life”*. In its weakest meaning, it refers to the increasing number of events that are happening simultaneously all around the globe, but besides this, it must be also something more than similarity in each country (Stalker, 2000). On the other hand, there is also the term “internationalization”, but on its strongest meaning, globalization goes more beyond internationalization and implies a higher standard of the organization (Stalker, 2000).

Globalization is a process that puts a special emphasis on the borders between countries and nations and tries to open them up (Čiarnienė & Kumpikaitė, 2008). As a process, it inspires the free trade between countries (Čiarnienė & Kumpikaitė, 2008), which leads to more new job opportunities and an incentive to migrate, especially for people from developing countries. Čiarnienė and Kumpikaitė (2008), support the idea the beside the economic development, globalization also causes the economic inequality among nations for some migration is not a choice anymore, but it becomes a necessity. Due to globalization, also people from rich countries migrate for economic reasons, as they find new and better opportunities in other countries (Murru, 2008).

Czaika and de Haas (2014) see globalization technological process because technological development has radically changed the manner of communication over distances and have lowered the cost of travel (Czaika & de Haas, 2014). Technological change has also facilitated migration and this assumption is threefold as following: 1) technological development has lowered the cost of communication, 2) it strengthens migrant network by making it easier to be in touch with each other and with the family back home, to send money and to travel back home more often 3) technological improvement has increase literacy in many countries due to easier access to global information via mobile phones, internet and other manners of information (Czaika & de Haas, 2014). Thank to ease access to information, now people are more ambitious about opportunities in other countries and this facilitates migration (Czaika & de Haas, 2014). Besides the technological aspect, Czaika and de Haas (2014), see globalization as a political factor that facilitates the migration of people. Moreover, the political aspect as a facilitator of migration will be discussed in one of the next sub-chapters.

The same reasons as Czaika and de Haas (2014) are supported also by Maurizio Murru (2008) who thinks that different aspects of globalization contribute to facilitating the migration of people mostly in developing countries A bunch of reasons such as easier and cheaper traveling, television images that reach in every village in poorer countries contributes to increasing the awareness about the differences and standard of living around the globe and these feed the dreams of a better life (Murru, 2008). At the same time, the easy way of connection and communication by phone and other ways facilitates the movements of people, especially young people, because they can be in touch with the family back home and also look for a better life abroad (Murru, 2008).

1.6.2 Poverty

Based on Merkle, Reinold, and Siegel (2017), poverty is the main factor why people choose to migrate, and this is an income diversification strategy (Sabates-Wheeler, Sabates, Castaldo & Mújica, 2009). Anyway, based on Sabates-Wheeler, Sabates, Castaldo, and Mújica (2009), the extremely poor people migrate less in comparison with others, due to the costs of moving and the risk of losing of what they actually have. International migration indeed reduced the level of poverty or at least reduced the depth of it in developing countries (Sabates-Wheeler, Sabates, Castaldo & Mújica, 2009).

For the first time, the poverty line was used by Charles Booth in the late 1880s, in order to divide the people of London into the “comfort” group and those “in poverty” (Gillie, 1996).

1.6.3 Socio- economic factors

One of the main motivations for migration globally is the lack of economic security such as income and employment inequalities (Merkle, Reinold & Siegel, 2017). Besides, income

and employment, also education which is considered the most important investment in human capital (Becker, 1992) is a factor because it is associated with income, employment opportunities, career and so on (Merkle, Reinold & Siegel, 2017). Income inequality and employment are considered as financial reasons while education is considered as a non-financial reason why people migrate, so not having access to desired education can lead to migration (Merkle, Reinold & Siegel, 2017).

1.6.4 Corruption

Corruption is a phenomenon that is in a constant increase all around the world and affects both developed and developing countries in different degrees, depending on the extent and the type of corruption (Pearson, 2013). Corruption is also seen as an important factor contributing to inequalities in both developing and developed countries (Pearson, 2013), and as a result of inequalities, mostly developing countries face the problem of brain drain among young people. As the causes and effects of corruption are different, it is normal that a single definition of corruption that covers all aspects of different countries is hard to formulate (Pearson, 2013). Different authors provide different definitions of corruption. Also, World Bank (1997) and Transparency International (n.d.-c) define corruption as “*the abuse of public office for private gain*”. In most of the definitions, the focus is on corruption in public office, but it is worth noting that corruption is present also in the private sector (Pearson, 2013). Another issue with the definition of corruption is that in most of the definitions, corruption includes only bribery, but does not include also other forms of corruption such as nepotism, patronage, fraud, theft, interest, etc. (Merkle, Reinold & Siegel, 2017).

Corruption is considered as an act in hiding and precise data and measurements are very hard to be provided (Merkle, Reinold & Siegel, 2017). Anyway, the most dramatic impact corruption has on the economy of the country (Merkle, Reinold & Siegel, 2017). Different objective measures have been used to measure corruption, such as conviction rates and reports (Merkle, Reinold & Siegel, 2017), but these have not become popular because they are unsystematic and often face reliability problems (Morris, 2008). Recently, estimated corruption was based on surveys of perception because of the advantage of good coverage and it is much harder to directly measure corruption rather than to ask someone’s perception of corruption (Olken & Pande, 2012). Another method of how to measure corruption from people’s direct experience or participation in corruption (Morris, 2008).

The most widely used index on corruption is the one published by Transparency International (Morris, 2008), which ranks 180 countries based on their perceived level of public sector corruption according to foreign and national experts and people involved in the business (Transparency International, 2019). The index uses a scale from 0 to 100, where 0 means that the country is highly corrupt and 100 means that the country is very clean (Transparency International, 2019).

1.6.5 Political situation

According to Merkle, Reinold, and Siegel (2017), political instability is related to forced migration and also plays a role in explaining the skilled migration from developing countries. There is a strong relationship between governance and migration (Rowlands, 1999). In countries with limited civic freedom, Rowlands (1999) thinks that migration increases with increasing liberalization, while in countries with a high level of civil freedom, migration decreases with increasing liberalization.

2 BRAIN DRAIN PROBLEM FROM NORTH MACEDONIA

2.1 Facts about migration in North Macedonia

The Republic of North Macedonia is facing the problem of migration as well. The total population in North Macedonia in 1960 was 1.3 million, while in 2005 it increased to two million and in 2020 it is expected to be 2.1 million (United Nations, 2013). However, based on the report of the United Nations (2013), which gives a prediction about the world population until the year 2100, the population in North Macedonia will start decreasing after 2020, and after twenty years, it will be 1.9 million.

There are several reasons why the population in North Macedonia is decreasing, and the most problematic one is called “brain drain”. Analyzing the data provided on the database of OECD (2019b), in the period 2012- 2016, shows that 113.975 people left North Macedonia and emigrated to OECD countries, mostly to Germany, Switzerland, Austria and the US. This means that 5.5 percent of the total population left the country in five- year period, a very significant percentage for a country such as North Macedonia with a total population of 2.07 million (United Nations, 2013). North Macedonia has a big diaspora also in Italy, Slovenia and Croatia, but unfortunately updated numerical data were not provided. Bilateral migrant stock data estimated by World Bank in 2013 show that 626.412 emigrants from North Macedonia leave abroad, or 30.2 percent of the total population (The Economist Newspaper, 2017). On the other hand, data published by the State Statistical Office of North Macedonia, show that the net migration in 2017 was 2.202 (State Statistical Office, 2018c). Data on emigration can be better captured only by harmonized data that are provided by receiving countries or international organizations, because statistics on emigration provided by origin countries do not always give the realistic picture, especially in developing countries (Docquier, Lohest & Marfouk, 2007).

Regarding Zulfiu (2018), the total number of people who left the country only in 2017 reached 534.7 thousand, or approximately twenty-six percent of the total population. On the other hand, the State Statistical Office of the Republic of North Macedonia reports that in the period 2005- 2014 only 9170 citizens emigrated from the country (Zulfiu, 2018). This is not the real situation actually because State Statistical Office shows only the list of people

who officially left the country and cannot provide data on illegal emigration and also data regarding the emigrants who are leaving the country using their Bulgarian passports (Zulfiu, 2018). Labor emigration in North Macedonia is not a new phenomenon and regarding Zulfiu (2018) this phenomenon started in the 1960s when former Yugoslavia opened the borders and encouraged people to work in Western Europe.

Another interesting fact is that most people, who are leaving North Macedonia, are young people, mostly having at least a high- school degree or bachelor's degree (Dietz, 2010). Also, the liberalization of the EU's visa regime toward the North Macedonian citizens, made easier to reach the EU countries (Joveski, 2012, p. 66). It is very hard to have precise data on the number of people leaving the country every year after the liberalization of visas since there are people that use this opportunity to leave the country as a tourist and then find a job and be emigrant. Since November 2015, a citizen of Western Balkan countries, including North Macedonia are able to enter and apply for a working visa in Germany, only if they have a binding job offer (Arapi & Kljajic, 2019) . This is a very serious problem, since these people that leave the country, they do not go as visitors, but they find a job, legally or illegally and do not come back. Even though the North Macedonian citizens might have remittances of living abroad, the high level of emigration will have negative implications for economic growth, public finances and population growth (The Economist Newspaper, 2017). The monthly average net wage in North Macedonia in January 2019, was 24.517 Macedonian Denars or converted to Euro, approximately 398 Euro (State Statistical Office, 2019c). Having in consideration also the political situation, level of corruption, quality of life, and the dynamic life, young people having tertiary education don't see a future in the country and decided to leave for more opportunities. This kind of migration is known as "brain drain", a phenomenon which will be discussed below.

Stamenkovic (2015) classifies Macedonian emigration into two main groups: 1) permanent family emigration which now is followed by brain drain; 2) temporary economic emigration. In addition to these two groups, Stamenkovic (2015) mentions also the illegal emigration and the group of people who seek asylum. The number of Macedonian citizens who are seeking refuge and protection in EU member states has increased for more than 600 percent after the liberalization of visas in 2010 (Stamenkovic, 2015).

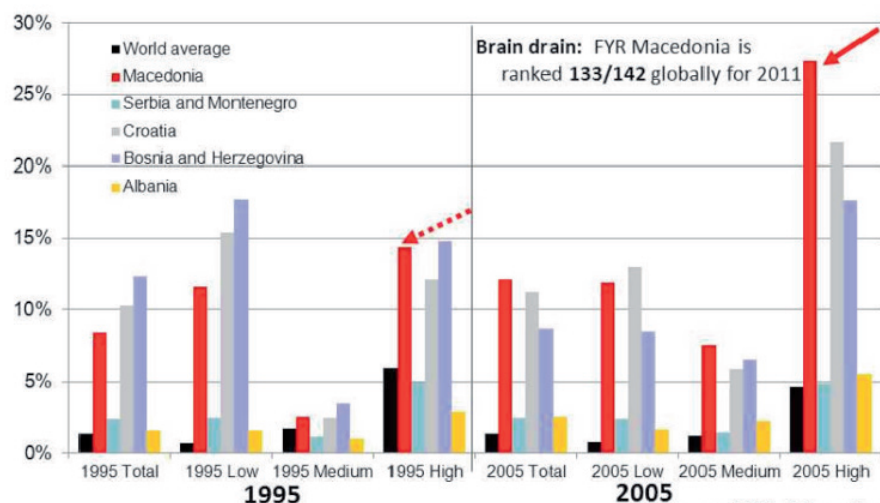
2.2 Brain drain problem from North Macedonia

Brain drain is a very actual topic and one of the main problems and challenges for policymakers in North Macedonia (Dinkovski & Markovska-Simoska, 2018). As a problem, it is linked to the loss of investments in human capital and creative work, the social policy and the economic condition of the country (Dinkovski & Markovska-Simoska, 2018). Even though this is a very actual topic in North Macedonia nowadays, the phenomenon is not new anyway. From 1993 to 2002, 12.000 to 15.000 young educated people, high- skilled persons emigrated from North Macedonia (Dinkovski & Markovska-Simoska, 2018, p. 174).

According to Nikolovska (2004), who did research on employment, education and emigration two of the main reasons for the brain drain problem in North Macedonia are political instability of the country and economic development. Besides this, unemployment is another problem in the country which is a problem that cannot be solved in the short term (Nikolovska, 2004). North Macedonia's current unemployment rate is 19.4 percent (Trading Economics), a very high rate for a small country.

Regarding the World Bank data, North Macedonia has the highest ratio in Southeast Europe, regarding the number of citizens who left the country, only in the period 1997-2005 about 29 percent of Macedonian citizens with tertiary education left the country (Zulfiu, 2018). The below-shown Figure 3 shows that North Macedonia is ranked 133 out of 142 in the world regarding the brain drain in 2011. It also shows a comparison of the emigration rate by education level in the years 1995 and 2005. In the year 2005, North Macedonia had the highest rate of emigration in the region, and people with high level of education were more motivated to leave the country, with around fourteen percent while citizens of Albania had five percent and the world average was slightly above five percent. After ten years, the situation got worsens. The same group with the high level of education emigrants doubled and reached almost thirty percent while neighboring countries such as Albania and Serbia were approximately five percent and the world average was slightly above five percent. In both cases, emigrants with a medium level of education were least motivated to emigrate in 1995 and 2005, with three percent and seven percent respectively. Educated emigrants from North Macedonia mostly include IT specialists, teachers, medical professionals and engineers, and this causes a decrease of more than seventy percent in the number of researchers and scientists for the period 1995 and 2000 (Zulfiu, 2018).

Figure 3: Emigration rate by education level



Source: Zulfiu (2018).

The World Bank data shows that migration stock in North Macedonia is increasing continuously and there is no evidence in return migration increase (Zulfiu, 2018). Anyway,

since 2004 in Skopje was established the International Organization for Migration (hereafter: IOM) office to implement the Assisted Voluntary Return Programmes through which emigrants wishing to return back home will have the support for reintegration in society, support for healthcare, education, the establishment of business, housing (IOM Skopje, 2019). Wahba (2015) in her paper “Who benefits from return migration in developing countries”? lists some pros and cons with respect to return migration as following:

1. **Pros:** return migration can be beneficial for the economy of the home country; returned migrants bring the new ideas that can improve the economic and political outcome of their home country; migrants while abroad acquire new skills and with this, they will have advantage in comparison with non-migrants at home country; migrants save money while abroad so this increases the opportunity for them to open a business and be self-employed;
2. **Cons:** bureaucracy can discourage return migrants to invest in their home country; skills required abroad not always are necessary for the home market; institutions and people at home country might not be very open to the ideas and practices in the host country.

Janeska, Mojsovska, and Lozanoska (2016) have distinguished some of the most important consequences and implications of the brain drain in North Macedonia:

1. The average level of human capital will decrease with all negative effects on innovation;
2. Unfavorable implications on the development of the country in the long-term;
3. Very poor feedback effects of the return of young educated people in terms of remittances and technology transfer;
4. The stimulus to domestic education;
5. Significant decrease in the population reproductive base.

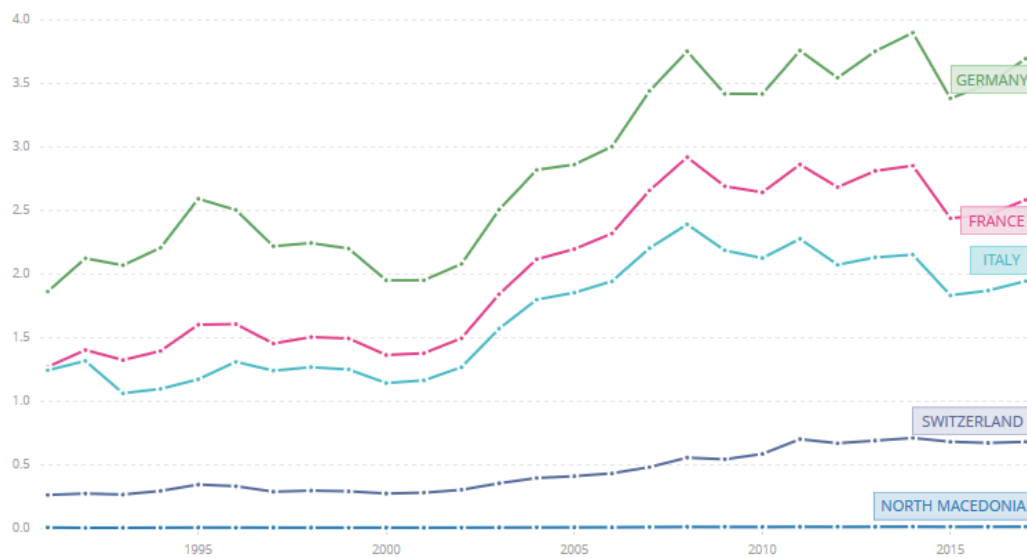
Wahba (2015) supports the idea that if return migrants are not able to reintegrate in their home country and bring new ideas and practices or if they do not match the home market requirements then this instead of brain gain can be easily transferred to brain waste. At the same time, if their remittances or savings from abroad do not stimulate the economic and social development of the home country, then their capital is not used to the greatest advantage (Zulfu, 2018).

2.3 Macroeconomic analysis of the Republic of North Macedonia

In order to understand the economic performance of the Republic of North Macedonia, a set of economic indicators from the World Bank database was analyzed. The analyzed period is from 1991 (declared independence) until nowadays. The macroeconomic performance of North Macedonia has been mixed since the country declared independence, even though on several indicators showed improvement, again it remains ranked in very bad compared to developed countries (Mughal, Cipusheva & Abazi, 2008).

1. Gross Domestic Product- always has been used in order to measure the human well-being and progress in a country, and as analysis it is limited to the economic factor, ignoring the social and cultural ones (Brinkman & Brinkman, 2011). On the below-shown graph from the World Bank (2019c), there is a huge difference between North Macedonia's GDP and other countries which are the main destination for young people who leave the country (see Figure 4). The graph shows data from 1991 until 2017, and the developed countries achieved to double their GDP, while North Macedonia, remained in the same position. In 2017, Germany's GDP was USD 3.693 trillion, following by France with USD 2.583 trillion, and Italy with 1.944 USD trillion. North Macedonia's GDP, even though it increased since the independence, but remains very low compared to the developing countries, with USD 11.28 billion.

Figure 4: Comparison of GDP between North Macedonia and main destination countries



Source: World Bank (2019c).

2. Inflation- Arthur Pigou (1917), in his paper “The Meaning of Inflation”, defines inflation as “*a too rapid increase in the volume of currency or bank money, a redundancy of currency, a redundancy of bank-money and so forth*”. Pigou (1917) believes that this definition is too vague and general, but still, one possible use of the term can be in direct reference to prices, which in this case “inflation” must mean something that is related to the rise or fall in the general level of prices. Pigou (1917), describes three more possible meanings of inflation such as the relation between the nominal and actual value of the paper currency in terms of standard metal, the state of foreign exchange and industrial boom, but since they are not related to this topic, would be considered in detail. When it comes to optimal inflation rate there are different opinions, but the Federal Open Market Committee and Bank of England target an inflation rate between 1.7 to 2 percent in medium-term (Billi & Kahn, 2008). In Table 3, there is shown the inflation rate for North Macedonia in the period 2009- 2019, which during this period of ten years has experience different extreme rates such as -0.74 percent in 2009 and the highest rate by 3.9 percent in 2011 (World Bank,

2019e). However, since 2017 the inflation in North Macedonia is between the preferred optimal rate. In the year 2018, it was 1.5 percent while until the end of 2019 it is expected to have the same rate (National Bank of the Republic of North Macedonia, 2019a). Based on the forecast of the National Bank of the Republic of North Macedonia and State Statistical Office, the inflation rate in 2020 is expected to be at 2.0 percent (National Bank of the Republic of North Macedonia, 2019a).

3. Unemployment- is another macroeconomic indicator that is used very often when analyzing the economic performance of a country. It shows the percentage of people that currently do not have a job but are part of the active population (people that are able to work and seek a job). The “natural” unemployment rate is not measured directly but is inferred from other information, and usually, a “natural” unemployment rate is considered between 4.3 percent to five percent (Weidner & Williams, 2011). As is shown in Table 3 North Macedonia’s unemployment rate is extremely above the “natural” rate, four or sometimes it was even five times higher. In the period 2009- 2019, the highest rate was in 2009, reaching 32.17 percent, and the lowest one in 2018 by 17.8 percent (World Bank, 2019g). In the first quarter of 2019, the unemployment rate was 17.8 percent (State Statistical Office, 2019b) and the job vacancy rate was 1.77 percent, or 9.100 free job positions (State Statistical Office, 2019d). In practice, it is very hard to find a job especially in public office, unless you have connections with the ruling political officials, at the national or local level. Besides the connections, bribery is also a phenomenon when it comes to public office vacancies. Usually, people pay an amount of € 1.500 to € 2.000 for a job position in public office. The private sector, on the other hand, does not offer too much, unless you have a degree in fields that have a low number of students. There are no official data for year 2012 and 2014.

4. Government debt to GDP- is an indicator that analyzes the health of the economy and a key factor for the sustainability of government finance and the benchmark for this indicator is fifty percent of GDP (OECD, 2019a). Government debt to GDP in North Macedonia always is increasing since 2009 (see Table 3). Its lowest point was in 2009 by 23.6 percent, and then constantly increased reaching 40.7 percent, which means that for a ten-year period it doubled and getting closer to reach the benchmark of fifty percent. In that case scenario, the country would have a financial crisis.

5. Current Account Deficit- North Macedonia is having a relatively low deficit in the last ten years. For the period 2009- 2019, the highest deficit in the current account was in 2009, by -6.48 percent, and for the two following years, it stayed constant at around two percent (see Table 3). In 2012, it had a sharp decrease at -3.27 percent while in 2014 it reached -0.63 percent (World Bank, 2019a). In 2017 and 2018, the country is having a deficit of -0.83 percent (World Bank, 2019a). For the year 2018, and two quarters of the year 2019, the current account to GDP was not provided.

6. Exports and Imports- are the main indicator of the economic performance of a country. Ideally would be that export is higher than import, but this is very rare, except in some

developed countries. In North Macedonia, the situation is almost the same as in other developing countries, the amount of imports is much higher than exports. Table 3, shows export and import and percentage of GDP, and in 2009 imports counted 54.37 percent and this value increased year by year, reaching 69.17 percent in 2017 (World Bank, 2019d). On the other hand, exports had some fluctuations from year to year, reaching the highest point in 2011, by 16.3 percent while this started to sharply decrease and in 2017 it ended up to 8.12 percent (World Bank, 2019b).

7. Foreign Direct Investment- is a great source of capital and usually, it brings new job opportunities, boosts overall economic growth (Chowdhury & Mavrotas, 2006), even though sometimes it can be seen as competition for domestic firms. As is shown in Table 3, for several years there is no data regarding the foreign direct investments in North Macedonia, except for the years 2015, 2016 and 2017. In the year 2015, the foreign direct investments were 202.8 million Euros, in 2016 much higher about 316.9 million while in 2017 it was a significant decrease of almost 50 percent than the previous year.

Table 3: Selected macroeconomic indicators (2009-2020)

Selected macroeconomic indicators of Republic of North Macedonia (2009- 2020)												
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
GDP growth %	9.40	9.43	10.40	9.70	10.80	11.31	10.11	10.60	11.24	n.d.	n.d.	n.d.
GDP annual growth %	-0.30	3.33	2.34	-0.4	2.90	3.60	3.82	2.81	0.24	n.d.	n.d.	n.d.
GDP growth per capita %	-0.41	3.21	2.20	-0.5	2.82	3.5	3.74	2.75	0.13	n.d.	n.d.	n.d.
Government debt to GDP %	23.63	24.11	27.73	33.7	34.05	38.17	38.10	39.9	39.52	40.7	n.d.	n.d.
FDI in million	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	202.81	316.90	180.01	n.d.	n.d.	n.d.
Gross external debt/GDP %	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	69.41	74.20	73.21	76.5	n.d.	n.d.

Table continues

Table 3: Selected macroeconomic indicators (2009-2020) (cont.)

Selected macroeconomic indicators of Republic of North Macedonia (2009- 2020)												
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Inflation %	-0.70	1.50	3.90	3.30	2.74	-0.23	-0.32	-0.21	1.31	1.51	1.50	2.00
Unemployment	32.20	32.00	31.40	n.d.	29.00	n.d.	26.12	23.7	22.3	20.7	17.5	n.d.
Trade Balance % of GDP	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	-2.01	-2.80	-1.00	-0.31	n.d.	n.d.
Exports % GDP	-13.80	23.60	16.10	1.90	6.14	16.42	8.44	9.02	8.15	n.d.	n.d.	n.d.
Imports % GDP	54.30	58.00	66.00	66.83	61.41	64.82	64.92	65.50	69.79	n.d.	n.d.	n.d.
Current Account Deficit (% of GDP)	-6.40	-2.00	-2.40	-3.24	-1.62	-0.61	-1.98	-2.90	-.08	n.d.	n.d.	n.d.

Source: Adopted from State Statistical Office (2019a); National Bank of the Republic of North Macedonia (2019b); Trading Economics (2019); World Bank (2019f)

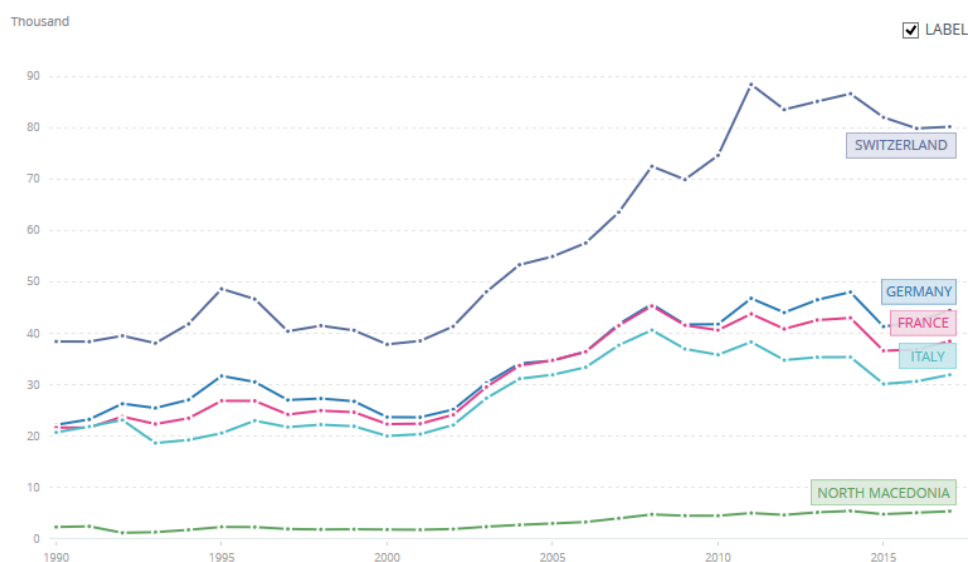
For the table of macroeconomic indicators, different sources were used, and unfortunately, some data for several years were not provided. Data provided for 2019, are only for the first and second quarter of the year, while data for 2020 are forecast.

2.4 Push and pull factors in North Macedonia

Based on Horvat's (2004) paper, one of the most important 'push' factors, that influences the decision of young professionals to leave is a violation of human rights and academic freedom. Based on a report published by U.S Department of State (2018), North Macedonia should apply policies to improve on several fields regarding human rights such as acceptable conditions at work, discrimination with respect to employment and occupation, the prohibition of forced labor, discrimination based on sexual and gender identity and discrimination based on ethnicity.

The difference in economic growth and development, technological development, level of democracy is extremely huge in comparison with developing countries from the European continent, where among them is also the Republic of North Macedonia. The difference in some aspects can be seen in Figure 5.

Figure 5: Comparison of GDP/ capita of Switzerland, Germany, France, and Italy with the GDP/capita of North Macedonia



Source: (World Bank, n.d.).

The graph above from The World Bank Database shows the difference in GDP per capita between North Macedonia and four countries that are the main destination of migration for highly- skilled individuals from North Macedonia. The World Bank Database gives data from 1990 to 2017. A quick analysis of this graph will make us understand that GDP per capita in North Macedonia did not have a drastic change. On the other hand, GDP per capita of Switzerland had a sharp increase especially after the year 2000. EU countries such as Germany, France, and Italy, which are the main destinations of North Macedonian emigrants, are positioned between North Macedonia and Switzerland, with a GDP per capita in 2017 of USD 44.470, USD 38.477, and USD 31.953, respectively. North Macedonia's GDP per capita is USD 5.515, while in Switzerland is USD 80.190

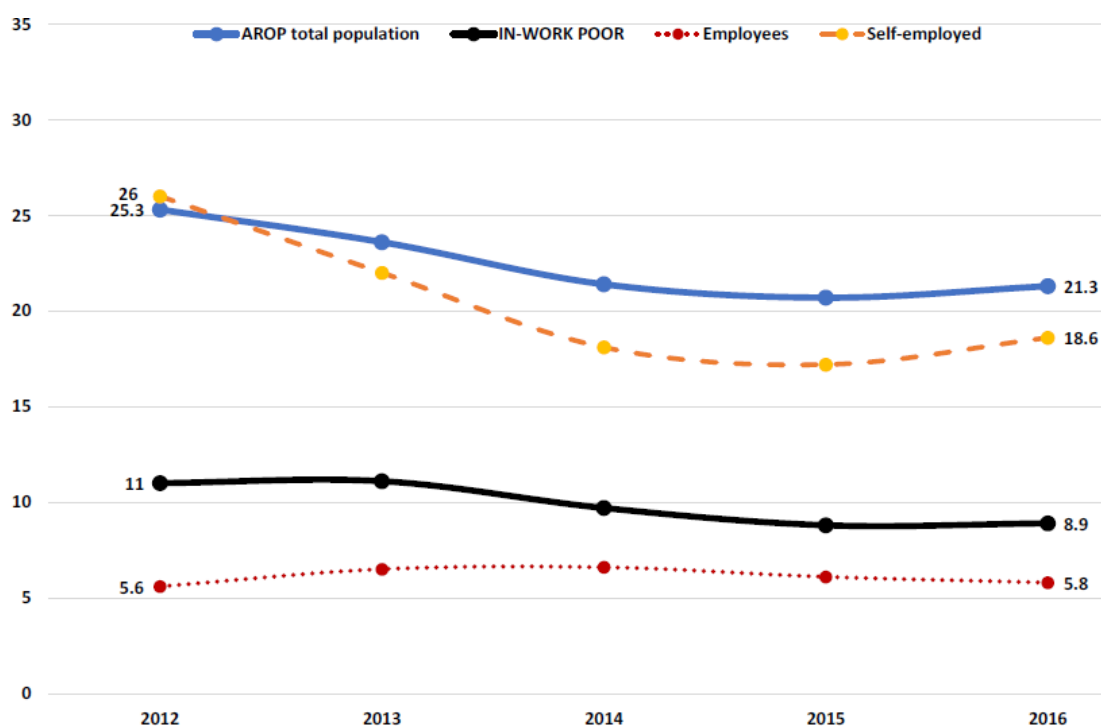
2.4.1 Globalization

Globalization is a factor of migration, also for people from North Macedonia, especially for the young generations that have tertiary education. Technological improvements and cheaper opportunities to travel mentioned by Murru (2008) and Czaika and de Haas (2014) make it easier for Macedonian citizens as well, to look for better opportunities abroad, especially in European countries. Young people that hold a degree do not want to imprison themselves and put a limit on their career, so thank technological developments they look for better job opportunities and in the first chance, they decide to go abroad. While a young person who just graduated from university needs up to six months to find the first job, in North Macedonia the same person might need several years to find a job in his/ her field and use connections or in the worst-case bribery.

2.4.2 Poverty

Around one-third of 30.4 percent of the North Macedonia's population are considered poor (Krajewski, 2017). In a country with two million people, six hundred thousand individuals are living below the poverty line. On the other hand, also in-work poverty (hereafter: IWP) is high. Based on the EU, a person is considered at in-work poverty if he/she has an employment status and is living in a household that is at risk of poverty (Peña-Casas, Ghailani, Spasova & Vanhercke, 2019). Around 9.4 percent of EU citizens who have employment status resulted to be at work poverty in 2017 (Peña-Casas, Ghailani, Spasova & Vanhercke, 2019). Moreless, the situation is the same also in North Macedonia. Data published by Eurostat show that 8.9 percent (see Figure 6) of employed people in North Macedonia were at-risk of poverty in 2016 (Mitev, 2019). Anyway, the situation before was even worse, the IWP rate fell by 19.1 percent in the period 2012-2016. As shown in Figure 8, at risk of poverty rate of the total population in 2016 was 21.3 percent, while the rate of self-employed people was 18.6 percent.

Figure 6: Evolution of IWP rate (in percentage) for the whole population, waged employees and the self-employed in North Macedonia in the period (2012-2016)



Source: Mitev (2019).

As is shown in Table 4, the IWP for employed people by age in North Macedonia improved from 2012 to 2016. The best improved was in the group of people among eighteen to twenty-four years. In 2012 the IWP rate for this group was 13.7 percent, while in 2016 it decreased to 5.8 percent. The second group, which consists of people from twenty-five to sixty-four-year-old, the IWP rate is higher and it had a slight decrease since 2012, from 10.6 percent to

only 9.2 percent. Also, the third group of people from fifty-five to sixty-four had an improvement on their IWP rate, and in 2016 it resulted to be 8.3 percent.

Table 4: IWP rate for employed people by age, in North Macedonia 2012-2016

IWP rate of employed persons (%)	Reference period					Change 2016 vs 2012
	2012	2013	2014	2015	2016	Intensity (%)
18 to 24 years	13.70	13.90	16.30	7.70	5.80	-57.70
25 to 54 year	10.60	11.10	9.60	9.10	9.20	-13.20
55 to 64 years	11.60	9.50	7.20	8.00	8.30	-28.40

Source: Mitev (2019).

The IWP rate is connected to the educational level (see Table 5), and the higher the level of education the lower is the IWP rate (Mitev, 2019, p. 7). People who have a lower secondary school or below have a higher IWP rate and are exposed more to risk. During the period 2012- 2016, this group of people did not have any significant decrease, while the second group of people with upper- secondary and post-secondary education, had a slight decrease from 8.7 percent to 6.2 percent. In the best position are people, with tertiary education, which has a very low percentage of IWP rate, of only 1.6 percent. Anyway, this group of people had a slight decrease of only 0.3 percent from 2012 to 2016.

Table 5: IWP rate for employed people by educational level, in North Macedonia 2012-2016

IWP rate of employed persons (%)	Reference period					Change 2016 vs 2012
	2012	2013	2014	2015	2016	Intensity (%)
Lower secondary or below	25.90	25.20	25.10	19.40	25.50	-1.50
Upper- secondary and post-secondary, non-tertiary	8.70	7.60	6.70	7.70	6.20	-28.70
Tertiary level	1.30	1.90	1.00	2.40	1.60	23.10

Source: Adopted from Mitev (2019).

According to Mitev (2019), some of the key challenges for North Macedonia in order to tackle the high rate of IWP are:

1. The low level of minimum salary;
2. Low-paid self- employment and part-time employment;
3. The high rate of low salaries;
4. The low education level;
5. Lack of labor policies.

2.4.3 Socio-economic factors

Based on Kaasa (2003) there are several factors that influence income inequality as follows:

1. Economic growth- this group of factors included the GDP growth which in North Macedonia is it increasing but still remains very bad compared to other developed countries;
2. Macroeconomic factors- especially unemployment and inflation affect inequality. As shown in Table 3 of macroeconomic indicators, both inflation and unemployment are at very high percentages in North Macedonia;
3. Demographic factors include all processes of demographic development such as the density of population, urbanization, etc.;
4. Political factors such as high taxes, privatization, social and economic policies;
5. Historical, cultural and natural factors include also the attitude of people toward inequality.

2.4.4 Corruption

North Macedonia is among the 180 countries that are listed on the Corruption Index 2018 provided by Transparency International (n.d.-b). In 2018, North Macedonia had a score of thirty- seven and was ranked in 93rd position, sharing the same position with Gambia, Kosovo, Mongolia, and Panama (Transparency International, n.d.-a). As is shown in Table 6, North Macedonia had an improvement since 2015, but still, it remains to be very corrupted and there is a lot of work to do. The worst country ranked in 2018, is Somalia with a score of 10 is ranked in 180 positions, while the best countries are Denmark and New Zealand, in the first and second positions, respectively (Transparency International, n.d.-a).

Table 6: North Macedonia's ranking on corruption (2012- 2018)

Year	2018	2017	2016	2015	2014	2013	2012
Score	37	35	37	42	45	44	43

Source: Transparency International (n.d.-a).

Corruption is one of the obstacles that prevent the business to invest in North Macedonia. Based on the report of the United Nations Office on Drugs and Crime (hereafter: UNODC), businesses in North Macedonia, pay on average 4.8 bribes to public officials (UNODC, 2013). The two main purposes of paying bribes to public officials are to speed up a procedure and to make the finalization of a procedure (UNODC, 2013).

“Widespread corruption is a sign that something has gone wrong in the relationship between the State and society” (Pearson, 2013, p. 36). Indeed, North Macedonia has a lot to do, in order to improve its image regarding corruption. In order to combat corruption, serious activities are needed such as institutional and administrative reforms, change of economic

policy, most important are legal and judicial reforms, reform of political system (Pearson, 2013).

2.4.5 Political situation

North Macedonia has been the core of most of the main problems in the Western Balkans, starting a few years before the end of the last century until nowadays. It was part of Yugoslavia and on the 8th of September 1991, it declared its independence. It is in a strategic position in the Western Balkans and it is a neighboring country of Bulgaria to the east, Albania to the west, Kosovo to the northwest, Serbia to the northeast and Greece to the south. The following timeline would sum up the best the political route of North Macedonia and the main issues that the country is facing (British Broadcasting Corporation, 2019):

1. March 2001 brought an interethnic conflict between Macedonians and Albanians, where Albanians demanded equal rights. The conflict brought the country close to a civil war;
2. August 2001- the Macedonian government and representatives of ethnic-Albanians signed the Ohrid Framework Agreement, to end the conflict and to accept the ethnic-Albanians requests for equality. As a result of this agreement, major changes happened in society, especially for the ethnic-Albanians. Mass employment at public offices and more educational opportunities;
3. March 2004- Macedonia successfully submits the application to join the EU;
4. December 2005- Macedonia officially became a candidate for EU membership;
5. July 2006- comes into power the center-right party VMRO-DPMNE, to run the country for ten years;
6. April 2008- Macedonia fails to join the NATO coalition after Greece blocked the invitation due to name dispute;
7. December 2008- Visa-free travel within Schengen Zone came into effect;
8. May 2015- clashes in the northern part of the country where eight police officers and fourteen gunmen died. This caused a lot of following protests in the country;
9. May 2017- end of the era of the center-right party. Zoran Zaev of Social Democrats forms a coalition to run the country;
10. October 2018- a referendum to change the country's name in order to close the dispute with Greece;
11. February 2019- name change to Republic of North Macedonia comes into force after Prespa Agreement on 12 June 2018. Center-right party VMRO-DPMNE still does not accept the Prespa Agreement. After the change of the name, North Macedonia signed the NATO accession agreement.

Since 2006, when the center-right party came into power, in North Macedonia always were the early parliamentary elections and none of the mandates were fully finished for four years. The early parliamentary elections were in June 2008, June 2011, April 2014, June 2016 and December 2016 (OECD, n.d.). Due to this North Macedonia had a lot of economic

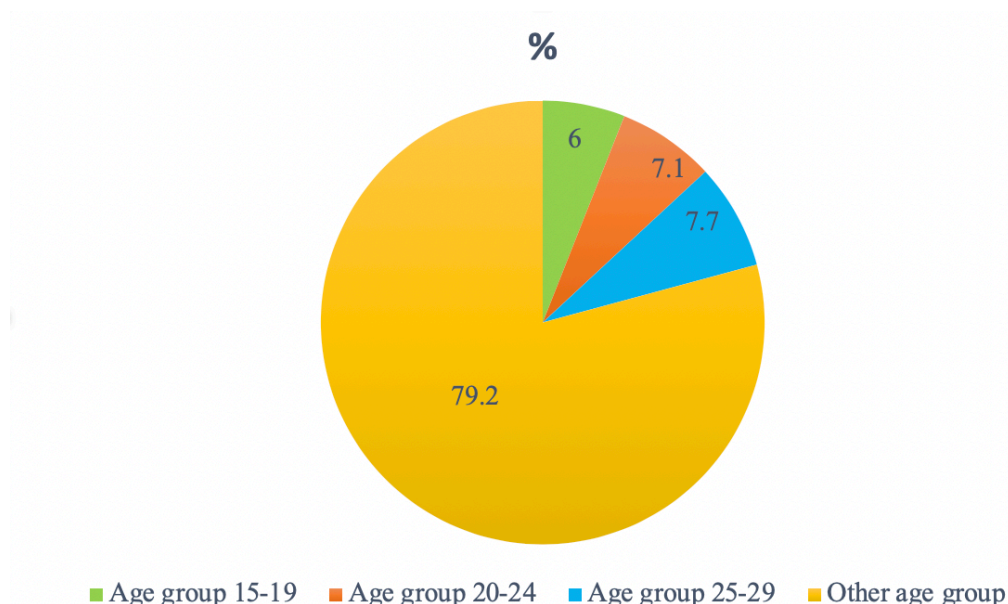
downturns and slow economic development. Elections, and especially early elections really affect the economic development of a country due to the inactivity of the parliament and postponed governmental decisions during the electoral campaign (Pop-Eleches & Robertson, 2015). Besides the early parliamentary elections in the period 2006- 2017, in North Macedonia there were also three regular Presidential elections (2009, 2014 and 2019) and three regular local elections (2009, 2013 and 2017).

The political elite is corrupted in North Macedonia and the latest case is the escape of former Prime Minister, who was sentenced to two years and claimed political asylum in Hungary (Freedom House, 2019). Based on the country report published by Freedom House (2019), North Macedonia's aggregate freedom score is 59/100, (where 100 is most free), freedom rating is 3.5/7 (where 1 is most free and 7 is least free) and the political rights score is 4/7 (where 1 is most free and 7 is least free).

2.4.6 Youth policy

A country's potential is based on its youth population. Based on the European Commission (2017b), the total number of young people in the Republic of North Macedonia 440,516 as of 2017 data, where 48.8 percent are female and 51.2 percent male. On the 1st of January 2017 (see Figure 7) the ratio of young people in the total population is as follows:

Figure 7: Ratio of young people in the total population on 1st of January 2017



Source: European Commission (2017b).

The Agency of Youth and Sport is a governmental body that is entitled to work on issues that are related to youth, it is a leader of any youth process and in charge to coordinate different ministries actions that are related to youth, but in the end, the government is the

main body on the decision- making processes (European Commission, 2017b). The Agency of Youth and Sport proposed the strategy National Youth Strategy (2016-2025) and the agency is responsible for the implementation of the same one (European Commission, 2017b). The Agency of Youth and Sport listed some of the key priorities of the National Youth Strategy (2016- 2025) as follows:

1. To provide a better living standard and equal opportunities;
2. To create opportunities for the involvement of young people in decision- making processes that directly affect them;
3. Equal access to quality education and other forms that would lead to professional development.

Based on the key priorities of the National Youth Strategy, it is obvious that there is much more work to do with regard to young people in North Macedonia. The first priority states that the better living standard and equal opportunities, from which we can understand that young people in North Macedonia do not share the same rights and do not have equal opportunities when it comes to education, employment, etc. The second priority includes the creation of opportunities for decision- making processes, which leads to the understanding that young people still do not have any competence regarding decision- making the process. The third priority points out the access to quality education and ways that would succeed with professional development, from which we understand that not all young people in North Macedonia have equal access to quality education.

In the below-shown picture, there are official data from the State Statistical Office regarding the number of enrolled students in undergraduate studies for the period 2009- 2018. As is shown in the picture, the number of undergraduate students enrolled is slightly decreasing year to year. A worrying fact is that between 2010 and 2011 there was a huge decrease in undergraduate students enrolled, exactly after the liberalization of the EU's visa regime. Only in a one-year period, 4503 fewer students enrolled in undergraduate studies (see Table 7). The last data provided by State Statistical Office for enrolled undergraduate students are from the academic year 2017/2018, and the number of enrolled students is 1142 less than a year before (State Statistical Office, 2018a).

Table 7: Number of enrolled students in undergraduate studies (2010-2018)

Academic Year	Number of students
2010/2011	63,250
2011/2012	58,747
2012/2013	56,906
2013/2014	57,746
2014/2015	59,359

Table continues

Table 7: Number of enrolled students in undergraduate studies (2010-2018) (cont.)

Academic Year	Number of students
2015/2016	59,865
2016/2017	58,083
2017/2018	56,941

Source: State Statistical Office (2018a).

The number of postgraduate students is very small compared to undergraduate students and this number is slowly decreasing (see Table 8). The biggest difference is between 2012 and 2013, where 897 fewer students enrolled in postgraduate studies (State Statistical Office, 2018b).

Table 8: Number of enrolled students in postgraduate studies (2010- 2018)

Academic Year	Number of students
2010/2011	3,787
2011/2012	3,562
2012/2013	3,212
2013/2014	2,315
2014/2015	3,569
2015/2016	3,034
2016/2017	2,773
2017/2018	2,360

Source: State Statistical Office (2018b).

The government of the Republic of North Macedonia published a “Resolution on migration policy 2015-2020”, introducing instruments and strategies that will be implemented to reduce the emigration rate of young people. The strategies are as follows (Janeska, 2015):

1. Reduce of the intensity of permanent emigration, especially the emigration of educated people and talents by improving the possibilities for temporary employment, gradual harmonization of the labor force, increase employment in the regions characterized by high emigration rate, etc.;
2. Improving cooperation with the migrants’ organizations in order to promote and increase investments in-country by Macedonian diaspora, enhance support for the family members, decrease transaction costs for transfer of foreign remittances and other financial services;
3. Promoting return migration and reintegration by creating favorable conditions for investments, establishing cooperation between citizens abroad;
4. Enhance the efficiency of institutions to detect and prevent irregular migration by harmonizing the national legislation with the EU’s legislation in the area of border control.

2.5 ‘Brain gain’ or return of migrants back to North Macedonia

Regarding Wahba (2015), the educational level is a very important factor that affects the probability of migrants return and their contribution to their home country. The majority of emigrants from North Macedonia have either low or medium level of education at the time when they decide to emigrate, while a very small percentage of them are highly educated (Zulfiu, 2018, p. 33). In the below-shown figure, there are data about the educational profiles of returnees. Basically, the table shows the educational level of people who are not present in the country and those who didn’t leave at all or returned back. People having four years of secondary education were among those people who did try to migrate and then returned or didn’t try at all. Also, people having a Ph.D. degree were among those who didn’t try to migrate at all (see Table 9). Among absent migrants again people with four years of secondary education result to migrate the most followed by people with primary education. Citizens with post-degree qualification either are absent migrant, or they return back home, but the number of those who did not migrate at all is very small.

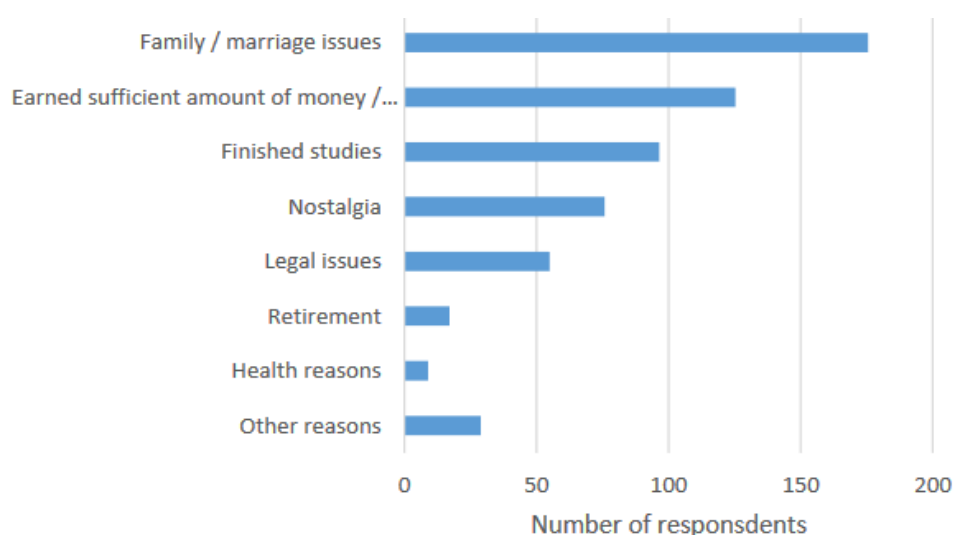
Table 9: Number of enrolled students in postgraduate studies (2010- 2018)

Education	Household Residents		Absent Migrants (at departure) %
	Non-Migrants %	Returned migrants %	
No education	1.10	1.30	2.70
Incomplete primary	13.90	5.60	6.30
Primary education	18.40	26.30	22.50
Incomplete secondary	3.40	2.00	2.90
3 years of secondary education	3.70	5.10	5.80
4 years of secondary education	40.50	32.80	44.20
Higher education	3.00	3.90	2.50
University-level education	13.40	20.30	7.10
Post degree qualification (Ms/PhD)	0.50	2.30	0.80
No answer	2.10	0.40	5.20

Source: Zulfiu (2018).

In 2007 Center for Research and Policy Making in Macedonia conducted research and found out that 29.7 percent of Macedonian emigrants would like to return back home, while only 26.1 percent think very often about it (Zulfiu, 2018). In Figure 8 are shown the reasons for return back to North Macedonia. The main reasons for return back home are family and marriage issues, followed by improved economic status and end of studies (Figure 10). Retirement and health reasons are the least important reasons why Macedonian citizens decide to return back home.

Figure 8: Reasons migrants would consider returning home



Source: Petreski (2016).

Ministry of Education of the Republic of North Macedonia has presented a strategy called Stop Brain Drain 2013-2020 which focuses on four main priorities such as following (Zulfiu, 2018):

1. To establish a national system for managing the flow of returning highly- skilled people and to use their potential for economic and social development;
2. To prevent the brain drain of young people by making North Macedonia a better place for employment and opportunities;
3. Transfer the brain drain into brain gain by giving a chance of employment to return migrants into Macedonian institutions;
4. To increase the academic exchange of students and professors with other foreign countries through cooperation between scientific Diaspora and Macedonian research institute and academia.

However, in North Macedonia, there is a general impression that these kinds of strategies are rarely implemented in practice.

There are a lot of benefits from brain drain phenomenon and those benefits turn it on brain gain. The benefits are as following:

1. Remittances- it is obvious that people who migrate to developed countries earn much more than those who are working in North Macedonia. Regarding Stankovic, Angelova, Janeska, and Stankovic (2013), altruism and exchange are two motives behind remittances. Altruism is usually directed to family members while remittances motivated by the exchange are those compensations for services done on behalf of immigrants by someone else that is still in their native country (Stankovic, Angelova, Janeska & Stankovic, 2013). Anyway, nowadays people from North Macedonia migrate with their families, so they spend the money in the host country and rarely send them back to their native country.

2. Brain circulation- this phenomenon is rare among highly educated people unless they return back to their home country as contribute to the growth of the economy or general development (Stankovic, Angelova, Janeska & Stankovic, 2013). A great example of this would be, the students that go abroad for studies, return back home and start implementing the knowledge in their home country. On the results that will be discussed later on, the percentage of Macedonian students who would like to return back home is very small.

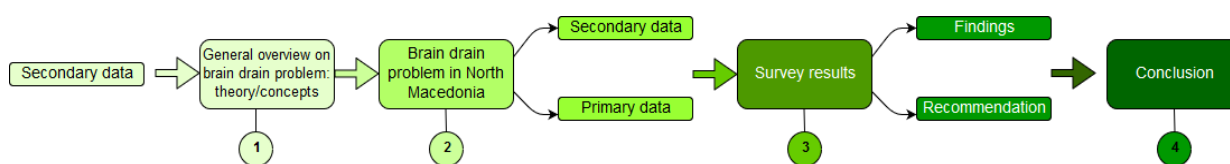
Stankovic, Angelova, Janeska, and Stankovic (2013), selected a number of knowledge assessment variables that are significant for brain circulation in North Macedonia and also other South-Eastern Europe countries. The selected indexes are human development index, control of corruption, university-company research collaboration, availability of venture capital, patent applications, high-technology exports as a percentage of manufactured exports, firm-level technology absorption, public spending of education, the difficulty of hiring (Stankovic, Angelova, Janeska & Stankovic, 2013). Since brain circulation is not the main goal of this master's thesis, the selected variables will not be elaborated further.

3 METHODOLOGY

3.1 Research framework

The research framework in Figure 9, provides the steps that will need to be taken in order to complete the whole process of research analysis and to achieve the goal of this master's thesis, using qualitative data. The approach of this research is descriptive and explanatory.

Figure 9: Framework on research analysis



Source: Own work.

The research analysis will consist of four main steps where in the first (1) step will be shown the general concepts of brain drain problem including theories and concepts of different authors that are dealing with this topic. In the second step (2) will be presented the brain drain specifically in North Macedonia, having an analysis of secondary data and collecting the primary data. In the third (3) step, which is the main and longest part of the research analysis, will be presented the results of primary data showing the main pull and push factors of the brain drain problem in North Macedonia and the experiences of highly- skilled workers that are leaving the country. Having the findings and recommendations will lead us to the last step or step four (4), which will provide us with a better and more simple understanding of the brain drain problem in North Macedonia.

3.2 Research method

There are two broad approaches to data collection that can be applied in any research: qualitative and quantitative research (Pathak, Jena & Kalra, 2013). In any research paradigm, both qualitative and quantitative methods can be used (Saunders, Lewis & Thornhill, 2009). Qualitative research is focused to understand the research questions as humanistic or idealistic and it was used to understand people's beliefs, behavior, attitude, etc. (Pathak, Jena & Kalra, 2013).

On the other hand quantitative approach and it is a more reliable method as it is based on numbers (Pathak, Jena & Kalra, 2013) and is defined as *“numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect”* (Sukamolson, 2007). The most used quantitative techniques of data collection are questionnaires

There are two main research approaches 1) deductive- in which you develop a theory and hypothesis and after that, you design a research strategy to test those hypotheses; 2) inductive approach is when you collect data and develop a theory as a result of collected data (Saunders, Lewis & Thornhill, 2009). The approach of this research is deductive.

For **secondary data**, I chose to use a) scientific data such literature published on different books, reports, articles, scientific and popular journals; b) popular data such as news reports of different international news agencies, web sites, magazines; and c) official data such as government publications, indexes, data from statistical offices of North Macedonia and also hosting countries, etc. Based on the results, I will forward the conclusion.

To find out the motivations, reasons, and incentives why highly- skilled professionals are leaving the Republic of North Macedonia, I also collected **primary data**: I prepared a twelve pages **questionnaire** that consists of twenty-five questions. The questionnaire has questions about the demographic profile of people who responded, born city, and their intentions and motivation to leave or stay in North Macedonia. Collecting data

The questionnaire includes all techniques of data collection in which each person needs to answer in the same set of questions that are in a predetermined order (Saunders, Lewis & Thornhill, 2009). Within the survey strategy, the questionnaire is one of the most used data collection techniques (Saunders, Lewis & Thornhill, 2009). The questionnaire is good to use for data collection in case there are not too many open-ended questions (Saunders, Lewis & Thornhill, 2009).

There are different types of questionnaires depending on how it is administered as such (Saunders, Lewis & Thornhill, 2009):

1. Self-administered questionnaires are those kinds of questionnaires that are fully completed by the respondents and there are three types of self-administered questionnaires:
 - 1.1 Internet and intranet questionnaires (are administered using the Internet)
 - 1.2 Postal questionnaires (posted to respondents by post)
 - 1.3 Delivery and collection questionnaires (delivered by hand to respondents and after a certain period collected again).
2. Interviewer-administered questionnaires
 - 2.1 Telephone questionnaire (this kind of questionnaire is done by calling on the telephone each respondent)
 - 2.2 Structured interviews (is the kind of questionnaire where interviewers should meet physically with the respondents to ask the questions and to record the answers).

I considered also other data collection techniques such as semi-structured or unstructured interviews, but due to the large sample, I decided to proceed with a self-administered questionnaire using the Internet. The choice for this kind of questionnaire was based on several factors as follows:

1. Characteristics of the respondents from whom I wanted to collect the data;
2. Size of the sample;
3. Number and type of questions I had on my questionnaire;
4. The geographic distance with respondents.

Self-administered questionnaires using the Internet have a favorable response rate compared to the typical postal questionnaires (Sepp, 2012). There are also other factors that will determine which type of questionnaire to choose for data collection, and not all factors apply equally in each scenario (Saunders, Lewis & Thornhill, 2009).

The questionnaire for this thesis was prepared on portal lka.com and was spread using social media such as Facebook, mail, etc. and it was prepared in the English language since it was believed that all respondents have English skills. The process of data collection was going on for the one-month period, from 26th of June 2019 until the 24th of July 2019. On the questionnaire, 1026 students responded.

The **target sample** included citizens of North Macedonia who are currently enrolled in universities or have already completed tertiary education, in North Macedonia (University of Tetova, South East European University, Ss. Cyril and Methodius University in Skopje) and also in other universities abroad. The survey was prepared on portal lka.com and was spread using social media such as Facebook, mail, etc. The questionnaire was prepared in the English language since it was believed that all respondents have English skills and data were collected during the one-month period, from the 26th of June to the 24th of July. About 1026 students responded to the questionnaire. Since the questionnaire was spread using

social media and databases of southeast European University, it was difficult to measure how many people received it. Upon examination of the data, it was discovered that responses mainly came from North Macedonia, and also other European countries such as Slovenia, Germany, Croatia, Switzerland, Turkey, the US, etc.

Since the questionnaire was spread using social media and databases of southeast European University and Ss. Cyril and Methodius University in Skopje, it was difficult to measure how many people received it. Upon examination of the data, it was discovered that some responses came from countries such as Ireland, Slovenia, North Macedonia, U.S, Switzerland, Croatia, Germany, Slovenia, Turkey, Portugal, Albania, Serbia, Denmark, Austria, Greece, Bulgaria, etc.

3.3 Limitations

Based on the objective of my research, the questionnaire could have more respondents than in 1026, in order to have a wider and more comprehensive overview of the research. Basically, I could not reach students from all public and private universities in North Macedonia. My main focus was at two biggest public universities (Ss. Cyril and Methodius University in Skopje and University of Tetovo), and two biggest private universities (South East European University and FON University). Namely, the least respondents came from FON University. The reason, why I could not reach to other universities, was because I used to spread the questionnaire through social media and did not have any connections on those universities that were not covered.

On the other hand, the covered universities all located in the northern part of the country, and basically, the majority of respondents come from the northern part, even though there are still responses from southern and eastern North Macedonia. Officially, there are seven ethnic groups in North Macedonia such as Macedonians, Albanians, Turks, Roma, Vlachs, Serbs, Bosnians (European Commission, 2017a). The majority of respondents were from the Albanian ethnic group, followed by the Macedonian ethnic group. The Serbian and Roma ethnic group were not reached to participate in this survey.

I contacted the administration of Ss. Cyril and Methodius University in Skopje, South East European University career center, and rectorate of the University of Tetova, in order to share my questionnaire via e-mails on their database to the currently enrolled students. Two of the above-mentioned accepted to do it, and just one of them did not respond at all. Namely, I could approach also the administration of FON University, to ask for the same.

The whole literature I used was in the English language, and sometimes I faced a lack of information in English for brain drain in North Macedonia. There are a lot of articles and reports also in Macedonian and Albanian language that I could have used, but due to translation of the same one and time consuming I decided to focus only on the English ones.

The questionnaire was prepared only in the English language, thinking that all respondents would speak English and will be able to respond. A translation of the questionnaire in Macedonian and Albanian languages would bring many more respondents. In the last part, which was reserved for comments, one of the respondents mentioned that I could have prepared the questionnaire in Macedonian because it made no-sense to answer in English if it is designed for North Macedonia.

On the questionnaire, I have included only currently enrolled students in the academic year 2018/2019. In order to have a better measurement, I could have included also just graduated students, to measure their intentions if they are planning to leave the country or not, since they are part of young educated people.

4 QUESTIONNAIRE RESULTS

In the following subchapters, interpretation of the results will be presented and also findings from the analysis, emphasizing the main reasons for brain drain problem in North Macedonia. The questionnaire was opened on the 26th of June and was closed on the 24th of July.

4.1 Demographic variables

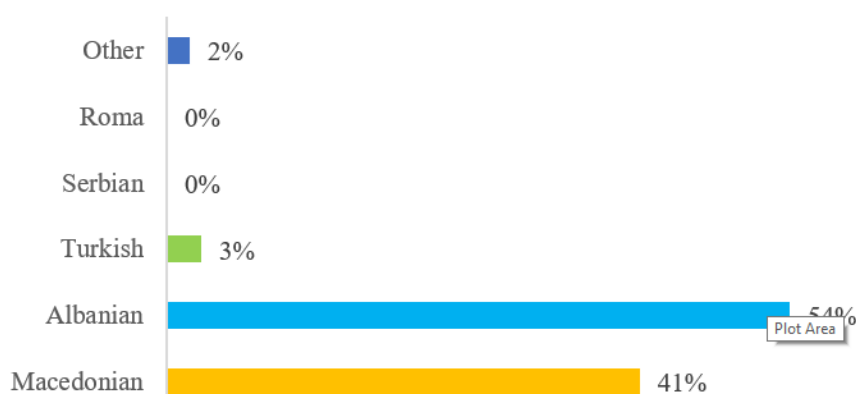
A total of 1026 students responded to the questionnaire. The response rate is as following: entered introduction 1026; entered in the first page 91; started responding 409; partially completed 114; fully completed 386 and left empty 26.

Sixty-one percent were female and thirty-nine percent male. Most respondents were between the age of nineteen and twenty-four.

For demographic reasons, I decided to include a question where respondents would provide their birthplace. It resulted that the vast majority was born in the northern part of the country in cities such as Skopje, Tetovo, Kumanovo, and Gostivar. There were respondents also from Kicevo, Kocani, Struga, Bitola, Gevgelija, etc. It resulted that there were respondents who are born abroad such as in Rijeka and Leverkusen.

Furthermore, a question regarding ethnicity was included. The results are as following, also shown in Figure 10 below: about fifty-four percent of respondents were of Albanian ethnicity, forty-one percent of Macedonian, three percent of Turkish ethnicity and two percent chose "Other". Unfortunately, Macedonian citizens of Serbian and Roma ethnic groups were not reached.

Figure 10: Question: What is your ethnicity?

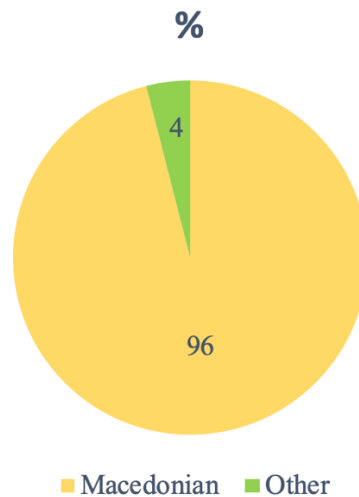


Source: Own work (N=321).

Among those who chose the option “Other” (around two percent), there were answers such as Bosnian, Yugoslav, Vlalinka and Torbesh.

The first question of the questionnaire is “are you a Macedonian citizen (holding a Macedonian passport)?”. It is designed in that way, that would not let the non- Macedonian citizens to continue with the questionnaire since they were not targeted. All respondents who answered “No”, were taken to the last page of the questionnaire and ended the questionnaire without having the chance to answer the other questions. I decided to act in this way, in order to skip foreign students who are studying in North Macedonia, because using the database of southeast European University and Ss. Cyril and Methodius University in Skopje, it is very hard to make sure that only students who are holding a Macedonian passport will respond. As is shown in Figure 11, ninety-six percent of the respondents answered “Yes” (holding Macedonian passport), and were guided to the rest of the questions, while only four percent answered “No” (not holding a Macedonian passport) and directly ended the questionnaire.

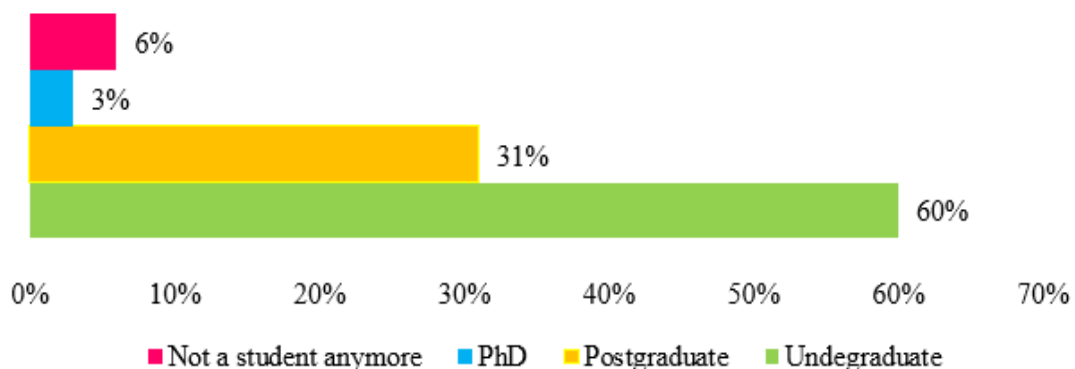
Figure 11: Demographics: Citizenship



Source: Own work (N= 1026).

The second question was also designed in the same way as the first question, in order to have more valid precise data and to not allow those respondents who are not students anymore to continue answering the questionnaire. The second question was defined as the following: “What is your current level of study?”. This question will help to understand which level of study were the respondents most. As is shown in Figure 12, undergraduate students responded most and they consist of sixty percent of all respondents, followed by postgraduate students with thirty- one percent. The Ph.D. students participated with three percent in this questionnaire. In this question, there is also another label called “Not a student anymore” for those respondents who are not a student in the time that the questionnaire took place. Only six percent of all respondents resulted to not be a student anymore and they were directed to the end of the questionnaire.

Figure 12: Current level of study

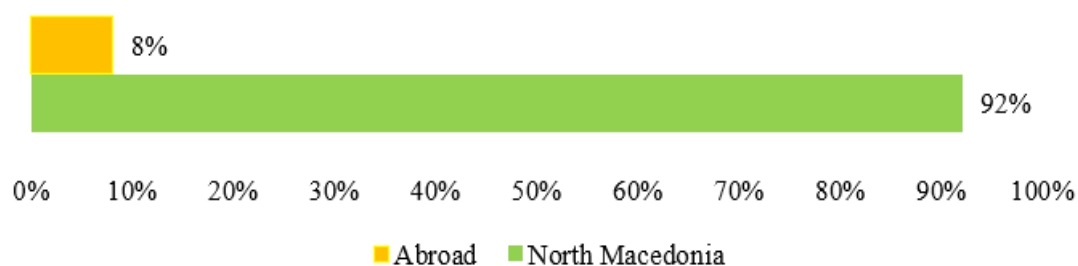


Source: Own work (N= 470)

Only the first and second question were designed in the way to help me reach the target that I planned in the beginning. In the first one, non- Macedonian citizens were taken to the end of the questionnaire, and in the second question, Macedonian citizens who were not students anymore were also taken to the end of the questionnaire.

The third question was used to determine the percentage of those studies in North Macedonia and of those who study abroad. As is shown in Figure 13, ninety-two percent of respondents were students who study in North Macedonia, and the rest or eight percent were studying abroad.

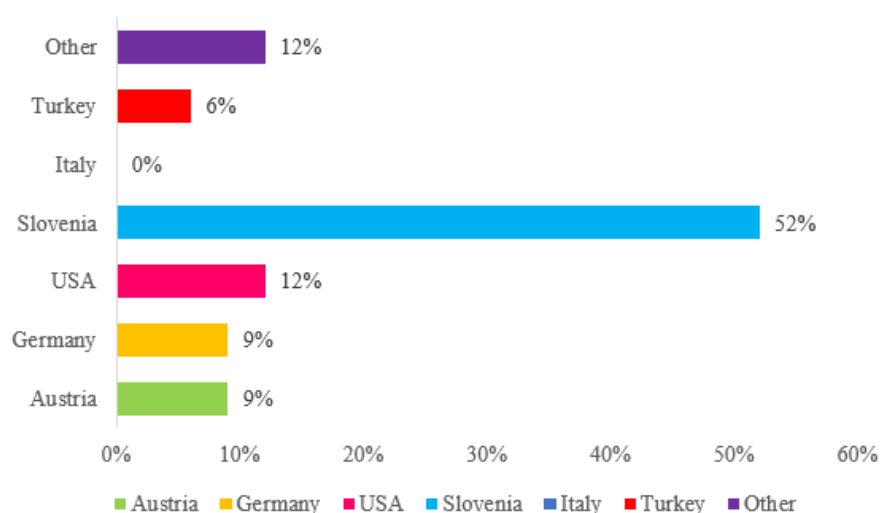
Figure 13: Place of current (2018-2019 school year) study



Source: Own work (N= 430).

For students who answered that are studying abroad, I prepared a filter question where they would select in which country they are currently studying. From the eight percent of students who are studying abroad, fifty- two percent of them responded that they are studying in Slovenia, twelve percent in the U.S, nine percent in Austria and Germany, six percent in Turkey. The labels were put using an assumption on which country usually Macedonian students study abroad (see Figure 14), but also the question had the label called “Other” where students that could not find on the list the country where they are studying, could write it in there. Around twelve percent of respondents could not find their country on the list and wrote that they study in countries such as Portugal, Kosovo, and Croatia.

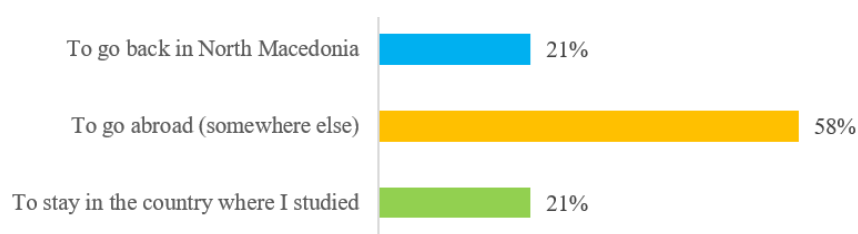
Figure 14: Country of study for students currently studying outside of North Macedonia



Source: Own work (N= 33).

Respondents who chose that are studying abroad, had also another filter question: “After getting your degree, what is your next plan?”. As shown in Figure 15, around fifty-eight percent of students who are studying abroad answered that they want to remain abroad and go in another country different from the country they are currently studying; twenty-one percent of them answered that they would like to return back in North Macedonia and twenty-one percent would choose to stay in the country where they are currently studying.

Figure 15: Plans after studying abroad (for students who are currently studying outside of North Macedonia)



Source: Own work (N= 33).

In Table 10, is shown the correlation between the plan of students after getting their degree and plans to move. It resulted that students who already study abroad and want to go abroad somewhere else already made plans for that move around 83 percent of respondents, mainly students that study in Slovenia (see Appendix 3), while none of the respondents who chose to return back to North Macedonia did not make a plan for that yet.

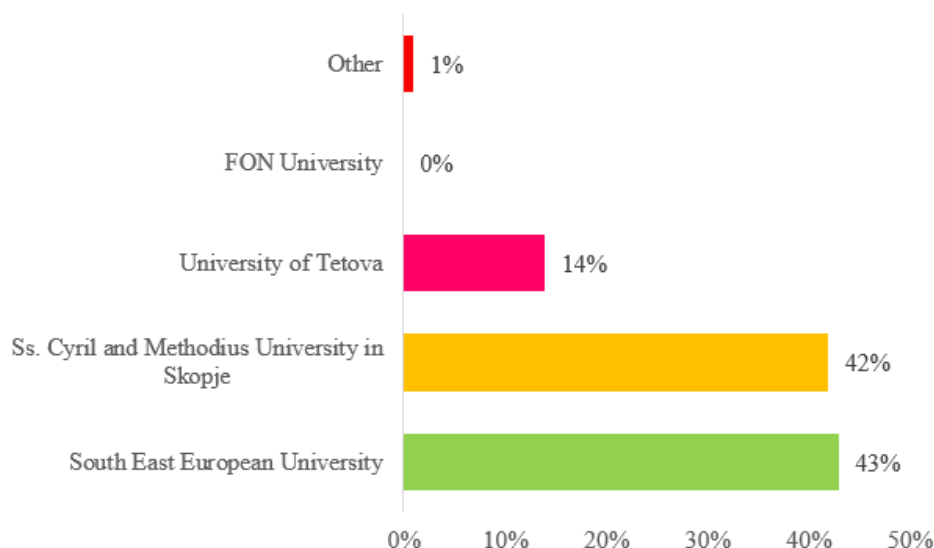
Table 10: Plans and preparation after studying abroad

		Have you already made any plans for this move or began preparations for this move?	
		Yes %	No %
After getting your degree, what is your next plan?	To stay in the country where I studied	20.00	80.00
	To go abroad (somewhere else)	83.33	16.67
	To go back in North Macedonia	0.00	100.00

Source: own work.

On the other hand, students who chose that they are studying in North Macedonia, had to answer in a filter question such as “From which university do you expect to graduate?”. About forty-three percent were students at South East European University, forty-two percent from Ss. Cyril and Methodius University in Skopje, fourteen percent from the University of Tetova and one percent chose the label “Other” by emphasizing on it “UKIM”, which basically is the acronym of Ss. Cyril and Methodius University in Skopje, in the Macedonian language (see Figure 16).

Figure 16: University of expected graduation

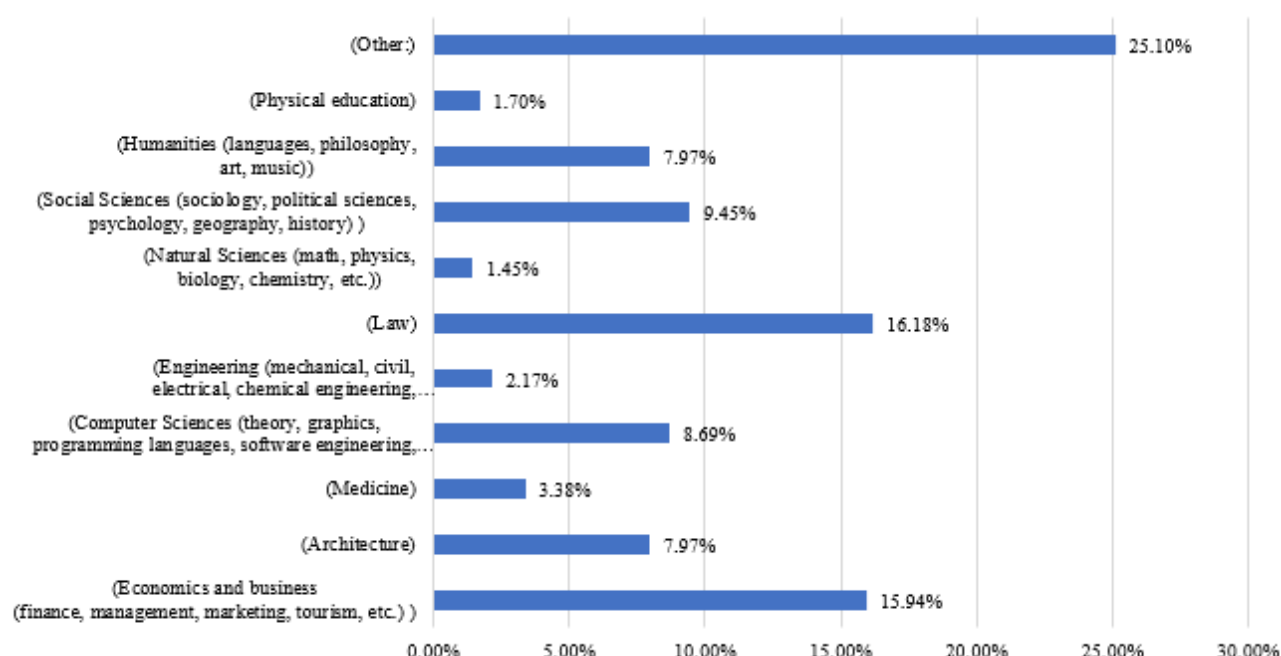


Source: Own work (N= 382).

Question four was about the field of study and the results are as shown in Figure 17. Most of the respondents (twenty- five percent) chose the label “Other” where they need to write their current field of education, where most of the answers were that they are studying design, pedagogy, journalism, and theology. Law and economics and business resulted in

the biggest groups of respondents with sixteen percent followed by students who study social sciences and computer sciences with nine percent. Students of architecture and humanities participated with eight percent and medicine students with three percent. Physical education and natural sciences students participated least in the questionnaire with two and one percent, respectively.

Figure 17: Current field of study

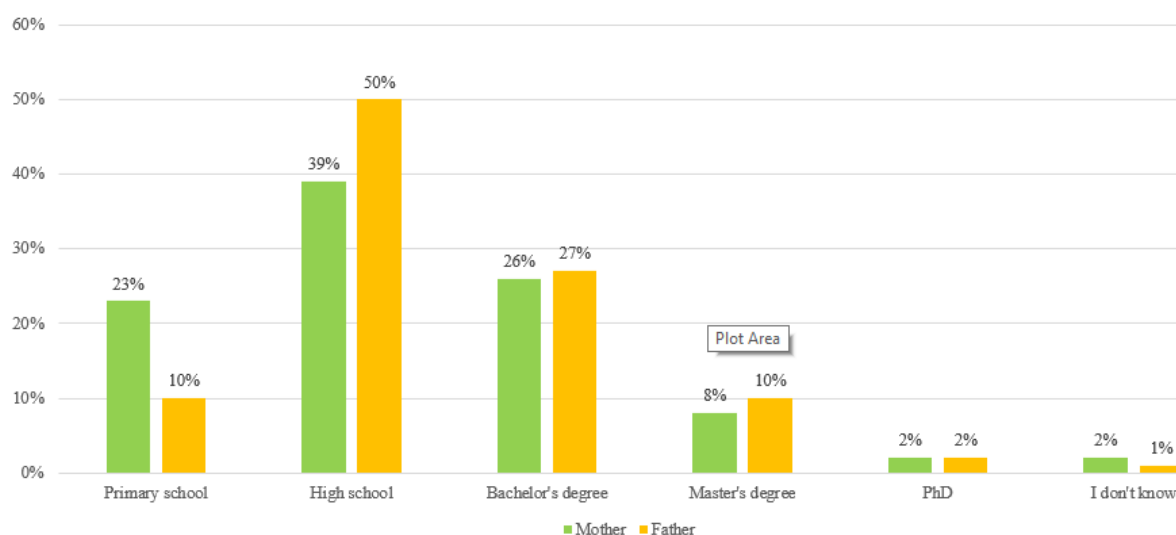


Source: Own work (N= 414).

Four previous questions were used for demographic purposes including country and field of study and the intentions of those students who study abroad will plan to return back to North Macedonia or not.

In order to analyze the background of respondents, a question regarding the educational level of their parents was included. The results are as following (see Figure 18). Based on the results, father parents have a higher level of education than mothers. Only ten percent of fathers have primary school completed, fifty percent high school, twenty-seven percent bachelor's degree, ten percent master's and only two percent have a Ph.D. level. On the other hand, twenty-three percent of mothers have only primary school level, thirty-nine percent high school level, twenty-six percent bachelor's degree, eight percent master's degree and only two percent Ph.D. level of education. On this question, three percent of students did not know the level of education of their parents. More specifically, two percent did not know about the mother's level of education and one percent about the father's level of education.

Figure 18: Question 18: What is the highest level of education from your parents?



Source: Own work (N= 318).

Another interesting fact is shown in Appendix 4 where is shown the correlation between the level of education of parents (mother) and the permanent move to another country. The results show that there is a positive correlation between these two variables. Basically, the level of education of parents (data for father see Appendix 7) does not affect the decision to permanently move to another country. The majority of respondents chose to move abroad.

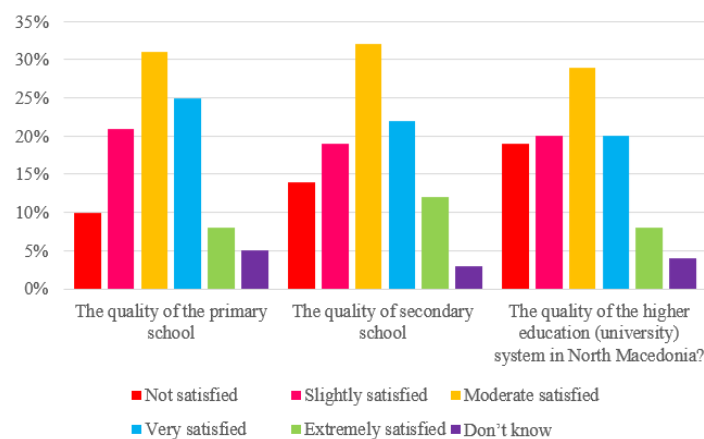
In the following question “Do you have relatives who already are living abroad (siblings, parents, aunt/uncle, grandparents or close friends)?”, ninety percent responded “Yes” and only ten percent “No”. This question was followed by another sub-question, where respondents chose the relationship with the relatives who already are living abroad (multiple answers were allowed). The vast majority answers that they have aunt/uncle abroad (sixty-eight percent), close friends (forty-four percent), siblings (twenty-seven percent), parents (eighteen percent), grandparents (twelve percent), other (eight percent).

The last part of the questionnaire was left for comments. Around ninety-two percent decided to not write while the other 8 percent decided some additional opinions. In total there were twenty-three comments, among the most frequent ones are complaints about the current political and economic situation in North Macedonia, some personal good wishes, a request to make the questionnaire in the Macedonian language, and some wishes for better life and improvement in North Macedonia.

The next following question will be about the quality of education in North Macedonia and students' perceptions about it. In the question, respondents were asked to mark the level of satisfaction with the quality of primary, secondary and higher (university) education (see Figure 19) using a Likert scale. It resulted that for primary education thirty-one percent of respondents marked as moderate satisfied, twenty-five percent very satisfied, twenty-one percent slightly satisfied, ten percent were not satisfied at all, eight percent were extremely

satisfied, and five percent choose the option “I don’t know”. On the subquestion about the quality of secondary school (including a gymnasium and high schools) thirty-two percent were moderate satisfied, twenty-two percent very satisfied, nineteen percent slightly satisfied, fourteen percent were not satisfied at all, twelve percent were extremely satisfied and only three percent decided to choose “I don’t know” option. On the third subquestion which is about the quality of higher education only four percent decided to answer by saying “I don’t know”, eight percent, were extremely satisfied, nineteen percent were not satisfied at all, twenty percent were slightly satisfied, and twenty-nine percent were moderate satisfied.

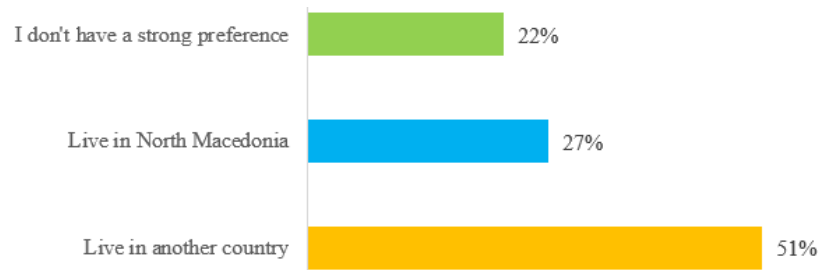
Figure 19: Level of satisfaction with the quality of education in N. Macedonia.



Source: Own work (N= 398).

The following question (see Figure 20), was used to measure the intension of respondents if after their studies do, they see the economic future in North Macedonia and do they plan to live move abroad or continue living in North Macedonia. About fifty-one percent of respondents decided to answer that they would choose to live in another country right away after they finish with university studies, while twenty-seven percent of them were optimistic and answered that they would live in North Macedonia. The percentage of respondents who did not clarify their mind was about twenty-two percent, and they decided that they do not have a strong preference, where they would choose to live after they are done with university studies.

Figure 20: Preference for living in North Macedonia or other country after university studies



Source: Own work (N= 396).

Students who responded that they would live in another country (fifty-one percent), had to answer in the following question “In which country would you choose to live?”. On the list, they provided more than twenty-eight countries, among which the most repetitive ones are as following: Germany, Switzerland, the U.S, Turkey, the Netherlands, Denmark, Canada, Sweden, Australia, Italy, Spain, UK, etc. There are responses such as “*not decided yet*”, “*somewhere other than North Macedonia*”, “*in any country where my profession would be valued and respected*”. Besides the question “In which country would you choose to live?”, students who responded that they would choose to live in another country were also asked if they already made any plans for this move or began preparations for this move. About fifty-two percent answered “No”, and forty-eight percent “Yes”. The same group of students was followed by another question such as “Later in life, do you plan to return back to North Macedonia, or you choose to permanently live abroad?”. The results show that sixty-five percent of the respondents choose to answer, “Stay abroad forever” and only thirty-five percent answered that later in life they would like to return back in North Macedonia. Another interesting fact shown in Table 11 is that the majority of respondents from three levels of education chose to live in another country, but only postgraduate students have already planned for this move, while Ph.D. students were in between.

Table 11: Correlation between the level of study and preparation to move

		Have you already made any plans for this move or began preparations for this move? (Q10)	
		Yes %	No %
What is your level of study you are currently at? (Q2)	Undergraduate	45.00	55.00
	Postgraduate	53.33	46.67
	PhD	50.00	50.00

Source: Own work.

Table 12 consists of the answers from the question “How much do the following factors affect YOUR decision on whether to leave the country?”. Several factors such as corruption, living standard, availability of jobs, bureaucracy, political climate, traveling opportunities, environment, infrastructure, medical care, religious freedom, possibility of war and revolution, isolation and access to technology were listed, using a Likert scale, in order to measure which are the main factors that motivate young educated people from North Macedonia to emigrate. It resulted that corruption indeed is a factor (forty-seven percent) that affects the decision of young people on whether to leave the country and only five percent answered that corruption is not a factor at all. The living standard seems to be one the most important factor and fifty-one percent of students answered that it is a very important factor that affects their decision, while only three percent did not see it as an important factor and nineteen percent remained neutral. The availability of jobs remains together with medical care remains the most important factor. About fifty-seven percent of students responded that these are very important factors that highly affect their decision. On availability of jobs twenty-three percent of them answered that is a relevant factor, nineteen percent remained neutral, three percent did not see it as a factor at all and four percent choose to answer, “I don’t know”. Bureaucracy is another factor that was assumed that affects the decision of young people. About twenty-nine percent of students saw it as a very important factor, twenty-eight percent remained neutral, twenty-two percent answered that it is a relevant factor while eleven percent decided to answer with “I don’t know”. Politics has an important role in the welfare of society and indeed it can affect the decision to leave the country. About forty-five percent of students see the political climate as a very important factor that might affect their decision. Also traveling opportunities and environment play a strong role (a very important factor) on the decision-making process of young people, with thirty-three and forty-one percent, respectively. Religious freedom, the possibility of war, revolution and violence, isolation and access to technology were seen as neutral factors on the decision whether to leave the country or not with thirty-three, twenty-seven, thirty-one, and thirty-one percent, respectively. Moreover, thirty-one percent answered that religious freedom is not a factor at all.

Table 12: Factors affecting respondent’s decision on whether to leave the country

Factors	Not a factor at all (%)	Not an important factor (%)	Neutral (%)	A relevant factor (%)	A very important factor (%)	I don’t know (%)
Corruption	5.00	2.00	19.00	21.00	47.00	6.00
Living standard	3.00	2.00	19.00	23.00	51.00	2.00
Availability of jobs	3.00	5.00	11.00	20.00	57.00	4.00
Bureaucracy	3.00	7.00	28.00	22.00	29.00	11.00
Political climate	6.00	5.00	20.00	19.00	45.00	5.00

Table continues

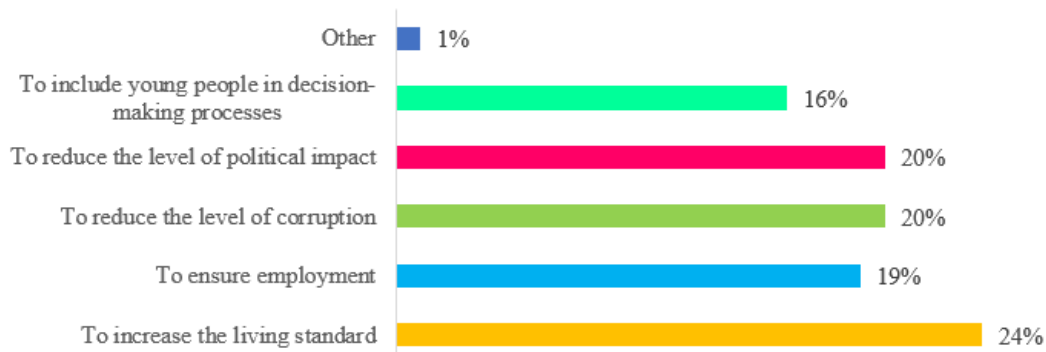
Table 12: Factors affecting respondent's decision on whether to leave the country (cont.)

Factors	Not a factor at all (%)	Not an important factor (%)	Neutral (%)	A relevant factor (%)	A very important factor (%)	I don't know (%)
Traveling opportunities	6.00	9.00	24.00	24.00	34.00	3.00
Environment (<i>air pollution etc.</i>)	3.00	7.00	21.00	23.00	41.00	5.00
Infrastructure	4.00	8.00	26.00	26.00	32.00	4.00
Medical care	4.00	2.00	13.00	20.00	57.00	4.00
Religious freedom	31.00	8.00	33.00	7.00	16.00	5.00
Possibility of war, revolution	19.00	8.00	27.00	16.00	24.00	6.00
Isolation	11.00	8.00	32.00	16.00	26.00	7.00
Access to advanced technology	8.00	6.00	31.00	24.00	26.00	5.00

Source: Own work (N= 347).

The next question was about what should be improved, in order that young educated people will be motivated to stay in North Macedonia. Figure 21 illustrates this. Around twenty-four percent of the respondents see the living standard as the main problem and an increase in living standards might motivate young people to stay. On the other hand, around twenty percent think that there is too much corruption and it should be reduced, while another twenty percent thinks that the level of political impact is too high. Employment is also another factor that should be improved in order young people to not leave the country (nineteen percent), while sixteen percent think that young people also should be included in the decision-making processes, in order to keep them motivated.

Figure 21: Most important things that should be done in North Macedonia to motivate young people to stay



Source: Own work (N= 347).

On the other hand, Appendix 8 shows a negative correlation between gender and the things that should be done in order to motivate young people to stay in North Macedonia. Most of the female respondents say that the living standard should be increased while male

respondents thought that the level of corruption should be reduced in order to motivate young people to stay.

Among respondents, one percent decided to write some other improvements that should be done in North Macedonia to motivate young people to stay. The most common answers are as following: better-medicated treatment, reformed law system, reformed educational system, improved infrastructure, and a better environment.

In the following question, respondents were asked to rate several statements using the Likert scale. In total there are thirteen statements and cover different aspects such as career and job opportunities, education, politics, etc. It resulted that living standard is one of the main concerns of the young people in North Macedonia. The results are as following, also displayed below in Figure 22:

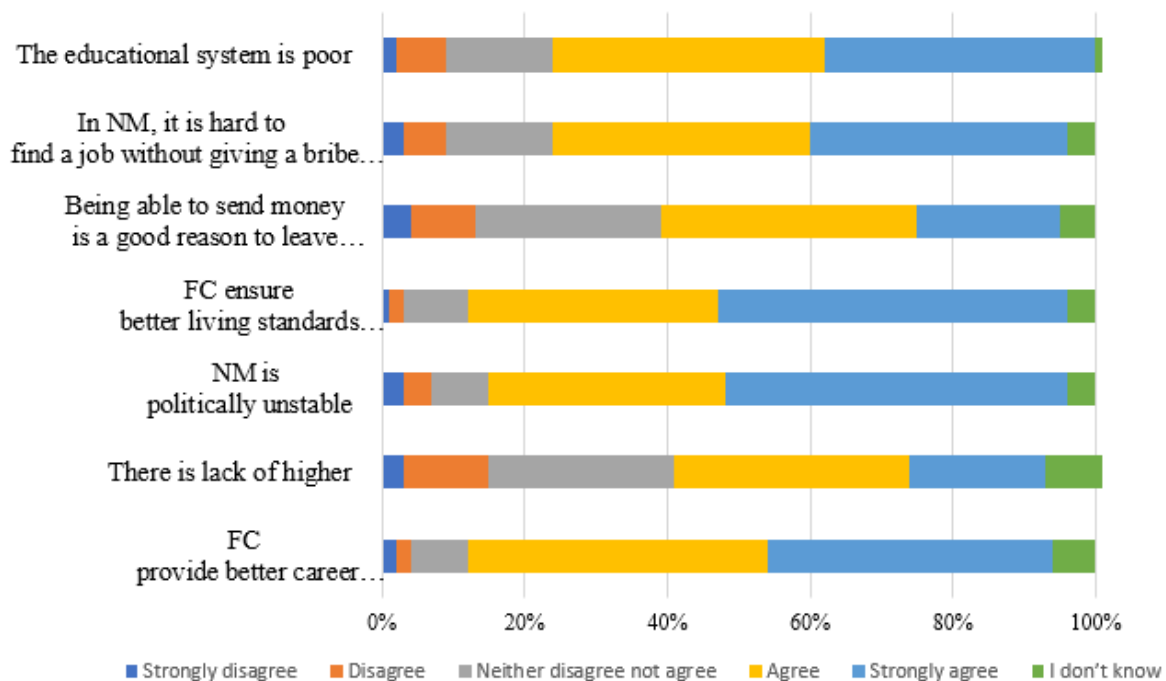
1. About forty-nine percent of respondents ‘strongly agree’ **that foreign countries ensure better living standard**, thirty-five percent ‘agree’ and only one percent ‘strongly disagrees’ with this statement. On the statement “If I get a job offer in North Macedonia that would allow me the same standard of living, I would stay in North Macedonia”, around sixty-nine percent agreed that would not leave if they would have the same standard as in foreign countries, while eleven percent did not agree with this, and fourteen percent stayed neutral.
2. The second main concern in the **unstable political situation** in the country. About forty-eight percent ‘strongly agree’ that North Macedonia is politically unstable, and thirty-three percent ‘agree’, while only three percent had a different opinion, but not agreeing with this statement.
3. **Better career opportunities** result to be one of the reasons why young people want to leave North Macedonia. Around forty-two percent of respondents ‘agree’ that foreign countries offer better career opportunities, while forty percent ‘strongly agree’ (see Table 10). Around eight percent of respondents were neutral while four percent didn’t agree that foreign countries offer better career opportunities.
4. Besides the lack of career opportunities, young people think that **their skills are not valued enough**. Around forty percent ‘strongly agree’ with this statement, while about thirty-nine percent ‘agree’ and only two percent of respondents do have different opinions. Moreover, seventy-two percent of respondents agree that is hard to find a job in North Macedonia if you are not ready to give a bribe, and only nine percent ‘disagree’ with the provided statement.
5. Around forty-one thousand children are not enrolled in pre-primary schools in North Macedonia, or sixty-one percent of children aged three to six years old (UNICEF, 2019). Majority of respondents ‘strongly agree’ (about thirty-eight percent) that **the educational system is poor in North Macedonia**, and only two percent ‘disagree’ with this statement. Around fifty-two percent of respondents agree that there is a lack of higher study

opportunities, and about fifteen percent disagree with this statement. Unfortunately, none of the Macedonian universities were included in the Shanghai Ranking's Academic Ranking of World Universities (Shanghai Ranking, 2019).

6. About sixty-two percent of respondents do not **see an economic future** in North Macedonia, and around fifty-six percent see as a good reason to leave in order to be able to **support the family by sending money** from abroad. Twenty-six percent of respondents remained neutral and thirteen percent did not agree with this statement.

7. About forty-three percent agreed that there are no **travel opportunities** in North Macedonia, and because of that would like to leave in foreign countries that will offer many more opportunities. Around twenty-nine percent remained neutral on this statement while twenty-four percent did not see this as a reason that they would migrate. Besides this, sixty-two percent answered that they would remain ties with North Macedonia even though they decide to migrate. Around twenty-nine percent were neutral, and twenty-four percent did not agree with the statement and would not like to remain ties once they migrate.

Figure 22: Level of agreement with Likert statements regarding climate in North Macedonia versus foreign countries



Source: Own work (N= 320).

4.2 Summary of reasons and factors for brain drain in North Macedonia-

In this subchapter, there will be an analysis of the reasons why young people decide to leave North Macedonia. The analysis will be based on the results I showed in the previous

subchapter. From the answers of 1026 respondents that agreed to answer the questionnaire prepared for this master's thesis, I prepared a list of factors and reasons why young people decide to migrate from North Macedonia and move to developed countries.

The top seven factors why young people decide to leave North Macedonia are as following:

1. **Corruption** is one of the biggest threats to democracy all around the world (Hughes, 2010). It is a threat also for the democracy of North Macedonia and a very important factor (among the top seven factors) why young people decide to leave the country. Based on the results of the questionnaire, corruption results to be one of the main issues that young educated people are facing in North Macedonia while trying to get a job or opportunity.
2. The **living standard** includes the level of living and the level of efficiency of goods and services that are available (Hoffer, 1929). It resulted that low living standard is indeed a factor why young people cannot accept in North Macedonia, and always try to migrate in countries, which offer higher living standard, which basically, all countries that they decide to migrate (Germany, Switzerland, France, UK, etc.) have a much higher living standard.
3. **Job opportunities** are limited in North Macedonia, and for young educated people that just graduated in almost impossible to find a job without giving a bribe (see Figure 24). For those who can afford and want to give a bribe, it might be a bit easier, but for the rest who cannot afford or does not want to use bribery, the lack of job opportunities indeed becomes a strong factor to leave the country, and look for other job opportunities in foreign countries which will offer better working conditions, more career opportunities and better living standard in the same time.
4. The relationship between **political stability** and economic equality is an important factor in terms of economic inequality (Posner, 1997). Indeed, the political situation is an important factor in motivating young people to leave the country (see page 27), and based on the results from this questionnaire, it resulted in among the top seven factors. As described in the previous chapter, there is a lot happening in Macedonian politics, especially with the elections, which really affect the economic performance of the country. Basically, in North Macedonia politics is included in every sector, which means it is a barrier for those young educated people that do not have someone to support them while trying to find a job. So, for these people there are two choices, even to agree with the reality and stay unemployed for a long time, work different jobs that do not fit their profile or the second choice is to leave the country and look for better opportunities in foreign developed countries. About forty-five percent of respondents saw political stability as a very important factor (see Table 10).
5. Among one of seven top factors that motivate young people to leave North Macedonia, is the **lack of travel opportunities**. Basically, this is a result of the weak economic performance of the country, low living standards, the lack of personal income due to lack of

job opportunities, etc. Moreover, a young educated person, just graduated, without any personal income, compares himself or herself, with other young people that are on the same level but are living in developing countries. Obviously, those people have opportunities to travel all around the world by financing themselves, while young people that live in North Macedonia, at least for the majority of them, this is impossible. A simple comparison of this kind easily motivates young people to move abroad and try to catch new opportunities there.

6. **Clean water, air, and soil** are the biggest contributors to the quality of life in society (Knopman, Zmud, Ecola, Mao & Crane, 2015). The scale of environmentally-related migration is unknown and for this further research is needed to understand the implications (Mence & Parrinder, 2017). Environmental impact on migration indeed is a challenge for policymakers either at the international or national level (Mence & Parrinder, 2017). Pollution is the main challenge nowadays, including North Macedonia. According to the European Environmental Agency, about five-hundred thousand premature deaths were caused by Europe every year (Fiorentino, 2019). Based on statistics provided by the World Health Organization (hereafter: WHO), North Macedonia is one of the most polluted countries in Europe (Fiorentino, 2019). In Europe, the most polluted urban area was the city of Tetovo, while Skopje was the second one on the list provided by WHO (Fiorentino, 2019). It is not surprising, why the environment is one of the top seven factors why young people want to leave North Macedonia and migrate to developed countries of Europe, which basically do not suffer from air pollution. About forty-one percent of respondents responded that air pollution is very relevant factor for their decision to migrate, twenty-three percent saw it as relevant factor and only three percent responded that air pollution is not a factor at all (see Table 10).

7. **Health** and migration are interconnected in many ways, and for sure one of the motives for migration is a bad health care system (Evans, 1987). The same reason applies to North Macedonia. About fifty-seven percent of respondents saw medical care as a very important factor that might affect the decision on whether to migrate or not. The government of North Macedonia has introduced a lot of changes in the healthcare system, but unfortunately, such improvements are not or very little visible in practice (Apostolova, n.d.). One of the biggest challenges for the Macedonian healthcare system is the brain drain of practitioners, who leave the country and massively migrate to Germany (Apostolova). This phenomenon comes as a result of low wages for the medical staff and bad working conditions (Apostolova). Annually, around 220 young doctors graduate from the Faculty of Medicine, 173 of them apply for a job abroad, mostly in Germany (Macedonian Private Doctors Association, 2019). The above-mentioned points, shortly summarize the top seven factors, that affect the decision of young people on whether to migrate or continue to live in North Macedonia. For sure, there are also other factors, but the above-mentioned ones, are the most emphasized ones, based on the results that came from the questionnaire, organized specifically for this master's

thesis. In the second part of this subchapter, some of the most common reasons will be listed. The order is as follows:

1. Foreign countries provide better career opportunities
2. Being able to send money from abroad to your family is a good reason to leave
3. Finding a job without bribing
4. Skilled people are not valued

4.3 Recommendations

Indeed, the situation in North Macedonia is dramatic and immediate policies should be implemented in order to stop this massive migration of young educated people. The factors and reasons that are mentioned in the previous chapter are more than enough to motivate young people to leave the country, especially the lack of job opportunities, high corruption, political impact, and low living standard.

In order to stop this brain drain process in North Macedonia, I suggest that economic reforms are needed in order to increase the living standard and start accelerating the Macedonian economy. Besides this, the fight against corruption should not be only in public speeches, but also should take place in practice, and together as a society, we should fight this phenomenon.

Politics is included everywhere, but young people are not involved in politics. They are involved only in electoral campaigns and are misused by political parties. Opportunities should be used by young people, in order to promote new ideas and together to work harder towards the integration of the country in the European Union, so one day in the future, we get closer to better opportunities and higher living standards.

Unemployment is another very important factor. Indeed, there is a lack of job opportunities, and those that are available are misused by those people that decide to work based on bribe or nepotism. More policies should be implemented that investors come to the country and new job positions are opened.

CONCLUSION

Brain drain is a worldwide problem because people want to have higher pay, to work in better conditions, to achieve more progress and to have the most rewarding employment (Docquier & Rapoport, 2012; Iredale, 1999). Literature shows that the most important push and pull factors are political instability, ethnic and religious discrimination, bad governance (Horvat, 2004; Kazlauskienė & Rinkevičius, 2006).

Analyzing various data sources, I understand how important and especially the consequences of this problem might be for North Macedonia and the biggest effect of brain drain will be

the decrease of human capital, which will have impacts of economic development of the country.

North Macedonia, is facing intense brain drain problem in the last two decades (Janeska, Mojsoska & Lozanoska, 2016). In the period 1997-2005, the emigration rate of the tertiary educated people was 29 percent and in the period 2008-2013 North Macedonia was part of the group of the ten countries in the world with the largest brain drain (Janeska, Mojsoska & Lozanoska, 2016). These data are enough to see the seriousness and implications of the brain drain problem for a small country such as North Macedonia.

The purpose of my master's thesis was to show a basic overview of brain drain and to identify main push and pull factors in general; to analyze the extent of the brain drain in North Macedonia and to determine the push and pull factors and to analyze if there is a brain gain possibility in the future. To achieve the purpose of my master's thesis I conducted a questionnaire with Macedonian citizens who were currently enrolled at university studies either in North Macedonia or abroad. The most important findings include:

1. Factors to leave are: level of corruption, living standard, job opportunities, political instability, lack of travel opportunities, environment (clean air and water), health;
2. After university studies 51 percent of the respondents were planning to leave abroad, 27 percent to stay in North Macedonia and 22 percent didn't have a strong preference yet. Among those who were studying abroad 58 percent responded that would like to go somewhere else, 21 percent wanted to return back and 21 percent to stay in the country they were currently studying;
3. 1/3 of the respondents were not satisfied with the quality of education in secondary and university studies;
4. Foreign countries ensure better living standard, better job opportunities and skills are better valued;
5. Recommendations to improve the current situation: increase living standards, ensure employment, reduce corruption, reduce political impact and include young people in decision-making processes.

North Macedonia has made good progress in terms of democracy and economic development, but still, there is much more to be done. Taking into consideration all the facts, that is a country in transition, had an internal ethnic conflict, and all global changes, North Macedonia's policymakers should put special emphasis on changing the policy and offering better conditions for young people. North Macedonia is not the only country that is facing the brain drain problem. This problem is worldwide, but the consequences are much bigger in small developing countries.

A country that is not getting employment to young people, cannot have an economic perspective. After conducting the questionnaire, unfortunately still there is no hope for young people from North Macedonia. More than half of them would like to leave the country

forever, some of them would like to leave and maybe return in the future after they improve their living standard, and only a few of them would not decide to leave. Based on this, I can conclude that the “brain gain” process in North Macedonia, cannot be compared to that one in India, which basically Indians, use migration to get improved and then they bring the knowledge, experience, connections, and money to their home country.

Immediate policies are needed in North Macedonia in order to respond to the brain drain implications. Pre-emigration measures are very relevant in order to prevent brain drain and such measures include: encouraging the cooperation among the business sector and universities, cross-cutting of the policies migration with other relevant policies and other programs for talents (Janeska, Mojsovska & Lozanoska, 2016) that will help and motivate young people to not leave and have an opportunity in their home country. After all, these policies should be implemented in practice, otherwise, the brain drain problem will keep increasing and the human capital in North Macedonia will keep decreasing.

REFERENCE LIST

1. Apostolova, M. (n.d.). *Challenges in the healthcare system of the Republic of Macedonia*. FOMOSO. Retrieved 14 September, 2019 from <https://www.fomoso.org/en/mosopedia/background-knowledge/challenges-in-the-healthcare-system-of-the-republic-of-macedonia/>
2. Arapi, L. & Kljajic, S. (2019, 28 March). Balkan bottleneck: Germany overwhelmed by 'enormous increase' in work visas. *Deutsche Welle*. Retrieved August 04, 2019 from <https://p.dw.com/p/32bgt>
3. Bank of England. (2019, 10 May). *Inflation and the 2% target*. Retrieved 15 June 2019 from <https://www.bankofengland.co.uk/monetary-policy/inflation>
4. Becker, G. S. (1992). Human Capital and the Economy. *Proceedings of the American Philosophical Society*, 136(1), 85-92.
5. Beine, M., Docquier, F. & Rapoport, H. (2008). Brain Drain and Human Capital Formation in Developing Countries: Winners and Losers. *The Economic Journal*, 118(528), 631-652.
6. Bell, S., Alves, S., Silveirinha de Oliveira, E. & Zuin, A. (2010). Migration and Land use Change in Europe: A review. *Living Reviews in Landscape Research*, 4(2).
7. Billi, R. M. & Kahn, G. A. (2008). What is the optimal inflation rate? *Federal Reserve Bank of Kansas City Economic Review*, 93(2), 5-28.
8. Brinkman, R. L. & Brinkman, J. E. (2011). GDP as a Measure of Progress and Human Development: A Process of Conceptual Evolution. *Journal of Economic Issues*, 45(2), 447-456.
9. British Broadcasting Corporation. (2019). *North Macedonia profile - Timeline*. BBC. Retrieved 08 September 2019 from <https://www.bbc.com/news/world-europe-17553072>
10. Chowdhury, A. & Mavrotas, G. (2006). FDI and growth: what causes what? *World economy*, 29(1), 9-19.
11. Čiarnienė, R. & Kumpikaitė, V. (2008). The impact of globalization on migration processes. *Socialiniai tyrimai*, (3), 42-48.
12. Czaika, M. & de Haas, H. (2014). The Globalization of Migration: Has the World Become More Migratory? *International Migration Review*, 48(2), 283-323.
13. Department of State. (2018). *North Macedonia 2018 Human Rights Report*. Retrieved 03 June 2019 from <https://www.state.gov/wp-content/uploads/2019/03/NORTH-MACEDONIA-2018-HUMAN-RIGHTS-REPORT.pdf>
14. Dietz, B. (2010). *Migration and remittances in Macedonia: A Review*. Leibniz: Institute for East and Southeast European Studies.
15. Dinkovski, V. & Markovska-Simoska, S. (2018). Brain drain as a function of sustainable development in the Republic of Macedonia. *Industrija*, 46(1), 173-188.
16. Docquier, F. (2014). The brain drain from developing countries. *IZA World of Labor*, 31.

17. Docquier, F., Lohest, O. & Marfouk, A. (2007). Brain Drain in Developing Countries. *The World Bank Economic Review*, 21(2), 193-218.
18. Docquier, F. & Rapoport, H. (2012). Globalization, Brain Drain, and Development. *Journal of Economic Literature*, 50(3), 681-730.
19. Dokos, T. (2017). *Migration and Globalization –Forms, Patterns and Effects*. Trilogue Salzburg. Retrieved from https://www.bertelsmann-stiftung.de/fileadmin/files/Faktencheck/Leaders__Dialogues/Salzbunger_Trilog_20177_Migration_and_Globalization.pdf
20. European Commission. (2017a). *Population: Demographic Situation, Languages and Religions*. Retrieved 13 June 2019 from https://eacea.ec.europa.eu/national-policies/eurydice/content/population-demographic-situation-languages-and-religions-48_en
21. European Commission. (2017b). *Youth Policies in former Yugoslav Republic of Macedonia. The Youth Wiki*. Retrieved 14 June 2019 from <https://eacea.ec.europa.eu/national-policies/en/youthwiki>
22. Evans, J. (1987). Introduction: Migration and Health. *The International Migration Review*, 21(3), 5-14.
23. Fiorentino, M.-R. (2019). Air pollution knocks almost one year off the average European's life: WHO, *Euro News*.
24. Freedom House. (2019). *North Macedonia- Country Report*. Retrieved 08 September 2019 from <https://freedomhouse.org/report/freedom-world/2019/north-macedonia>
25. Gibson, J. & McKenzie, D. (2011). Eight Questions about Brain Drain. *The Journal of Economic Perspectives*, 25(3), 107-128.
26. Gillie, A. (1996). The Origin of the Poverty Line. *The Economic History Review*, 49(4), 715-730.
27. Hoffer, C. R. (1929). Research in the standard of living. *Social Forces*, 7(3), 399-402.
28. Horvat, V. (2004). Brain drain. Threat to successful transition in South East Europe. *Southeast european politics*, 5(1), 76-93.
29. Hughes, R. (2010). *Passage of Change: Passage of Change: Law, Society and Governance in the Pacific*. Canberra: ANU Press.
30. IOM Skopje. (2019). *IOM assisted voluntary return and reintegration programme*. Retrieved 19 May 2019 from <https://iomskopje.org/assisted-voluntary-return-and-reintegration/>
31. Iredale, R. (1999). The need to import skilled personnel: factors favouring and hindering its international mobility. *International migration*, 37(1), 89-123.
32. Janeska, V. (2015). *Resolution on migration policy of the Republic of Macedonia 2015-2020*. Skopje: International Migration Office (IOM).
33. Janeska, V., Mojsovska, S. & Lozanoska, A. (2016). Brain drain from the Republic of Macedonia- Trends, implications, policies. *Economic Development/Ekonomiski Razvoj*, 18(3), 23-37.

34. Joveski, Z. B. (2012). Forms of illegal and forced migration in the Republic of Macedonia. *Security dialogues*, 3(2), 59-74.
35. Kaasa, A. (2003). *Factors influencing income inequality in transition economies*. Tartu: Univeristy of Tartu.
36. Kazlauskienė, A. & Rinkevičius, L. (2006). Lithuanian" brain drain" causes: push and pull factors *Inžinerinė ekonomika*(1), 27-36.
37. KNOMAD. (2018). *Migration and remittances. Migration and Development Brief*. Retrieved 17 November 2019 from <https://www.knomad.org/sites/default/files/2018-04/Migration%20and%20Development%20Brief%2029.pdf>
38. Knopman, D., Zmud, J., Ecola, L., Mao, Z. & Crane, K. (2015). *Quality of life indicators and policy strategies to advance sustainability in the pearl river Delta* (pp. 81-106). Santa Monica: RAND Corporation.
39. Krajewski, D. (2017). *Four facts about poverty in Macedonia* [published on blog]. Retrieved from <https://borgenproject.org/poverty-in-macedonia/>
40. Macedonian Private Doctors Association. (2019). Докторите си заминуваат, кој ќе нè лекува? [Press release]. Retrieved from <https://www.zplrm.mk/?p=8912>
41. Marusic, S. J. (2011, 06 September). *Macedonian diaspora money exceeds FDI by 600%* [published on blog]. Retrieved from <https://balkaninsight.com/2011/04/04/money-from-the-diaspora-overshadow-macedonia-s-fdi/>
42. Mattoo, A., Neagu, I. C. & Özden, Ç. (2008). Brain waste? Educated immigrants in the US labor market. *Journal of Development Economics*, 87(2), 255-269.
43. Mence, V. & Parrinder, A. (2017). *A Long Way to Go*. Canberra: ANU Press.
44. Merkle, O., Reinold, J. & Siegel, M. (2017). *A Study on the Link between Corruption and the Causes of Migration and Forced Displacement* [published on blog]. Retrieved from <https://migration.unu.edu/publications/reports/a-study-on-the-link-between-corruption-and-the-causes-of-migration-and-forced-displacement.html>
45. Mitev, M. G. (2019). *In- work poverty in North Macedonia* [published on blog]. Retrieved from https://www.academia.edu/39235353/In-Work_Poverty_in_North_Macedonia
46. Morris, S. D. (2008). Disaggregating Corruption: A Comparison of Participation and Perceptions in Latin America with a Focus on Mexico. *Bulletin of Latin American Research*, 27(3), 388-409.
47. Mughal, A. G., Cipusheva, H. & Abazi, H. (2008). *Migration, Remittances, and the Standards of Living in the Republic of Macedonia*. Tetovo: South East European University.
48. Murru, M. (2008). Globalization, migration and brain drain: a reality check. *health policy and development*, 6(3), 153-163.
49. National Bank of the Republic of North Macedonia. (2019a). *Inflation*. Retrieved 22 June 2019 from <https://www.nbrm.mk/prebaruwanje-en.nspx?q=inflation>

50. National Bank of the Republic of North Macedonia. (2019b). *Latest Macroeconomic Indicators, March 2019*. Retrieved 14 July 2019 from https://www.nbrm.mk/content/Latest_Macroeconomic_Indicators_March_2019.pdf
51. Nikolovska, M. (2004). Employment, education, and emigration: the FYR of Macedonia. *Higher Education in Europe*, 29(3), 319-328.
52. OECD. (2019a). *General government debt*. Retrieved 15 June 2019 from <https://data.oecd.org/gga/general-government-debt.htm>
53. OECD. (2019b). *International Migration Database*. March 28, 2019 from <https://stats.oecd.org/Index.aspx?DataSetCode=MIG#>
54. OECD. (n.d.). *Elections in North Macedonia*. Retrieved 08 September 2019 from <https://www.osce.org/odihr/elections/north-macedonia?page=1>
55. Olken, B. A. & Pande, R. (2012). Corruption in developing countries. *Annu. Rev. Econ.*, 4(1), 479-509.
56. Pathak, V., Jena, B. & Kalra, S. (2013). Qualitative research. *Perspectives in clinical research*, 4(3), 192-192.
57. Pearson, Z. (2013). An international human rights approach to corruption. In Larmour P & Wolanin N (Eds.), *Corruption and Anti-Corruption* (pp. 30-61). Canberra: ANU Press.
58. Peña-Casas, R., Ghailani, D., Spasova, S. & Vanhercke, B. (2019). *In-work poverty in Europe. A study of national policies 2019* [published on blog]. Retrieved from <https://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=9378&furtherNews=yes>
59. Petreski, M. (2016). *Does return migration affect health outcomes in Macedonia*. Tokyo: Hitosoubashi University.
60. Pigou, A. C. (1917). Inflation. *The Economic Journal*, 27(108), 486-494.
61. Pop-Eleches, G. & Robertson, G. B. (2015). Information, Elections, and Political Change. *Comparative Politics*, 47(4), 459-478.
62. Porter, M. E. (1990). The Competitive Advantage of Nations. *Harvard Business Review*, 68(2), 73-91.
63. Portes, A. (1976). Determinants of the brain drain. *International Migration Review*, 10(4), 489-508.
64. Posner, R. A. (1997). Equality, Wealth, and Political Stability. *Journal of Law, Economics, & Organization*, 13(2), 344-365.
65. Radio Slobodna Evropa. (2019). *Ostatiti ali napusti Jugoistočnou Evropu?* Retrieved 20 May 2019 from <https://www.slobodnaevropa.org/a/29939959.html>
66. Rowlands, D. (1999). Domestic Governance and International Migration. *World Development*, 27(8), 1477-1491.
67. Sabates-Wheeler, R., Sabates, R., Castaldo, A. & Mújica, C. R. (2009). Tackling poverty- Migration linkages evidence from Ghana and Egypt. In M. Á. C. García, R. C. Piñeiro & J. S. Romellón (Eds.), *Nuevas tendencias y nuevos desafíos de la migración internacional* (1 ed., pp. 325-360): Colegio de Mexico.

68. Saunders, M., Lewis, P. & Thornhill, A. (2009). *Research methods for business students* (Fifth ed.): Pearson Education Limited.
69. Sepp, A. (2012). Online versus postal questionnaires: a comparison between two data collection methods. *Actas do VIII Colóquio de Farmácia*, 101-112.
70. Shanghai Ranking. (2019). *ShanghaiRanking's Academic Ranking of World Universities 2019*. Retrieved 18 September 2019 from <http://www.shanghairanking.com/>
71. Stalker, P. (2000). *Workers without frontiers: the impact of globalization on international migration*: International Labour Organization.
72. Stamenkovic, S. (2015). *Key Migration Trends in Macedonia*. Retrieved 18 May 2019 from <http://patchworkbalkan.org/blogs/key-migration-trends-macedonia>
73. Stankovic, M., Angelova, B., Janeska, V. & Stankovic, B. (2013). Science and innovation policy in Southeast Europe: brain drain as brain gain. *International Journal of Technological Learning, Innovation and Development*, 6(3), 262-282.
74. State Statistical Office. (2018a). *Enrolled students in undergraduate studies, 2017/2018*. Retrieved 22 June 2019 from <http://www.stat.gov.mk/Publikacii/2.4.18.11.pdf>
75. State Statistical Office. (2018b). *Enrolled students on postgraduate studies*. Retrieved 28 June 2019 from http://www.stat.gov.mk/PublikaciiPoOblast_en.aspx?id=39&rbrObl=5
76. State Statistical Office. (2018c). *Migrations*. Retrieved 28 March 2019 from http://www.stat.gov.mk/PrikaziPoslednaPublikacija_en.aspx?id=9
77. State Statistical Office. (2019a). *Active Population in the Republic of Macedonia Results from the Labour Force Survey, II quarter 2019*. Retrieved 19 September 2019 from http://www.stat.gov.mk/pdf/2019/2.1.19.30_mk.pdf
78. State Statistical Office. (2019b). *Active Population in the Republic of North Macedonia Results from the Labour Force Survey, I quarter 2019*. Retrieved 22 June 2019 from http://www.stat.gov.mk/pdf/2019/2.1.19.20_mk.pdf
79. State Statistical Office. (2019c). *Average monthly net wage paid per employee, January 2019*. Retrieved 22 June 2019 from http://www.stat.gov.mk/PrikaziSooopstenie_en.aspx?rbtxt=40
80. State Statistical Office. (2019d). *Job vacancies, first quarter 2019*. Retrieved 15 June 2019 from http://www.stat.gov.mk/pdf/2019/2.1.19.19_mk.pdf
81. Sukamolson, S. (2007). Fundamentals of quantitative research. *Language Institute Chulalongkorn University*, 2-3.
82. The Agency of Youth and Sport. (2016). *National Youth Strategy 2016- 2025*. Retrieved 15 June 2019 from <http://www.mladi.ams.mk/documents>
83. The Economist Newspaper. (2017, February 28). Macedonian emigrants estimated at more than 30% of population. *The Economist Newspaper*. Retrieved February 28, 2019 from <http://country.eiu.com/article.aspx?articleid=285169212&Country=Macedonia&topic=Economy&subtopic=Forecast&subsubtopic=Economic+growth>

84. Trading Economics. (2019). *Macedonia Unemployment Rate*. Retrieved 29 March 2019 from <https://tradingeconomics.com/macedonia/unemployment-rate>
85. Transparency International. (2019). *Corruption Perceptions Index 2018*. Retrieved 23 June 2019 from https://www.transparency.org/files/content/pages/CPI_2018_Executive_Summary_EN.pdf
86. Transparency International. (n.d.-a). *Corruption Perception Index 2018*. Retrieved 06 June 2019 from <https://www.transparency.org/cpi2018#results>
87. Transparency International. (n.d.-b). *Macedonia (FYR)*. Retrieved 23 June 2019 from <https://www.transparency.org/country/MKD>
88. Transparency International. (n.d.-c). *What is the Corruption Perceptions Index?* Retrieved 23 June 2019 from https://www.transparency.org/cpi2011/in_detail#myAnchor3
89. Tung, R. L. & Lazarova, M. (2006). Brain drain versus brain gain: an exploratory study of ex-host country nationals in Central and East Europe. *The International Journal of Human Resource Management*, 17(11), 1853-1872. doi: 10.1080/09585190600999992
90. UNICEF. (2019). *North Macedonia committed to improving access to quality pre-primary education*. Retrieved 18 September 2019 from <https://www.unicef.org/northmacedonia/press-releases/north-macedonia-committed-improving-access-quality-pre-primary-education>
91. United Nations. (2013). *World Population Prospects*. Retrieved 26 May 2019 from <https://www.un-ilibrary.org/content/publication/02911eeb-en>
92. United Nations. (2018). *International Migration Report 2017*. Retrieved 27 May 2019, from <https://www.un-ilibrary.org/content/publication/54684d14-en>
93. UNODC. (2013). *Business, Corruption and Crime in the Former Yugoslav Republic of Macedonia: The impact of bribery and other crime on private enterprise*: United Nations Office on Drugs and Crime.
94. Wahba, J. (2015). Who benefits from return migration to developing countries? *IZA World of Labor*.
95. Weidner, J. & Williams, J. C. (2011). What is the new normal unemployment rate? *FRBSF Economic Letter*, 5.
96. WFD. (2019). *Youth emigration costs Serbia €1.2 billion a year*. Retrieved 24 May 2019 from <https://www.wfd.org/2019/05/24/youth-emigration-costs-serbia-e1-2-billion-a-year/>
97. World Bank. (1997). *Helping Countries Combat Corruption: The Role of the World Bank* Retrieved 23 June 2019 from <http://www1.worldbank.org/publicsector/anticorrupt/corruptn/cor02.htm>
98. World Bank. (2019a, 22 June 2019). *Current account balance (% of GDP)*. Retrieved 22 June 2019 from <https://data.worldbank.org/indicator/BN.CAB.XOKA.GD.ZS?locations=MK>

99. World Bank. (2019b). *Exports of goods and services (% of GDP)*. Retrieved 22 June 2019 from <https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?locations=MK>
100. World Bank. (2019c). *GDP (current US\$)*. Retrieved 19 June 2019 from <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>
101. World Bank. (2019d). *Imports of goods and services (% of GDP)*. Retrieved 22 June 2019 from World Bank <https://data.worldbank.org/indicator/NE.IMP.GNFS.ZS?locations=MK>
102. World Bank. (2019e). *Inflation, consumer prices (annual %)*. Retrieved 22 June 2019 from <https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=MK>
103. World Bank. (2019f). *North Macedonia*. Retrieved 24 June 2019 from <https://data.worldbank.org/country/north-macedonia>
104. World Bank. (2019g, 22 June 2019). *Unemployment, total (% of total labor force) (national estimate)*. Retrieved 22 June 2019, from <https://data.worldbank.org/indicator/SL.UEM.TOTL.NE.ZS?locations=MK>
105. World Bank. (2019h). *World Bank Country and Lending Groups*. Retrieved 11 May 2019 from <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>
106. World Bank. (n.d.). *GDP per capita (current US\$)*. Retrieved 24 June 2019 from <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=CH-MK-DE-FR-IT>
107. Zulfiu, M. (2018). Return of highly skilled migrants in Macedonia and absorption of knowledge transferred. *OSF Alumni*, 29-39.

APPENDICES

Appendix 1: Povzetek (Summary in Slovene language)

Beg možganov je svetovni problem, ker ljudje želijo imeti višjo plačo, delati v boljših pogojih, doseči več napredka in imeti najbolj koristno. Literatura kaže, da so najpomembnejši dejavniki politična nestabilnost, etnična in verska diskriminacija ter slabo upravljanje

Če analiziram različne vire podatkov, razumem, kako pomembne in zlasti velike posledice tega problema bi lahko bile za Severno Makedonijo, največji učinek bega možganov pa bo zmanjšanje človeškega kapitala, kar bo vplivalo na gospodarski razvoj države.

Severna Makedonija se v zadnjih dveh desetletjih sooča z veliko težavo bega možganov. V obdobju 1997–2005 je bila stopnja emigracije terciarno izobraženih ljudi 29 odstotkov, v obdobju 2008–2013 pa je bila Severna Makedonija del skupine desetih držav na svetu z največjim begom možganov. Ti podatki so dovolj, da vidimo resnost in posledice problema bega možganov za majhno državo, kot je Severna Makedonija.

Namen mojega magistrskega dela je bil prikazati osnovni pregled bega možganov in na splošno ugotoviti glavne dejavnike; analizirati obseg bega možganov v Severni Makedoniji in določiti dejavnike ter analizirati, če v prihodnosti obstaja možnost pridobitve možganov. Da bi dosegla namen magistrske naloge, sem opravila vprašalnik z makedonskimi državljani, ki so bili trenutno vpisani na univerzitetni študij bodisi v Severni Makedoniji bodisi v tujini. Najpomembnejše ugotovitve vključujejo:

1. Dejavniki za odhod so: raven korupcije, življenjski standard, možnosti zaposlitve, politična nestabilnost, pomanjkanje priložnosti za potovanja, okolje (čist zrak in voda), zdravje;
2. Po študiju na univerzi je 51 odstotkov vprašanih nameravalo oditi v tujino, 27 odstotkov bi jih bivalo v Severni Makedoniji in 22 odstotkov še ni imelo močne preference. Med tistimi, ki so študirali v tujini, jih je 58 odstotkov odgovorilo, da bi se radi odpravili kam drugam, 21 odstotkov se jih je želelo vrniti nazaj, 21 odstotkov pa je želelo, da ostanejo v državi, v kateri so trenutno študirali;
3. 1/3 anketirancev ni bilo zadovoljno s kakovostjo izobraževanja na srednjih in univerzitetnih študijih;
4. Tuje države zagotavljajo boljši življenjski standard, boljše možnosti za zaposlitev in znanje je bolj cenjeno;
5. Priporočila za izboljšanje trenutnih razmer: povečati življenjski standard, zagotoviti zaposlovanje, zmanjšati korupcijo, zmanjšati politični vpliv in vključiti mlade v procese odločanja.

Appendix 2: Questionnaire questions

Q1 - Are you a Macedonian citizen (holding a Macedonian passport)?

- ☐ Yes
- ☐ No

Q2 - What is your level of study you are currently at?

- ☐ Undergraduate
- ☐ Postgraduate
- ☐ PhD
- ☐ Not a student anymore!

Q3 - Do you currently (2018-2019 school year) study in North Macedonia or abroad?

- ☐ Abroad
- ☐ North Macedonia

Q4 – In which country are you currently studying at?

- ☐ Austria
- ☐ Germany
- ☐ USA
- ☐ Slovenia
- ☐ Italy
- ☐ Turkey
- ☐ Other:

Q4_2 - After getting your degree, what is your next plan?

- ☐ To stay in the country where I studied
- ☐ To go abroad (somewhere else)
- ☐ To go back in North Macedonia

Q5 - From which university do you expect to graduate?

- ☐ South East European University
- ☐ Ss. Cyril and Methodius University in Skopje
- ☐ University of Tetova
- ☐ FON University
- ☐ Other:

Q6 - What is your current field of study?

- ☐ Economics and business (finance, management, marketing, tourism, etc.)
- ☐ Architecture
- ☐ Medicine
- ☐ Computer Sciences (theory, graphics, programming languages, software engineering, AI)
- ☐ Engineering (mechanical, civil, electrical, chemical engineering, petroleum, aerospace)
- ☐ Law

- ☐ Natural Sciences (math, physics, biology, chemistry, etc.)
- ☐ Social Sciences (sociology, political sciences, psychology, geography, history)
- ☐ Humanities (languages, philosophy, art, music)
- ☐ Physical education
- ☐ Other:

Q7 - Please mark your level of satisfaction with the quality of education.

	Not satisfied	Slightly satisfied	Moderate satisfied	Very satisfied	Extremely satisfied	I don't know
The quality of the primary school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The quality of secondary school (gimnazija, sredno uciliste)(gimnaz dhe shkolla te mesme)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The quality of the higher education (university)system in North Macedonia?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q8 - Ideally, if you could choose, would you like to move permanently to another country, or would you prefer to live in North Macedonia right after your university studies?

- ☐ Live in another country
- ☐ Live in North Macedonia
- ☐ I don't have a strong preference

Q9 - In which country would you choose to live?

Q10 - Have you already made any plans for this move or began preparations for this move?

- ☐ Yes
- ☐ No

Q11 - Later in life, do you plan to return back to North Macedonia, or you choose to permanently live abroad?

- ☐ Return back to North Macedonia
- ☐ Stay abroad forever

Q12 – How much do the following factors affect YOUR decision on whether to leave the country: (1 – not at all a factor; 5 = highly affects my decision)

	Not at all a factor/does n't affect my decision at all	Not an important factor/affect s my decision very little	Neutral	A relevant factor/ It affects my decision somewhat	A very important factor/ Highly affects my decision	I don't know
Corruption	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Living standard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of jobs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bureaucracy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Political climate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traveling opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environment (air pollution, etc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Medical care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Religious freedom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Possibility of war, revolution and violence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Isolation (having family members in country)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to advanced technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q13 - In your opinion, what are the most important things that should be done in North Macedonia to motivate young people to stay?

Please select two options!

- ☐ To increase the living standard
- ☐ To ensure employment
- ☐ To reduce the level of corruption
- ☐ To reduce the level of political impact
- ☐ To include young people in decision- making processes
- ☐ Other

Q14 - Please write what you think is the most important thing that should be done in order young people to not leave the country?

Q15 - Please rate your level of agreement with the following statements.

	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	I don't know
Foreign countries provide better career opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is lack of higher study	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree	I don't know
opportunities in North Macedonia						
North Macedonia is politically unstable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreign countries ensure better living standards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being able to send money from abroad to your family is a good reason to leave	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In North Macedonia, it is hard to find a job without giving a bribe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The educational system is poor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I see no economic future in North Macedonia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are no travel opportunities in North Macedonia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skills are not valued and compensated enough in North Macedonia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I get a job offer in North Macedonia that would allow me the same standard of living, I would stay in North Macedonia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I move abroad, I want to remain active in North Macedonia political affairs (e.g.: absentee voting)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I move abroad, I want to maintain ties with North Macedonia as much as possible (visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Strongly disagree Disagree Neither disagree nor agree Agree Strongly agree I don't know

frequently, etc.)

Q16 - What is your birthplace (city)

Q17 - What is your ethnicity?

- ☐ Macedonian
- ☐ Albanian
- ☐ Turkish
- ☐ Serbian
- ☐ Roma
- ☐ Other:

Q18 - What is the highest level of education of your parents?

	Primary school	High school	Bachelor's degree	Master's degree	PhD	I don't know
Mother	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Father	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q19 - Do you have relatives who already are living abroad (siblings, parents, aunt/uncle, grandparents or close friends)?

- ☐ Yes
- ☐ No

Q20 - What is your relationship with them?

Multiple answers are possible

- ☐ Siblings
- ☐ Parents
- ☐ Grandparents
- ☐ Aunt/Uncle
- ☐ Close friends
- ☐ Other:

Q21 - Gender?

- ☐ Female
- ☐ Male

Q22 - What is your age? (please enter year of birth)

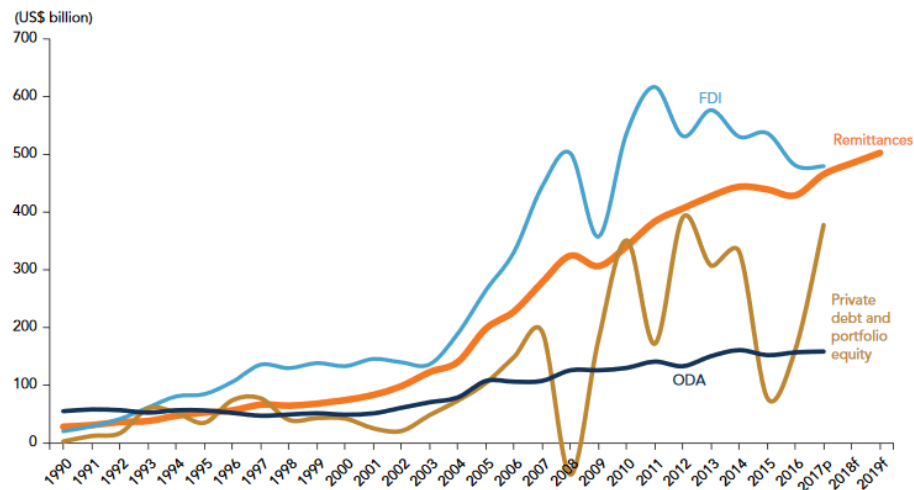
Q23 - Any other comments?

- ☐ Yes
- ☐ No

Q24 - Please write your comment!

Appendix 3: Remittance flows (1990- 2019)

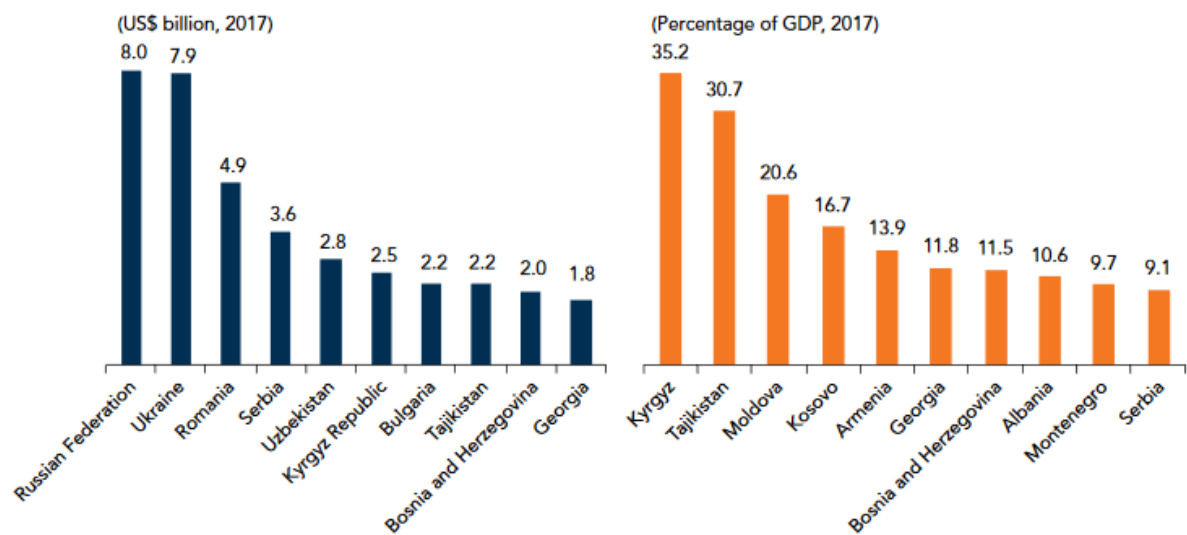
Figure 23: Remittance flows (1990-2019)



Source: KNOMAD (2018).

Appendix 4: Remittances to Europe and Central Asia in 2017

Figure 24: Remittances to Europe and Central Asia in 2017



Source: KNOMAD (2018)

Appendix 5: Correlation between the next plan after studies and country of studies!

Table 13: Correlation between the next plan after studies and country of studies

		In which country are you currently studying at? (Q4)						
		Austria (%)	Germany (%)	USA (%)	Slovenia (%)	Italy (%)	Turkey (%)	Other (%)
After getting your degree, what is your next plan? (Q4_2)	To stay in the country where I studied	14.29	14.29	0.00	71.43	0.00	0.00	0.00
	To go abroad (somewhere else)	5.26	10.53	21.05	52.63	0.00	0.00	10.53
	To go back in North Macedonia	14.29	0.00	0.00	28.57	0.00	28.57	28.57
Total		9.09	9.09	12.12	51.52	0.00	6.06	12.12

Source: Own work (N= 66).

Appendix 6: Correlation between the level of education of mother and permanently move to another country

Table 14: Correlation between the level of education of mother and the decision to permanently move to another country

		Ideally, if you could choose, would you like to move permanently to another country, or would you prefer to live in North Macedonia right after your university studies? (Q8)		
		Live in another country	Live in North Macedonia	I don't have a strong preference
What is the highest level of education from your parents? (Q18), Mother (Q18a)	Primary school	40	21	11

Table continues

Table 14: Correlation between the level of education of mother and the decision to permanently move to another country (cont.)

			Ideally, if you could choose, would you like to move permanently to another country, or would you prefer to live in North Macedonia right after your university studies? (Q8)		
			Live in another country	Live in North Macedonia	I don't have a strong preference
	High school	%	55.56	29.17	15.28
		Nr.	69	28	31
	Bachelor's degree	%	53.91	21.88	24.22
		Nr.	45	16	21
	Master's degree	%	54.88	19.51	25.61
		Nr.	10	8	6
	PhD	%	41.67	33.33	25.00
		Nr.	4	1	2
	I don't know	%	57.14	14.29	28.57
		Nr.	1	0	4
		%	20.00	0.00	80.00

Source: Own work.

Appendix 7: Correlation between the education level of father and the decision to permanently move abroad

Table 15: Correlation between the education level of father and the decision to permanently move abroad

		Ideally, if you could choose, would you like to move permanently to another country, or would you prefer to live in North Macedonia right after your university studies? (Q8)		
		Live in another country %	Live in North Macedonia %	I don't have a strong preference %
What is the highest level of education of your parents? (Q18), Father (Q18b)	Primary school	54.55	24.24	21.21
	High school	53.50	24.84	21.66
	Bachelor's degree	57.65	20.00	22.35
	Master's degree	38.71	29.03	32.26
	PhD	66.67	0.00	33.33
	I don't know	20.00	20.00	60.00

Source: Own work.

Appendix 8: Correlation between gender and attitude

Table 16: Correlation between gender and attitude

			In your opinion, what are the most important things that should be done in North Macedonia to motivate young people to stay? (Q13)					
			To increase the living standard	To ensure employment	To reduce the level of corruption	To reduce the level of political impact	To include young people in decision-making processes	Other
Gender? (Q21)	Female	Nr.	118	93	86	96	75	13
		%	24.53	19.33	17.88	19.96	15.59	2.70
	Male	Nr.	77	62	78	72	54	7
		%	22.00	17.71	22.29	20.57	15.43	2.00
	Total	Nr.	195	155	164	168	129	20
		%	23.47	18.65	19.74	20.22	15.52	2.41

Source: Own work.