

Individual- and Contextual Determinants of Migration Events in a Massive Out-Migration Setting: The Case of Lithuania

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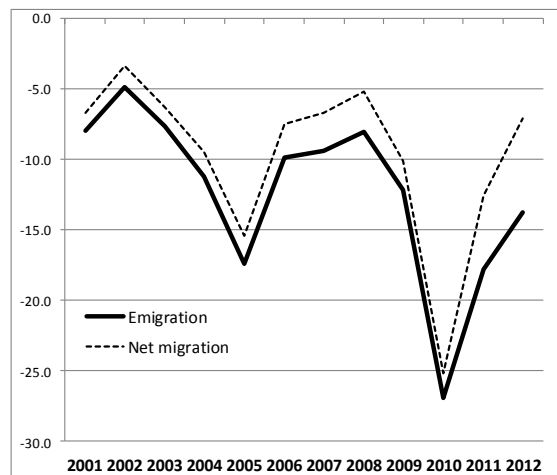
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Out-migration can offer both potentials as well threats to the development of a country and to the livelihoods of its inhabitants (Adams 2003, Thaut 2009). On the one hand, countries might suffer from brain drain effects and losses of young active persons. This might create a substantial demographic burden and affect future prospects for sustainable socioeconomic development, which could further spur out-migration. On the other hand, out-migration can offer individuals the opportunity to move into spatial contexts which are better suited to realize their full potentials and where they can further accumulate human, social and financial capital. Also out-migration countries can benefit from such strategies through remittances, foreign investments by former emigrants or through return migration of migrants who were able to establish themselves successfully abroad (see e.g. Stark et al. 1997). Upon their return they might bring with them additional human capital and important contacts to other countries which can help them to develop own businesses in their home country. However, during the phase of massive out-migration it is likely that the negative effects prevail, while it is difficult to assess potential future benefits. Thus, governments and societies experiencing these events usually consider them as a serious development challenge.

It is often very difficult to analyze big out-migration waves as almost all countries experiencing such events face at the same time difficulties in collecting reliable population statistics. As a country maintaining relatively high standards of population statistics Lithuania stands here as a rare exception. Although the previously published official migration statistics for the 2000s were incomplete due to a relatively large share of undeclared emigrants, Statistics Lithuania took major steps to improve this situation by correcting these figures using annual migration surveys data. In addition, the migration figures for the 2000s were revised backwards according to the 2011 census results and now include previously unregistered emigrations.¹ Finally, reporting of departures notably improved after several administrative measures were taken in 2009. These measures impose additional taxes and/or penalties for those emigrants who do not officially report their departure and keep Lithuania as their official place of residence.

¹ A personal identification number allows Statistics Lithuania to revise the numbers based on individual-level data, and not only at the aggregate level.

Figure 1. Trends in crude emigration and net-migration rates (per 1000), 2001-2012*



Source: Statistics Lithuania, 2013.

The out-migration figures for Lithuania for the 2000s and 2010-2012 look particularly striking. Alone in the period 2004 to 2012 Lithuania lost almost 10% of its population due to out-migration, with two big out-migration waves being registered directly after the accession to the European Union in 2004 and in the aftermath of the onset of the world economic crisis in 2008/2009 (see Fig. 1). According to surveys, economic motives are the prime driver of this process (Sipaviciene, 2010; Sipaviciene & Stankuniene, 2011). Over the last years Lithuania has been the EU member state witnessing the highest negative net-migration rates. Prime destination countries in the 2000s were Great Britain, Ireland, Norway, and Germany (Eurostat, 2013). A rather new development over the last few years is that Lithuania is registering an increasing number of immigration events, which are in most of the cases return migrants. This could be related to considerable economic improvements and achieving macro-economic stability after the deep crisis of 2008-2009. However, this increase in in-migration events can so far not outweigh the out-migration events, so that the net-migration rates are still far below 0.

Our research project has two main aims. One is to improve our understanding how individual-level characteristics and spatial social contexts relate to out-migration decisions during big out-migration waves. Here we are also interested to what degree events cluster in households and regions, which might be related to spatially dependent social interaction in migration networks. The second aim is to derive policy advice on how Lithuania might improve its “geographies of opportunities” so that it gains attractiveness both for its inhabitants as well as for return migrants and foreign in-migration.

Data and Methods

Our research relies on rich data sources which allow us to overcome limitations of the traditional analysis of officially released migration data. The data for our analysis comprises census and population register data provided by Statistics Lithuania. It enables us to combine information from the census of 2011 with mortality and emigration follow-up data. In a future step, we plan to extend the analysis to also include the census of 2001 and vital events in the period 2001-2011. For this period we will be able to work with out-migration data which has been corrected by Statistics Lithuania based on the census of 2011 and the mortality register for the inter-censal period. This will allow us to cover both big out-migration waves that Lithuania experienced in recent years. The data were provided by Statistics Lithuania in an aggregated multidimensional frequency table format that combines emigration events and population exposures and are split by detailed combinations of each category of available socio-demographic and socio-economic variables. Because we deal with count data, we use multivariate multi-level Poisson regression models (a version of the Generalized Linear Latent and Mixed Model for count data) to explore the relationship between individual and contextual-level variables and the occurrence of a migration event (Rabe-Hesketh and Skrondal, 2005).

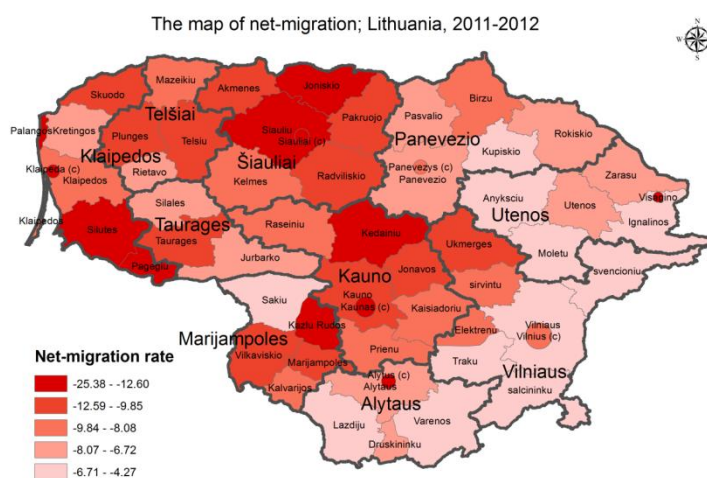
We restrict our analyses to the population aged 20-64. As emigration event we define any registered out-migration event in the period of observation between the last census on the 1st of March 2011 until the 31st of December 2012, where no return migration event was registered until the end of our study period. Thus, we are focusing on long-term emigrations rather than studying short-term or seasonal migrations which are also widely spread in Lithuania. The final dataset includes information about app. 20 thousand emigration events and 3.4 millions of person years of exposure. We calculate the models separately for men and women to look at gender differences. Controls include demographic characteristics such as age and marital status. From the census of 2011 we are able to obtain information on educational attainment and employment status at the time of the census, which give us indications on the socioeconomic status. The ethnicity variable allows us to distinguish Lithuanians from the two biggest minorities (Polish and Russian) and other ethnic groups. We also have information on prior experience of living abroad for at least one year as well as whether a person was born abroad or within a rural or urban area of Lithuania. In addition, we have data on whether the place of residence at the census of 2011 was urban or rural. From the census we intend to derive in the future a number of contextual measures such as the unemployment rate at the level of the 58 Lithuanian municipalities.

Descriptive Findings and Model Results

In presenting our preliminary tentative results we first turn to a map showing international net-migration statistics at the municipality level. The highest negative net-migration rates are

recorded in western Lithuania and in the region around the second biggest city of Kaunas in the central part of the country. One may notice a surprisingly notable regional divide in net-migration as the eastern and southern parts of the country exhibit less pronounced negative net-migration figures (Figure 1). However, it is likely that at least part of this phenomenon may be explained by spatial variation in population composition by age and other socio-demographic variables across municipalities.

Figure 2. Crude international net-migration rates (per 1000 pop.) by municipality. Lithuania, 2011-2012.



Source: Statistics Lithuania, 2013, own calculations.

Table 1 shows the estimates for the contextual random residuals at the municipality level before and after controlling for all our individual-level variables (for males). The estimate of total variance (Model 0) suggests that there are statistically significant contextual effects contributing to male emigration risk in Lithuania. Further controlling for all available individual characteristics (such as age, education, marital status, ethnicity, urban-rural residence, place of birth, economic activity status, and others) explain only 25% of the total emigration variation between the Lithuanian municipalities (Model 1). Thus, the statistically significant contextual effects remain even after controlling for these major individual-level variables. We will explore whether this notable regional variation in emigration risks persists after controlling for contextual (municipality) level characteristics such as overall economic situation in a municipality.

Table 1. Estimates and significance levels of variances of area-level residuals (Model for males only)

Model 0: intercept only	0.092* (0.019)
Model 1: controlled for all individual-level variables	0.069* (0.015)

* $p \leq 0.05$ (exact p-values are given in brackets)

Our model results based on individual-level variables exhibit clear gender differences both with regard to how the level of education and the marital status relate to the decision to out-migrate. Among females there is a positive educational gradient in the likeliness to out-migrate, while among men higher educated are the least likely to out-migrate (Table 2). With regard to the marital status among both sexes married person have the lowest likeliness to out-migrate. However, for females the migration rate ratios of never-married, divorced and widowed persons are much higher compared to males. This suggests that family reunion is not a prime motivation for out-migration events among females. In a pooled model for both sexes (not shown here), we could determine that females have a slightly higher (1.12 times) risk to emigrate than males. After controlling for all socio-demographic and socio-economic variables this female excess even grew to 1.19 times.

An indication for economic motives is that people who stated as employment status “unemployed” in the census were more likely to out-migrate in the following 22 months. Among the ethnicities it is particularly the Polish minority which shows lower tendencies to out-migrate. We still need to explore to what degree this is related to the situation, that this population is largely concentrated in the Southeastern part of the country, which exhibits in general lower out-migration rates. People, who have already lived abroad for one year, were also more likely to out-migrate again. This is in line with increasing evidence that circular migration is gaining ground in Lithuania over the last years.

Discussion and Conclusion

If we understand international migration as an instrumental behaviour to improve the access to the “geographies of opportunities”, the evolving pattern can be interpreted as indication for existing challenges in Lithuania. That especially high educated and non-married females are likely to out-migrate suggests that the existing labour market opportunities are particularly unfavourable for females. This is also supported by data from European Social Survey, which shows that despite a rather high female employment rate a high share of respondents agrees that males should be given preference in the labour market if jobs are scarce.

Our study also found that there is a notable regional variation in net-migration and emigration rates across municipalities even in such a comparatively small country like Lithuania. In particular, we found a striking East/South vs. West divide in geographical net-migration pattern. Our findings show that the inter-regional variance of emigration risks remains statistically significant after controlling for all individual-level variables under study. This points to the importance of sociodemographic or socioeconomic characteristics at the municipality level (Table 2) also playing a role. Therefore, in the next step we will explore possible impacts of contextual variables on individual decisions to emigrate. For this we will benefit from more comprehensive census-linked dataset covering the whole period between the 2001 and 2011 censuses. We expect that our findings will shed more light on underlying individual and contextual level determinants shaping emigration decisions in high out-migration settings such as Lithuania.

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Appendix 1. Poisson regression emigration rate ratios by socio-demographic and socio-economic variables, Lithuanian males and females aged 20-64, 2011-2012

	Males				Females			
	MRR	P-values	CI-	CI+	MRR	P-values	CI-	CI+
Age								
Age 20-24	4.34	0.000	3.93	4.79	3.97	0.000	3.61	4.35
Age 25-29	3.87	0.000	3.53	4.25	3.01	0.000	2.76	3.29
Age 30-34	2.14	0.000	1.94	2.35	1.71	0.000	1.56	1.88
Age 35-39	1.42	0.000	1.28	1.57	1.28	0.000	1.16	1.41
Age 40-44 (ref.)	1.00				1.00			
Age 45-49	0.68	0.000	0.60	0.77	0.73	0.000	0.66	0.82
Age 50-54	0.41	0.000	0.35	0.47	0.56	0.000	0.50	0.63
Age 55-59	0.22	0.000	0.18	0.27	0.23	0.000	0.19	0.28
Age 60-64	0.05	0.000	0.03	0.08	0.04	0.000	0.02	0.06
Marital Status								
Married (ref.)	1.00				1.00			
Never married	1.17	0.000	1.10	1.23	2.06	0.000	1.95	2.18
Divorced	1.39	0.000	1.27	1.51	2.35	0.000	2.20	2.52
Widowed	1.05	0.806	0.69	1.61	1.46	0.000	1.24	1.73
Education								
Higher (ref.)	1.00				1.00			
Secondary	1.13	0.000	1.07	1.19	0.96	0.109	0.92	1.01
Lower than secondary	1.06	0.080	0.99	1.14	0.87	0.000	0.81	0.93
Economic activity								
Employed (ref.)	1.00				1.00			
Unemployed	1.47	0.000	1.40	1.55	1.56	0.000	1.47	1.64
Inactive, disabled	0.18	0.000	0.14	0.25	0.17	0.000	0.12	0.24
Other inactive	0.96	0.239	0.90	1.03	1.06	0.019	1.01	1.12
Ethnicity								
Lithuanian (ref.)	1.00				1.00			
Russian	1.21	0.000	1.12	1.31	1.16	0.000	1.07	1.25
Polish	0.80	0.000	0.72	0.87	0.82	0.000	0.75	0.90
Other	0.89	0.032	0.80	0.99	0.90	0.026	0.82	0.99
Experience of life abroad for 1 year								
No experience (ref.)	1.00				1.00			
Life abroad for 1 yr	1.69	0.000	1.58	1.81	1.81	0.000	1.68	1.95
Place of residence								
Urban (ref.)	1.00				1.00			
Rural	0.75	0.000	0.71	0.79	0.80	0.000	0.76	0.84
Place of birth								
Lithuania-urban (ref.)	1.00				1.00			
Lithuania-rural	0.70	0.000	0.66	0.74	0.79	0.000	0.75	0.83
Other country	1.00	0.989	0.89	1.12	0.96	0.490	0.86	1.08
Residence one year before the census								
The same (ref.)	1.00				1.00			
Other urban	1.02	0.663	0.92	1.13	1.05	0.281	0.96	1.14
Other rural	0.90	0.437	0.68	1.18	0.57	0.000	0.42	0.77
Foreign country	2.90	0.000	2.64	3.20	2.99	0.000	2.71	3.30

Note: Model controls for all variables.