

UNIVERSITY OF LJUBLJANA
SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

DETERMINANTS OF BRAIN DRAIN AMONGST SERBIAN YOUTH

Ljubljana, March 2022

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AUTHORSHIP STATEMENT

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LIST OF ABBREVIATIONS

EU – European Union

FDI – Foreign Direct Investment

GDP – Gross Domestic Product

GPA – Grade Point Average

IWP – In-work Poverty

MNCs – Multinational Companies

OECD – Organisation for Economic Co-operation and Development

PPP – Purchasing Power Parity

UK – United Kingdom

US – United States

INTRODUCTION

Migrations happen ever since human history and are constantly growing in numbers (Murru, 2008). Nowadays, the number of people who live in a different place than their country of birth has skyrocketed. The number of international migrants reached 272 million people in 2019, which makes it 3.5% of the global population. Comparing this figure to 2.3% of the global population in 1980, the proportion of international migrants in the world has risen sharply in 50 years (United Nations, 2021).

As reported by Bell, Alves, Silveirinha de Oliveira & Zuin (2010), three types of international migrations exist: labour migration, which is the migration of high-skilled, unskilled low wage and temporary labour; forced migration, which includes refugees and asylum seekers who move because of political instability or are forced to move due to natural disasters; and international retirement migration, which includes retired seniors buying a property abroad and moving to the host country. Lee (1966) is known for the pioneering theory of migration which shows factors that explain the volume of migration between origin and destination. Even though the theory has been coined in 1966 it has withstood time and is still relevant today. In this study, factors which cause migration are divided into two groups: push and pull factors. Push factors are reasons which are detrimental for the area an individual lives in, such as not enough jobs and general opportunities, famine or droughts, political fear or persecution, poor medical system, death threats, pollution, mentality, war, crime rates, slavery, any form of discrimination (sexual, race or other) and religious freedom. Pull factors are the ones that attract an individual to another area, and they include job opportunities, better living conditions, good medical care, education, security, family unification, and an attractive climate (Lee, 1966).

Human capital (which includes skills, intelligence, etc) is one of the most important intangible assets of a country. Every country strives to improve its assets, therefore developed countries invest more in the education of their citizens to improve their knowledge and skills, which in return will be beneficial for their workforce. The reverse flow of economic growth or decrease is known as the loss of human capital and a phenomenon referred to as brain drain. "Brain drain" was firstly used by the British Society to describe the movement of scientists and technologists from the United Kingdom (hereafter: UK) to the United States (hereafter: US) and Canada in the 1950s and 1960s. The term is now used to explain the emigration of countries highly skilled individuals and the migrations are usually from developing to developed countries (Gibson & McKenzie, 2011). Although brain drain affects developed industrial countries such as Canada, Germany, and the UK, who also fear not to lose their highly skilled workers, the catastrophic repercussions of brain drain on developing nations are mainly looked at in the academic literature (Docquier, Lohest & Marfouk, 2007). According to Dodani & LaPorte (2005), developing countries have invested in the education of future doctors, while developed countries are the ones that will get the bigger share of the cake, because people will migrate where they are offered a

better standard of living and a higher quality of life. The intellectuals of a country are the most expensive resource due to the lost opportunity. Based on Ellerman, brain drain is compared to the classic prisoner dilemma as the individual strategy is not the best outcome for the collective, meaning when talented people emigrate, the relationship to achieve general well-being is negative and starts to decrease (Krasulja, Vasiljevic-Blagojevic & Radojevic, 2016). A related phenomenon is so-called “brain waste”, which is explained as the foregone opportunity of an individual working in a lower-skilled job than the one he was educated for. Brain waste leads to not reaching the full potential of individual skills in the destination country which makes both parties worse off (Garcia Pires, 2015).

On the contrary, there are some positive externalities of high-skilled migration. The government of India, for example, mentions that there is a reverse flow of income from the Indian diaspora (Gibson & McKenzie, 2011). It is pointed out that brain drain brings highly-skilled people into networks in their fields of specialization where they exchange their knowledge and even create communities and platforms in exchange with their home country. In addition, migrants send remittances or foreign exchange earnings to the home country – people who work abroad send money back to their relatives or they return for pension and bring the savings into their home country (Beine, Docquier & Rapoport, 2008). Remittance flows have jumped tremendously from the 1990s (see Appendix 3 & Figure 31) until today and reached a historical record of \$548 billion in 2019 to low and middle-income countries and became larger than foreign direct investment (FDI) flows with \$534 billion. As a proportion of GDP, the top recipients are Tonga and Haiti with 40% and 38%, corresponding to more than 1/3 of a country GDP (KNOMAD, 2020).

Serbia is a country well-known for emigration. During the 60s,70s, and 80s, many workers from the former Yugoslavia emigrated to Western European countries as low-skilled labour force. The total number of Serbian nationals working and living abroad was 269 012 in 1981. In the period of 1990s-2000s, people left due to political circumstances (war, sanctions, bombing). As a consequence, the total number of Serbian nationals working and living abroad reached a record high with 414 839 in 2002. The host countries were predominantly Germany, Austria, and France, later the list of host countries included Russia, Hungary, the UK, the US, and Canada (Bobić, Vesković Anđelković & Kokotović Kanazir, 2016). In addition to war-displaced people and refugees, many highly-skilled people left during this same time period. More recently, according to the Westminster Foundation for Democracy (2019) from 2012 until 2016, roughly 245 000 people have left Serbia, or around 49 000 people who emigrate from Serbia yearly. The significant difference according to Bobić, Vesković Anđelković & Kokotović Kanazir (2016) with migrations after the 2000s is that people who are emigrating are highly qualified individuals with a tertiary education level (bachelor's and master's degree holders). At the same time, Serbia ranks 3rd on the European remittance inflow level in 2020 (see Appendix 4 & Figure 32), with 3.4 billion US dollars, and would rank first if the statistics compared the size of the country with the size of the population in the country (KNOMAD, 2020).

The intention to emigrate is highest among youth, as they are not content with their social status and the migration potential is the highest until the age of 30, even though the actual migration happens mostly in the age group from 35 to 39 years old. Factors for dissatisfaction include lack of jobs and possibility for training and gaining new skills, lack of housing opportunities, political situation and feelings of insecurity, and in general an idea for a better life with greater opportunities and a higher standard of living abroad (Bobić, Vesković Anđelković & Kokotović Kanazir, 2016). Deutsche Welle (2009) argues that the youth is frustrated with the social, cultural, and economic stance in Serbia, that they are left alone with no belief in the government or any other regulatory body of the country.

Interestingly, the Economist (2021) suggests that with the COVID-19 crisis, many people who emigrated to Western Europe reversed their migration pattern and went back to their countries of origin. The master's thesis is therefore timely, as it will allow for an understanding of how COVID-19 affected migration intentions of young people. In addition, various studies have examined brain drain in the past, but none so far has addressed the causes of brain drain in the case of students from Serbia, which will mark the originality and contribution to the knowledge of the research study.

The main **purpose** of this master's thesis is to provide a deeper understanding of the brain drain problem in Serbia, by exploring the causes of brain drain in the case of students. The research will enlarge the knowledge on the issue of brain drain in developing countries and will be of advantage for the governments to identify the root problems of brain drain and how to overcome it.

The **goals** of this master's thesis are:

- To give a general comprehension of the brain drain phenomenon and identify its push and pull determinants,
- To provide an analysis of the brain drain trends in Serbia utilizing different data sources,
- To examine the push and pull factors for brain drain on the case of students in Serbia,
- To analyse whether young adults who leave Serbia intend to return to their homeland in the future,
- To determine whether COVID-19 affected migration intentions of young people in Serbia,
- To provide recommendations on how to overcome the problem of brain drain in Serbia.

The methodology used in this thesis will be based on secondary sources, primary and secondary data. The literature review will be based on secondary sources such as scientific articles, books, and papers. The first part of the thesis will build the foundation of the theoretical component and define the main concepts. The second chapter of the thesis will

focus on the brain drain phenomenon in Serbia and therefore the secondary sources and data will be used from official sources such as government reports, official statistics from various institutions as the statistical office of Serbia and other agencies, indexes, and as well scientific and popular articles from newspaper magazines and websites.

The third and fourth chapters of the thesis will be the main part of my thesis where the focus will be the quantitative primary data collection. The primary data will be collected through a survey questionnaire which will be administered on the platform 1ka.si and non-probability sampling will be used due to the current COVID-19 situation and time consumption. The survey questionnaire will be further distributed to participants through social media on Facebook groups and through E-mails to Universities in Serbia and abroad. The target group sample is young adults - current Serbian students studying in the home country and abroad. The responses from participants will be analyzed through descriptive statistics and visual features of the above-mentioned platform 1ka.si. The analyzed data will further be used to obtain recommendations on how to overcome the brain drain problem of young adults in Serbia.

1 MIGRATION AND BRAIN DRAIN

The first chapter looks at the different types of migration, defines brain drain, gives an overview of global trends on the topic of brain drain, provides advantages and disadvantages of brain drain such as brain gain and brain waste, and introduces push and pull factors of the phenomenon.

1.1 Different types of migration

Ernst Georg Ravenstein is the first who described modern human migration patterns in "The Laws of Migration" upon which the basic principles are founded today. Ravenstein (1885) notes that most migrants move short distances, that every migration flow comes with a return migration, that individuals from urban areas are less likely to move than those from rural areas, and that economic factors are the main cause for moving.

Defining migration is disputable as it can be described as the movement of people over a certain distance and as a change of permanent residence, while nowadays the permanent notion has been disregarded (Kok, 1999). Classifying migrations is another multidimensional activity due to the numerous criteria which need to be accounted for. According to the criteria of political boundaries, destination, and origin the simple distinction is between internal-inward (within a country) or external-outward (outside of a country and international) migration. The classification helps determine the term emigrant which is the persona who moves outside of his home country to reside in another and the opposite term immigrant which is the individual who settles into the host country. Based on the length of time migration is classified into temporary or short-term which is a period less

than a year in the change of residence and permanent or long-term which is a period longer than a year in the new area of residence. The classification on length of distance distinguishes between short-distance and long-distance migration, although the criteria do not state any calculated distance as the definition. The spatial approach classifies migration into local, regional, national, and international. Depending upon the nature of the area, migration can be rural to rural, rural to urban, urban to rural, and urban to urban. However, migration flows are usually towards cities with a large population. The number criteria distinguish between individuals or group of people and mass migration. Accordingly, the volume of flow classifies large, medium, and small-scale migration. The qualitative approach criteria recognise skilled, semi-skilled, and unskilled migration. Migration can as well be classified into occupational mobility for example an agricultural worker switching to non-agricultural work. As migrations occur with individuals of different ages, gender, social class, religion, education, and marital status, migrations are age, sex, caste, religion, marriage, and education specific (Sinha, 2005).

Literature on migration reflects that migration flows are one of the key components in the globalisation process and represent the various economic and social elements of each country on a national or international level (Bell, Alves, Silveirinha de Oliveira & Zuin, 2010). As already established, migration processes are complex and thus all elements of the phenomenon need to be considered. In the second part of the 20th century, three main types of international migration can be identified: labour and temporary migration which as well includes illegal migration, forced migration such as refugee movements, and international retirement migration. Labour migration is the moving of people from one country to find work and settle in another country. Two types of migrants can be identified: highly-skilled-labour and unskilled low-wage labour (includes illegal or forced immigrants).

Highly skilled labour migration accounts only for a small percentage of the whole migration, though is in most demand by host countries that try to attract highly skilled migrants, such as doctors or engineers establish special types of incentives. The benefit for the host country lies in the fact that it will take advantage of outstanding human capital with no education or training costs. Host countries can solve the problem of labour shortage and as well increase economic production with highly skilled labour migrants. Ever since the 1980s, the US, Canada, Australia, and later some European and Asian countries introduced a point system where applicants who wanted to emigrate to these countries had to score a specific number to be eligible for emigration. Highly skilled labourers are usually young to early middle-aged people who come from a specific field of science such as medicine or engineering. Most of the migrants chose to stay in the receiving country and raise their families with high education capital. Besides, losing highly skilled workers brings detrimental impact which results in a double loss – all the foregone opportunity cost of education and training of the youth and loss of human capital (Bell, Alves, Silveirinha de Oliveira & Zuin, 2010).

1.2 Defining brain drain

The term ‘brain drain’ was firstly used by the British Royal Society to describe the movement of scientists and technologists from the UK to the US and Canada in the 1950s and 1960s. Nowadays, the popular term is used in a broader scope to describe the emigration of highly skilled individuals from a country (Gibson & McKenzie, 2011). Brain drain is the movement of skilled human resources in exchange for trade, education, knowledge, etc. Talented people and trained professionals are in demand in every corner of the world. The factors that attract trained professionals to developed countries are mainly a better standard of living, quality of life, higher income, access to technological advances and knowledge as well as a favourable political environment. As a rule, migrations happen from poorer developing towards richer developed countries (Dodani & LaPorte, 2005).

The two notable theories on brain drain that should be pointed out are the optimistic view or neo-classical economics theory and the endogenous or new growth theory. Neo-classical migration is built on the idea of optimal allocation of production factors that will benefit both the sending and the receiving country e.g., allocation of human capital from rural to urban areas. The optimistic view does not consider remittances and takes the individual as the rational actor which will maximize his utility at all costs which will benefit the fair distribution of resources. Hence, neo-classical migration theory rejects migrants belonging to a social institution as families or local communities. The pessimistic view or new growth theory which goes along with the first literature on brain drain that the migration of highly skilled individuals is detrimental for the sending country and benefits only the receiving country. Furthermore, it is stated that poor developing countries are left without skilled human capital in which the government invested heavily into their education and knowledge. The endogenous theory states the lost labour effect with young professionals which increases inequality in the sending country and mentions the so-called “migrant syndrome” or the vicious circle of migration leading to more underdevelopment and more migration (De Haas, 2010).

Glăvan (2008) claims that the current academic literature is mistaken in the interpretation of the brain drain phenomenon which leads to the economic downturn of developing countries. The paradox of migration today is that individuals who migrate from developing to developed countries are precisely the people who countries cannot lose: the highly skilled and educated individuals. Such a peculiar brain drain does not only cause loss of human capital but as well puts a dangerous hindrance to the future economic development of poorer countries. Also, Murru (2008, p.159) mentions that “*in the great majority of cases, brain drain is just one symptom of more serious diseases: poverty, inequalities, underdevelopment*”. Iredale (1999, p.90) argues that describing the term is much more complex and that it is not well defined, and the interpretation is different from country to country. The brain drain phenomenon includes different types of human working profiles as it “*includes highly skilled specialists, independent executives and senior managers, specialized*

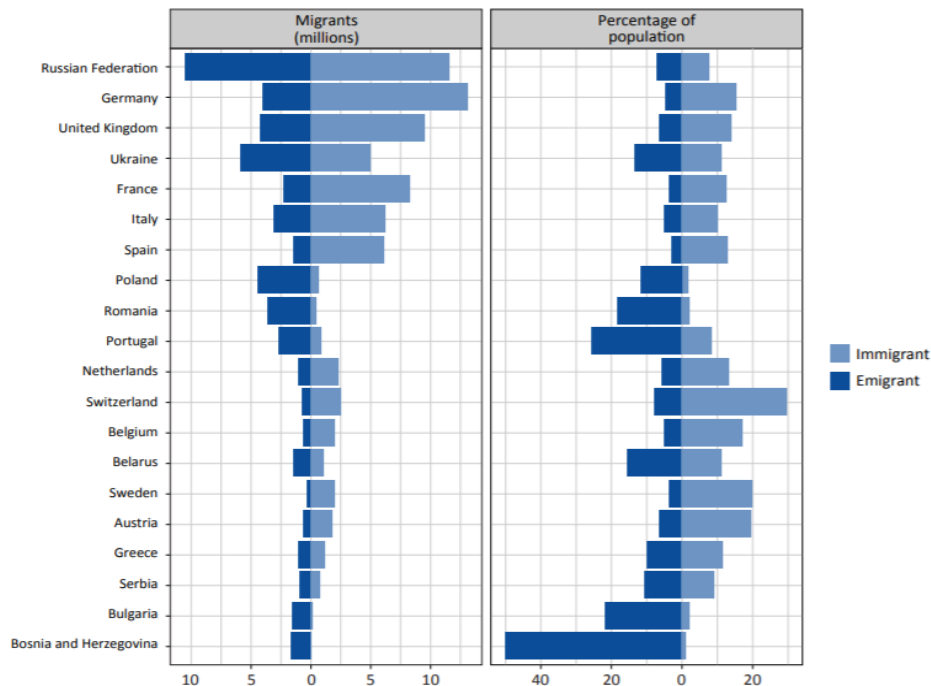
technicians or tradespeople, investors, physicians, businesspeople, “keyworkers” and sub-contract workers”.

There are two types of causes for brain drain which are the supply and demand-side factors. The supply side represents the idea that with globalisation someone from a developing country could seek better opportunities in the developed world where they will be offered the best environment & income for their skills. The demand side represents host countries such as Australia and Canada which in the 1980s have introduced immigration policies on how to attract the most talented professionals from developing countries (Beine, Docquier & Rapoport, 2008). In 2017, the EU introduced new laws which would help the qualified workforce from developing countries in having easier access to the job market. Austria introduced a visa for graduates of developing countries where they can stay up to a year in order to find work. Germany offered extra professional training and skills for improving the chances of qualified workers on the legal job market, while Italy established the National Employer Association to make the hiring procedure for highly trained workers easier (Westminster Foundation for Democracy, 2019).

1.3 Overview of global trends of brain drain

Firstly, migration patterns should be looked at from a global perspective to determine the main trends. A research study conducted in five countries describes that there is a significant increase in the income of qualified emigrants which is between 40 000 and 60 000\$ yearly after they move to the developed countries. These opportunities could not be achieved in the emigrants' home countries (Krasulja, Vasiljevic-Blagojevic & Radojevic, 2016). India, one of the world's most populous countries, had the highest number of migrants in 2020 (18 million). Followed by are Mexico and Russia with most people living outside of their home country. Although most countries experienced an increase in the diaspora from 2000 to 2020, some countries including Angola and Serbia benefited from the voluntary return and return of displaced refugees after the war years (UN DESA, 2020). According to the United Nations Global Migration Database, the number of international migrants surged dramatically from 75 million in 1960 to 214 million in 2010. The change goes along with the increase in world population. As a result, the global migration rate increased correspondingly from 2.5 to 3.1 % of the entire world population (Docquier, 2014). Germany is the country with the largest foreign-born population, followed by Russia, the UK, and France while Switzerland, Sweden, Austria, and Belgium have the highest share of migrants in their country. Serbia had approximately 12% of emigrants in 2019 of their total population as can be seen in Figure 1 (IOM, 2019).

Figure 1: Top 20 European migrant countries in 2019

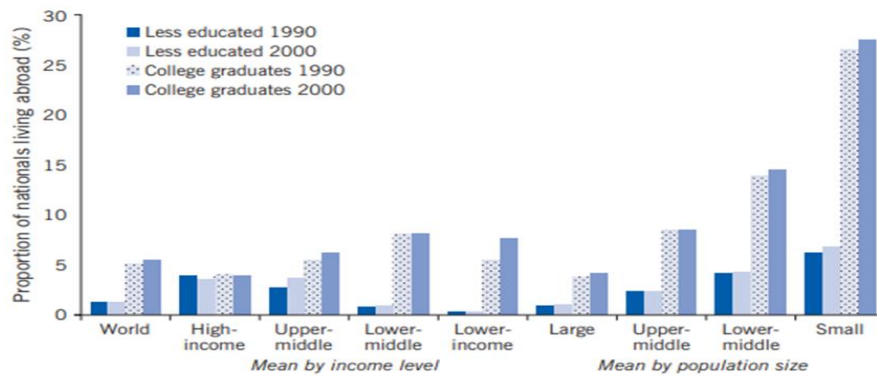


Source: IOM (2019).

As mentioned above, the emigration rates have been on the rise since the 1960s. Docquier (2014) argues that brain drain and economic development of a country go hand in hand even though they are two separate concepts. Firstly, the emigration rate is high when brain drain affects the economic development negatively and secondly, highly skilled workers are motivated to emigrate when facing a lack of economic development. Furthermore, the proportion of nationals living abroad in 1990 and 2000 is graphically represented in Figure 2. The proportion is made up of less educated and college graduates in two classifications: mean by income level and mean by population size. The mean by income level consists of high income, upper-middle, lower-middle, and lower-income. The overall impression is that there was an increase for all categories from the 1990s to 2000s. From Figure 2 it can be concluded that college graduates from low and lower-middle-income countries are the ones with the highest proportion of nationals living abroad, while less educated individuals have an almost insignificant proportion in comparison with college graduates. Figure 2 supports the argument that highly-educated people have strong human capital and can use their skill set to their advantage when they want to emigrate. Interestingly, there is not much difference in the high-income class between less-educated and college graduates. The second classification is the mean by population size. As noted by Docquier (2014) "the largest brain drain rates are observed in small, poor countries". The proportion of college graduates is approximately 30% in comparison to 8% for less educated people in small population sizes. The numbers for large population size are less than 5% for all categories. Docquier & Rapoport (2012) have extensively augmented in their research that the smaller countries face detrimental effects of brain drain as the rates of highly-skilled workers emigrating is

staggering and the education sector quality questionable in comparison to the developed countries.

Figure 2: Brain drain rates decrease with economic development and population size in the home country



Source: Docquier (2014).

Docquier, Lohest and Marfouk (2007) distinguish between three levels of schooling: low-skill workers with only a primary education degree, medium-skilled workers with a secondary education certificate, and high-skill workers with an university degree. Hence, they define brain drain as the “*migration of high-skill workers*” (Docquier, Lohest, Marfouk, 2007, p.195). The paradox lies in the fact that most emigrants are not from the OECD countries but “*90 percent of high-skill international emigrants are living in OECD countries*” (Docquier, Lohest & Marfouk, 2007, p.196). The link between brain drain and economic development are two forces that depend on each other. Highly skilled migrants move to more economically developed countries. Besides, Docquier, Lowell and Marfouk (2009) explain that the highest brain drain is recorded after the 1990s in small tropical islands such as Jamaica and Haiti where approximately 80% of the educated workforce have moved to another country. Moreover, nearly 20 countries lost a third of qualified workers – some of the examples are Libya, Somalia, Cambodia, Hong Kong, and Ireland. Lastly, the term “highly educated emigrant” was described by Docquier and Marfouk (2006) as any individual who is over the age of 25 holding an academic degree and who moved to another country. On the other hand, illegal migrants do not have a regulated residence in any place and they either regulate it after a certain timeframe in the host country or they move back to their home country.

Table 1: Young people who want to emigrate from Southeast Europe

Country	Want to emigrate as %	Want to stay as a %
Serbia	75	25
Macedonia	73	27
Albania	66	34
Slovenia	65	35
Montenegro	63	37
Bosnia & Herzegovina	62	38
Kosovo	58	42
Bulgaria	34	66
Croatia	34	66
Romania	30	70

Adapted from Radio Free Europe (2019).

Table 1 shows the results of the survey conducted by Radio Free Europe (2019) where young people from the countries of Southeast Europe have been asked whether they would want to stay or leave their home country. Serbia ranks first with 75% of the youth stating they want to emigrate. A trend is that all countries from Southeast Europe are experiencing the same problem with young adults wanting to leave. What is surprising is that three EU member countries (Bulgaria, Croatia & Romania) have almost less than double, around 30% of participants who stated they would want to migrate, in comparison with countries from Western Balkan (Macedonia, Albania, Montenegro, Bosnia & Herzegovina, Kosovo) who have around 60% on average. Therefore, Serbia is at the top of the ladder in the region as a country from which young people want to emigrate.

1.4 Advantages and disadvantages of brain drain

The impact of brain drain can be either favourable or damaging. Docquier (2014) argues that it depends on country-specific factors such as geographic location, population size, welfare, and level of economic development. In addition, he discusses the primary benefits and drawbacks of brain drain:

1. Advantages: brain drain is favourable for developing countries due to the positive income-maximizing level; brain drain drives education, encourages remittance flows, and produces gains for the diaspora and the source country; implementation of effective policies can increase the benefits and decrease the negative implications of brain drain
2. Disadvantages: brain drain is a cost for the poorest developing countries because of the income-maximizing level; could cause fiscal losses, decreases the stock of human capital, and generate an occupational disturbance.

To identify brain drain, Docquier (2014) poses crucial questions: “*What drives the brain drain, and how can we quantify it?*”. He argues that poverty and a lack of economic progress are caused by discrimination, political repression, and a lack of freedom, all of which lead

people to migrate, particularly the youth. Brain drain can be divided into two multiplicative components: the average emigration rate which is the mean of all skilled people; and the index of positive selection in emigration which represents the total number of college graduates emigrating divided by the total number of college graduates among natives.

1.4.1 Brain gain

'Brain gain' is defined as the increase in the human capital stock of the sending country resulting from the emigration of highly-skilled workers. The argument is that emigration to economically developed countries will lead to higher benefits and, thus will motivate the people in the home country to invest in their education. If brain gain exceeds brain drain, the difference is named 'beneficial brain drain'. There are some positive externalities of high-skilled migration. These are remittances, network externalities, and return migration (Heuer, 2011). Hence, brain gain leads to an increase in trade, remittances, knowledge, and skills from return migrants, foreign direct investment (hereafter: FDI) which are known as the diaspora effects (Schiff, 2005). The government of India, for example, mentions that there is a reverse flow of income from the Indian diaspora (Gibson & McKenzie, 2011).

Hunger (2002, p.1) implies that the phenomenon of brain gain is the "*intellectual and technical elites from the Third World who emigrated to an industrialized country represent a potential resource for the socio-economic development of their home country*". He argues that the brain gain hypothesis is compromised on two assumptions: 1) the emigrants can play a vital part in the development of the home country through the process of remigration – return migration or transnational networks and 2) that governments and regulatory bodies can create policies and incentives which will attract the emigrants to return to their country even if they were living abroad for a longer timeframe.

In classical economics, individuals are seen to be risk-neutral and try to maximize income during their lifetime. The assumption is that unskilled employees will stay in the country of origin and during their lifetime earn wages w , whereas qualified workers will emigrate to developed countries and get a chance to earn the superior wage w^* . As a result, $w^* > w$, implying that highly qualified employees will benefit from a higher salary in the destination country as a result of their migration decision (Beine, Docquier & Rapoport, 2008).

The return to the country of origin is not a rare event as many migrants decide to move back. The reasons are either better economic conditions in the home country or a stronger and more diverse labor market. The positives of return migrants are their previous international experiences, financial resources, business networking, and family. Researchers have found a positive correlation between the duration of stay and the finances which the migrants have accumulated and the concept to start their own business in their home country. Other views include the idea of many authors that migrants did not achieve their expectations and returned home; emigrants who lived up to their expectations did not return to their country and lastly; the increasing number of multinational companies (hereafter: MNCs) opened

positions in developing countries and here is where the return migrants work for the same company just from their home (Krasulja, Vasiljevic-Blagojevic & Radojevic, 2016).

It is pointed out that brain drain brings highly-skilled people into networks in their fields of specialization where they exchange their knowledge and even create communities and platforms in exchange with their home country. Besides, migrants send remittances or foreign exchange earnings to the home country – people who work abroad send money back to their relatives or they return for pension and bring the savings into their home country (Beine, Docquier & Rapoport, 2008). Remittance flows have jumped tremendously from the 1990s until today and reached a historical record of \$548 billion in 2019 to low and middle-income countries and became larger than foreign direct investment (FDI) flows with \$534 billion. As a proportion of GDP, the top recipients are Tonga and Haiti with 40% and 38%, corresponding to more than 1/3 of a country's GDP (KNOMAD, 2020).

1.4.2 Brain waste

Barker (2020, p.88) states that “*brain waste occurs when the gain of human capital is not maximised in the host country*”. Further, brain waste occurs when highly educated individuals are underemployed and accept involuntary jobs as opposed to natives. Underdevelopment is when highly skilled individuals perform a job for which they are overqualified and paid less than the native employees for the same job. The same happens if highly-educated individuals accept part-time positions when full-time is wanted which leads to high labour market frictions a mismatch of their high-skill usage. Garcia Pires (2015) explains brain waste as the phenomenon of downgrading the skillset of an individual. The persona ends up working in a lower-skilled job than the one he or she was educated for. The migrant ends up performing an unskilled job and does not get to utilise their full human capital potential. Emigrants face the risk of not taking a complete competitive advantage over their destination country and their education and, thus decrease the benefits of the brain gain. Besides, Hardy (2010, p.50) suggests that brain waste harms individuals and leaves damaging effects on an individual as the quote of a Polish female hospitality worker describes: “*It is a big physical effort, which definitely is not proportional to the payment. And in general this job is very dulling on a long term basis - burning one out intellectually I would say*”.

As already mentioned, underemployment is one of the main problems of brain waste. Several studies have identified the non-recognition of qualifications as the main issue for emigrants who specialize in a specific field such as medicine, teaching, or the law. Such a phenomenon is known as the “taxi driver syndrome”, where teachers or lawyers are employed as cab drivers since their qualifications are not recognized in the host country. These emigrants end up having little to no skills to use in the new host labour market. Also, gender bias is mentioned as a significant problem as females usually arrive on a family visa which will

lead them to be outside of the labour market due to family obligations and higher difficulty in finding a job (Barker, 2020).

Docquier (2014) suggests negative repercussions or adverse effects of brain drain: 1) emigrants do not pay taxes once they have left the country and as education is either partly or fully subsidized it leaves governments with significant fiscal losses; 2) the shortage of manpower in key professions such as lack of engineers and health workers will lead to a much harder way for countries to adapt to a crisis (the effects can be seen in countries with the brain drain problem and not enough medical staff to take care of COVID-19 infected patients during a pandemic); 3) the technological gap becomes bigger between developing and developed countries as the highly-skilled workers are likely to be in the advanced economies.

With brain waste, there are three losers. Migrants lose as they work for lower wages, face higher unemployment rates, lower job security and stability rates, underutilise their skillset & education, have less financial wealth, and face lower levels of innovation. Firms lose because they do not use the best of their employees and as an effect have unhappy employees performing unsatisfying jobs and face lower inefficiency due to the lack of motivation of their employees. The economy loses in general as there is a lack of investment, production, and consumption (Barker, 2020). Schiff (2005) argues that unskilled workers who migrate and return to the country have a smaller benefit on the source country than the literature suggests that brain waste results in a negative brain gain, nobody wins and that there are more losers and the biggest one are being the sending country and the emigrant.

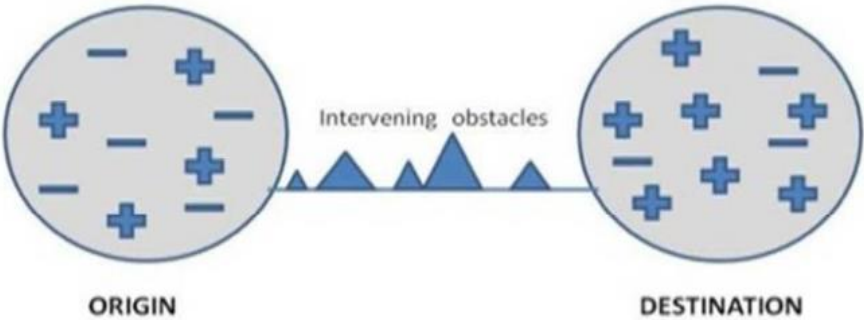
1.5 Push and pull factors

As mentioned in the introduction, Lee (1966) is known for the pioneering theory of migration which shows factors that explain the volume of migration between origin and destination. Even though the theory has been coined in 1966 it has withstood time and is still relevant today. In this study, factors that cause migration are divided into two groups: push and pull factors. Push factors are reasons which are detrimental for the area an individual lives in, such as not enough jobs and general opportunities, famine or droughts, political fear or persecution, poor medical system, loss of wealth, natural disasters, death threats, lack of political or religious freedom, pollution, poor housing, landlord/tenant issues, bullying, poor chances of marrying, mentality, war, crime rates, slavery, and any form of discrimination (sexual, race or other). Pull factors are the ones that attract an individual to another area, and they include job opportunities, better living conditions, good medical care, education, security, family unification, political and/ or religious freedom, industry, better chances of marrying, enjoyment, and an attractive climate (Lee, 1966).

Lee (1966) with his theory model explains how push and pull determinants influence the movement of people. In the beginning, there is the origin or the home country of the emigrants, while on the other end there is the destination or the host country. In between,

there are intervening obstacles or challenges which need to be crossed to make the move happen such as immigration policies in the host countries which the migrants face. Hence, there are personal factors. Most importantly, Lee’s model indicates that both the home and host country have positives and negatives which the individual must account for before deciding whether to move or not. It must be stated that the positives and negatives are always perceived differently for people because of perceptions, attitudes, motivations, and assumptions. People always have a better and clearer knowledge of the factors of origin and are more realistic in comparison when evaluating the factors of destination as they have only a portion of knowledge and certain expectations rather than first-hand and long-term experience. From Figure 3 it can be noticed that if the pull factors in the receiving country exceed the determinants in the country of origin, there is a high likelihood that the migration prevails.

Figure 3: Lee's Push - Pull Theory Model



Source: Pineda, Matriano & Ekundayu (2016).

Building on Lee’s push and pull factor theory, Hatton & Williamson (2002) outline the factors of global migration: the enormous income disparities across countries (North-South divide and East-West), the share of the population between 15 and 29, the sending and receiving country, the immigrant stock, and the poverty level of the home country.

Krasulja, Vasiljevic-Blagojevic & Radojevic (2016) offer additional views on the push and pull factors. They describe the biggest push factors being economic, political, and legal. If all spheres are detrimental, the likelihood of a brain drain occurring is very strong, while pull factors in the host country will be looked at as encouraging with better employment and income opportunities. Furthermore, the social system in the host country and the cost of living are stated as another important push and pull factor for migrants. Also, the crucial social determinants are family and friendship relationships. If a member of the family or friends lives abroad, there is a high possibility that an individual will be driven to move. This especially applies to a spouse and/or children. Because of the large network of communities around the world, the diaspora effect acts as a pull factor. Research studies showed that the geographical distance between the country of origin and the destination country plays an

important role in migration. The closer the geographical proximity between the host and home country, the easier it is for people to emigrate as they will be able to visit family, friends, and relatives on holidays. The language spoken in the host country plays a vital factor in the decision to which country to emigrate. Today the situation is much better than in the past thanks to the English language which is used in all MNCs as a main means of communication for work purposes internationally. Another factor is the age of emigrants. People who reach the age of 40 and over are less likely to decide to move than younger people. The explanation lies in the higher probability and longer period for return on investment than for younger people due to the age difference. In addition, gender is an important factor as there is a noticeable trend where women join their spouses abroad, however, it is suggested that this will change in the future as more women juggle both career and household economics (taking care of the family at home).

Governments in developing countries face the most difficult task in enacting new policies and regulations to reduce brain drain, reverse brain drain, and acquire fresh ideas on how to accomplish and manage things more efficiently (Krasulja, Vasiljevic-Blagojevic & Radojevic, 2016). On the other hand, the developed countries such as Canada, Australia, the US, the UK, and Germany have already implemented score-based policies and strategies on how to attract and how to make it easier for highly-skilled migrants to move to the host country in the 1980s (Beine, Docquier & Rapoport, 2008).

The future growth of developing countries hugely relies on knowledge, learning, education, further research, innovative ideas, and most importantly on cooperation with other countries. With the ever-growing importance of globalisation, trade, and technology the interdependence between international market economies has become the new normal. However, the global trend of workers looking for opportunities abroad in developed countries has been on the rise ever since. Researchers have come up with a new term 'brain circulation' which is the two-way flow of highly qualified workers migrating from country to country. Brain circulation is a modern era phenomenon as it takes the positive and negative impacts of brain drain and combines them in one, resulting in benefits for both parties involved in the brain exchange - the home and host country. A qualified workforce can utilise their knowledge and education to achieve innovation in their area of specialisation, while the sending country benefits from remittances and as well from economic innovation and promotion of diaspora. Consequently, brain circulation influences the overall development of societies, countries, and the global economy (Krasulja, Vasiljevic-Blagojevic & Radojevic, 2016).

2 BRAIN DRAIN IN SERBIA

The second chapter gives an overview on migration and brain drain in Serbia, provides a socio-demographic analysis of the country, introduces push and pull factors for brain drain in Serbia and explains the reverse brain drain or brain gain of Serbia.

2.1 Overview on migration in Serbia

Young people are fleeing, fertility rates are shrinking, societies are ageing, borders, ethnic disputes, EU dreams and unfinished stories from the conflicts and wars of the 1990s is how Judah (2019) for BIRN described the critical demographic decline of the Balkans. As the whole Balkan region, the Republic of Serbia is heavily influenced by population changes, most of which are attributed to migrations. In 1950 the total population of Serbia was 6.7 million people and recorded the highest rate with 9.7 million in 1996. Ever since the total population is rapidly stagnating and in 2019 the total population was 8.7 million people (United Nations, 2019). This implies that one million people left the country over twenty years. Moreover, the United Nations (2019), creates a database of projections on the total population size until the 22nd century and the devastating projection for Serbia in 2100 is 4.2 million people. If true, Serbia would lose half of its total population in seventy years.

Comparing the data from Eurostat's (2019a) database from 2015 to 2019 it can be seen that 150 148 people moved from Serbia, which is roughly 2.15% of the total population of 7 million people that emigrated in five years. As stated in the introduction, around 245 000 people departed Serbia between 2012 and 2016, equating to around 49 000 persons emigrating each year. Serbs emigrated to countries that are members of the Organisation for Economic Co-operation and Development (hereafter: OECD). Between 1990 and 2000 the number of people emigrating from Serbia increased, while it started to drop until 2010, after which it started to increase again. 964 000 Serbian-born persons lived outside the country until the UN report in 2015, with 99% emigrating to the developed countries. Around 850 000 live in Western Europe and predominantly in Austria, Switzerland, Germany, France, while other countries include Italy, Hungary, and Slovenia. The rest of the emigrants moved outside of Europe and the biggest Serbian diaspora is found in the US, Canada, Australia, and New Zealand (Westminster Foundation for Democracy, 2019). The Statistical Office of the Republic of Serbia (2020a) suggests that between 2002 and 2011, around 311 139 people emigrated from the country which is 4.1% of the population.

Moreover, the Statistical Office of the Republic of Serbia publishes yearly demographic statistics with only focusing on internal migrations. In 2020, 109 747 people changed their place of residence within Serbia. Hence, the Statistical Office of the Republic of Serbia (2020b) mentions on their website clearly that the Ministry of Internal Affairs is responsible for keeping the track of international migrations. Tragically, no official institution of the Republic of Serbia has any information on recent international migration from Serbia. The

only data available is collected on censuses, where the last was in 2011 and the latest should have been completed in 2021 but was moved due to the COVID-19 situation until further notice. From the above numbers, the migration statistics from developed countries and international institutions do not align with the migration statistics from the developing countries and the institutions from the home country. Hence, Docquier, Lohest, and Marfouk (2007) claim that emigration statistics given from the country of origin do not give a clear picture of emigration. Only by integrating aggregate data collected in different receiving countries can the data be representative.

Additionally, measuring the demography in Balkan is a difficult task as many citizens tend to get a passport from the neighbouring or “mother countries” which are all members of the EU, and make it easier for people to emigrate. The EU passports are seen as an attractive option means as they offer a legal right to work within the EU. Though such cases are not reported by the official authorities and therefore the statistics are manipulative and even more harmful than suggested as it does not account for Serbian citizens who travel with the EU documents. Serbia may soon have more pensioners than working-aged people due to the low fertility rate since women used to have around six children whereas now rarely families have more than one child. Furthermore, around 50 000 people emigrate from Serbia annually and establish a new life elsewhere by creating families and raising children who will never come back to the home country (The Economist, 2020).

Captivatingly, the highest emigration rates come from the youth which is not a new phenomenon. Already in the 1960s did the Serbian youth emigrate to work in Western Europe as ‘guest workers’ and mostly performed blue-collar jobs. By the 1990s, the illiteracy rates declined and the number of highly educated increased, therefore the emigration rates as well. Only this time it was a one-way ticket for this generation as they left to never come back due to the war, poverty, and political unrest. The conflicts had ended by the 2000s, but the country's highly bright youth continued to emigrate. The reasons were different as the Serbian youth emigrated in the pursuit of advanced studies in foreign countries, acquiring new knowledge and meeting expert in their fields (Bobić & Vesković-Anđelković, 2017). Considering all the above-mentioned parameters, the educated and qualified Serbian youth do not see a future in their motherland and decide to leave the country hoping for better opportunities elsewhere, such movement is known as brain drain and will be explained in the next subchapter.

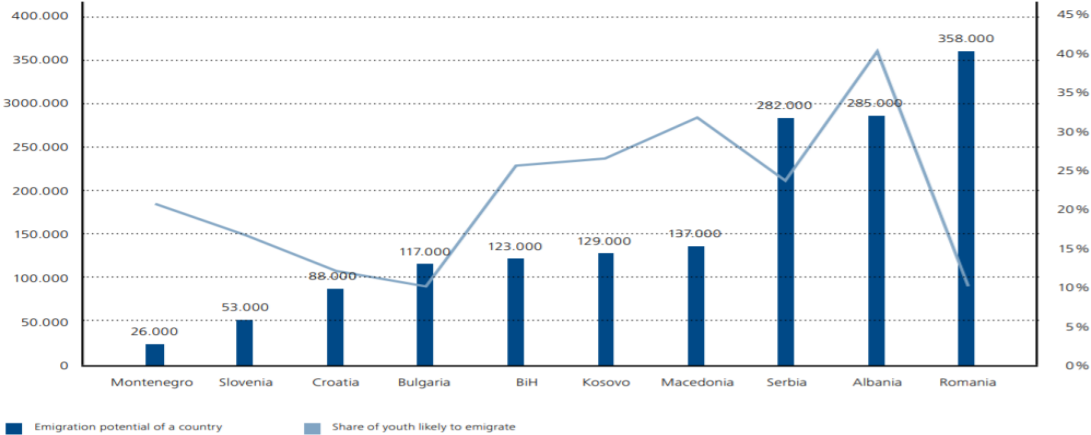
2.2 Brain drain in Serbia

Serbia is frequently cited as a prime example of an exodus country (Dinić, 2018). Grečić (2010) even emphasizes six ways of emigration from Serbia in the 20th century. From the 1960s to the 1980s Serbia experienced the migration scheme of “guest workers” where after the Second World War the developed countries were seeking semi-skilled and skilled workers. Therefore, emigration is not a new phenomenon for the country of Serbia. Only

since the 1990s have the outward movements been identified as brain drain or the emigration of highly skilled and educated individuals such as managers, scientists, professionals, researchers, and technicians (in Radonjić & Bobić, 2020). According to Westminster Foundation for Democracy (2019) from 2012 until 2016, roughly 245 000 people have left Serbia, which makes it around 49 000 people who emigrate from Serbia yearly. The significant difference with migrations after the 2000s is that people who are emigrating are highly qualified individuals with a tertiary education level (bachelor's and master's degree holders). The majority of the highly-skilled individuals that emigrate come from the Belgrade and Vojvodina regions. On the other hand, the highest number of people without any or with just a primary education level comes from the south of Serbia. By the year 2000, the wars have finished, poverty has slowly started to decrease, but what stayed in the persistent emigration of young professionals. However, this time around, the emigration reasons were different to the ones in the 1990s as the youth of Serbia has left the country to advance their study portfolio not just in one country, but a few countries. This view is seen as migration mobility for acquiring new knowledge, meeting experts in their study fields, and working with mentors. An increase in the mobility schemes for young professionals through funded scholarships such as ERASMUS, DAAD, CEEPUS with which studying abroad became accessible and the Serbian student did not have to depend on their families' financial support (Bobić, Vesković Anđelković & Kokotović Kanazir, 2016).

The emigration potential index is part of six factors which are determined by respondents, and these include the strong desire to emigrate, the planned emigration within the next 6 months, the plan to stay abroad longer than 20 years, help and support from someone who is already in the host country, level of familiarity with the host country and have fulfilled all the steps towards moving. The results demonstrate (see Figure 4) that the emigration potential of Southeast European youth is enormous, and it specifically shows that Serbia has over 282 000 young people who represent a country's emigration potential, and roughly 25% of youth who are highly likely to depart (Lavrič, Tomanović & Jusić, 2019).

Figure 4: Youth emigration potential by country



Source: Lavrič, Tomanović & Jusić (2019).

Serbia could lose up to €1.2 billion per year due to youth exodus. Besides, 4 out of 5 people of Serbian youth think about leaving the country. The report estimated costs which portray the expenses per individuals' education level for the year 2018. The costs for a completed elementary school are €13,572, completed high school €20,854, completed university €34,139 and completed post-graduate university studies €54,576 (Westminster Foundation for Democracy, 2019). The economic losses can be measured as what Serbia has thus far invested in young people with the opportunity costs. The emigration of the educated youth is a national catastrophe and a measure of defeat for all politicians who have ruled in the last 30 years. The brain drain of the Serbian youth is also referred to as the issue and tragedy of Serbian families and each parent in Serbia as the issue is insensitive to ideological, political, and other differences (Milenković Kerković, 2021). Youth unemployment is pointed out as the main driver of emigration in Serbia as it is seen as the outcome of a mix between the individual education and training of individuals. In other words, the educational system completely lacks practical and vocational training on all levels: primary, secondary, and tertiary education. Next to economic reasons, a huge motivation for emigrating represents the idea of a better life in a stable democratic society and that "bad institutions are likely to drive out good people" (Radonjić & Bobić, 2020).

A study by Friedrich Ebert Stiftung found out that 3/4 of the Serbian youth would emigrate, which puts Serbia in the first position from the countries in the region where more than half of the respondents have the desire to leave. The main push factors for leaving are the bad situation in the country and pessimism towards an improvement of social factors. The main pull factors for the youth of Serbia represent the idea of improving their financial assets and gaining a better education (Popadić, Pavlović & Mihailović, 2019). Since Serbia is currently a member candidate of the EU it should be also mentioned that if Serbia ever enters the European Union the trend of emigrating highly qualified youth will certainly continue. This can be especially seen in the example of the neighbouring country of Croatia which became an EU member in 2013, and in three years lost 80 000 people who have emigrated to other countries (Živković, 2021). The current misery of Serbia lies in the government itself as the politicians claim that Serbia is experiencing an overall economic growth which statistically it is, but it is relatively normal due to years of experiencing a halt. Such measurements should and cannot be taken seriously by anyone as the brain drain phenomenon is disastrous in the country of Serbia (Wölfl, 2019).

Table 2: Multiple economic indicators for Southeast European countries

Country	GDP (PPP) per capita in 2020 (in dollars)	Youth unemployment rate in 2019 in % (15-29 years)	Average net salary in December 2020 (in euros)	Risk of poverty and social exclusion in 2019 in %
Serbia	18 840	27,1	562	31,7
Croatia	27 680	16,6	923	23,3
Hungary	32 430	11,4	814	18,9
Romania	30 140	16,8	743	31,2
Bulgaria	23 740	8,9	582	32,8
North Macedonia	16 610	35,5	459	39,9
Montenegro	19 930	25,3	527	30,5

Adapted from IMF (2020); World Bank (2019a); Istinomer (2021); Eurostat (2019b).

Table 2 shows multiple economic indicators for Southeast European countries from which people emigrate and the indicators presented are: GDP (PPP) per capita, the youth unemployment rate, average net salary, poverty risk, and social exclusion rate. Serbia ranks as the third-worst Southeast European country with a GDP (PPP) per capita of 18 840 \$ in 2020, the only worse off are North Macedonia and Montenegro. The situation is the same for Serbia with the youth unemployment rate for 2019 where it ranked 2nd worst with 27.1%. A similar situation is with the average net salary of €562 in 2020 where Serbia has ranked again as 2nd worse off. Once more, Serbia is among the countries with the highest poverty risk and social exclusion rate with 31.7% in 2020.

2.3 Socio-demographic analysis of Serbia

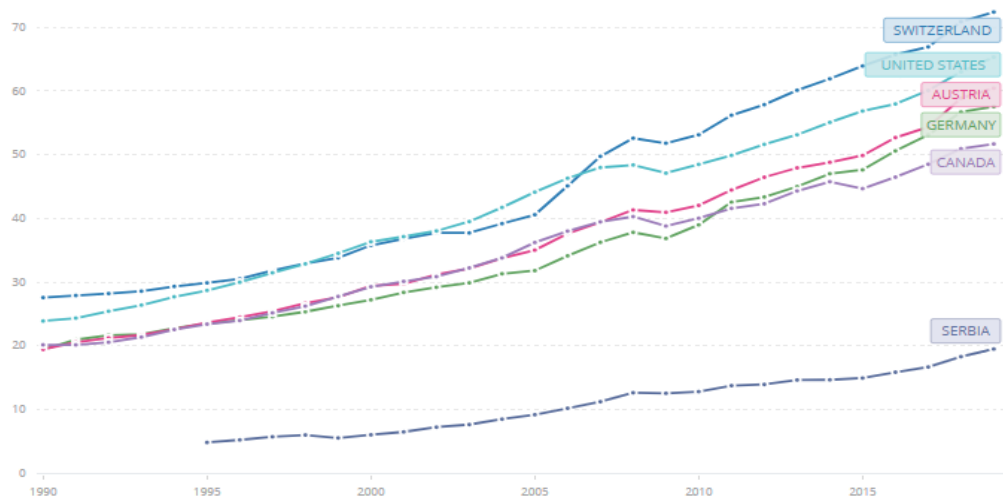
To understand the socio-demographic situation of Serbia, a group of indicators will be analysed in the following section:

Gross domestic product per capita based on purchasing power parity

GDP per capita (PPP) is an “indicator which provides per capita values from the gross domestic product (hereafter: GDP) expressed in current international dollars converted by purchasing power parity (hereafter: PPP) conversion factor” (World Bank, 2019b). GDP represents the monetary value of all final goods and services produced in a country during one year. GDP per capita is used to compare the economy and GDP between countries and further identified as a measure of the standard of living (Bergh, 2009). This indicator has been used on purpose as it shows the GDP per capita using the PPP which “adjusts for differences in local prices and costs of living to make cross-country comparisons of real output, real income and living standards” (Investopedia, 2021). Figure 5 shows data from 1990 to 2019, showing a clear trend of advanced economies doubling their GDP per capita

(PPP), with Switzerland having around US 72 376 \$, while the one of Serbia in contrast to the host countries climbed little over time, to US 19 495 \$ (World Bank, 2019b).

Figure 5: Comparison of GDP per capita (PPP) between Serbia and main host countries



Source: World Bank (2019b).

Demographics - Total population, population growth, life expectancy at birth, and total fertility rate

The total population represents all citizens of a given country. Population growth represents the percentage rate of the population either as growth or shrinkage. The total population of Serbia was 7,586,000 in 1990 with the last time in the same year that the population of Serbia experienced a growth rate of 0.1%. In 2019 the population reached a historical low with 6,994,975 people and a shrinking rate of -0.54%. Life expectancy represents the average time a human is expected to live and is measured in average years of age. In 2000 the average life expectancy was 71.6 years and since then has been on the rise and reached the highest average of 75.89 years in 2018. The total fertility rate is an indicator for the average births of women. The number has been steady over the years for Serbia and is around 1.5 which is close to the European average total fertility rate where the trend is that families have fewer children than ever on average (World Bank, 2019c).

Unemployment

Unemployment represents the share of the labour force that is currently without work and seeking employment. The rate is measured in the percentage of the population within a country. The measure of unemployment has a limitation which is that a low unemployment rate can deceive the real poverty rates and economic development of a country, whereas high unemployment rates can be found sometimes in developed countries with low values of poverty. Usually, the value which is perceived as “normal unemployment” for a country is up to 5 %. The highest unemployment was recorded in 2013 with 22.2% and the lowest in

2019 with 10.4% (World Bank, 2019c). The most recent unemployment rate for Serbia recorded was for the last quarter of 2020 and was 9.9%, whereas the youth unemployment rate was 32.4% which is a surprise due to the ongoing COVID-19 crisis (Statistical Office of the Republic of Serbia, 2020c). Južne vesti (2020) published a leaked message of a member of the regime party and suggest that the only way to get to a public sector job in Serbia is through being a member of the ruling party. The priority for job vacancies have individuals who have actively participated in numerous organised events.

Table 3: Selected indicators of Republic of Serbia (1990-2019)

Selected indicators of Republic of Serbia (1990-2019)											
	1990	2000	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total population	7,586,000	7,516,346	7,234,099	7,199,077	7,164,132	7,130,576	7,095,383	7,058,322	7,020,858	6,982,604	6,944,975
Population growth %	0.1	-0.3	-0.8	-0.49	-0.49	-0.46	-0.5	-0.52	-0.53	-0.54	-0.54
Life expectancy at birth	n.d	71.6	74.5	74.8	75.1	75.3	75.2	75.6	75.5	75.89	n.d
Total fertility rate	n.d	1.5	1.4	1.45	1.43	1.46	1.46	1.46	1.49	1.49	n.d
Unemployment %	n.d	12.6	23	24	22.2	19.2	17.7	15.3	13.5	12.7	10.4
Inflation %	n.d	81	8.9	6.1	5.1	2.5	1.8	1.5	2.9	1.9	2.4
Exports % GDP	n.d	8.8	33	35.8	39.8	42	45.1	48.5	50.4	50.4	51
Imports % GDP	n.d	13.7	45.8	49.6	48	50.1	52.2	53.3	57	59.1	61
FDI in US\$ million	n.d	n.d	493.053	127.533	205.929	199.953	234.313	235.521	289.461	407.189	426.87

Adapted from World Bank (2019c).

Inflation

Inflation represents the rate of price change in the economy through the annual growth rate of the GDP implicit deflator. The GDP implicit deflator is the ratio of current local currency GDP to constant local currency GDP. The optimal inflation rate is usually close to 2%. The highest inflation and most unnatural one was recorded in 2000 with 81%. This number is explained by the period of hyperinflation in the 1990s, the NATO bombing, and the fall of the Slobodan Milošević regime. Ever since then, inflation has had a stable rate of 2.4% in 2019 (World Bank, 2019c). The latest inflation rate recorded in October of 2021 was 3% (IMF, 2021).

Exports and Imports

Exports and imports represent the indicator of the economic performance of a given country. A country experiences a surplus if exports exceed imports which is the ideal case in which a country is performing excellent economically, but in the real world, only a few developed countries experience surplus. On the other hand, if imports exceed exports, the deficit of a

country happens which is a phenomenon usual for developing countries. Table 3 shows exports and imports as a percentage of GDP. Imports were 13.7% in 2000 and have been on a dramatic rise over the years and reached 61% in 2019. Exports were only 8.8% in 2000 and have been increasing over the years to 51% in 2019 (World Bank, 2019c).

Foreign Direct Investment

FDI represents the monetary value when a foreign individual or firm establishes a business operation in a foreign country. It is of crucial importance for the home country as it is seen as the foreign assets which have been directly invested into the local economy. The highest recorded FDI was in 2011 with US 493.053\$. However, the lowest FDI recorded was the following year in 2012 with US 127.533\$ million. Since then, FDI has been on a steady and significant increase and reached US 426.87\$ (World Bank, 2019c).

Table 3 shows selected indicators from different data sources and as can be noticed some data is missing as it was not given. Data for 2020 is as well missing due to this fact.

2.4 Push and pull factors for brain drain in Serbia

2.4.1 Socio-economic, political, technological, and environmental implications

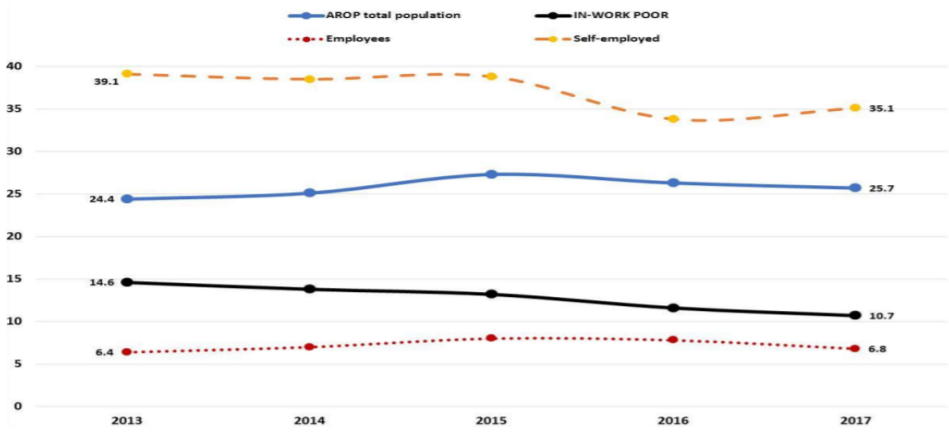
Young people who leave will have children, marry, start families, divorce, and many of which will die in the host country. Besides the demographic effects, the socio-economic, political, and technological consequences of youth emigration are extremely important. If the emigration of highly educated and skilled workers from one country to another is excessive and continues to rise, it will have severe consequences for the economy and society of the migrants' home country. If the emigration of highly educated continues to rise which is expected with previous statistics and trends, the consequences will be negative, affecting the economy and society of the migrants' home country. Losses in tax revenues, potential future entrepreneurs, a shortage of competent labor, innovative ideas, money invested in education, and the loss of health care and education services are all repercussions of young emigration abroad. Serbia loses its investment in the upbringing, schooling, education, and training of high achievers, but it also loses because the capital invested in education and training is not returned to the home country, but given as a gift to the country receiving highly educated and expert labor. As a result, this is about the projected but unrealized profit of highly educated and professional people. This is why, soon, favorable improvements in the Republic of Serbia's economic landscape are required, as they will have the greatest impact on such migrant movements (Official Gazette of the Republic of Serbia, 2020). Moreover, Branko Milanović indicates that in Serbia there is political capitalism where one party, person, and institution comply with what is asked from them while always emphasising the economic and technological growth the country has experienced. Although he points out that most countries from the former Yugoslavia are experiencing liberal

capitalism where the main problems are corruption in the political system and the weak enforcement of the laws and regulations which leads to just having one ruling class that is in favor of the regime party (Arbutina, 2021).

2.4.2 In-work poverty

According to the Government of the Republic of Serbia (2018) risk indicators, 25.5 % of the Republic of Serbia's population (1.79 million people) was at risk of poverty, 19.5% (1.37 million people) was extremely materially deprived, and 15.7% (1.01 million people) lived in the low-work-intensity home. The in-work poverty (hereafter: IWP) represents the portion of employed people who is at risk of falling into poverty. In 2017, the share of the employed workforce and at the risk of poverty was 9.4% in the EU (Peña-Casas, Ghailani, Spasova & Vanhercke, 2019). Similarly, the data from European Commission show Serbia is following with a share of 10,7% of employed who are at risk of poverty in 2017, which is an improvement of 3.9% since the year 2013. As can be seen in Figure 6 the total population at risk of poverty in Serbia in 2017 was 25.7% and it is noticeable from the figure that it increased for the share of the total population over years, and the risk of poverty was the highest with 35.1% for the self-employed.

Figure 6: IWP % in Serbia from 2013-2017 for the total population, the employed and self-employed



Source: Pejin Stokić & Bajec (2019).

As Table 4 shows the IWP for the employed by age group in Serbia improved from 2013 to 2017. The greatest improvement was in the age group 18 to 24 years where it was 14.9% and decreased to 7.8% and a percentage change of -48% in the reference period. The second age group from 25 to 54 years as well decreased from 13.6% to 10.5% a percentage change of -23% in the reference period. The eldest age group from 55 to 64 years also experienced an improvement in the decrease of the IWP from 19.6% to 13% a percentage change of -35% in the reference period. Although, the oldest age group was at the highest risk of poverty in Serbia.

Table 4: IWP of the employed by age in Serbia from 2013 to 2017

IWP of the employed (%)	Year					Change from 2017 to 2013 (%)
	2013	2014	2015	2016	2017	
18 to 24 years	14.9	14.5	13.7	11.3	7.8	-48
25 to 54 years	13.6	12.9	12.5	10.9	10.5	-23
55 to 64 years	19.6	19	16.7	15.3	13	-35

Adapted from Pejin Stokić & Bajec (2019).

The IWP is inversely related to the level of education, meaning the higher the level of education the lower will the IWP percentage be. Individuals with a lower level of education are more vulnerable to the risk of poverty (Pejin Stokić & Bajec, 2019). The group of people with the lower secondary education and below had a decrease from 35.2% to 31% and a percentage decrease of 11.9%. Individuals with the upper secondary and post-secondary, non-tertiary education had the highest decrease from 14.1 to 10.8% and a percentage decrease of 23.4%. Individuals with a tertiary education experienced an increase from 3% to 3.4% with a percentage change from 13.3% in the mentioned period. Even though the group of people with tertiary education experienced the biggest increase, the group with the highest risk of poverty is the group of individuals with the lowest level of education (see Table 5).

Table 5: IWP of the employed by education levels in Serbia from 2013 to 2017

IWP of the employed (%)	Year					Change from 2017 to 2013 (%)
	2013	2014	2015	2016	2017	
Lower secondary and below	35.2	32.3	37.9	29	31	-11.9
Upper secondary and post-secondary, non-tertiary education	14.1	13.7	13.1	12.2	10.8	-23.4
Tertiary education	3	4.8	3.5	4.8	3.4	13.3

Adapted from Pejin Stokić & Bajec (2019).

The key challenges of the high IWP in Serbia are the following: 1) non-regulated social benefits, 2) the high share of low level of education, 3) the high share of the elderly 4) the low minimum wage scheme and 5) the high share of self-employed people with low salaries.

2.4.3 Corruption

The Corruption Perceptions Index is a global indicator of the level of corruption in the public sector. It represents a yearly snapshot of the degree of corruption between countries. Serbia was ranked 94 out of 180 countries in 2020 with a score of 38. Serbia shares the same ranking with countries such as Suriname, Sri Lanka, Tanzania, Ethiopia, Peru, Brazil, and Kazakhstan. As Table 6 shows, Serbia improved slightly since 2016 but is full of corruption

which leaves a huge amount of improvement which the country should undergo. The worst-ranked country in 2020 was Somalia with a score of 12 and the best-ranked country New Zealand with a score of 88 (Transparency International, 2020).

Table 6: Corruption Perception Index of Serbia (2012-2020)

Year	2012	2013	2014	2015	2016	2017	2018	2019	2020
Score	39	42	41	40	42	41	39	39	38

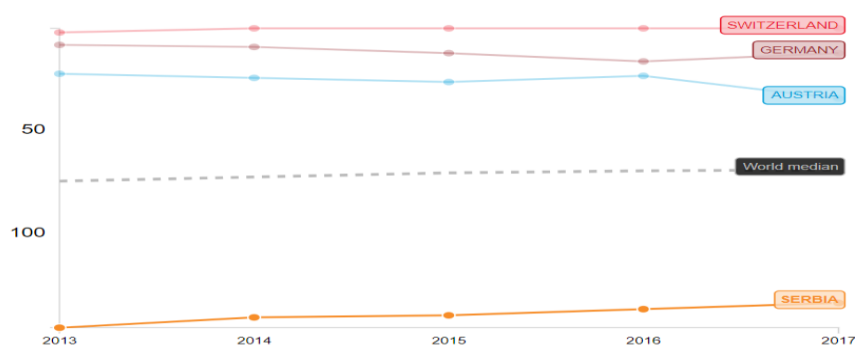
Adapted from Transparency International (2020).

After unemployment and the low living standards, Serbian citizens regard corruption as the third most pressing issue facing their country today. In Serbia, the most common reasons for paying bribes are to speed up and complete a procedure or receive better treatment (UNODC, 2011). In Serbia, there is a great deal of corruption. When it comes to starting a business, around 60% of the people in the sample study admitted to using some type of deception. Corruption is particularly prevalent in areas vital for life, such as receiving subsidies, grants, and other favourite sources of finance; issuing construction permits; and registering property. Non-transparent laws and regulations, the inefficiency of administrative services courts, customs authorities, and the lack of severe sanctions for unethical behaviour by public employees, among other factors, are some of the major causes of corruption in Serbia and thus diverse measures must be implemented for a change to happen (Ivanović-Djukić, Lepojević, Stefanović, Van Stel & Ateljević, 2019).

2.4.4 Country Capacity to Retain Talent

The World Economic Forum (2019) ranked Serbia as the 72nd country from 141 countries (see Appendix 5 & Figure 33) which have been analysed in the Global Competitiveness Index (GCI). The GCI is used as an indicator that compares twelve different pillars of countries according to their policies, institutions, and factors which display countries' efficiency levels. The seventh pillar is the labour market efficiency which represents the most efficient allocation of workers within a country's economy. The 7th pillar looks at two aspects of countries: how to attract talent and how to retain their talented workforce. The latest report on the country's capacity to retain talent ranked Serbia as 134th out of 137 countries as Figure 7 shows. For comparison purposes, the main destination countries have been taken as an example where Switzerland ranks first in the world in the country's capacity to retain talent. Austria and the US closely follow Switzerland within this category. Therefore, Serbia is almost at the bottom of the ranking of a country's capacity to retain talent (World Bank, 2017).

Figure 7: Country Capacity To Retain Talent, 1-7 (best) from (2013-2017)



Adapted from World Bank (2017).

2.4.5 The Serbian youth today

According to the data from Census from 2011, the total number of young people aged between 15 and 30 years of age was 1,322,021 which is approximately 18% of the whole population as is shown in Figure 8. The share of young people who completed higher education is 157154. The number of women 96970 who completed higher education was far more superior than men with 60184 (Klašnja, 2020).

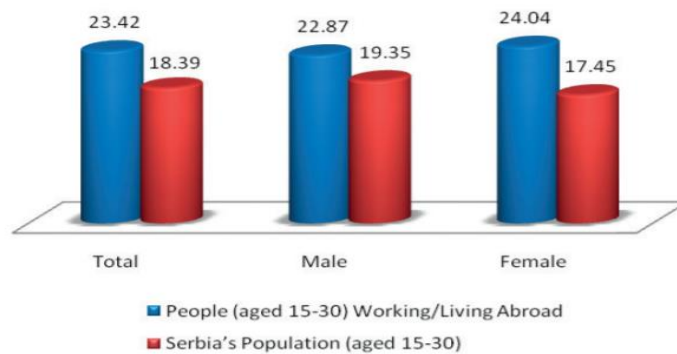
Figure 8: Young people in Serbia by educational attainment and the 2011 Census

educational attainment of young people (aged 15-29)	total/number of young people	total %	men	women	urban %	other %
Without educational attainment	15.326	1.2	7.926	7.400	1	1.3
Incomplete primary education	22.594	1.7	12.273	10.321	1.3	2.4
Primary education	375.459	28.4	196.746	178.713	25.1	33.6
Secondary education	747.847	56.6	398.028	349.819	57.1	55.8
College and higher education	157.154	11.9	60.184	96.970	15.3	6.6
Unknown	3.641	0.3	1.953	1.688	0.2	0.3
Total	1.322.021	100%	677.110	644.911	100%	100%

Source: Klašnja (2020).

Interesting to note is an alteration when comparing the data taken on the official Serbian Census between the share of migrants living and working abroad and the population of Serbia. The share of the total youth living abroad is 23.4% is in favour of Serbia's population with 18,4%. The similar statistics are with the male versus female ratio with slight modification in the percentage, but with the population living abroad being clearly in favour (Bobić, Vesković Anđelković & Kokotović Kanazir, 2016). As is presented in Figure 9 such statistics clearly show the immense scale and magnitude of Serbian youth living outside of their home country.

Figure 9: Comparison of the Migrant and Domicile Youth (15-30 Years) Population (in %)



Source: Bobić, Vesković Anđelković & Kokotović Kanazir (2016).

Another important fact to notice is the worrying trend of fewer enrolled students for each year of the studies. The Statistical Office of Serbia noticed that between the three academic years of 2016/2017 to 2019/2020 the number of enrolled decreased from 262,108 to 241,968 in 2019/2020 which is a decrease of 7.68%. The same trend is noticed in the number of graduated students where the situation is more dramatic with a decrease of 17,6% from 51596 graduates in 2016/2017 to only 42499 graduates in 2019/2020. Reasons for such a situation are the fact that there are simply fewer children in Serbia due to the negative birth rate, but also emigration. Another reason is that many young people do not go for formal education, but continue doing IT-related courses which quickly bring the desired employment in the country or abroad (Čonkaš, 2020).

The Ministry of Youth and Sports is the highest governmental body of the Republic of Serbia which represents the interests of the young people of Serbia and the interest in sports. For years they are the representative of many projects and policies for the Serbian youth. They have adopted the National Youth Strategy 2015-2025 which defines nine strategic goals but the can be summarised in 1) employment for both gender 2) participation of both gender in the society 3) quality opportunities for acquiring qualifications of young people (Ministry of Youth and Sports, 2014). From the Strategy, it can be noticed that there is much more to do than is mentioned. The first goal can be understood as males and females not having the same employment possibilities and as well their age group. The second goal is perceived as both genders not having any active participation or say in the society, let alone in the decision-making process. The third goal gives the idea that not all young people have the same chance for quality opportunities and for acquiring qualifications.

The government of Serbia (Official Gazette of the Republic of Serbia, 2020) published an “Economic Migration Strategy of the Republic of Serbia for the period 2021-2027” with main strategies which should be implemented to reduce the emigration rate of young people:

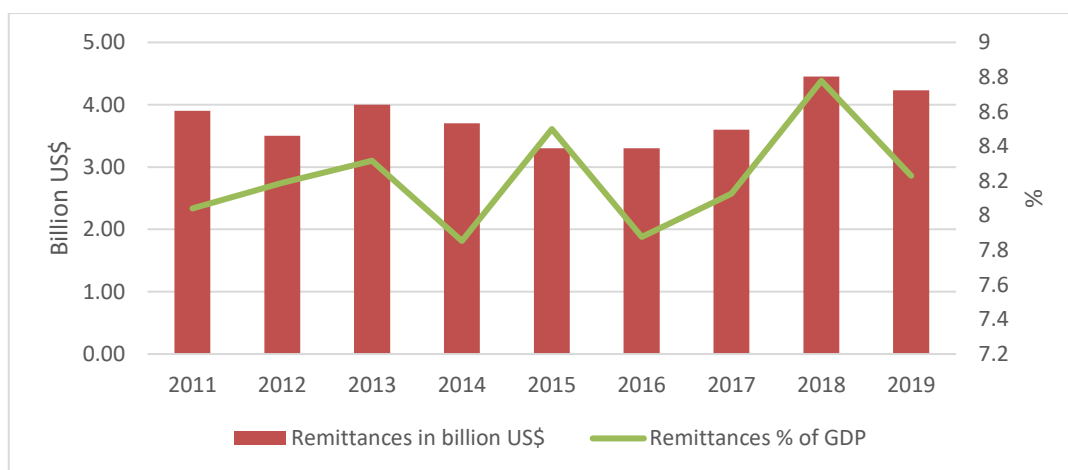
- 1) Creation of economic and social environment to slow down emigration (better monitoring of emigration statistics, improving living and working conditions in economic and social sectors, digitalisation of the education system,
- 2) Strengthen ties with the diaspora (stimulation transnational entrepreneurship, stimulating remittances flow and higher involvement of the diaspora at a local level)
- 3) Stimulate return and circular migration (establishing programs for return and circular migration individuals, monitoring the statistics of such flows)

Thus, it can be summarised that the main push factors of young people emigrating from Serbia are unemployment, economic problems, insecurity, socio-political situation, and local administration and that the main pull factors are better jobs, a better quality of life, education, and marriage (Bobić & Vesković-Andelković, 2017)

2.5 Reverse brain drain or brain gain of Serbia

Serbia ranks 3rd on the European remittance inflow level in 2020 (see Appendix 4 & Figure 32), with 3.4 billion US dollars, and would rank first if the statistics compared the size of the country with the size of the population in the country (KNOMAD, 2020). According to the World Bank (2019d), personal remittances made up an average of 8% of the GDP of Serbia. The personal remittances were approximately 4.2 billion US\$ in 2019. From Figure 10 it can be pointed out that the flow of personal remittances during the period 2011 to 2019 has experienced stability with little alterations during the years (Arandarenko, 2021). This is why it can be noticed that remittances play an important role for Serbia from the brain drain.

Figure 10: Flow of personal remittances in billion US\$ and as a % of GDP of Serbia (2011-2019)



Adapted from World Bank 2019c, d).

Many studies have attempted to determine the size and dispersion of the Serbian academic diaspora around the world. Its size is a point of contention among researchers. By establishing a separate organization for constant monitoring and data gathering in the field,

the government can improve the quality of data on migration issues. The institution's funding should come from the state budget. The government should foster an environment that encourages and supports migrant diaspora contributions to development through various programs (Grečić, 2016).

According to Bobić & Vesković-Andelković (2017), there are three most important contributors to how the brain drain in Serbia can be turned into brain gain and they are the following:

1. Brain circulation - Instead of limiting the mobility of individuals, state (bilateral) agreements, chambers of commerce mediation, national employment agency, and other mechanisms should be used to facilitate the emigration, immigration, and return of Serbian citizens. Recognizing the qualifications of those who have returned to Serbia with diplomas and accrediting degrees earned in Serbia while studying abroad would be crucial tools for making temporary and cyclical migrations simpler. Also, the costs of individuals who want to emigrate as well as those who want to return would be reduced.
2. Financial capital returns (savings, remittances & investments) are usually a huge boost for small and medium-sized enterprises, family-run businesses and provide developmental resource opportunities for the mentioned establishments, especially on the local level. Serbian citizens who have returned and members of the diaspora are usually the ones who initiate such projects.
3. Knowledge sharing: sharing of ideas, values, beliefs, and transfer of social remittances- Virtual research centers that sustain and grow collaboration with persons who work and live abroad through migratory networks are now possible thanks to modern technology and communication options. Emigrants, returnees, and the diaspora are key social mediators and facilitators of cooperation, as well as initiators of local development projects, such as virtual diaspora universities and information networks for young professionals who want to exchange their ideas, values, and beliefs and as well gain some new knowledge and expand their social network.

Besides, Bobić & Vesković Andelković (2019) offers two options how the skilled youth emigration can be turned into brain gain or brain circulation. These two options are transnational entrepreneurship and the diaspora. Transnational entrepreneurship it is referred to the portion of educated young people who are doing business abroad/or in Serbia and are in a way connected to the country. Even though they lack the support of Serbia, they create an impact in the host and home country by sharing professional business ideas and knowledge. Regarding the diaspora - young and educated professionals are the best ambassadors of the country and have a huge impact in the fields of study.

Serbia could gain significantly if it supports circular mobility through bilateral agreements and programs while fostering and promoting conditions for returnees. Furthermore, the costs of remittances should be reduced, fighting poverty and corruption on local levels as well as regionally and lastly generating financial capital to provide quality employment for the

young people. The proposed ideas would lead towards the strengthening of bonds between the Serbian diaspora network which would be able to maximize its pool of talents in various fields such as science, research, academia, and culture. Scholars have finally recognized the importance of bridging migration and development and the returnees. Serbian academic diaspora plays a vital role in the national, social, economic, political, and cultural progress. Although, what is left is the higher public awareness towards the pros of cross-border mobility, greater media presence, NGOs, and the change in the mentality of only registering the pessimistic views on brain drain (Radonjić & Bobić, 2020). Few examples of organisations & institutions which have the goal to turn the brain drain into brain gain. The already famous OSSI-Organisation of Serbian students abroad which already exists for more than twenty years and by now has national organisations in various countries where students are the bridge makers of knowledge exchange and networking (OSSI, 2021). The second organisation is the new “Point of return” which aims to be the information point for returnees and circular migrants and publishes guides for returnees and the Serbian diaspora (Tačka povratka, 2021).

The ongoing COVID-19 pandemic has brought some positives in terms of return migration or brain gain to the countries with a high number of expats. For example, Italy, Greece, Romania, and even Ireland have seen huge numbers of their citizens' comeback at the start of the pandemic when the revolutionary change happened with executives realising many jobs can be performed remotely from any location of the world. This has allowed expats to return home even for a short while and spend time in their native home countries with family, relatives, and friends while as well working from home. These trends brought on new ideas to life such as co-working spaces, attracting digital nomads to warmer places such as the “dead towns” of Sicily and Sardinia. Crime, a bad healthcare system, and huge bureaucracy problems in general and especially for start-ups are still seen as negative determinants for an individual to stay. On the other hand, Greece gave a 50% discount in income tax to certain remote workers. Ireland is encouraging rural working hubs to restore balance to the rural-urban relationship and encourage people to return to rural areas. The biggest mistake we can make when we emerge from the pandemic is reverting to our previous situation (D'Ignoti, 2021). The Economist (2021) reports on the various cases of reverse migration, although it concludes that the number of returnees is much smaller than the number of youths who left. Even the ones who returned home might go abroad again when the pandemic is close to over. A study shows that 2/3 of Bulgarian returnees, plan to migrate again. In the long run, people in the EU have a free choice with open borders and can choose where they want to live and work since people can change their minds about where they want to live (The Economist, 2021). Certainly, the future cannot be foreseen whether the returnees will stay in their home countries or whether this will just stay a temporary brain gain, but a step toward facilitating their return stay has been done with still room for improvement on implementing and enforcing different regulations such as tax deductions, reduced rent and tax breaks. This is surely where the Serbian government has a lot to learn with understanding and promoting the mindset ‘staying locally, thinking globally’.

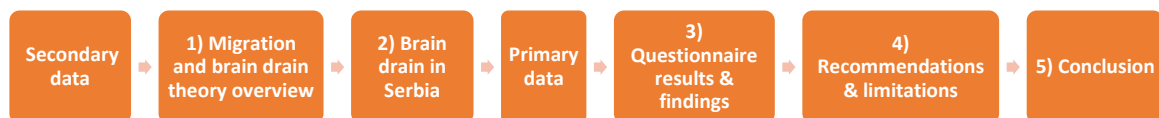
3 RESEARCH FRAMEWORK AND METHODOLOGY

The third chapter describes the research framework and the research method of the master's thesis and provides the sample description.

3.1 Research framework

According to Kumar (2010, p.208) a research design “*is a plan, structure, and strategy of investigation so conceived as to obtain answers to research questions or problems*”. The actual goal is to complete the scheme of the research. The research framework in Figure 11 gives a visual understanding of the steps needed to complete the entire research analysis, achieve the goals and answer the research questions of this master's thesis using quantitative data.

Figure 11: Framework on research analysis



Source: Own work.

The research analysis of the master's thesis consists of five parts. The first two parts are mainly based on secondary data. The first step is to look at the migration and brain drain theory overview of other authors who reviewed this topic, the second step is to give an overview on brain drain in Serbia using secondary data. The third and main part of this master's thesis is to deal with the research questionnaire results using primary data. The questionnaire results will explain the main push and pull determinants of the brain drain issue amongst the Serbian youth. The fourth step will provide future recommendations for future research, recommendations for governments on the topic of brain drain in Serbia and provide limitations of this master's thesis. The last step in the research analysis is the conclusion which will thoroughly conclude the master's thesis.

The methodology used in this thesis is based on secondary sources, primary and secondary data. The **secondary data** that I use are scientific data such as journal articles and scientific books; popular sources or data which is made for non-scientific readerships such as newspaper magazines and websites; official sources such as government reports, official statistics from various institutions as the statistical office of Serbia and other agencies, indexes and publications from various official institutes. For investigating the reasons and determinants of why the highly-educated youth of Serbia emigrates from the country, I have composed a questionnaire using the **primary data** collection technique.

3.2 Primary data collection

The selection of using the research method can be qualitative, quantitative, or integrating both research methods. As a result, the selection of the research method will have a tremendous effect on the process of interpreting the data. Thomas (2011) explains that the simplest distinction between these research methods is that qualitative methods compromise a researcher which describes different kinds of characteristics of people and events and does not consider events amounts or measurements. Quantitative approaches, on the other hand, are based on measurements and amounts of the characteristics of the people and events that the researcher is interested in. Moreover, Saunders, Lewis & Thornhill (2009, p.151) state that "*one way to distinguish the two is the focus on numeric or non-numeric data*". Generally, there are more quantitative research designs than qualitative. Quantitative study designs are specific, well structured, well defined, and tested for their validity and reliability. On the other hand, qualitative designs do not have structural depth and are less specific and precise (Kumar, 2010). As has been previously stated by Saunders, Lewis & Thornhill (2009) the quantitative research method is to be seen as a data collection technique (such as a questionnaire) or data analysis process (such as graphs or statistics) that are always based on numerical data. This study will use quantitative techniques of data collection, analysis, and interpretations.

There are three different types of research studies concerning their purpose of research: exploratory, descriptive, or explanatory. Studies that are based on the relationships between variables are considered explanatory research. The focus lies on studying a situation or problem to be able to find out the connection between variables (Saunders, Lewis & Thornhill, 2009). The research approach of this study is **descriptive** and **explanatory**.

When choosing the research methods, researchers either use a single data collection set and analysis technique (mono method) or use more than one data collection set and analysis technique to answer the research question (multiple methods) (Saunders, Lewis & Thornhill, 2009). This particular study is completely **quantitative** since it consists of the **mono research** method particularly using the quantitative data collection set such as **online survey** with the majority of questions being closed and structured.

The research design of this master's thesis is **cross-sectional**. The cross-sectional study design is "*the study of a particular phenomenon at a particular time*" (Saunders, Lewis & Thornhill, 2009, p.155). They are usually time-constrained. However, Bryman (2008, p.158) defines the cross-sectional design as the "*collection of data on more than one case and a single point in time to collect a body of quantitative or quantifiable data in connection with two or more variables which are examined to detect patterns of association*". The most common names for cross-sectional designs are **survey** design and **questionnaire**.

The survey strategy is mostly recognized with a **deductive** quantitative approach. This particular strategy is popular and very common in business and management research and is

mostly used to answer who, what, where, how much and how many questions. Furthermore, online surveys are so common nowadays as they are *"using a collection of a large amount of data from a sizeable population in an economical way"*. Likewise, survey strategy is perceived as how daily newspapers and other news sources present the findings of new surveys and how a percentage of the population thinks or behaves in specific cases. Such surveys are usually straightforward and easy to comprehend (Saunders, Lewis & Thornhill, 2009). Surveying is *"the process of information gathered by asking a range of individuals the same questions related to their characteristics, attributes, how they live, or their opinions"* (O'Leary, 2010, p.152). As has been mentioned, online surveys are used for descriptive or explanatory research. Therefore, explanatory or analytical research allows investigating relationships between different variables, especially the cause and effect relation. According to Saunders, Lewis & Thornhill (2009), the most frequent survey strategies are structured observations, structured interviews, and questionnaires. Interviews can be face-to-face or via telephone, whereas questionnaires can be supervised, by post, or via the internet. Due to this fact, the researcher decides which format and method suit the most aim and objective of the study (Bryman, 2008). There are various advantages when using an online survey to collect research data. Online surveys *"in conjunction with E-mail offer greater control because most users read and respond to their mail at their computer"* (Saunders, Lewis & Thornhill, 2009, p. 363). Further, online surveys allow reaching a large sample of a given population at a low or no cost (Google Forms or 1ka.si), and data is collected quickly. Hence, they are not complicated to analyze for researchers. Additionally, respondents' answers are automatically programmed with the option to download them into the database, which eliminates the effort of coding a large number of surveys (Bryman, 2008).

The type of a questionnaire varies how it is administered and there are different types such as the self-administered questionnaires which are carried out by respondents themselves and they can be a) internet & intranet-mediated questionnaires which use the internet; b) postal or mail questionnaires which are sent to the respondents and once completed they are sent back via post or mail; c) delivery and collection questionnaires which are directly delivered to the respondent and taken back when completed. Questionnaires can as well be administered by the interviewer and they are: a) telephone questionnaires which are conducted via the telephone and b) structured questionnaires for which the interviewers meet face to face to complete the interview-they are further categorised into semi-structured and in-depth interviews (unstructured) (Saunders, Lewis & Thornhill, 2009). At the beginning of the thesis process, I have contemplated conducting semi-structured interviews or the combination of both methods semi-structured interviews and the self-administered questionnaire, but due to the large sample size, time consumption, scope, and the realm of the thesis I have instead opted for the self-administered questionnaire using the internet to distribute the survey to respondents. I chose to use the questionnaire based on a few factors which are: 1) the significance of reaching the correct respondent, 2) reaching the required size of the sample, 3) the geographical extent of respondents, 4) the number of questions

needed for the data collection process, 5) the types of questions needed for the data collection process, 6) the characteristics of the respondents.

The questionnaire contains twenty-five questions divided into sections. The questions focused on the demographic variable of the respondents as well as their view on whether to stay in Serbia or leave the country. The questionnaire was completed on the website 1ka.si and the data were collected through Facebook groups with the target audience being students. The survey has been produced in the Serbian language as this is the official language of the target sample. The data has been collected for seven days from the 4th of May to the 11th of May in 2021.

3.3 Sample description

The target group of the master's thesis are holders of Serbian citizenship who are full-time students enrolled into universities in Serbia or abroad regardless of their levels of study. The target sample includes students inscribed in bachelor, master's, and doctorate programs. Although it is hard to analyse how many individuals received the questionnaire, 791 students opened and entered the introduction of the survey; 570 students entered the first page; 550 students partially completed, and 408 students fully completed the questionnaire. After the data analysis, it was determined that responses mostly came from Serbia, but also countries like Austria, Germany, Slovenia, China, Greece, the UK, Belgium, Spain, Italy, France, Australia, Bosnia & Herzegovina, Norway, the Czech Republic, Ireland, Netherlands, and the US.

The survey entailed 25 questions including the demographic variables of the respondents. The gender of the respondents was following 73% were female, and 27% were male. As is shown in Figure 12 below.

Figure 12: Gender distribution in %

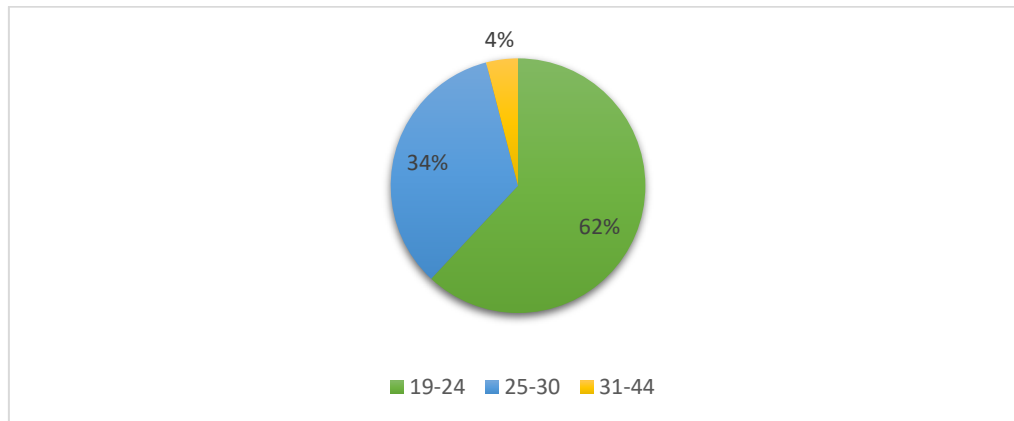


Source: Own work (N=311).

The age range of respondents varied between the ages of 19 to 44 years. The largest group of respondents were students aged 19 to 24 years making up 62%. The second group of

students was aged 25 to 30 years with 34%, whereas students aged 31 to 44 years made a share of 4% of the total sample.

Figure 13: Age group



Source: Own work (N=297).

Respondents were asked to provide background on their ethnicity. From the sample, 97% of the respondents were of Serbian ethnicity. The respondents could choose the option “Other” and 3% of ethnic groups that have been reached are Montenegrin, Bosnian, Hungarian, and Slovenian. Another ethnic group that was mentioned was Yugoslav.

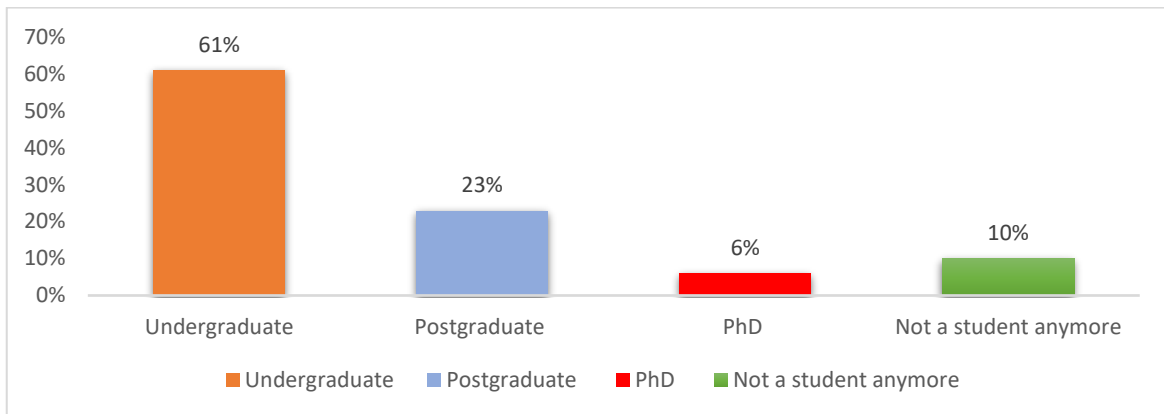
Furthermore, the respondents were asked to include information on their birthplace. Almost half of the respondents answered that they were born in the two biggest cities of Serbia – the capital city of Belgrade and Novi Sad. Other birthplaces included the south of the country Niš, Leskovac, Pirot, and the rest with cities such as Čačak, Kragujevac, etc. There were a few respondents who were born in the other neighbouring cities Vukovar and Sarajevo. Additionally, there were no respondents who were born abroad other than the Balkan region.

The first question of the survey was whether the respondent was a Serbian citizen (holder of the Serbian passport). If the respondents answered with a ‘No’ to this question, they were immediately traced to the end of the survey. The question was designed in this way to reach the target group of the thesis and not include foreign students who are studying in Serbia. I have edited this question explicitly for Serbian citizens only as this would ensure the validity of the targeted sample group. Results show that 94% of the respondents answered that they are Serbian citizens and holders of the Serbian passport, whereas 6% of the respondents answered that they are not Serbian citizens nor holders of the Serbian passport. For the respondents who answered ‘No’ to the mentioned question, the survey ended, and they could not continue with filling out other questions.

The second question was about the current level of study of the respondents. The second question was also an excluding question, as there was an option for respondents to answer that they are not a student anymore. The questionnaire led the respondents to the end of the

survey to ensure reliable and valid data of the targeted sample group. From Figure 14 it can be noticed that undergraduate students made up the biggest share of the respondents with 61% of the total sample. 23% of postgraduate students answered the questionnaire, whereas only 6% were students at the doctorate level. As previously mentioned, the questionnaire distinguished current students from students who have already graduated. The share of respondents who answered ‘Not a student anymore’ was 10% and led the respondent to the end of the survey.

Figure 14: Current level of study

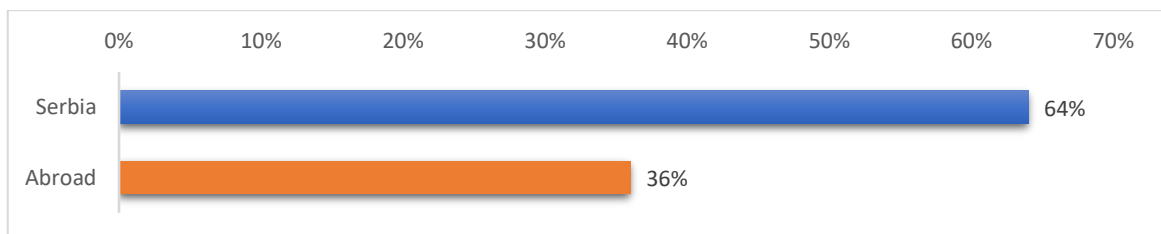


Source: Own work (N=504).

The first two questions were deliberately created in a way that would help reach the planned target group to ensure validity and reliability of the data. With the first question, respondents who were not holders of the Serbian passport were taken to the end of the survey. The same was the case in the second question with Serbian citizens who are not students anymore, the survey ended for them as well.

In the third question, the respondents were asked about their current place of study for the 2020/2021 academic year. As can be seen in Figure 15, 64% of students were studying in Serbia, while 36% of the respondents were studying abroad.

Figure 15: Current place of study (the academic year 2020/2021)

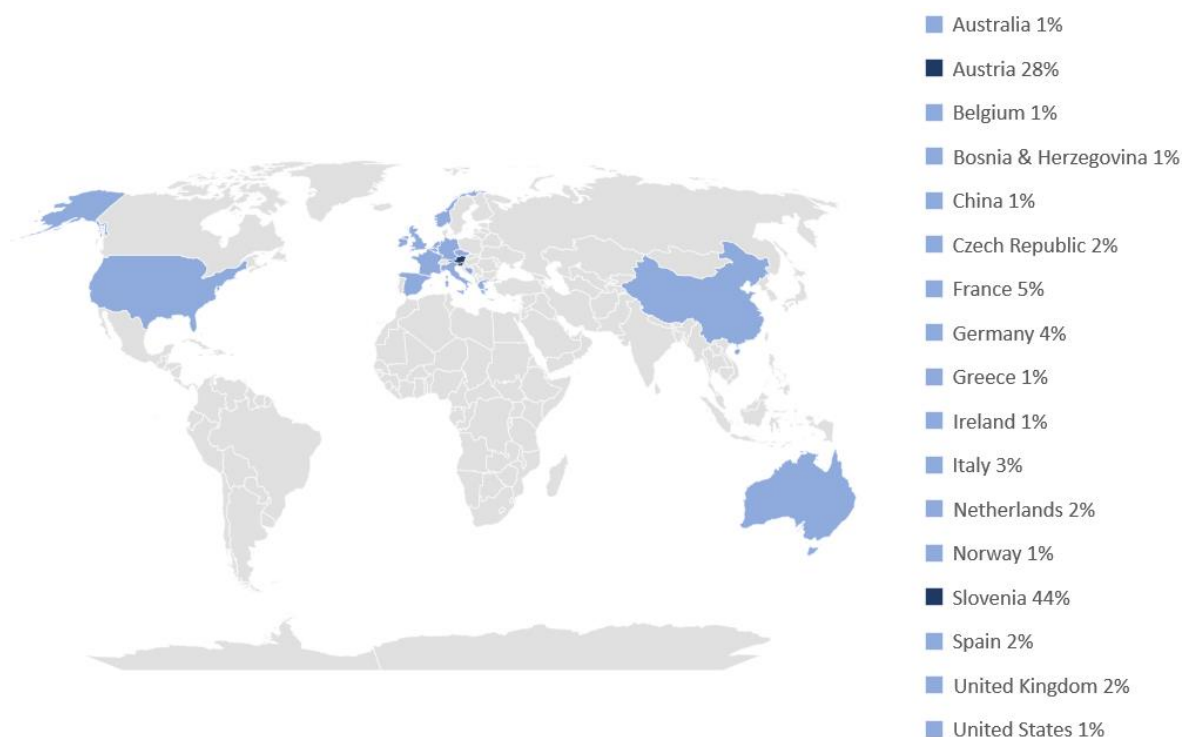


Source: Own work (N=453).

The proportion of students who study abroad received a follow-up filter question to identify the country they currently study in the academic year 2020/2021. Students who study abroad

had the option of choosing Austria, Germany, and Slovenia as their current country of studying as a presumption has been made that these are the major countries where Serbian citizens study abroad. Of the 36% of students who study abroad, 28% study in Austria, 4% study in Germany, and 44% study in Slovenia. The question included the option “Other” where students could determine the country they study in if it was different from the three mentioned ones. In comparison, 24% of students study in countries like China, Greece, the UK, Belgium, Spain, Italy, France, Australia, Bosnia & Herzegovina, Norway, Czech Republic, Ireland, Netherlands, and the US. Figure 16 illustrates a world map where the blue coloured countries represent the country where Serbian students currently study and their share in percentage terms.

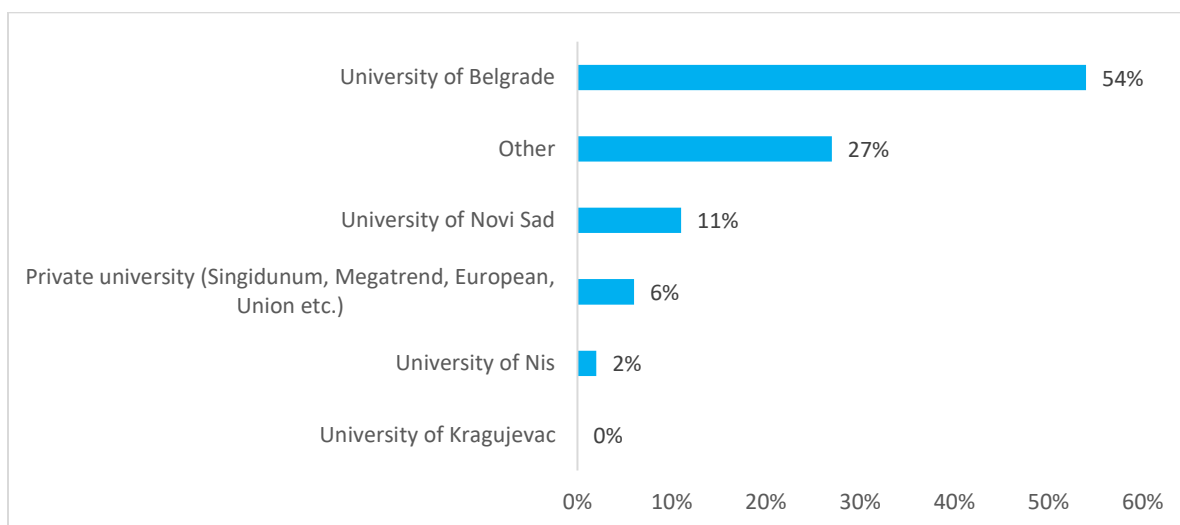
Figure 16: Country of studying (the academic year 2020/2021) in %



Source: Own work (N=161).

The Serbian youth was asked from which University they expect to graduate and the results are the following. 54% of students will graduate from the University of Belgrade, 11% of students will graduate from the University of Novi Sad, 6% of respondents will graduate from private faculties (see Figure 17) and another 2% will graduate from the University of Niš. Unfortunately, students from the University of Kragujevac could not be reached. The rest 27% represent the share of students who study abroad and the biggest group of students expect to graduate from the University of Ljubljana, the University of Maribor, and the University of Vienna.

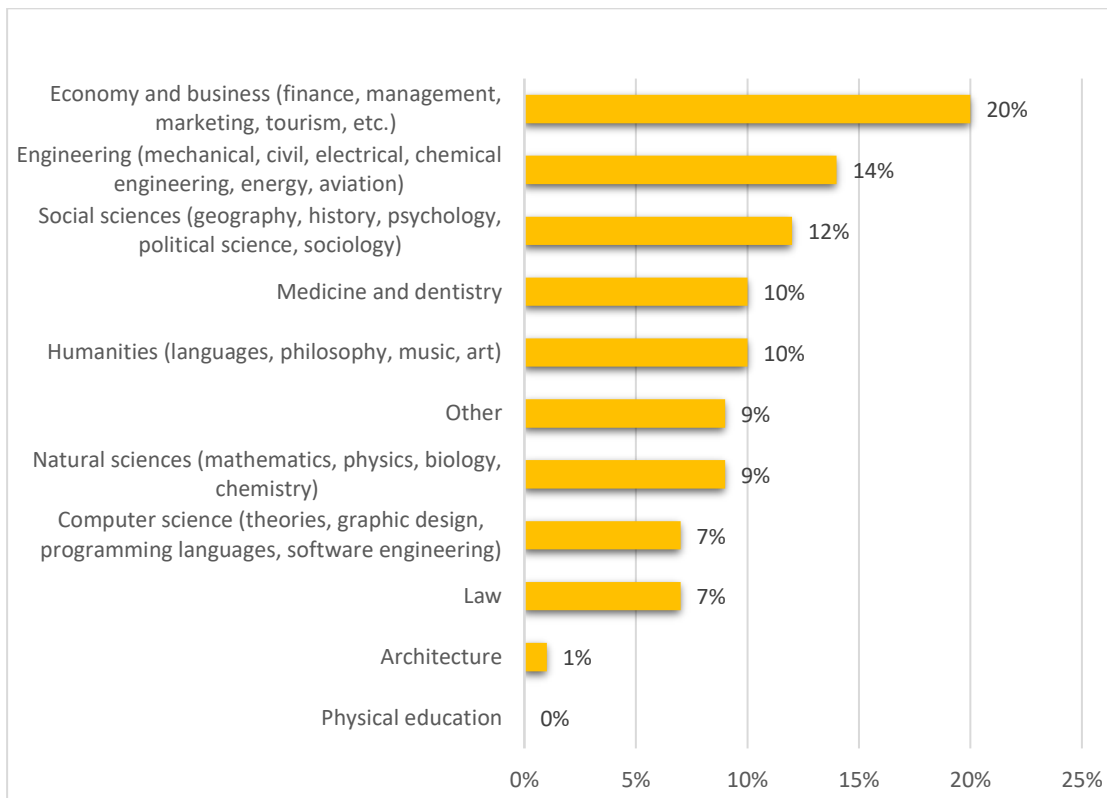
Figure 17: University of expected graduation



Source: Own work (N=413).

Respondents were asked about their current field of study. 20% of students study economy and business, followed by engineering with 14% and social sciences with 12%. 10% of students study medicine and dentistry and the same proportion study humanities. 9% study natural sciences, while 7% study law and another 7% computer sciences. 1% of students study architecture, while the students of physical education have unfortunately not been reached. Another 9% of students had the option of choosing 'Other' if their study field was not listed. The remaining fields of study are neuroscience, biotechnology, pharmacy, teaching, maritime studies, security studies, veterinary, special education, and agriculture.

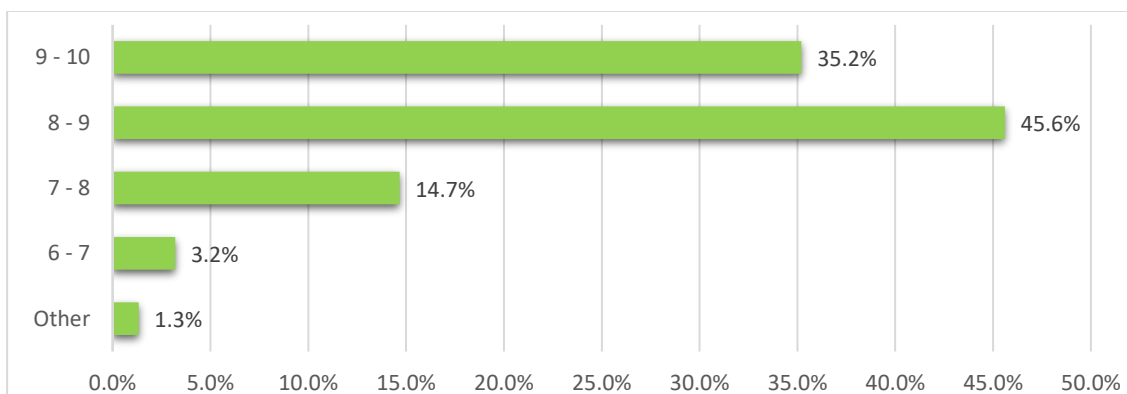
Figure 18: Current field of study



Source: Own work (N=422).

Students were asked about their current grade point average as is shown in Figure 19 (hereafter: GPA). For this thesis, the grading scale that is used in the Slovenian higher education system has been used as a reference. Six represents the minimum number for a passing grade, whereas ten represents the highest grade possible. 45% of students have a GPA ranging between 8 and 9, 35% have a GPA between 9 and 10. 14% have a GPA between 7 and 8, and only 3% have a GPA between 6 and 7. 1% of students did not list any number as their GPA.

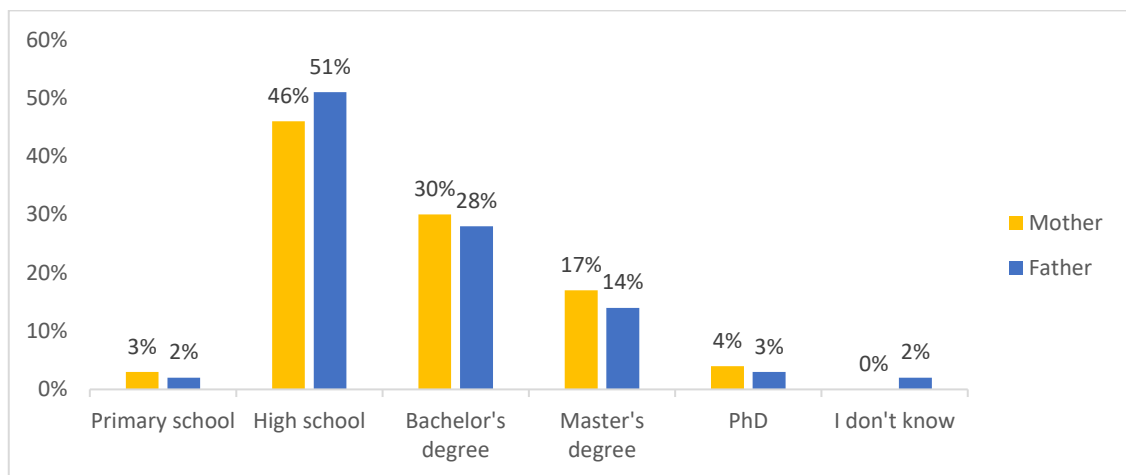
Figure 19: Current grade point average (GPA)



Source: Own work (N=375).

Respondents were questioned about the level of education of their parents. Based on Figure 20 it is interesting to note that male parents with high school (fifty-one) have a higher level of education than female parents (forty-six) with a high school degree. On the other hand, female parents have a higher level of education than for primary school with 1% more, for bachelor's degree with 2% more, for master's degree 3% more and at Ph.D. level 1% more than male parents have. Only 2% of respondents did not know their male parents' level of education. Additionally, Appendix 8 and Appendix 9 show that there is a positive correlation between two variables which are the parents' level of education and respondents' plans and preferences for later in life. The data shows that the parents' level of education is not affected by respondents' plans and preferences for later in life. Approximately half of the respondents would live abroad permanently and half would remain in Serbia, not depending on the level of education for both mothers and fathers.

Figure 20: Parents' level of education



Source: Own work (N=309).

Respondents were asked to answer whether they had relatives who already live abroad. 62% answered that their aunt/uncle already live abroad, 44% answered that their close friends live abroad, 34% had siblings abroad, 14% had their grandmother /grandfather abroad, 8% had their parents abroad and 13% named as having others abroad which included acquaintances and not that close relatives. The last question in the survey was for comments and there was a total of hundred five comments which mostly consisted of best wishes for the survey and some personal remarks about the current economic and political situation in Serbia and their improvement.

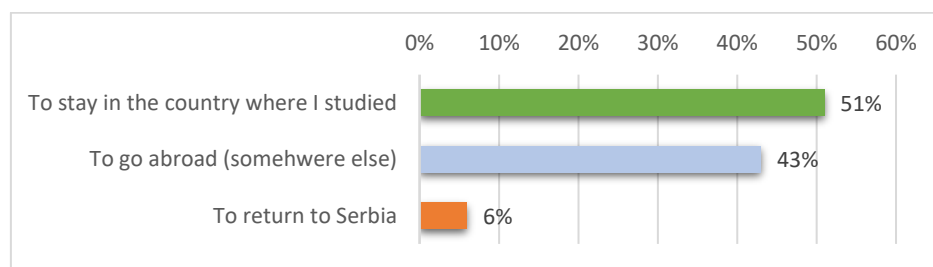
4 RESEARCH ANALYSIS AND RESULTS

The fourth chapter provides findings on brain drain in the case of Serbian youth, push and pull factors on brain drain in the case of Serbian youth, and brain gain of Serbian youth.

4.1 Findings on the determinants of brain drain in the case of Serbian youth

Figure 21 shows the cohort of Serbian students who study abroad who has been asked about their plans after graduation. The question was designed to get an overview of respondents' intentions after their studies and whether they want to stay in the country of their studies, go somewhere else or return to Serbia. 51% of students answered that they plan to stay in the county of their current studies, 43% answered they would like to go to some other country. Only 6% of the respondents answered they plan to return to Serbia after they complete their studies.

Figure 21: Plans after graduation (for students who currently study outside of Serbia)



Source: Own work (N=160).

For the same cohort of students who study outside of Serbia, Table 7 shows the correlation between the respondents' plans after graduation and their readiness for moving. 81% of students claim that they have already made plans to stay in the country where they studied, while 90% of the students did not initiate any plan to go back to Serbia. 65% of the students answered that they have already initiated further moves to go to another country.

Table 7: Plans and preparedness after graduation

		Q12 - Have you already made plans for this move or initiated further moves?	
		Yes	No
Q5 - What is your plan after graduation?	To stay in the country where I studied	81%	19%
	To go abroad (somewhere else)	65%	35%
	To return to Serbia	10%	90%

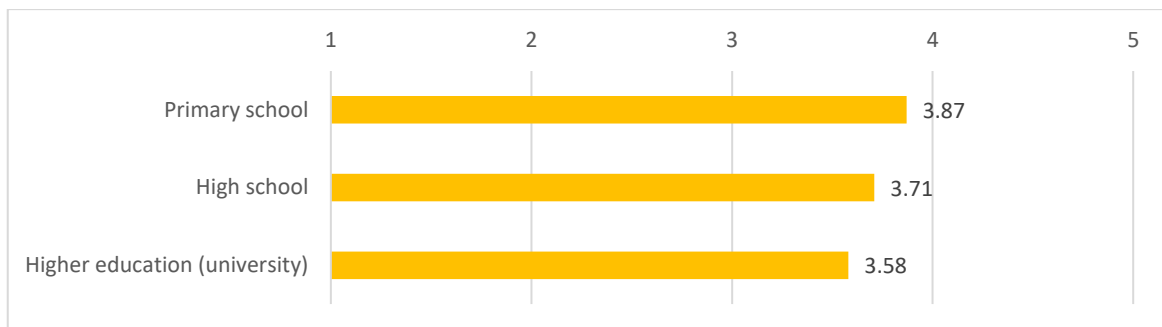
Source: Own work (N=160).

For the same cohort of students who study outside of Serbia Table 9 (see Appendix 6) shows the correlation between the respondents' current level of study and their plans after graduation. It can be noticed that roughly half of the undergraduate students want to stay in the country where they study and half want to go somewhere else, while only 4% want to

return to Serbia. 56% of postgraduate students want to stay in the country where they studied and 33% want to go abroad, while 11% want to return to Serbia. 55% of Ph.D. students want to stay in the current country, while 45% want to move to another country and no one wants to return to Serbia. Besides, Table 10 (see Appendix 7) shows the correlation between respondents' plans after graduation and their current country of study. It turns out that 48% of students who study in Austria want to stay there, while 33% want to stay in Slovenia and 15% in other countries. 18% of students want to go somewhere other than Austria and 65% other than Slovenia.

Respondents were asked to rate their level of satisfaction and how they perceive the quality of education in Serbia. The type of question was a 5-point Likert scale ranging from 1-“extremely bad” to 5-“extremely good” where students had to indicate their level of satisfaction with the primary and high school, as well as higher education institutions (Universities). The output is shown in Figure 22 using means. The primary school had the highest average, followed by is the satisfaction with high school education in Serbia. Respondents were least satisfied with higher education (Universities) institutions in Serbia.

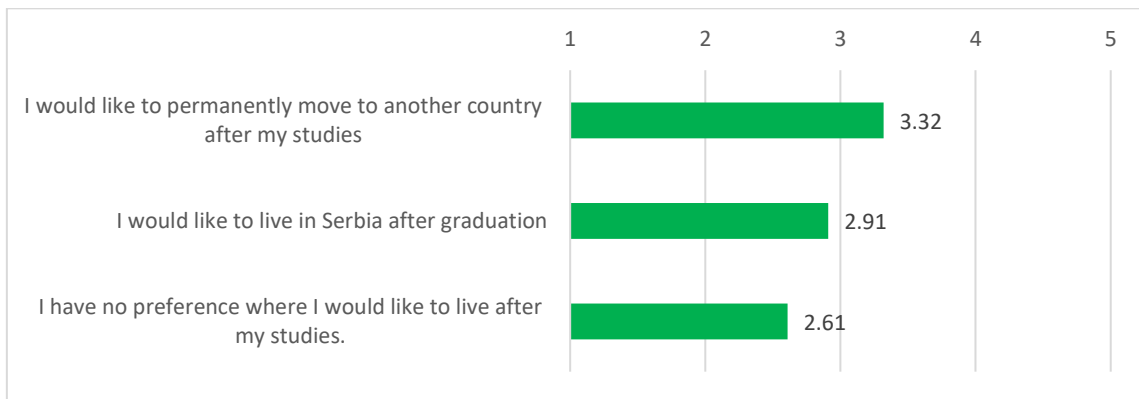
Figure 22: Respondents' satisfaction with the quality of education in Serbia (5-Point Likert Scale-mean)



Source: Own work (N=410).

In the next question, all respondents were asked to rate their level of agreement using the Likert scale where values 1 represented “strongly disagree” and 5 represented “strongly agree” to gain a perspective of their preference on the country of living after graduation. As Figure 23 depicts, the statement with the highest mean shows that Serbian students would like to permanently move to another country after their studies, whereas fewer students would like to live in Serbia after graduation. The group with the least average is the group of students who have no preference where they would like to live after finalising their studies.

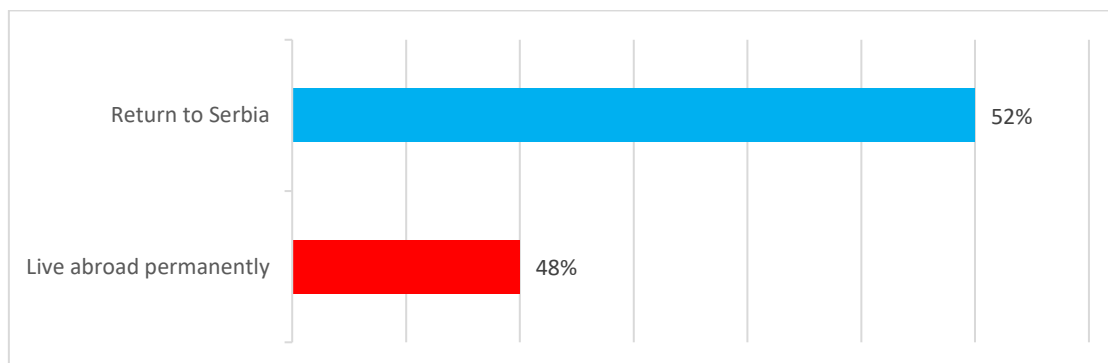
Figure 23: Preferences of respondents after graduation (5-Point Likert Scale-mean)



Source: Own work (N=367).

The next question was used to examine the plans and preferences of respondents for later in life and where they see themselves. They could choose between two options which are presented in Figure 24. 48% of students indicated that they see themselves living abroad permanently, while fifty-two of questioned students are more optimistic and would return to Serbia later in life.

Figure 24: Plans and preferences of respondents for later in life



Source: Own work (N=347).

Question twelve in the survey is about whether the respondents already made plans for moving abroad or not. 46% answered that they initiated further moves, while fifty-six did not make any plan yet. Table 8 shows the correlation between the current level of study of respondents and their preparedness to move abroad. Roughly 40% of the undergraduate students made plans for moving abroad, while 60% were not prepared for such a move. The situation is reversed for postgraduate students were 60% claim they have already made plans for moving, while 40% did not. For the Ph.D. level, 54% answered that they have initiated a plan for moving.

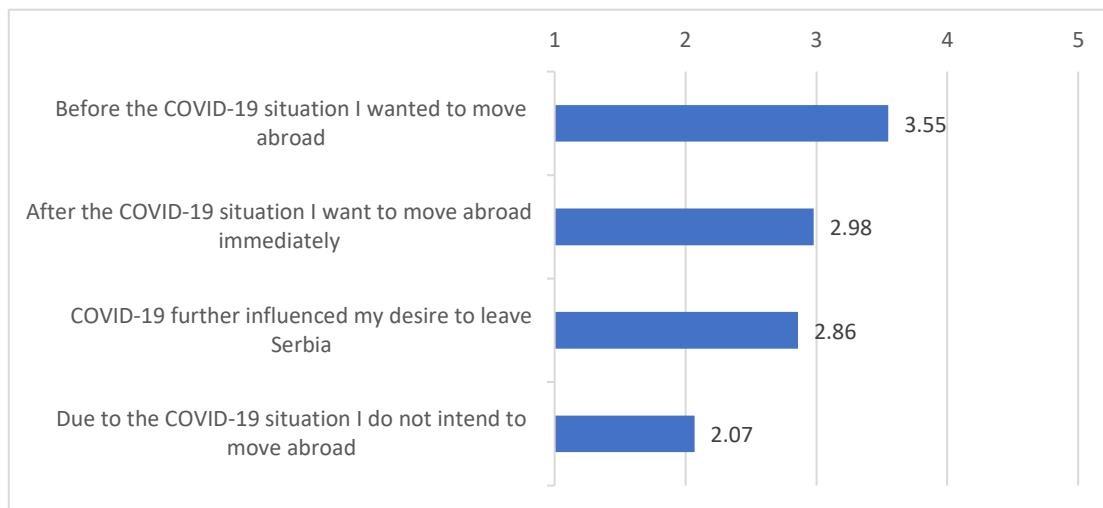
Table 8: Correlation between the current level of study of respondents and their preparedness to move abroad

		Q12 - Have you already made plans for this move or initiated further moves?	
		Yes	No
Q2 – What is your current level of study?	Undergraduate	39%	61%
	Postgraduate	60%	40%
	PhD	54%	46%

Source: Own work (N=361).

The Serbian youth were asked to rate their level of agreement with four statements using a Likert scale on the effects of COVID-19 and their intention to migrate from Serbia. The Likert scale was analyzed with the mean from value 1 - “strongly disagree” to 5 - “strongly agree”. The statement with the highest mean was ‘Before the COVID-19 situation I wanted to move abroad’. Followed by are the two statements ‘After the COVID-19 situation I want to move abroad immediately’ with a mean of 2.98 and ‘COVID-19 further influenced my desire to leave Serbia’ with a mean of 2.86. The statement ‘Due to the COVID-19 situation I do not intend to move abroad’ gained the least average with 2.07 meaning that the COVID-19 crisis did not alter the emigration decision of young people in Serbia.

Figure 25: The effects of COVID-19 on the intention to leave Serbia (5-Point Likert Scale-mean)

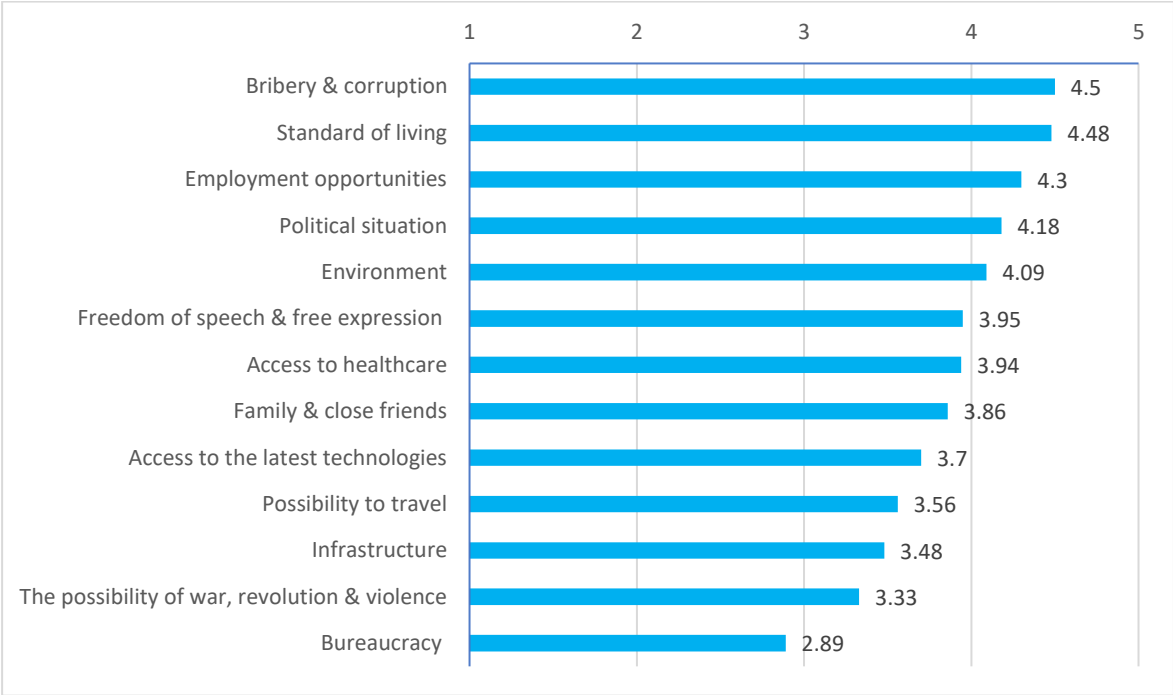


Source: Own work (N=316).

The following graph in Figure 26 tries to easier examine the answers to the question ‘How much do the following determinants in Serbia influence your decision on whether to leave the country?’. In the question, a Likert scale was used to measure which are the main determinants that influence the educated youth of Serbia to emigrate with averages. The value 1 represented “not a determinant at all”, whereas the value 5 represented “extremely important determinant”. Thirteen determinants have been identified and it turns out that bribery & corruption is the main determinant amongst the Serbian youth’s decision on

whether to live the country with an average of 4.5. Followed by are the crucial determinants such as the standard of living, employment opportunities, political situation and environment, freedom of speech & free expression, access to healthcare, and family and close friends. The next determinants were access to the latest technologies, the possibility to travel, the possibility of war, revolution & violence, and infrastructure. The least important determinant of the Serbian youth to emigrate seems to be bureaucracy.

Figure 26: The determinants of Serbian youth's decision on whether to leave the country (5-Point Likert Scale-mean)



Source: Own work (N=353).

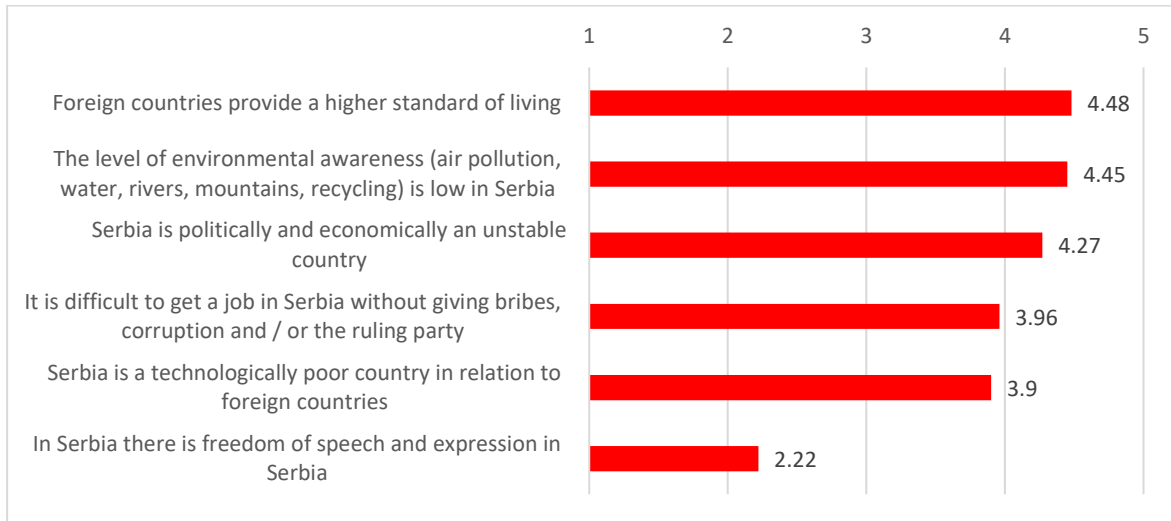
Respondents received a question with thirteen statements where they had to rate their level of agreement on a Likert scale where value 1 represented “strongly disagree” and 5 representing “strongly agree” with the various topics which included topics ranging from education, technology, politics to standard of living and career possibilities are shown in Figure 27 using the averages. The outcome is that the standard of living and environmental awareness are the two primary issues for the Serbian youth. Important to notice: these outcomes befall in all subchapter categories push factors, pull factors, and brain gain, but the thesis structure and layout will be analysed in chapter 4.1. Below are the outcomes of the question and as well in Figure 27:

1. **Economic** reasons – respondents are primarily concerned about the economic situation in Serbia which can be seen in the following results. The statement with the highest mean of 4.48 for the level of agreement is that **foreign countries provide a higher standard of living**, while nearly the same number of respondents agree that **foreign countries**

provide better career opportunities than Serbia. On the other hand, the statement 'In case I get a job offer in Serbia that will provide me with the same standard of living as in foreign countries, I would stay in Serbia' shows that most respondents would not leave the country if they had the same standard of living as foreign countries with an average of 3.91. Respondents agree that **unemployment** is the one of biggest causes of young people leaving Serbia with a mean of 3.87. Respondents further agree that they do not see an economic future in Serbia with a mean of 3.71. Moreover, respondents agree that the **possibility of sending financial aid to their family** is a good reason to leave Serbia with an average of 3.68.

2. **Environmental** reasons – the second concern of the Serbian youth is the **low level of environmental awareness** with components such as air pollution, water, rivers, mountains, and recycling. An average of 4.45 respondents agree that the level of environmental awareness is low in Serbia.
3. **Political** reasons – the young people of Serbia are concerned about the political situation in the country. An average of 4.25 respondents agree with the statement that Serbia is **politically and economically an unstable** country. Another political concern is the difficulty of getting a job in Serbia. Respondents agree on an average of 3.98 with the statement which claims that it is difficult to get a job in Serbia without giving **bribes, corruption, and/or the ruling part**. Additionally, the results of the statement 'Even if I move abroad, I want to remain active in political circles in Serbia (such as voting)' show with an average of 2.91 respondents that they neither agree nor disagree whether they would like to remain active in political circles in Serbia.
4. **Legal reasons** – are as well present worries in the mind of the young people of Serbia. With an average of 2.22, it can be noticed that respondents least agree with the statement that in Serbia there is **freedom of speech and expression** with personal values, ideals, and religion.
5. **Social** reasons – there are several social reasons which worry the Serbian youth. Respondents agree with an average of 3.89 that **foreign countries provide better study opportunities** than Serbia. An average of 3.72 respondents agree that the Serbian **healthcare system** is in a hopeless state. Respondents agree with an average of 3.30 that the **education system** of Serbia is worse than the one of foreign countries. An average of 3.07 respondents agree that Serbia struggles with the providing of **travel opportunities**. Furthermore, with a high score of 4.07 on average respondents agree that they want to maintain a connection with Serbia even if they move abroad such as frequent visits to the country, family, and friends.
6. **Technological** reasons – an average of 3.90 respondents agree that Serbia is a **technologically poor country** concerning other foreign countries.

Figure 27: Level of agreement of respondents with the following statements in regards to the situation in Serbia (5-Point Likert Scale-mean)



Source: Own work (N=379).

4.2 Push factors

The following open-ended question was used to determine the first association when young people emigrate from Serbia. Respondents were asked to answer ‘What first comes to the mind of the respondents when they hear that young people are emigrating from Serbia?’. To analyse the complexity of the open-ended question the word frequency count has been used as a matter of determining the opinion of the respondents. It has been examined that the first thing that comes to the mind of respondents is with a frequency of 42 mentions the word better, followed by is the word people with a frequency count of 38 mentions. Other words with a high-frequency count are life, Serbia, country, job, young, work, future, living, state, understandable, leave, sadness, smart, standard, conditions, employment, nothing, normal, poor, salaries, decision, desire, dissatisfaction, low, poverty, profession, brain drain, corruption, unemployment, economic, inability, party, reality, society, family, logical, opportunity, money, studies, degree, happiness, opportunities, surprise, advancement, doctors, easier, dissatisfied, disaster, departure, change, consequence, fleeing, friends, far, experts, glad, humiliated, important, elsewhere, nepotism, manipulation, luck, political, problems, politicians, staff, student wages, and Germany. I have aimed to represent this graphically so it is clearer to the reader what the results of the survey are and I did it with the help of wordclouds.com which can be seen in Figure 28. The same platform has been used for the word frequency count. It must be pointed out that the words have been translated from Serbian into the English language for this master's thesis. All the above-mentioned words represent the push factors amongst the Serbian youth.

Figure 29: Most important thing that needs to be done that young people do not leave Serbia

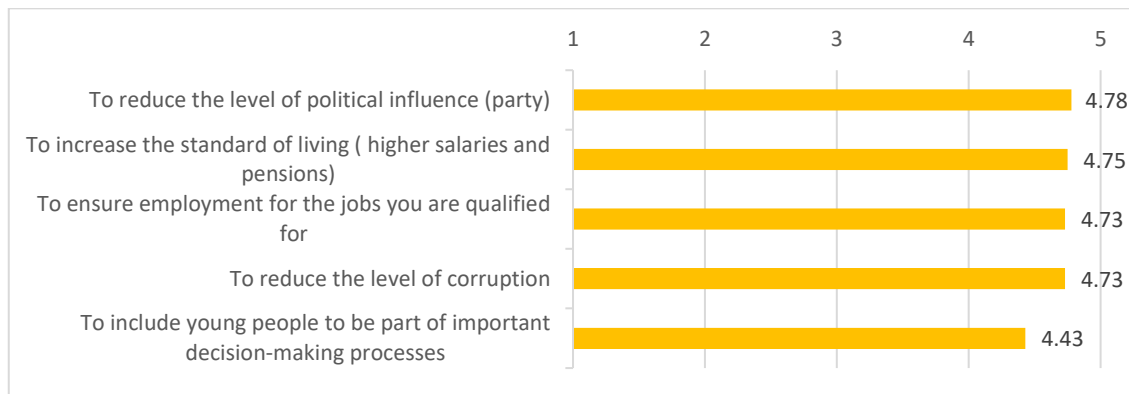


Source: Own work (N=171).

4.4 Brain gain

To find out what motivates young people to stay in Serbia a list of the most important things that need to be done was assembled for the respondents with the Likert scale ranging from 1 – “not important at all” to 5 - “extremely important” and have been measured by the mean value. The results for the following question are astonishing and are shown in Figure 30 as four from the five mentioned motivators gained an average higher than 4.72. The first thing that needs to be done for young people to stay in Serbia is to reduce the level of political influence (political party), the second one is to increase the standard of living with higher salaries and pensions. The third and fourth thing that needs to be done is a shared average for reducing the level of corruption and ensuring employment for which you are qualified. Last, but not least, young people should be part of important decision-making processes.

Figure 30: Motivators for young people to stay in Serbia (5-Point Likert Scale-mean)



Source: Own work (N=345).

5 RECOMMENDATIONS AND LIMITATIONS

The fifth chapter provides the summary of the final results of the master's thesis, limitations of the study, recommendations for future research, and recommendations for the Serbian government.

5.1 Summary of final results

The following subchapter will provide the determinants of brain drain amongst the Serbian youth. The output is a result of the previous findings which have been shown in chapter 4. The summary output includes the responses of 408 respondents who participated in the survey questionnaire, the determinants, and the nature of reasons why the young people from Serbia want to emigrate to developed countries. The following is the criteria that come under the top six groups of determinants why the Serbian youth decides to emigrate:

1. **Economic determinants** such as standard of living, unemployment, career opportunities, and remittances. As Hawthorn & Sen (2004, p.8) state “*The value of the living standard, lies in the living*” and that standard of living “*is an absolute notion in the space of capabilities but very often it will take a relative form in the space of commodities or characteristics*”. The results of the survey clearly show that the low **standard of living** is an important determinant of why the Serbian youth decides to emigrate to countries that offer a higher standard of living such as the main destination countries (Germany, Austria, Switzerland, USA) for Serbian expats. An average of 4.4 respondents agree that foreign countries provide better **career/employment opportunities** than Serbia, therefore, it is not surprising why this is a determinant to leave. Respondents agree with an average of 3.87 that **unemployment** is the main economic factor why the educated young people of Serbia move to another country and respondents do not see an economic future in

Serbia with an average of 3.71. Financial aid to the family or **remittances** has been determined as another motivation for the youth to leave the country.

2. **Environmental determinants** such as level of environmental awareness with components such as air pollution, water, rivers, mountains, and recycling. One of the most basic prerequisites for human health and well-being is clean air. However, air pollution affects nearly nine out of ten people who live in cities (Guillerm & Cesari, 2015). **Air pollution** is the most serious environmental hazard in Europe and around the world, as well as one of the five major risk factors for non-communicable and chronic diseases. Poor air quality kills roughly 400,000 people prematurely each year in Europe according to the World Health Organisation (Kukolj, 2021). Serbia is one of the most polluted countries in the world according to air quality monitoring results. Experts claim it's nothing new because pollution levels have been high for a long time (Riha, 2021). The Serbian government has been accused of falsifying data to downplay the severity of its air pollution problem. Since a report by Global Alliance on Health & Pollution in December 2019 claimed it had Europe's worst per capita record for pollution-related deaths: 175 per 100,000 inhabitants, the country has been under greater investigation. The report as well put Serbia in the first place in Europe for death rates from combined pollution risk factors by country. In the autumn and winter, pollution in Serbia and other parts of the Balkan peninsula is so severe that it may be seen, smelled, and even tasted (Pantović & Harris, 2021). Belgrade, along with New Delhi, Mumbai, and Lahore, is currently one of the world's most polluted cities, with other Serbian cities choking on toxic gases as well (Milenkovic, 2021). Unsurprisingly, **environmental awareness** is the second most important factor for the Serbian youth to migrate from the country and relocate to the developed Western countries where air pollution is not an issue. Respondents agree with a high average of 4.45 that the environmental awareness is low in Serbia named environment a very important determinant on their decision whether to leave the country.
3. **Political determinants** such as political instability and bribes & corruption. Trends in wealth and income distribution have far-reaching repercussions for society and economy and political stability (Brennan, Menzies & Munger, 2017). Respondents agree that the **political** and economic **instability** of Serbia is one of the crucial determinants to emigrate with an average of 4.25 and respondents find the political situation and the possibility of war, revolution & violence in the country as an important factor in their decision whether to leave or not with an average of 3.33. **Political corruption** is a severe threat to the consolidation of democracy (Mungiu, 2006). As has been described in the subchapter, the corruption index of Serbia was 38 in 2020 (Transparency International, 2020). Politics interferes in every sector of Serbia and therefore represents an enormous barrier for the educated youth of Serbia to find a job they are qualified for unless they are involved in the ruling regime party or give bribes to advance in the career letter. Such a corner situation for the educated

individual ends in two ways: either to accept reality and perform jobs which you are not qualified for or seek better career possibilities in foreign developed economies.

4. **Legal determinants:** Respondents agree with an average of 3.95 that **freedom of speech and expression** is an important factor in their decision whether to migrate and disagree that there is freedom of speech and expression with personal values, ideals, and religion in Serbia with an average of 2.22.
5. **Social determinants** such as study opportunities, the healthcare system, education system, and travel opportunities. Respondents agree that foreign countries provide better **study opportunities** than Serbia and the proportion of 1/3 of respondents who took part in this survey supports this argument as these 160 students already study abroad. Besides, respondents state that the **education system** of Serbia is worse than in other countries and a reason to move with an average of 3.30.

Respondents think that the **healthcare system** in Serbia is in a hopeless state with an average agreement of 3.72 and the youth determines access to healthcare as an important determinant on their decision whether to leave the country with an average of 3.94.

Although the government of Serbia has raised salaries for doctors and nurses to slow down the migration of healthcare workers, not much has been achieved with this move as Germany, as a developed country is working on an enormous law that will facilitate the procedure to recruit non-EU workers (Deutsche Welle, 2019). Vušović Marković (2021) describes that *“The need to buy needles, bandages or syringes ourselves to get treated in a health institution is nothing new for the Serbian healthcare system and that soon we will have to treat ourselves in hospitals”*. The Union of doctors and pharmacists determines that every year around 1000 highly educated medical professionals (doctors & specialists) apply for better jobs abroad. In addition, respondents find the lack of **travel opportunities** as another important factor for young people to leave with an average of 3.56 and respondents think that Serbia struggles to provide travel opportunities. The lack of travel opportunities is a consequence of the state that the country of Serbia is in with a low standard of living, salaries lower than the consumer basket, and low economic growth. As the youth likes to compare themselves it is clear why moving abroad would motivate a young person to leave Serbia as the youth in foreign countries can afford to travel which is way harder for the youth of Serbia due to the lack of financial assets.

6. **Technological determinants:** students find that access to the **latest technologies** is an important factor in their decision to leave the country with an average of 3.7, while students agree with an average of 3.90 that Serbia is a technologically poor country concerning foreign countries.

Certainly, there are other push and pull determinants when young people decide whether to migrate from Serbia or not. However, the above-mentioned six represent the main determinants among the Serbian youth to emigrate formed on the findings of the survey

questionnaire and designed for this master's thesis. To summarise, the main causes for leaving Serbia are:

- Foreign countries provide a higher standard of living, better access to the latest technology, education, and career opportunities
- Financial aid and relief to the family is a strong push factor
- Developed countries provide a healthier environment for an individual's well-being
- The interference of politics/corruption on getting a job a young person is qualified for
- Educated people and qualified workforce is not valued as in other foreign countries

The current and ongoing COVID-19 pandemic altered the life of every human in a different aspect. The next section will provide an answer to how the COVID-19 affected the migration intentions of young people in Serbia. KOMS (2021) obtained answers from young people of Serbia and the impacts of COVID-19 on different topics in their report. The results were that 46% of the youth thinks about moving abroad, but did not plan yet, 27% said they already planned to move abroad, while 27% said they did not plan to move abroad. The next question was whether the pandemic impacted their decision on whether to migrate and 41,8% answered that the pandemic influenced more on their decision to emigrate, while 56,5% mentioned that their decision was not altered by the pandemic and only 1.8% that due to the pandemic they want to move less abroad. The youth of Serbia had to answer what they think about how the pandemic affected other young people and their decision for emigrating. The youth of Serbia think that the COVID-19 negatively affected other young people and 73,8% think that more young people want to emigrate, while 22% think the attitude did not change and only 3.8% think that other young people want to leave Serbia less with COVID-19.

The respondents of this master's thesis had to rate the effects of COVID-19 on the intention to leave and the most notable result is the category is that respondents agreed with an average of 3.55 that before the coronavirus pandemic they wanted to move abroad. Respondents neither agree nor disagree that they want to move abroad immediately after the pandemic with an average of 2.98, nor that their desire to leave Serbia has been influenced by the COVID-19 with an average of 2.86. Further, respondents disagree with an average of 2.07 that due to coronavirus their intention to move has been jeopardized. Therefore, COVID-19 made the already existing issues of the Serbian youth just more visible than they have been before the pandemic.

Findings show that after their studies students want to move to another country with an average of 3.52, fewer students agree that they would like to live in Serbia after their studies with an average of 2.91. The group with the least average is the group of students who have no preference where they would like to live after finalising their studies. Of students who study abroad 51%, they would like to stay in the country of their studies, while 43% would go somewhere else and only 6% would return to Serbia. Students have been asked about their plans in life and 52% said they would want to return to Serbia eventually and 48% they

would want to live abroad permanently. The trend of the highly qualified young people from Serbia will certainly continue to rise as many statistics suggest, therefore, the enormous potential of Serbia lies in the diaspora. As it can be seen from the results of the survey, the majority of students are highly qualified educated individuals with strong GPAs which will soon represent the workforce of one country and half of them plan to eventually return to Serbia in their life. This is why Serbia should strive to develop better collaboration within the diaspora communities in clubs such as students clubs, literary nights, exchange in ideas, knowledge sharing and offer Serbian citizens belonging to their country and their cultural and national identity.

5.2 Limitations of the study

As every research study has its advantages and drawbacks, there are several limitations of this study which will be explained in the following section. The first and foremost limitation is that any findings can be generalized only to the population of the studied sample. To put it another way, the findings only apply to the collected sample that has been studied. The survey could have reached more respondents to have an ample outlook of the research topic. Since the questionnaire has been distributed online while social media platforms, I could not reach a balance for the gender distribution within the target sample as it was random. Females made up a higher percentage of the target sample (73%) in comparison with males (27%).

I did not manage to reach all Serbian students studying at public or private Universities in Serbia or abroad. The aim was to reach respondents from the biggest Universities in Serbia such as the University of Belgrade, the University of Novi Sad, the University of Niš, and the University of Kragujevac. I did not manage to reach the respondents from the University of Kragujevac as the questionnaire has been spread through Facebook groups and to this day, I did not receive an update on joining the group for students from the University of Kragujevac. Most respondents were from the University of Belgrade, University of Novi Sad, private Universities, and a small portion of students from the University of Niš.

According to the Census from 2011 (Statistical Office of the Republic of Serbia, 2012), there are many different ethnic groups in Serbia. The largest are Serbs, Montenegrin, Bosnians, Hungarians, Roma, and all others. Most respondents identified as Serbs, while other ethnic groups were underrepresented. Respondents from the ethnic group Roma were not reached for this survey.

Henceforth, I have decided to exclude recent graduates from sampling to target the students who are enrolled in the academic year 2020/2021. For a clearer picture and more precise results, I could have as well included recent graduates and seen their plans and preferences for emigrating from Serbia or staying as they are as well a part of the Serbian youth.

Bearing this in mind, it should not be forgotten that the findings from a study have broader applicability. Furthermore, the time limit of the study can be different for example, the findings might not have been the same if the study had been carried out in the 1980s where online surveys did not even exist yet. Another limitation is the cooperation problem as nowadays the internet users are bombarded by irrelevant messages which decrease the chance and their interest to respond to the online survey. Hence, an online survey has an absence of the interviewer which consequently the researcher must trust respondents' honesty when filling the questionnaire, the interviewer is not present if there is a need for clarification and could lead to less reliable data.

5.3 Recommendations for future research

The obtained results are dramatic and the data on how the pandemic affected the youth of Serbia and their plans to emigrate should be alarming for the policy and decision-makers. Besides the alarming number of young people who wanted to leave the country before the pandemic, what is astonishing is that COVID-19 did not influence the decision of many young people and that they would nonetheless, emigrate. Future research on the topic of overcoming the brain drain problem in Serbia could consider a bigger, more representative sample targeting specific students in all regions of the country. The future research could as well look at the experience of young people who are already abroad and people who have returned with conducting qualitative research and obtaining primary data with semi-structured interviews and gaining a different perspective. Moreover, semi-structured interviews could be performed with experts such as University professors and researchers who study this phenomenon to have an in-depth analysis of the problem. These recommendations represent the idea for future research on the brain drain in Serbia but are well beyond the realm and scope of this master's thesis.

5.4 Recommendations for the Serbian government

As previously mentioned, the findings of this master's thesis should be used as a red flag for the Serbian government as the situation is catastrophic and instant changes need to be incorporated for the young and educated youth of Serbia to stop emigrating to developed countries. The determinants which have been thoroughly explained in subchapter 5.1 are clear motivators for the youth of Serbia to emigrate, particularly the low standard of living, poor job opportunities, low environmental awareness, high involvement of politics, and corruption & bribery. These findings should be a trigger for the institutions, regulatory bodies, and decision-makers to create mechanisms and adopt action plans and strategies how to make the young professionals stay in Serbia.

To mitigate the brain drain problem of the Serbian youth many changes need to happen. First, the Serbian government must tackle the brain drain problem by spreading awareness of the topic as it is little spoken about it almost anywhere, this would raise questions from

people on how to proceed with the phenomenon. The Serbian youth needs economic adjustments which will boost the standard of living and foreign investments which would speed up the much-needed development and growth of the Serbian economy. Unemployment is as well a big issue and more foreign investors need to be attracted so the Serbian youth can take advantage of the new career possibilities. To go against politics and corruption, the educated youth is needed, but the educated youth of Serbia is not involved in anything other than the political campaign of the regime party and thus misused. The youth should get involved to exchange knowledge and ideas which would lead to better opportunities for individuals and the society and one day the integration to the EU could become reality and such reforms would eventually lead to a higher standard of living and better job & education opportunities.

In chapter 2 it has been pointed out that the migrations statistics are a huge problem, therefore the government must enforce better measurement techniques and form a special migration institute to keep track of the migration data. The similar can be said for the census which was supposed to happen in 2021 which was moved until further notice due to COVID-19. The next recommendation is to truly enforce the strategies and policies which have been created and not just leave it until further as is the case in Serbia. The strategy of the economic migration 2021-2027 has been made, but since then no event took place, nor any department formed to put the strategy in practice. Without handling and clear goals, no changes will occur, and almost two years nothing happen since launching the strategy (Bukvić, 2020).

The primary goal of state policy should be to keep the country's brightest students. Serbia requires foreign expertise in various fields, including economics, education, culture, and social services. Serbia requires creators, organizers, managers, and, in a nutshell, a group of elite leaders. Grečić (2016) suggests some points for improvement between the Serbian diaspora and the economic development of the country. Previous studies show that the Serbian diaspora is likely to cooperate with the home country, all depending of course on the policies of Serbia. Such strategies, however, do not exist between the diaspora and home institutions, neither the Return of the Qualified expatriate and immigrants' program nor a Talent Return program exist. Lastly, a policy roadmap should be created to follow up on the work and promote the engagement of the diaspora and the home institutions in exchange for benefiting from the brain gain or brain circulation. This is how the countries that have such implemented policies deal with their well organised institutions.

CONCLUSION

Brain drain is a global phenomenon as people desire to have a high standard of living, favourable work opportunities, and better conditions for advancing in their careers and having the best benefits. According to the literature the main determinants are lack of socio-economic opportunities, poor medical system, lack of political or religious freedom, loss of wealth, any form of discrimination (sexual, race, ethnic, religious, or other), and lack of good

governance. Analysing the data from various sources, one can understand the excruciating ramifications and implications which the brain drain problem has on the country of Serbia. The biggest consequence is certainly the loss of human capital to developed countries which leaves detrimental effects on the development and economic growth of Serbia countries (Lee, 1966; Krasulja, Vasiljevic-Blagojevic & Radojevic, 2016)

Serbia is a country well-known for emigration. During the 60s,70s, and 80s, many workers from the former Yugoslavia emigrated to Western European countries as the low-skilled labour force. In the period of 1990s-2000s, people left due to political circumstances such as war, sanctions, bombing (Bobić, Vesković Anđelković & Kokotović Kanazir, 2016). From 2012 until 2016, roughly 245 000 people have left Serbia, which makes it around 49 000 people who emigrate from Serbia yearly, and the big difference with migrations after the 2000s is that people who are emigrating are highly qualified individuals with a tertiary education level - bachelor and master's degree holders (Bobić, Vesković Anđelković & Kokotović Kanazir, 2016; Westminster Foundation for Democracy, 2019). Such data are alarming for the government and policy decision-makers and show the seriousness and implications that the brain drain problem brings.

The purpose of my master's thesis was to give an overview of the brain drain problem, provide an analysis of the brain drain trends in Serbia and examine the main determinants of why the educated youth of Serbia emigrates and whether the brain gain is possible in the future, whether and how the COVID-19 impacted their decision and recommendations how to reduce the human capital flight. To reach the goals of my study I have conducted a survey questionnaire with Serbian citizens who are currently studying in Serbia or abroad.

Following are the most significant findings:

The determinants of brain drain amongst the Serbian youth can be distinguished into six groups: economic such as standard of living, unemployment, career opportunities, and remittances; environmental such as level of environmental awareness with components such as air pollution, water, rivers, mountains, and recycling; political such as political instability and bribes & corruption; legal such as freedom of speech and expression, social such as study, education, and travel opportunities and the healthcare system; technological such as access to latest technologies.

Findings show that after their studies students want to move to another country with an average of 3.52, fewer students agree that they would like to live in Serbia after their studies with an average of 2.91. The group with the least average is the group of students who have no preference where they would like to live after finalising their studies. Of students who study abroad 51%, they would like to stay in the country of their studies, while 43% would go somewhere else and only 6% would return to Serbia. Students have been asked about their plans in life and 52 % said they would want to return to Serbia eventually and 48% they would want to live abroad permanently. Foreign countries provide a far more superior

standard of living, better employment, working conditions, career, education, study, and mobility opportunities than Serbia.

Respondents agree with an average of 3.55 that before the coronavirus pandemic they wanted to move abroad. Respondents neither agree nor disagree that they want to move abroad immediately after the pandemic with an average of 2.98, nor that their desire to leave Serbia has been influenced by the COVID-19 with an average of 2.86. Further, respondents disagree with an average of 2.07 that due to coronavirus their intention to move has been jeopardized.

Recommendations to reduce the brain drain problem amongst the Serbia youth are spreading awareness of the problem, keeping better migration data on statistics, providing a higher standard of living, better employment opportunities, reduction of political power and corruption, trust in regulatory bodies and institutions, and more involvement of young people in the decision-making processes.

Considering all the political events Serbia has gone through in the past thirty years, it has made significant progress in terms of economic growth, although there is so much more which must be done by the government and policy decision-makers for the youth of Serbia. The brain drain problem is a global phenomenon that many countries are experiencing, especially in the Balkan region, therefore Serbia is not the only one facing it but the repercussions which are already felt are much bigger on a small-scale developing country like this. From the literature review and the conducted questionnaire and its findings, it can be concluded that the brain drain problem of Serbia is an urgent ongoing issue and that there is little hope for the young people of Serbia as the trends indicate and findings show that many the young and educated population wants to move abroad in the foreseeable future. After all, the paradigm of a country that is not willing to provide jobs and neglects its young citizens is destined for meager economic prospects. However, the potential of Serbia lies in the collaboration with the diaspora as the results indicate that more than half of the people would eventually want to return to Serbia later in life and show a general interest in the country affairs be it over family members of the professional route through brain gain or brain circulation. Nevertheless, the only way how to mitigate or stop the brain drain amongst the Serbian youth is to immediately address the problem by implementing policies and measures in practice that would motivate the young and bright to stay in the country, or else the human capital of Serbia will continue to shrink further in the same or even higher catastrophic emigration numbers.

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APPENDICES

Appendix 1: Povzetek (Summary in Slovene language)

Beg možganov je globalni pojav, saj si ljudje želijo visokega življenjskega standarda, ugodnih delovnih možnosti in boljših pogojev za napredovanje v svoji karieri ter najboljših koristi. Literatura pove, da so glavni dejavniki pomanjkanje socialno-ekonomskih možnosti, slab zdravstveni sistem, pomanjkanje politične ali verske svobode, izguba bogastva, katera od oblik diskriminacije (spolna, rasna, etnična ali druge) in pomanjkanje dobrega upravljanja. Z analizo podatkov iz različnih virov je mogoče razumeti boleče posledice in implikacije, ki jih ima problem bega možganov za državo Srbijo. Največja posledica je zagotovo izguba človeškega kapitala v razvitih državah, kar ima škodljive učinke na razvoj in gospodarsko rast srbske države.

Srbija je država, znana po emigraciji. V 60., 70. in 80. letih se je veliko delavcev iz nekdanje Jugoslavije izselilo v zahodnoevropske države kot nizkokvalificirana delovna sila. V obdobju 1990-2000 so ljudje odhajali zaradi političnih razlogov, kot so vojna, sankcije in bombardiranja. Od leta 2012 do 2016 je Srbijo zapustilo približno 245 000 ljudi, kar pomeni, da se je iz Srbije izselilo okrog 49 000 ljudi na leto. Velika razlika pri migracijah po 2000-ih je v tem, da so ljudje, ki se izseljujejo, visoko kvalificirani posamezniki s terciarno izobrazbo – diplomanti in magistri. Takšni podatki predstavljajo rdeč alarm za vlado in politične odločevalce ter kažejo na resnost in posledice, ki jih prinaša problem bega možganov.

Namen moje magistrske naloge je bil podati pregled problema bega možganov, analizirati trende bega možganov v Srbiji in preučiti glavne determinante, zakaj se iz Srbije izseljuje izobražena mladina in ali je pridobivanje možganov možno v prihodnosti, ali in kako je COVID-19 vplival na njihovo odločitev in priporočila, kako zmanjšati beg človeškega kapitala. Za doseg ciljev moje študije sem izvedla anketo s srbskimi državljani, ki trenutno študirajo v Srbiji ali v tujini. Sledijo najpomembnejše ugotovitve:

1. Dejavnike bega možganov med srbsko mladino lahko ločimo v šest skupin: 1) ekonomske, kot so življenjski standard, brezposelnost, poklicne možnosti in nakazila, 2) okoljske, kot je raven okoljske ozaveščenosti s komponentami, kot so onesnaževanje zraka, vode, rek, gor in recikliranje, 3) politične, kot so politična nestabilnost ter podkupnine in korupcija, 4) pravne, kot je svoboda govora in izražanja, 5) socialne, kot so študij, izobraževanje, potovanja in zdravstveni sistem, in 6) tehnološke, kot je dostop do najnovejših tehnologij.

2. V povprečju 3,31 odstotkov srbskih študentov se strinja, da bi se po končanem študiju za stalno preselili v drugo deželo. V povprečju 2,91 odstotkov anketiranih bi želelo živeti v Srbiji. V povprečju 2,61 odstotkov študentov se strinja, da po končanem študiju nima preference. Od študentov, ki študirajo v tujini, se jih 51 odstotkov želi ostati v državi študija, 43 odstotkov se jih želi oditi drugam, le šest odstotkov pa se jih želi vrniti v Srbijo. Ko so bili vprašani o nadaljnjih življenjskih načrtih, je 52 odstotkov študentov odgovorilo, da se sčasoma želijo vrniti v Srbijo, 48 odstotkov pa se jih želi stalno živeti v tujini.

3. Tuje države zagotavljajo veliko boljši življenjski standard, boljše zaposlitve, delovne pogoje, kariero, izobraževanje, študij in možnost mobilnosti kot Srbija.

4. Anketiranci se s povprečjem 3,55 strinjajo, da so se pred pandemijo koronavirusa želeli preseliti v tujino. Anketiranci se niti strinjajo niti ne strinjajo, da se želijo takoj po pandemiji preseliti v tujino s povprečjem 2,98, niti da je na njihovo željo zapustiti Srbijo vplival COVID-19 s povprečjem 2,86. Poleg tega se anketiranci s povprečjem 2,07 ne strinjajo, da je bila zaradi koronavirusa ogrožena njihova namera za selitev.

5. Priporočila za zmanjšanje problema bega možganov med srbsko mladino so širjenje ozaveščenosti o tem problemu, vodenje boljših statističnih podatkov o migracijah, zagotavljanje višjega življenjskega standarda, boljše zaposlitvene možnosti, zmanjšanje politične moči in korupcije, zaupanje v regulativne organe in institucije in večja vključenost mladih v procese odločanja.

Appendix 2: English and Serbian version of the survey questionnaire

The determinants of brain drain amongst Serbian youth / Uzroci odliva mozgova među srpskom omladinom

Dear, My name is Milica Karbić, I am a student at the Faculty of Economics at the University of Ljubljana, Slovenia. In my master's thesis, I research: "The determinants of brain drain among Serbian youth". Please take a few minutes to complete the following survey. The survey is intended for all current full-time students who are citizens of Serbia, regardless of their level of study, whether they study in Serbia or abroad. Your answers will be treated confidentially and all data will be kept secure and anonymous. For all additional questions contact me at E-mail: milica_karbic@hotmail.com. Thank you so much for your help!

Poštovani, Zovem se Milica Karbić, student sam Ekonomskog fakulteta pri Univerzitetu u Ljubljani, Sloveniji. U svom master radu istražujem: "Uzroke odliva mozgova među srpskom omladinom". Molim Vas da izdvojite nekoliko minuta da ispunite sledeću anketu. Anketa je namenjena svim trenutnim redovnim studentima koji su državljani Srbije nezavisno od nivoa studija, bilo da studiraju u Srbiji ili inostranstvu. Vaši odgovori će se tretirati poverljivo i svi podaci će se čuvati sigurno i anonimno. Za sva dodatna pitanja kontaktirajte me na E-mail: milica_karbic@hotmail.com. Hvala puno na Vašoj pomoći!

Q1 - Are you a Serbian citizen? / Da li ste državljanin Srbije (imate srpski pasoš)?

- Yes / Da
- No / Ne

Q2 – What is your current level of study? / Koji je Vaš trenutni nivo studija?

- Undergraduate / Osnovne studije
- Postgraduate / Master studije
- PhD / Doktorske studije
- I'm not a student anymore / Nisam više student

Q3 - Are you currently (academic year 2020-2021) studying in Serbia or abroad? / Da li u trenutno (akademska godina 2020-2021) studirate u Srbiji ili u inostranstvu?

- Serbia / Srbija
- Abroad / Inostranstvo

Q4 - In which country are you currently studying? / U kojoj zemlji trenutno studirate?

- Austria / Austrija
- Germany / Nemačka
- Slovenia / Slovenija
- Other country / Druga zemlja

Q5 - What is your plan after graduation? / Koji je Vaš plan nakon diplomiranja?

- To stay in the country where I studied / Da ostanem u zemlji u kojoj sam studirao/la
- To go abroad (somewhere else) / Da odem u inostranstvo (negde drugde)
- To return to Serbia / Da se vratim u Srbiju

Q6 - Which faculty are you enrolled in? / Na kojem ste fakultetu upisani?

- University of Belgrade / Univerzitet u Beogradu
- University in Novi Sad / Univerzitet u Novom Sadu
- University in Nis / Univerzitet u Nišu
- University of Kragujevac / Univerzitet u Kragujevcu
- Private faculty (Singidunum, Megatrend, European, Metropolitan, Union, Alpha, FEFA, RAF or others) / Privatni fakultet (Singidunum, Megatrend, Evropski, Metropolitan, Union, Alfa, FEFA, RAF ili dr)
- Other / Drugi

Q7 – What is your current field of study

- Architecture / Arhitektura
- Social sciences (geography, history, psychology, political sciences, sociology) / Društvene nauke (geografija, istorija, psihologija, političke nauke, sociologija) /
- Economy and business (finance, management, marketing, tourism, etc.) / Ekonomija i poslovanje (finansije, menadžment, marketing, turizam itd.)
- Physical Education / Fizičko vaspitanje
- Humanities (languages, philosophy, music, art) / Humanističke nauke (jezici, filozofija, muzika, umetnost)
- Engineering (mechanical, civil, electrical, chemical engineering, energy, aviation) / Inženjerstvo (mašinsko, civilno, elektro, hemijsko inženjerstvo, energetika, vazduhoplovstvo)
- Medicine and dentistry / Medicina i stomatologija
- Law / Prava
- Natural sciences (mathematics, physics, biology, chemistry) / Prirodne nauke (matematika, fizika, biologija, hemija)
- Computer science (theories, graphic design, programming languages, software engineering, artificial intelligence) / Računarske nauke (teorije, grafički dizajn, programski jezici, softversko inženjerstvo, vesačka inteligencija)
- Other / Drugi

Q8 - What is your grade point average in the current studies you attend? / Koji je vaš prosek ocena na trenutnim studijama koje pohađate?

Q9 – Please mark your level of satisfaction with the quality of the acquired knowledge during education in Serbia. / Ocenite vaše zadovoljstvo kvalitetom znanja stečenog tokom obrazovanja u Srbiji.

(1 =extremely bad quality / veoma loš kvalitet; 5 = extremely good quality / veoma dobar kvalitet)

	1	2	3	4	5	I don't know / Ne znam
Primary school / Osnovna škola	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
High school / Srednja škola	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Higher education (university) / Visoko obrazovanje (univerzitet)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10 – How much do you agree with the following statements? / Koliko se slažete sa sledećim tvrdnjama?

	Strongly disagree / Uopšte se ne slažem	Disagree / Ne slažem se	Neither disagree nor agree / Niti se ne slažem/niti se slažem	Agree / Slažem se	Strongly agree / Potpuno se slažem	I don't know / Ne znam
Foreign countries provide better career opportunities / Inostrane zemlje pružaju bolje mogućnosti za karijeru	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreign countries provide better study opportunities than Serbia / Inostrane zemlje pružaju bolje mogućnosti za studiranje od Srbije	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreign countries provide a higher standard of living / Inostrane zemlje pružaju viši životni standard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The possibility of sending financial aid to my family is a good reason to leave Serbia / Mogućnost slanja finansijske pomoći porodici je dobar razlog da se napusti Srbija	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Serbia is politically and economically an unstable country / Srbija je politički i ekonomski nestabilna zemlja	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Serbia is a technologically poor country in relation to foreign countries / Srbija je tehnološki zaostala zemlja u odnosu na inostrane zemlje	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly disagree / Uopšte se ne slažem	Disagree / Ne slažem se	Neither disagree nor agree / Niti se ne slažem/niti se slažem	Agree / Slažem se	Strongly agree / Potpuno se slažem	I don't know / Ne znam
It is difficult to get a job in Serbia without giving bribes, corruption and / or the ruling party Teško je doći do posla u Srbiji bez davanja mita, korupcije i/ili vladajuće stranke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Serbia's education system is worse than that of foreign countries / Obrazovni sistem Srbije je lošiji u odnosu na inostrane zemlje	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not see an economic future in Serbia / Ne vidim ekonomsku budućnost u Srbiji	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unemployment is the biggest cause of young people leaving Serbia / Nezaposlenost je najveći uzrok odlaska mladih iz Srbije	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Healthcare in Serbia is in a hopeless state / Zdravstvo u Srbiji je u beznadežnom stanju	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Serbia provides travel opportunities / Srbija pruža mogućnosti za putovanja	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In Serbia there is freedom of speech and expression in Serbia / U Srbiji postoji sloboda govora i izjašnjavanja	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The level of environmental awareness (air pollution, water, rivers, mountains, recycling) is low in Serbia / Nivo svesti o ekologiji (zagađenje vazduha, voda, reka, planina, reciklaža) je nizak u Srbiji	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Q11 - How much do you agree with the following statements? / Koliko se slažete sa sledećim tvrdnjama?

Strongly disagree /	Disagree / Ne slažem se	Neither agree nor disagree / Niti se ne	Agree / Slažem se	Strongly agree /	I don't know /
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Uopšte se
ne slažem

slažem/niti se
slažem

Potpuno
se slažem

Ne
znam

In case I get a job offer in Serbia that will provide me with the same standard of living as foreign countries, I would stay in Serbia / U slučaju da dobijem ponudu za posao u Srbiji koja će mi omogućiti isti životni standard kao inostrane zemlje, ostao/la bih u Srbiji

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Even if I move abroad, I want to remain active in political circles in Serbia (such as voting) / Iako se preselim u inostranstvo, želim da ostanem aktivan u političkim krugovima u Srbiji (kao npr. glasanje)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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If I move abroad, I want to maintain a connection with Serbia as much as possible (frequent visits to the country, family and friends) / Ako se preselim u inostranstvo, želim da održavam vezu sa Srbijom sto više je moguće (često posećivanje zemlje, porodice i prijatelja)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

I would like to permanently move to another country after my studies / Voleo bih da se trajno preselim u drugu državu posle studija

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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I would like to live in Serbia after graduation. / Voleo bih da živim u Srbiji posle studija.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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I have no preference where I would like to live after my studies. / Nemam preference gde bih voleo da živim posle studija.		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Q12 - Have you already made plans for this move or initiated further moves? / Da li ste već napravili planove za ovaj potez ili pokrenuli dalje poteze?

- Yes / Da
- No / Ne

Q13 - Do you plan to return to Serbia later in life or live abroad permanently? / Da li kasnije u životu planirate da se vratite u Srbiju ili trajno živite u inostranstvu?

- Return to Serbia / Povratak u Srbiju
- Live abroad permanently / Trajno u inostranstvu

Q14 - How much do the following factors in SERBIA influence your decision on whether to leave the country? / Koliko sledeći faktori u SRBIJI utiču na vašu odluku o tome da li ćete napustiti zemlju?

(1 = Not a determinant at all / nebitan razlog; 5 = Extremely important determinant / veoma bitan razlog)

	1	2	3	4	5	I don't know / Ne znam
Bureaucracy (paperwork, e.g. when enrolling to college, employment, the needs for various documents in banks, state institutions and obtaining personal documents) / Birokratija (papirologija npr. pri upisu fakulteta, zapošljavanju, potrebama različitih dokumenata u bankama, državnim institucijama i vađenju ličnih dokumenata)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability of employment opportunities (jobs for which you are qualified) / Dostupnost poslovne ponude (poslovi za koje ste kvalifikovani)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Infrastructure (roads, railways, waste management) / Infrastruktura (putevi, železnice, upravljanje otpadom)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1	2	3	4	5	I don't know / Ne znam
Bribery and corruption / Mito i korupcija	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Possibility to travel / Mogućnost putovanja	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The possibility of war, revolution & violence / Mogućnost rata, revolucija i nasilja	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Political situation / Političko stanje	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Family & close friends / Porodica i bliski prijatelji	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to healthcare / Zdravstvo (pristup medicinskoj negi)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to the latest technologies / Pristup najsavremenijim i naprednim tehnologijama	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Freedom of speech & free expression (ideals, religion etc.) / Sloboda govora i slobodnog izjašnjavanja (ideala, vere itd.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environment (air, pollution, pollution of rivers, mountains, etc.) / Životna sredina (vazduh, zagađenje, zagađenje reka, planina itd.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Standard of living / Životni standard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q15 - In your opinion, what are the most important things that need to be done in Serbia to motivate young people to stay in the country? / Koje su po vašem misljenju najvažnije stavke koje treba učiniti u Srbiji da bi se mladi motivisali da ostanu u zemlji?

(1 = not important at all / nebitno: 5 = extremely important / bitno)

	1	2	3	4	5	I don't know / Ne znam
To increase the standard of living (higher salaries, pensions) / Da se poveca životni standard (više plate, penzije)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To ensure employment opportunities for which you are qualified / Da se osigura mogućnost zaposlenja u struci /	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To reduce the level of corruption / Da se smanji nivo korupcije	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To reduce the level of political influence (e.g. party influence) / Da se smanji nivo političkog uticaja (npr. stranački)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To include young people to be part of important decision-making processes / Uključiti mlade u procese donošenja važnih odluka	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q16 – What do you think is the most important thing that should be done that young people do not leave the country? / Napišite sta mislite da je najvažnije što bi trebalo učiniti kako mladi ljudi ne bi napuštali zemlju?

Q17 – Please rate your level of agreement with the following statements: / Ocenite koliko se slažete sa sledećim izjavama:

	Strongly disagree / Uopšte se ne slažem	Disagree/ Ne slažem se	Neither agree nor disagree / Niti se ne slažem/niti se slažem	Agree / Slažem se	Strongly agree / Potpuno se slažem	I don't know / Ne znam
Before the COVID-19 situation I wanted to move abroad (after graduation) / Pre COVID-19 situacije sam hteo/la da se preselim u inostranstvo (nakon studija)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Due to the COVID-19 situation I do not intend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Strongly disagree / Uopšte se ne slažem	Disagree/ Ne slažem se	Neither agree nor disagree / Niti se ne slažem/niti se slažem	Agree / Slažem se	Strongly agree / Potpuno se slažem	I don't know / Ne znam
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to move abroad (after graduation) / Zbog COVID-19 situacije nemam nameru da se selim u inostranstvo (nakon studija)						
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After the COVID-19 situation I want to move abroad immediately (after graduation) /
Nakon COVID-19 situacije se odmah selim u inostranstvo (nakon studija)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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COVID-19 further influenced my desire to leave Serbia / COVID-19 je još više uticao na moju želju da napustim Srbiju						
--	--	--	--	--	--	--

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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Q18 - What first comes to your mind when you hear that young people are leaving Serbia? / Šta Vam prvo pada napamet kada čujete da mladi napuštaju Srbiju?

Q19 – What is your birthplace? / Koje je vaše rodno mesto (grad)?

Q20 – What is your ethnicity? / Koja je vaša nacionalna pripadnost?

- Serbian / Srpsko
- Bosnian / Bosansko
- Hungarian / Mađarsko
- Roma / Romsko
- Other / Drugo:

Q21 - What is the highest level of education of your parents? / Koji je najviši stepen obrazovanja vaših roditelja?

	Primary school / Osnovna škola	High school / Srednja škola	Bachelor's degree / Osnovne univerzitetske studije	Master's degree / Master univerzitetske studije	PhD / Doktorske univerzitetske studije	I don't know / Ne znam
Mother / Majka	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Father / Otac	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q22 - Do you have relatives who already live abroad? / Da li imate rođake koji već žive u inostranstvu?

- Siblings / Braća ili sestre
- Parents / Roditelji
- Aunt / Uncle / Tetka/Ujak/Stric
- Grandparents / Bake/deke
- Close friends / Bliski prijatelji
- Other / Drugo:

Q23 – Your gender? Vaš pol?

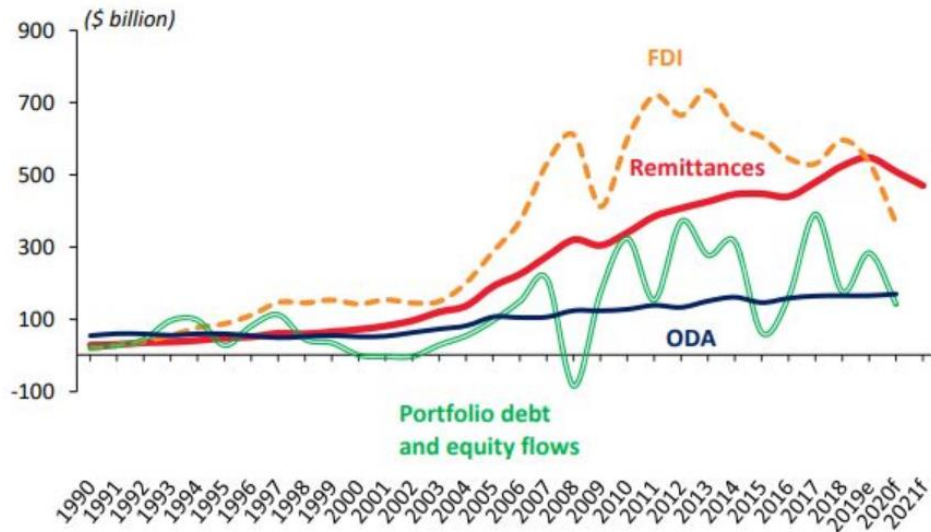
- Female / Žensko
- Male / Muško

Q24 – What is your age? (Please enter your year of birth) / Koliko imate godina? (Unesite godinu rođenja)

Q25 - Please write your comment! / Napišite komentar!

Appendix 3: Remittance flows (1990-2020)

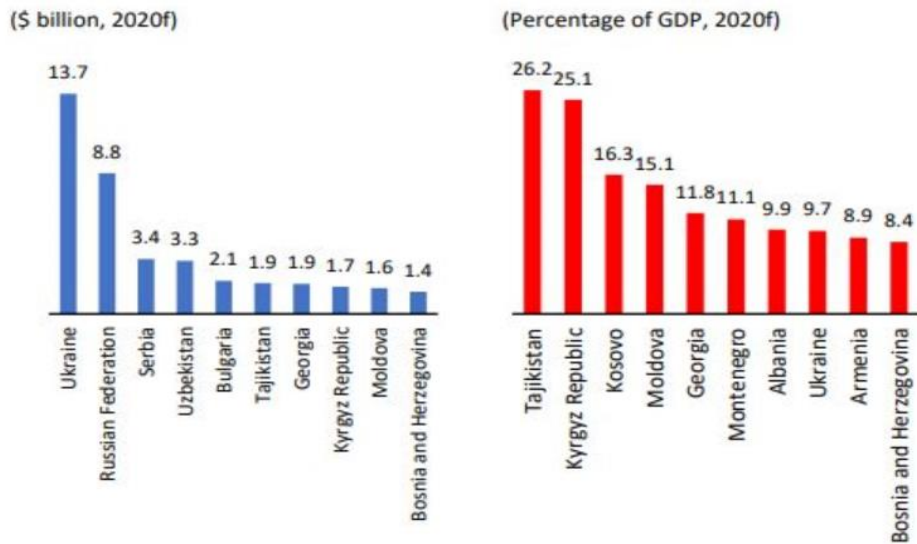
Figure 31: Remittance flows (1990-2020)



Source: KNOMAD (2020).

Appendix 4: Top remittances recipients in Europe and Central Asia in 2020

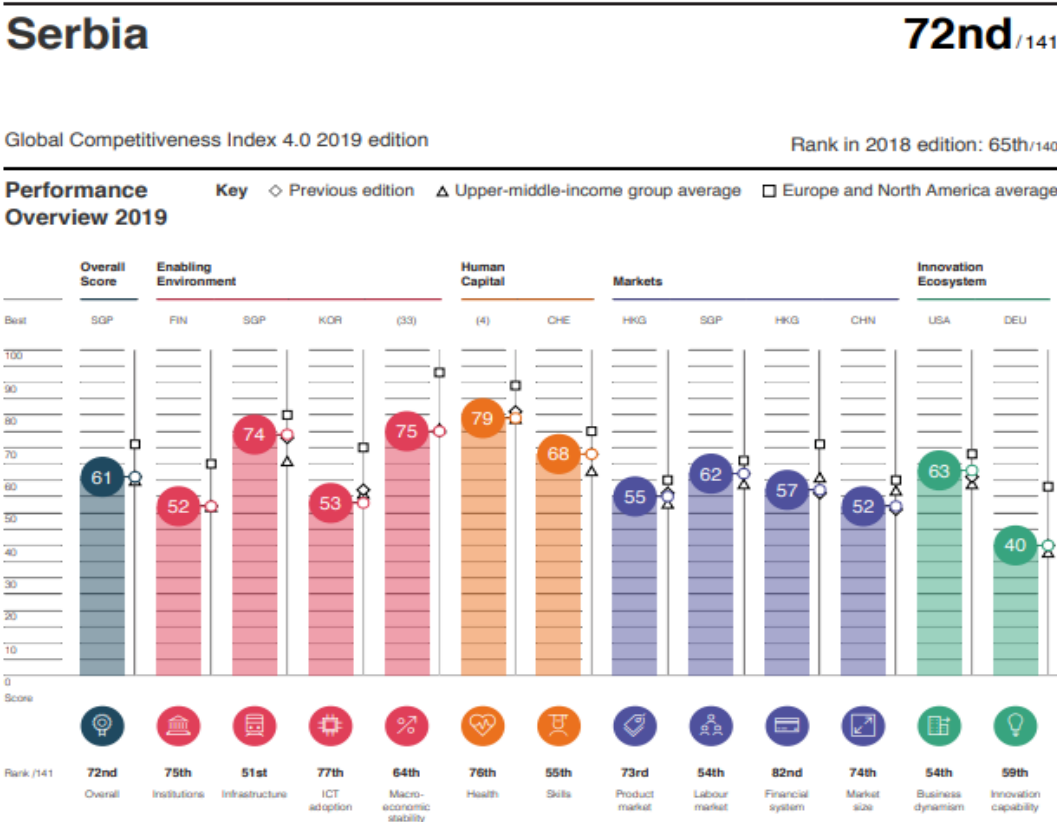
Figure 32: Top remittances recipients in Europe and Central Asia in 2020



Source: KNOMAD (2020).

Appendix 5: Global Competitiveness Index for the Republic of Serbia in 2019

Figure 33: Global Competitiveness Index for the Republic of Serbia in 2019



Source: World Economic Forum (2019).

Appendix 6: Correlation between the current level of study and their plans after graduation

Table 9: Correlation between the current level of study and their plans after graduation

		Q5 - What is your plan after graduation?		
		To stay in the country where I studied	To go abroad (somewhere else)	To return to Serbia
Q2 – What is your current level of study?	Undergraduate	47%	49%	4%
	Postgraduate	56%	33%	11%
	PhD	55%	45%	0%

Source: Own work (N=160).

Appendix 7: Correlation between respondents plans after graduation and their current country of study

Table 10: Correlation between respondents plan after graduation and their current country of study

		Q4 - In which country are you currently studying?			
		Austria	Germany	Slovenia	Other country
Q5 - What is your plan after graduation?	To stay in the country where I studied	48%	5%	33%	15%
	To go abroad (somewhere else)	18%	3%	65%	15%
	To return to Serbia	0%	0%	60%	40%
Total		32%	4%	48%	16%

Source: Own work (N=160).

Appendix 8: Correlation between respondents level of education of mother and their plans and preferences for later in life

Table 11: Correlation between respondents level of education of mother and their plans and preferences for later in life

		Q13 - Do you plan to return to Serbia later in life or live abroad permanently?	
		Return to Serbia	Live abroad permanently
Q21 - What is the highest level of education of your parents? Q21a - Mother	Primary school	64%	36%
	High school	55%	45%
	Bachelor's degree	49%	51%
	Master's degree	53%	47%
	PhD	60%	40%
	I don't know	0%	100%

Source: Own work (N=309).

Appendix 9: Correlation between respondents level of education of father and their plans and preferences for later in life

Table 12: Correlation between respondents level of education of father and their plans and preferences for later in life

		Q13 - Do you plan to return to Serbia later in life or live abroad permanently?	
		Return to Serbia	Live abroad permanently
Q21 - What is the highest level of education of your parents? Q21b - Father	Primary school	50%	50%
	High school	57%	43%
	Bachelor's degree	52%	48%
	Master's degree	46%	54%
	PhD	50%	50%
	I don't know	20%	80%

Source: Own work (N=309).