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Potential Migration of Educated Youth from North Macedonia: Can Brain Drain be Averted?

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Abstract

Using unique survey data collected from respondents attending university in North Macedonia (N=423), this paper investigates students' decisions on intended emigration. The study is set within the regional context of high youth migration from the Western Balkans and involves comparisons with an earlier, similar study on Albania. Results for North Macedonia indicate that those more likely to leave the country are undergraduate (as opposed to postgraduate) students, those who are not planning to continue further studies and students with a family history of migration. The concluding discussion makes policy recommendations for reforming the labour market to dissuade young graduates from leaving and attract the return of those already abroad.

Keywords: *Youth emigration; students; labour market; unemployment; brain drain; North Macedonia*

Introduction

It is no exaggeration to say that there has been an explosion of research on migration in Europe in recent decades. Particular boosts to this fast-growing output were the end of the Cold War and the eastward expansion of the European Union (EU), which contributed to a fundamental remapping of European migration flows (see, *inter alia*, Black et al., 2010; Boswell & Geddes, 2011; Glorius et al., 2013; Kahanec & Zimmermann, 2016; Lafleur & Stanek, 2017; Recchi, 2015). Within this burgeoning literature, migration trends in the Western Balkans have been poorly represented, except for some studies focused only on this region and therefore not integrated within wider European migration dynamics (e.g. Bobić & Janković, 2017; King & Oruc, 2020; Vermeulen et al., 2015). This paper, on North Macedonia, makes a contribution to spotlighting this little-studied country within the Western Balkans. It does so by concentrating on young, highly educated (would-be) emigrants who are current university students. Third-level students, including recent graduates, have come to be recognised as an increasingly important component of international migration, especially within Europe where geographical proximity, the expansion of student exchange schemes and an increasingly integrated teaching and research environment encourage what has come to be called "international student migration" or ISM (King & Findlay, 2012; King & Raghuram, 2013).

Located at the south-east periphery of Europe, North Macedonia, like its WB neighbours, suffers from a weak economy, a mismatched labour market, high unemployment and poor living and working conditions. Especially amongst the country's youth, there is a general

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opinion that life in more developed economies can be better for them, especially as regards to employment openings, higher incomes and an improved quality of life (Dragović et al., 2017). There is also the belief, which broadly accords with reality, that more developed countries, in Western Europe and elsewhere, have a growing demand for educated workers, especially in sectors like medicine and IT.

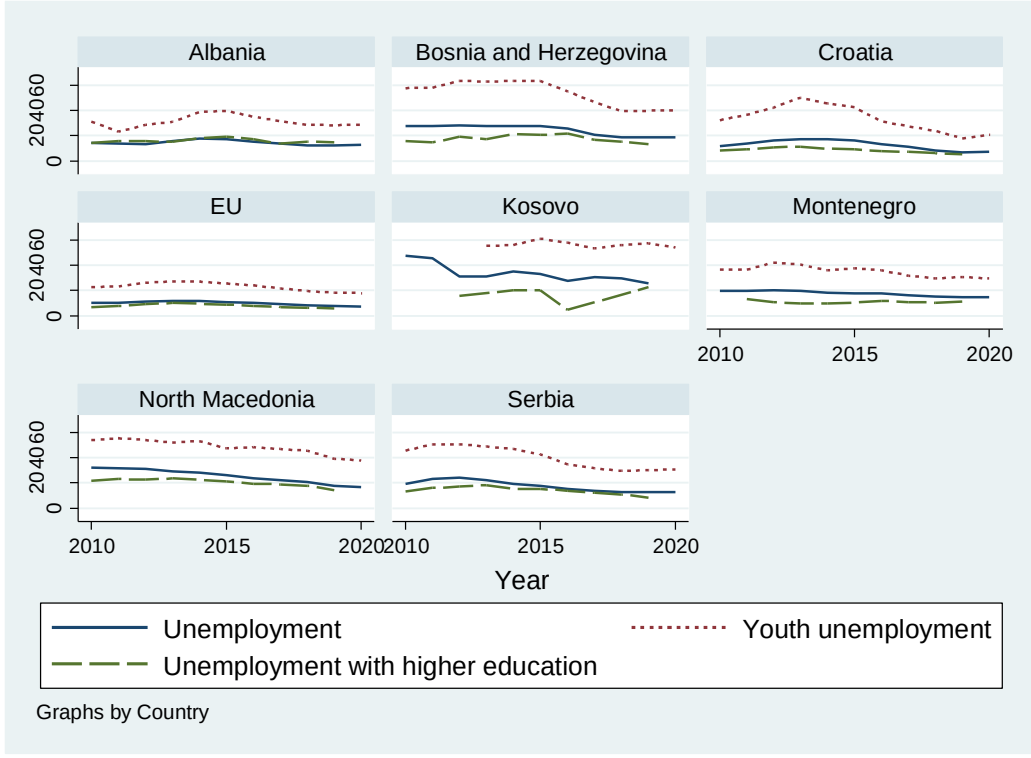
Recent survey research in Albania using a similar methodology to the present paper has shown that "potential migration" – measured as the share of respondents who intend to emigrate in the proximate future – is particularly high among young adults and the more-educated (Gëdeshi & King, 2018; King & Gëdeshi, 2020). We transfer this approach, including a tried and tested survey instrument, to the North Macedonian case and generate evidence to answer the following questions. What are the plans of students currently enrolled in North Macedonian universities? Specifically, do they plan to stay in their home country or to emigrate once their university studies are finished? For those who plan to leave, which are their preferred destination countries? Finally, for the potential emigrants, what are the factors that push them to go and what are the correlates, in terms of their background characteristics, that influence their aspired emigration?

The paper is organised as follows. First, we set out some socio-economic background on North Macedonia and the Western Balkans. The following section then summarises current ideas regarding the determinants of youth migration, especially ISM. The next section outlines our survey method and some descriptive statistics of the sample. Then comes the core of the paper, built around the model specification and the presentation and interpretation of the results and the statistical analysis. The conclusion discusses the results in terms of their relevance for policy measures to staunch the likely brain drain and encourage the return of those who have already emigrated.

North Macedonia and the Western Balkans

The southernmost successor state of the former Yugoslavia, North Macedonia, previously known as Macedonia and the Former Yugoslav Republic of Macedonia (FYROM), is a small (population 2.1 million) landlocked country in the Western Balkans which shares many of the socio-economic and demographic characteristics of its regional neighbours. As a factor shaping emigration trends and intentions, unemployment is important. Figure 1 shows three unemployment indicators for the years 2010–2020. The three measures are overall unemployment, youth unemployment (for those aged 15–24 years) and the unemployment of those with advanced (i.e. tertiary-level) education. For the decade in question, the average youth unemployment for North Macedonia was 48.4%, whilst the unemployment of the higher-educated was much lower at 15.5% averaged over the decade. The focus on youth unemployment is all the more important given the young age structure of the WB population compared to that of the EU. The median age of the North Macedonian population was 39.1 years in 2019, compared to 42.6 years for the EU as a whole (United Nations, 2019).

Figure 1. Unemployment (% of the total labour force); youth unemployment (% of the total labour force aged 15–24); unemployment with higher education (% of the total labour force with higher education) of Western Balkan Countries, 2010–2020



Source: Data from the database: World Development Indicators. Author's illustration.

Labour markets in the WB have experienced skill shortages in certain sectors such as medical doctors and IT personnel, exacerbated by the high propensity of highly educated people to emigrate (World Bank & WIIW, 2019). Whilst the overall figures for emigration from the WB region show that these countries have amongst the highest rates in Europe, the emigration has a dual character as a predominantly youthful exodus and a brain drain. According to Eurostat data, nearly 230,000 people emigrated "permanently" (i.e. with a long-term intention to stay away) from the six non-EU WB countries in 2018. The national breakdown was Albania 62,000, Bosnia and Herzegovina (BiH) 53,500, Serbia 51,000, Kosovo 34,500, North Macedonia 24,300 and Montenegro 3,000 (Šelo Šabić & Kolar, 2019). When these figures are standardised in relation to each country's population, the North Macedonian figure (24,300, equating to 1.2% of the country's population) is lower than the figures for Albania (2.1%), Kosovo (1.9%) and BiH (1.5%) but higher than Serbia (0.7%) and Montenegro (0.5%). Furthermore, in terms of potential migration, the WB countries had the highest rates in Europe for young adults wanting to migrate, according to survey data for 2015–2017, the North Macedonian figure of 52% being representative of the WB region as a whole. As stressed by the World Bank and the Vienna Institute for International Economic Studies in their report on WB labour-market trends, the continued emigration of young and highly educated people from the region will create mismatches between the available skill levels in

the domestic labour market and the required composition of the workforce in these countries (World Bank & WIIW, 2019).

Determinants of youth migration: theoretical perspectives and empirical evidence

According to the neoclassical school which, for long, has dominated explanations of migration, especially by economists, economic sociologists and economic geographers, the reasons why people migrate are determined by a combination of push and pull factors, the former inducing people to leave their region or country and the latter attracting people to a certain destination (King, 2012). Push and pull factors are so self-evident in thinking about migration as to hardly warrant further consideration but they do serve as a useful departure point for discussions on youth migration.

In a general overview of theories of migration, King (2012: 12–14), following Massey et al. (1998: 18–21), demonstrates how the neoclassic push–pull model operates at two levels, both of which are relevant to the case of youth migration from the WB. At the macro scale, migration results from geographically uneven economic development: between countries of lower economic wellbeing – characterised by sluggish growth, low incomes and high unemployment – and, on the other hand, countries with more advanced economies, high wages and unmet demands for certain kinds of labour. The pairing of the Western Balkans (and other southeast European countries such as Bulgaria, Romania and Moldova) versus the richer EU countries fits this scenario rather well, especially as regards to youth labour-market disadvantage (Kolev & Saget 2005).

At the micro level, migration decisions are made by rational-acting individuals who evaluate the pros and cons of moving relative to staying; such calculations may be well-informed or more speculative, based on partial information or even an imagined future. Well-informed decisions are founded on realistic calculations of costs (both monetary and psychological) and benefits (economic improvement through access to better jobs and incomes, greater psychological wellbeing through enjoying a better quality of life etc.). Such costs and benefits can be calculated over different time-scales – short, medium or longer term.

Most migration theorists regard the neoclassical push–pull framework as merely a starting-point for a more complex and multi-layered analysis. Amongst other critiques, it is regarded as too deterministic and fundamentally ahistorical. According to Arango (2004: 19–20), the Achilles heel of neoclassical theory is its failure to explain, firstly, why so few people actually migrate, given the apparent incentives to do so and, secondly, why countries with very similar economic conditions produce greatly different rates of emigration. This opens up the need to bring in the global, regional and local histories of imperialism, domination and economic peripheralisation which are clearly evident in the complex geopolitical history of the Western Balkans. Also relevant is the way in which migration networks are created and perpetuated over time. According to Arango, "the importance of networks for migration can hardly be overstated … [they] rank amongst the most important explanatory factors for migration" (2004: 28).

A review of the main theories relevant to international youth migration (King et al., 2016) discusses the key perspectives which are pertinent to this cohort, especially if they are highly educated. First, and picking up Arango's last point, social networks play a crucial role in

shaping the (intention to) move abroad among youth in Europe (Herz et al., 2018). Amongst youth social networks, we can distinguish family-level networks, generational histories of chain migration and peer-group networks of former classmates and work colleagues. Also important is the way in which migration and migration intentions are embedded in life-stage transitions, such as leaving school or university, moving from education or unemployment into employment and the personal transition from, say, an adolescent or student identity to a more mature, independent adult able to take decisions affecting one's future. Youth emigration might also be constituted as a *rite de passage*, a means of "growing up" or an "escape" to personal independence and a freer way of life.

Some literature offers us clues as to how these conceptual frameworks play out in the empirical reality of the Western Balkans, although there is little that is specific to North Macedonia, hence the originality of our study. Sanfey and Milatović (2018) note that, for the WB as a whole, high levels of youth unemployment now seem to be endemic, leading to consistent emigration flows. Much of this emigration seems to be semi-permanent, with (so far) limited return migration. According to Franc et al. (2019), these young migrants respond, in conformity to neoclassical thinking, rather directly to high levels of GDP per capita and to increasing GDP growth in destination countries. Meanwhile, Atoyan et al. (2016) found that skilled labour outflows lowered productivity growth, pushed wages up and delayed income convergence in the sending countries.

Begović et al. (2020) analysed the determinants of youth's propensity to emigrate from Bosnia-Herzegovina, using 2017 data from USAID's National Survey of Citizens' Perceptions. Probit regressions (similar to our approach in this paper) indicated that younger respondents (below age 30) are more likely to consider emigrating than those over 30. In addition, they found a positive effect of dissatisfaction with public services and with the high level of corruption in BiH on the desire to leave the country.

These political factors also loomed large in survey research on Albanian would-be emigrants, especially highly educated graduates and current students, as well as members of the Albanian "scientific diaspora" working abroad, who frequently cited the widespread corruption in Albania as a barrier to their return (Gëdeshi & King, 2018; King & Gëdeshi, 2020). According to data reported by Gëdeshi & King (2018), more than 40% of university and research staff left the country between 1990 and 2008, a much higher figure than for the other transition countries. The brain drain trend has continued – especially, nowadays, that of younger graduates.

Data for North Macedonia also display a worrying trend for youth migration, indicating an actual or potential brain drain of young talent. World Bank data quoted by Mús (2017) show that 29% of the country's university graduates emigrated during the period 1997–2005, the highest share in southeast Europe. The main leavers were IT specialists, engineers, medical professionals and teachers. After 2005, the trend continued, due to high levels of unemployment amongst tertiary-educated young people (Janeska, 2012). According to Topuzorska Latkovikj et al. (2019), based on youth and unemployment survey data, every other young individual in 2013 was planning on or thinking about leaving the country whereas, in 2016, 80% of unemployed youth were contemplating emigration. According to these authors, "the most significant reasons [were] the financial situation and standard of living, or unemployment and poverty in the country compared to better conditions for education, employment and life abroad" (2019: 28). In other words, a classic mix of interacting push and

pull factors. The most recent youth survey data for 2018 on the desire to migrate showed that one third has a "strong desire" to emigrate, one third has a "moderate" desire to leave and one third do not want to emigrate (Topuzorska Latkovikj et al., 2019). Most emigration from North Macedonia, actual or projected, is to Italy, Germany, Switzerland and Austria or overseas to Australia, the USA and Canada.

In another North Macedonian study, Dragović et al. (2017) collected questionnaire survey data from first- and second-year students (N=216) in the Faculty of Philosophy at the University of Skopje during the academic year 2014–2015. Their results indicated that a shortage of suitable jobs was the main reason for planning to migrate in the imminent future, following graduation. The sample divided as follows: 39% wanted to live and work abroad "for some time" and then return to North Macedonia, 35% would like to live and work abroad indefinitely and the remainder, one quarter, preferred to stay put. The main source of information for the country to which they intend to emigrate was their relatives and friends who already live abroad – an example of the power of social and kinship networks. Descriptive statistics, backed up by logistic regression, showed that male students, those from larger families and those with personal or family experience of travel and migrating abroad were the groups the most inclined to emigrate following the completion of their studies.

Method and descriptive statistics

Data for the current study were collected between March and May 2020 in the form of an online questionnaire administered to the main universities, both public and private, in North Macedonia. With minor variations, the survey replicated the same research instrument as one used in a similar study carried out in April and May 2019 with students in Albanian universities (King & Gëdeshi, 2020); hence some comparisons are made in the presentation of the descriptive statistics below. In North Macedonia the questionnaire was answered by 423 students; those the most represented were studying economics, medicine, technological subjects and languages.

The questionnaire, designed to provide insights into the questions posed in the introduction to this paper, had 31 questions organised into four sections: biographical questions (age, gender, place of birth, university, year and programme of study, parents' education); intentions to migrate following completion of studies; intended destination country and incentives and barriers thereto; and students' and their parents' history of migration. The basic objective of the questionnaire was to match the intention to migrate – the main dependent variable – with a wide range of individual and family characteristics and different push and pull factors.

Tables 1–4 set out the basic features of the survey respondents and their responses to selected key questions, for both the North Macedonian (N=423) and the Albanian (N=1,650) surveys. Table 1 shows broadly similar profiles for North Macedonian and Albanian students regarding most variables and responses to questions, including gender differences. In both countries, roughly four out of five respondents plan to continue their studies. Part-time work is more widespread among male students. Patterns of parental higher education are fairly similar, except that, in the North Macedonian case, there are almost twice the number of respondents where only the father has a university qualification.

Table 1. Respondent characteristics (all data % except age)

	Albania			North Macedonia		
	Female	**Male**	**Total**	**Female**	**Male**	**Total**
Age (mean, years)	21.7	22.1	21.8	22.7	23.3	22.9
Gender	71.4	28.6		63.4	36.6	
Birthplace						
Urban				73.5	70.9	72.6
Rural				26.5	29.1	27.4
Study level						
Undergraduate	73.2	67.1	71.5	84.3	79.3	82.5
Postgraduate	26.3	31.4	27.7	15.7	20.6	17.5
Do you plan to continue your studies?						
Yes	85.2	74.5	82.1	81.7	72.9	78.5
No	14.8	25.5	17.9	18.3	27.1	21.5
Parents' university education						
Neither	54.5	47.8	52.7	55.2	46.4	52.0
Both	25.3	33.3	27.6	19.4	27.7	22.5
Father only	11.7	12.1	11.8	20.9	20.0	20.6
Mother only	8.5	6.8	8.0	4.5	5.8	4.9
Do you work part-time?						
No	79.8	68.4	76.6	76.1	52.3	67.4
Yes, <8 hours/week	6.9	8.3	7.3	8.2	6.4	7.6
Yes, 8–20 hours	4.5	6.8	5.2	4.8	12.9	7.8
Yes, >20 hours	8.8	16.6	11.0	10.8	28.4	17.3

Source: Authors' survey; King & Gëdeshi (2020).

Table 2. Likelihood of migration (all data %)

	Albania	**North Macedonia**
Do you intend to migrate?		
Yes	79.0	55.6
No	9.8	24.8
I don't know	11.2	19.6
Do you plan to migrate:		
Before finishing studies	6.9	11.6
Immediately after	62.0	51.8
After work experience	27.4	35.3
Other or don't know	3.7	1.3
When do you plan to migrate?		
Within a year	16.6	21.9
Over the next five years	69.1	64.6
After more than five years	14.4	13.5

Source: Authors' survey; King & Gëdeshi (2020).

For Tables 2–4, the gender variable is not tabulated as the differences are minimal and not statistically significant between male and female responses. Table 2 reveals that the intention to migrate is high across both countries, albeit higher in Albania (79%) than in North Macedonia (56%); in the latter country, however, the "don't know" share, which allows the possibility of emigration, is almost twice as high – 20 vs 11%. The most likely time horizon for migrating, affecting around two-thirds of respondents in both countries, is not immediately but within the next five years, mostly soon after finishing their studies. A more detailed breakdown of migration intentions between different university courses shows rates as follows for North Macedonian students: medicine 71%, informatics 65%, economics 50%, foreign languages 49%. These figures are likely related to perceived opportunities for

employment in the desired migration country. This sequencing of programmes of study in terms of migration propensity was more or less the same in Albania, except that the figures here were consistently higher (e.g. medicine 91%, foreign languages 79%).

Table 3. Main push and pull factors for students' intended migration (%)

	Albania	**North Macedonia**
Push factors:		
To continue studies abroad	17.3	12.2
Difficult to find a job here	12.2	12.5
Unsatisfactory working conditions	13.4	23.1
To improve living standards	34.1	19.5
To develop an international career	4.7	3.6
Reunite with/accompany family/partner abroad	2.9	2.3
For an adventure	1.2	1.6
I think there is no future here	9.1	16.2
Other nominated reasons	5.1	9.0
Pull factors to intended country:		
Better job/higher income/savings	62.4	58.0
Better health/social security system	6.8	9.2
Better education/qualifications	22.2	18.8
To reunite with family/partner abroad	2.4	4.1
I have relatives/friends there	2.1	1.4
I have lived/visited there before	1.4	2.1
I know the language	1.4	2.7
No difficulties to enter this country	1.3	3.7

Source: Authors' survey; King & Gëdeshi (2020).

The question on the intention to migrate gave students various options in order to nominate the most important reason, which were then divided into push and pull factors. Table 3 lists these and their response rates for the two countries. It can be noted that some push and pull factors are, in practice, opposite sides of the same coin – for instance, "to continue studies abroad" and "better education/qualifications" or "difficult to find a job here" versus "better job/income/savings". Perusal of the two lists of factors, push and pull, shows that economic factors, relating to employment, income, living standards etc., are the dominant ones for both sets of students. A second-tier reason has to do with educational opportunities – for students seeking to continue their studies abroad, usually Bachelor's students looking to continue with a Master's from a foreign university, perhaps linked to the chance of getting a scholarship. "Networking" factors with partners, relatives and friends and reasons related to prior experiences of living or travel abroad are not so important, at least as far as being nominated as the most important reason. Finally, there are two factors – sense of adventure and orientation towards an international career – which have been shown to be important drivers for UK students who study abroad (Findlay et al., 2012) but which have minor importance for North Macedonian and Albanian students.

Table 4. Country of intended destination (%)

Albania		**North Macedonia**	
Germany	25.5	Germany	34.2
USA	18.0	Switzerland	19.7
UK	15.0	USA	8.2
Italy	8.9	Austria	4.3
Canada	5.4	Sweden	4.3
France	3.6	Slovenia	2.6
Sweden	3.1	Canada	2.3
Switzerland	3.1	Italy	1.6
Australia	1.5	EU	4.9
Norway	1.3	Other	17.8
Spain	1.3		
Other	13.3		

Source: Authors' survey; King & Gëdeshi (2020).

Table 4 lists the main countries which are the preferred destinations for respondents intending to migrate. Germany accounts for over one third of the North Macedonians and is also the most popular target for Albanian students. Switzerland is the second most common choice for North Macedonians (20%), with the USA third on 8% (but second, 18%, for Albanian students' preferences).

Model specification

An econometric model was constructed of the determinants of students' intended migration from North Macedonia. Following the literature review and the data available from the survey, we estimate a multinomial logic regression to predict migration choice. The multinomial dependent variable based on the question "Do you intend to migrate?" yielded three possible answers: "Yes", "No" and "I don't know". The relevant equation is expressed as:

$$^{Y}propensity\ to\ migrate\ ij=\beta_j x_i+\varepsilon_{ij} \quad (1)$$

where $\beta_j x_i$ is the inner-product of the predictors and their coefficients for choice j and all the ε_{ij} are independent and identically distributed by the type 1 extreme value distribution. Given that the dependent variable is categorical but possible responses are threefold, we construct two binary models for easier analysis and interpretation – "Yes" vs other response and "No" vs "Don't know".

As a comparison and robustness check we estimate the probit version of a discrete choice model where the dependent variable is a dummy variable taking the value of 1 if the respondent intends to migrate and 0 otherwise. The equation can be expressed as:

$$^{Y}propensity\ to\ migrate=bX+\varepsilon \quad (2)$$

where $^{Y}propensity\ to\ migrate$ is a latent variable measuring the propensity to migrate for North Macedonian student youth.

Table 5. List of variables and their specification used in the empirical analysis

Variable	Specification	Mean	SD
Intend to migrate	Categorical variable: 1 if Yes, 2 if No, 3 if Don't know	1.64	0.79
Intend to migrate	Dummy variable: 1 if Yes, 0 if No	0.69	0.46
Gender	Dummy variable: 1 if male, 0 if female	0.36	0.48
Age	Range 18–38 years	22.9	3.43
Level of study	Dummy variable: 1 if postgraduate, 0 if undergraduate	0.17	0.38
Parents' university education: father only	Dummy variable: 1 if Yes, 0 if No	0.20	0.40
Parents' university education: mother only	Dummy variable: 1 if Yes, 0 if No	0.05	0.22
Parents' university education: both parents	Dummy variable: 1 if Yes, 0 if No	0.22	0.42
Continue studies	Dummy variable: 1 if Yes, 0 if No	0.78	0.41
Work part-time: <8 hours/week	Dummy variable: 1 if Yes, 0 if respondent does not work part-time	0.08	0.26
Work part-time: 8–20 hours/week	Dummy variable: 1 if Yes, 0 if respondent does not work part-time	0.08	0.27
Work part-time: >20 hours/week	Dummy variable: 1 if Yes, 0 if respondent does not work part-time	0.17	0.38
Previous migration experience	Dummy variable: 1 if respondent or parents have lived abroad for >1 year, 0 otherwise	0.38	0.49

Source: Authors' survey.

Following the discussion in the previous section, six groups of independent variables are used in the analysis. Table 5 gives their definitions and specifications. The first group includes the demographic variables of gender and age. Next is level of study – undergraduate vs postgraduate. The third group covers parents' higher education – mother, father, both, none. Then comes the question about continuing studies after the current course is finished. The fifth cluster of questions relates to part-time work besides studying, with three classes in terms of number of hours per week, the reference group being "I do not work". The final group of variables concerns previous migration experience – whether the respondent or their parents have ever lived abroad for at least one year.

Results

The results of the multinomial logistic regression model and their statistical significance are reported in Table 6. The model calculates the log-odds of a student in North Macedonia intending to leave the country versus not emigrating (the baseline category) after controlling for the influence of the explanatory variables. It does this both for the first version of the binary model (intend to migrate vs no intention) and for the second version (do not know vs no intention). We use a goodness-of-fit test to check the fit of a logistic regression model with two or more outcome categories. The test indicates that the model is a good fit (prob>chi-squared=0.624). We conducted LR and Wald tests for combining outcome categories. The tests show (prob>chi-squared=0.000) that none of the pairs of alternatives can be collapsed (i.e. the coefficients associated with all given pairs of alternatives are significantly different).

The likelihood ratio chi-square of 63.65 ($p<0.0001$) tells us that our model fits significantly better than an empty model (i.e. one with no predictors). Based on McFadden's pseudo R-square we can say that the full model containing our predictors represents a 7.99% improvement in fit relative to the null model.

Table 6. Multinomial logistic regression: log-odds of intention to migrate

(robust standard errors in parentheses)

	Intention to emigrate	
Variables	**Yes vs. No**	**Do not know vs. No**
Male	–0.156	–0.460
	(0.285)	(0.350)
Age	0.266***	0.215***
	(0.063)	(0.071)
Postgraduate	–	–1.267***
	1.635***	(0.516)
	(0.435)	
Parents' university education (reference category: neither of them)		
Father	–0.126	0.081
	(0.333)	(0.388)
Mother	–0.178	0.459
	(0.646)	(0.708)
Both	0.153	–0.308
	(0.334)	(0.431)
Work part-time (reference category: do not work)		
<8 hours/week	–0.100	–0.485
	(0.484)	(0.618)
8–20 hours/week	–0.767	0.120
	(0.489)	(0.520)
>20 hours/week	–0.288	–0.516
	(0.415)	(0.524)
Continue studies	–	–0.627
	1.310***	(0.478)
	(0.401)	
Previous emigration experience	0.856***	0.760***
	(0.287)	(0.337)
Constant	–	–4.217***
	3.897***	(1.619)
	(1.419)	
Observations	403	403

***p<0.01; **p<0.05; *p<0.1

Source: Authors' calculations.

The results allow us to determine which of the independent variables significantly predict whether a student falls into the "emigrating" category (the comparison group) versus "not emigrating" (the baseline category). The "male" predictor is negative but not at a significant level. The significant results are the following. Older students are more likely to intend to emigrate than younger ones. This finding is consistent with Dragović et al. (2017) who found younger students (under 24 years) less likely to intend to emigrate from North Macedonia. Postgraduate students are found to be at lower risk of falling into the "emigrating" category, which appears to contradict the previous finding that older students are more migration-oriented, since postgraduate students are likely to be older than undergraduate students. We have no easy explanation for this apparent contradiction except to suggest that, on the one hand, older undergraduates, closer to graduation, might be more pessimistic about their future

in North Macedonia and so more predisposed to migrate, whereas postgraduate students, especially if they are pursuing a vocationally relevant Master's degree, might be more optimistic of getting a job without emigrating.

Moving down Table 6, there are no significant effects on the dependent variable on the part of any of the two clusters of variables relating to parents' education or to part-time work. On the other hand, the log-odds of being in the "intending to migrate" category for students who plan to continue their studies is 1.31 points lower than for students not planning further studies. The positive and significant sign for prior emigration experience suggests that a history of foreign residence increases the intention to emigrate in the future.

Table 7. Probit results: marginal effects (robust standard errors in parentheses)

Variables	Intention to migrate: Yes	
Male	–0.038	(0.057)
Age	0.057***	(0.012)
Postgraduate	–0.411***	(0.101)
Parents' university education: Yes		
Father	–0.005	(0.064)
Mother	–0.008	(0.128)
Both of them	0.043	(0.061)
Work part-time: Yes		
<8 hours/week	–0.010	(0.087)
8–20 hours/week	–0.176	(0.110)
>20 hours/week	–0.044	(0.090)
Continue studies	–0.213***	(0.053)
Previous emigration experience	0.146***	(0.049)
Observations	323	

***p<0.01; **p<0.05; *p<0.1
Source: Authors' calculations.

The probit model results are presented in Table 7. The estat gof table group(10) command was used for estimating the Hosmer-Lemeshov goodness-of-fit test statistic for the logistic model. The test results (Hosmer-Lemeshov chi-square = 0.9256) suggest that the model is a good fit. The correlation matrix indicated that there is no multicollinearity (highest correlation 0.4825; matrix available from the first author on request). The results indicate that a one-unit change in the age variable leads to an estimated increase in the probability of expressing an intention to migrate of 0.057 or 5.7 percentage points, *ceteris paribus*. Students enrolled in postgraduate studies are 4.1 percentage points less likely to intend to emigrate compared to undergraduate students. Students who declared that they intended to continue their studies after completing the current programme are 21.3 percentage points less likely to plan to emigrate compared to the reference category of not wanting to continue. Finally, if the students and/or their parents had lived abroad for at least one year, this increased the possibility of an emigration intention by 14.6 percentage points.

Conclusion

This paper contributes to debates about youth migration and, in particular, student migration, from North Macedonia, a little-studied country for this kind of migration. The analysis is set within the wider regional frame of the Western Balkans, where many countries have similar profiles both socio-economically (e.g. high unemployment, especially of young people) and with regard to youth migration trends. In this paper, some descriptive statistical comparisons

were made with neighbouring Albania, benefiting from the fact that the same survey instrument had been used there in 2019 (King & Gëdeshi, 2020).

The headline results of our analysis are clear but also concerning for the overall development of North Macedonia. More than half of the student respondents to the questionnaire affirmed that they intended to emigrate upon completion of their studies and another fifth were undecided about migration; only a quarter of the respondents were not intending to migrate. Motives for emigrating were chiefly economic: to look for better employment opportunities with higher incomes, better working conditions and an overall improved standard of living. Working abroad, they anticipated, would allow them to boost their material wealth, accumulate savings and acquire new skills. The results of the logistic regression and probit analyses confirmed that emigration intentions were significantly shaped by four main independent variables: age (older students more likely to intend to migrate), level of study (postgraduates less inclined to migrate), plans to continue studying after the present qualification (such plans lessening the proclivity to migrate) and prior personal and family migration experience (enhancing the chances of further migration).

These findings give rise to some important policy implications, both of a general nature and with regard to the specific statistical outcomes of our analysis. At a general level, the emigration of young, educated people can have a detrimental impact on the economic growth of a country. The brain drain in North Macedonia, as in Albania and the rest of the WB, represents a decrease in the stock of human capital and also a decrease of the workforce in priority sectors such as medicine and IT, vital for social and economic development.

How to stem this talent loss of newly and recently graduated students – a "putative brain drain" (King & Gëdeshi, 2020) – remains a huge challenge, especially for a country which is demographically small and economically and geographically peripheral within Europe. The obvious policy measures to suggest are more job creation, higher salaries, better working conditions and appropriate training programmes to match new entrants to the labour market to those sectors where there is demand and potential for expansion. The same conditions would be effective, in principle, in getting North Macedonian graduate-level workers abroad to return. However, these policy suggestions are far easier to articulate than to implement, not least because of the investment costs involved. Generating new and better-paid jobs is a policy aim being pushed by all WB countries, so there is an element of intra-regional competition for the resources and policy know-how that will make one country, such as North Macedonia, succeed over its neighbours. Governments in labour-exporting countries have often focused on foreign direct investment to boost the economic development of the country but the international economic climate may not always be propitious for this or there may be political strings attached to FDI. As an alternative or complementary strategy, returning migrants can also provide a potential source of capital and know-how (Zulfiu Alili et al., 2019). Moreover, job creation is not the only solution to unemployment and youth emigration: adjunct policies are also important to make the country more attractive in terms of leisure and recreation activities, environmental protection and more community engagement to foster a stronger sense of belonging to replace the alienation that results from the widespread feeling that "there is no future here". Local authorities in this regard can play a very important role by promoting opportunities for tourism and local business, promoting successful young entrepreneurs to convey a positive message to youth that they can be successful in this country as well.

Subsidies for the start-ups which are given by the government should be realized on a meritorious and transparent basis and without political influence.

On a more optimistic note, certain findings from our data analysis offer pointers for hope. We saw clearly from Figure 1 that, across the WB region, the higher educated have much lower unemployment. For North Macedonia, the difference was extremely wide, the average figure for youth unemployment over the decade 2010–2020, 48.4%, being more than three times the rate for those with higher education, 15.5%. This indicates that expanding the higher education system to produce more graduates, especially those geared to economic growth sectors, would be a rational policy. Other results from our analysis point in a similar direction. The finding that postgraduate students were 41 percentage points less likely to feel the need to emigrate, compared to undergraduates, suggests that expanding postgraduate courses would also be a rational policy. A similar message is given by the result that students who are intending to continue their studies to a higher level are 21 percentage points less likely to intend to emigrate. These educational policies, relatively easy and not so expensive to implement, could be a launch-pad for a more geographically stable, young, well-educated population.

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