Factors affecting emigration and domestic migration of immigrants by reason for immigration in Norway

By
Lasse Sigbjørn Stambøl

Research Department, Statistics Norway, Box 8131 Dep, 0033 Oslo, Norway

Abstract: The aim of this paper is to analyse factors affecting emigration of immigrants from Norway, and provide descriptions of how emigration varies between different groups of immigrants by reason for immigration in various regions. With a demographic development that provides perspectives on future labor shortage, the ability to retain migrants, and highly qualified migrants in particular, could be of key importance.

On the basis of aggregated time-series data and cross-sectional micro-data we have analyzed how the emigration of immigrants is influenced by various factors such as gender, age, level of education, duration of residence, and labor force attachment, as well as their family size and family composition. The immigrants' likelihood of moving domestically or remain in a region is also examined. We have estimated relative probabilities of how immigrant groups emigrate and move inland at various regional centralities accounted for individual characteristics.

Important issues to answer are: What drives the exodus of immigrants from Norway? Which groups of immigrants emigrate? Is it the resourceful immigrants or those with few resources? What is the impact of having family in Norway? And what is the significance of reason for immigration for emigration? How can differences in regional centrality explain different emigration from different parts of Norway, and the likelihood of alternatively remain in a region or move domestically within the country?

Important findings include that male immigrants are more likely to emigrate than female, that younger immigrants of working age have higher probability to emigrate than middle-aged and older immigrants, and that the immigrants' emigration probability falls with their duration of residence. These results apply to all regional centralities. Immigrants with education as reason for immigration show the highest emigration probability, while refugees show low likelihood of emigrating. They rather move domestically than to emigrate. It is consistently immigrants with unspecified education that show the highest emigration probability followed by those with long tertiary education. Furthermore, it is immigrants who are outside the labor force and the educational system who are most likely to emigrate, while employed immigrants are least likely to emigrate. It is unaccompanied immigrants that show the highest mobility, both out of the country as well as between regions, and immigrants living in families with only immigrants are more likely to emigrate than immigrants with non-immigrant family members. Immigrants in the most central localized municipalities show the highest tendency to emigrate.

1. Introduction

With a demographic development that provides perspectives on future labor shortages in the entire European Economic Area, the ability to retain migrant labor in general, and highly qualified migrant labor in particular, could prove to be of key importance for a country and a region. In 2013 about 24,000 former immigrants emigrated from Norway. Emigration has increased over time as more immigrants had entered the country, but there are large fluctuations from year to year. It is therefore natural to ask what drives emigration from Norway, and whom do we 'loose'?

In this paper we look at how emigration of immigrants from Norway varies because of factors, such as gender, age, the degree of 'centrality levels', duration of residence in Norway, immigrants' education level, immigrants' labor force participation, their reason for immigration to Norway as well as their family size and family composition. Important issues we try to answer are: What drives the exodus of immigrants from Norway? Which groups of immigrants emigrate? Are they immigrants that are well integrated into society, as measured by labor force participation and education, or are they the least integrated ones? What is the impact of having family in Norway? In addition we look at to what extent differences in centrality can explain variation in emigration from different parts of Norway, and the likelihood of alternatively remaining in a region or move to another region in Norway.

As opposed to other studies that analyze emigration among immigrants we not only focus on emigration but also consider the alternative of moving within the country, to another centrality level (see definition in Section 3). In Norway refugees are placed across the country in order to obtain a balanced regional settlement pattern. In principle, however, they are free to move to another location, and after some time in the country, many refugees and their family members seem to do that.

As a basis for the analysis we use individual-based registry data for population, migration, education and employment for all immigrants. The analyses are first briefly described by giving an overview of migration and emigration during approximately a ten years period using time-series data. The estimations are concentrated on immigrants adjustments from 2012 to 2013. There is one record for each of the observational units. These data are cross-sectional data with all the observed characteristics of individuals taken from the year 2012, while the outcome of the settlement, internal migration and emigration are measured for the year 2013.

In the interpretation of our findings it may be worth noting that not all emigrations from Norway are reported to the Norwegian population register. In some cases, an emigration is registered in the system several years after the person actually left the country. This means that an immigrant who moved from Norway in a recession, can be registered as emigrated a few years later when the economy is different. Thus, fluctuations in the registered emigration rates do not necessarily merely reflect the fluctuations in the real emigration from Norway, but also fluctuations in the population register's work on out-registration of emigrants who did not report their emigration (see Pettersen, 2013, Vassenden, 2015).

The paper is organized as follows: In Section 2 we take a brief look at some of the earlier literature. In Section 3 we define different concepts and variables and elaborate on the institutional setting. Section 4 presents a short descriptive overview of domestic out-migration and emigration from the four centrality levels during a ten years period. The empirical

estimation results based on cross-sectional micro-data are provided in Sections 5 and 6, and some conclusions are drawn in Section 7.

2. Some factors behind emigration among immigrants

For some factors that may affect immigrants' emigration from developed countries, most studies find a unique context. For other factors, both theoretical models and empirical analyzes can point in different directions. Some of the factors that prove to be relatively clear for emigration are among others: Where an immigrant's closest family lives appears to be a key driver for where the immigrant will eventually live. Having a family in the country of origin increases the likelihood of emigration while the probability of staying increases if the family lives in the country of destination - and especially if the children are many and whose partner is not from the country of origin (see e.g. Constant and Massey, 2003, Dustmann, 2003, Jensen and Pedersen 2007, Gibson and McKenzie 2011, Kangasniemi and Kauhanen 2013). In a study of foreign-born adults emigrated from the United States, it is found that family and social networking was a major driver more than education and economic factors (Van Hook and Zhang, 2011).

Male immigrants generally appear to be more likely to emigrate than female immigrants (see e.g. Zaiceva and Zimmermann, 2012). This seems particularly evident in the United States. Van Hook et al. (2006) found almost twice as high migration rates for men as for women among foreign-born in the United States.

The probability of emigrating differs also according to the reason why immigrants had to immigrate, and refugees are often those who remain staying in the country of destination (Dumont and Spielvogel, 2008). In Sweden, labor and education immigrants have the highest probability of emigration, while refugees have the lowest (Statistics Sweden, 2012). Immigrants with strong ties to the country they originally came from appear to have a higher likelihood of emigration. Association with the country of origin, such as investment and money transfers, language skills and general identification with the country, are linked to an increased likelihood of emigration (Constant and Massey, 2003).

Political and economic development in the country of origin also seems to mean something for the emigration. The economic development in Chile appears to have increased emigration among Chilean immigrants in Sweden (Klinthäll, 2007).

Furthermore, studies often find strong relationships between emigration and the following driving forces: Income differences between the country of origin of the migrant and the country of destination (see e.g. Balderas and Greenwood, 2010). Unemployment, although primarily in the country of destination (Cappelen, Skjerpen and Tønnessen, 2015). Population growth and age structure in both the country of origin and destination (Kim and Cohen, 2010). Networks, measured as the number of immigrants from the same country of origin already living in the immigrant country (see e.g. Balderas and Greenwood, 2010, Ruyssen and Rayp, 2014). Distance between the country of origin and destination (see e.g. Kim and Cohen, 2010, Ruyssen and Rayp, 2014). The levels of welfare state in both the country of origin and destination (Borjas, 1999).

If we divide migration into immigration and emigration, it turns out that these two flows are not necessarily governed by the same driving forces. What explains why someone moves into a country can't explain just as to why some move from the same country because "entry and exit typically are responses to completely different factors" (Massey, 2006). There is also reason to believe that the causes of emigration among immigrants are governed by other mechanisms than among non-immigrants that emigrate.

There is much literature about emigration from Norway, but most of them relate to emigration to overseas areas, and especially to America in the last century. With regard to recent emigration from Norway, current statistics are published, and in recent decades research and analysis has also been made of what characterizes this emigration (see e.g. Tysse and Keilman, 1998, Longva, 2001, Ekhaugen, 2005, Bratsberg, et al., 2005, Lund, 2009, Friberg, 2012, Pettersen, 2013, Cappelen and Skjerpen, 2014, Skjerpen, Stambøl and Tønnessen, 2015a,b and Kornstad, Skjerpen and Stambøl, 2016, 2017).

Our brief literature review shows that a number of factors might affect immigrants' emigration from a wealthy country. In addition to the general determinants of international migration – such as income differences between countries, unemployment, population structure, immigrant network, political conditions and distance between country of origin and destination – there appears to be several other factors that affect this type of emigration: The tendency to emigrate from a rich country is higher for immigrants who arrived for employment or education, for people who do not have close family in the country of residence and for people who have strong ties to their country of origin, and for immigrants who find that the conditions in their country of origin improves. For the correlation between emigration and other factors such as education, age and whether the immigrant "succeeds" in the destination country, the literature is more ambiguous. With this background in mind, the analyses in this paper are concentrated on emigration and internal relocation given different characteristics of the immigrants, their family size and family composition.

3. Institutional setting and definition of different concepts
An immigrant is defined by Statistics Norway as a person who has immigrated to Norway and has been registered as living in the country, and as someone who is born abroad with two foreign-born parents and four foreign-born grandparents. To be registered as resident in Norway, one must generally have the intention to stay in Norway for at least six months and have acquired legal residenceship of the country. This means that seasonal workers and other people staying short term in Norway are not included. The same is the case for asylum seekers waiting to have their cases processed. It is also true that not all who have immigrated to Norway are regarded as immigrants. Persons who are born in Norway, but who have lived for some time abroad and then moved back, are not counted as immigrants in Norway. The same applies to persons born abroad to Norwegian-born parents and/or have Norwegian-born grandparents. In this analysis, we look at emigration in general and mobility of first generation immigrants, and thus do not include their Norwegian-born children.

In the empirical analysis it is being assumed that immigrants can move to another country or another centrality within Norway. We group municipalities according to centrality levels, and distinguish between 4 different levels, i.e. the distance from the main cities/regional centers. The least central municipalities are in centrality level 1, the less central municipalities are in centrality 2, somewhat central municipalities are in centrality level 3, and the most central municipalities are allocated to centrality level 4. The reason we do not only focus on emigration to another country is that the likelihood of moving inside Norway (internal migration) or remain settled in a region constitute alternatives to emigration. High tendency to move domestically can be expected to curb the emigration that could otherwise have taken place. Refugees are, e.g. placed regionally by the authorities after they have received a residence permit. The allocation of refugees to different regions takes account of the need for maintaining a balanced regional settlement pattern. Moving between centrality levels in Norway may thus emerge as an alternative to emigration. Generally the settlement pattern of immigrants is more centralized than what is the case for the rest of the population.

In the specification of the empirical model we apply the following information: We have information on where the immigrants reside at the end of 2012. At the end of the subsequent year, 2013, we consider three possibilities: (1) the individual may still live at the same centrality level, (2) the individual may have relocated to another centrality level and (3) the individual has emigrated. These are the three states of choice in our analyses. An emigration is a registered migration from Norway to another country of an immigrant who has been registered as resident in Norway. The person can either have notified emigration or have been administratively emigrated. There is no distinction between temporary versus permanent emigration. Not everyone who moves abroad is to be registered as having emigrated - it may include diplomats, people who still have a place of residence in Norway and have working ties to and/or students from Norway who are studying at foreign universities. These people are not considered as having emigrated in our analysis.

Furthermore, the immigrants are grouped by their registered reason for immigration, where the four main reasons are: immigration due to search of labor (labor-immigrants), immigration as refugees, immigration due to family reunion/formation (family-immigrants) or immigration due to education (education-immigrants). When statistics do not operate with any reason for immigration for immigrants from other Nordic countries, we handle immigrants born in other Nordic countries as a separate group of immigrants (Nordic immigrants). There is also a group of immigrants with unspecified reason for immigration. The concept of reason for immigration was introduced to the statistics in 1990, so all immigrants that immigrated to Norway before 1990 is still to be found in this group.

To account for the effect of age we include four age-groups within the age interval for labor force participation as follows: 16-24 years, 25-35 years, 36-61 years and finally 62-74 years.

To consider the impact of education we have used the codes from the Norwegian Standard Classification of Education, and aggregated with four levels of education for immigrants plus a group of unspecified education. These are as follows,: (1) immigrants with only primary education, (2) immigrants with secondary school education, (3) immigrants with 1-4 years of higher education, (4) immigrants with 5 years and longer higher education, and finally (5) – a reference category – immigrants with no or unspecified education.

Immigrants are also grouped according to their labor market status. We distinguish between (1) employed immigrants, (2) immigrants who combine employment with education, (3) immigrants who are involved in full-time education, (4) unemployed individuals and (5) – a reference category – individuals who are not in the workforce and have not been absorbed in the educational system.

Employed immigrants are defined as immigrants in employment in November each year with an occupational status codes as wage earner or self-employed in the regional employment statistics. An unemployed individual is anyone who is registered in the unemployment register at the Norwegian Labor and Welfare Administration (NAV) with at least one month unemployment during the calendar year. Unemployed immigrants who have also been employed during the calendar year are classified as unemployed if the circumstance has lasted seven months or longer during the same calendar year. Similarly, unemployed who have also undergone training during the calendar year are classified as unemployed if this circumstance has lasted for seven months or longer during the same calendar year.

The data provides information about the number of members in the family of the immigrants, and the composition of their families. For instance, all in a family may be immigrants, or a

family may consist partly of immigrants and partly of individuals born in Norway. Norwegian born children to immigrant parents are classified then as individuals born in Norway.

We also operate with variable for immigrants depending on what year they arrived in Norway as immigrants and for their duration of residence. The arrival year is recognized by the variable "first year of immigration," which renders the year immigrants arrived in the destination country as an immigrant first time. All immigrants who arrived in the destination country that year constitute *the immigrant cohort* for this year. Immigrants retain their value for the "first year of immigration" as long as they are registered as immigrants in the country. The same applies to immigrants who have emigrated and then again later make a return immigration. These will thus retain the value of their "first year of immigration" regardless of whether they have been migrated from the country for a period.

4. Emigration and domestic migration among immigrants by reason for immigration – some time-series results

Initially, we provide an overview of the evolution of immigrants' frequencies of emigration simultaneously with their probability of making a domestic relocation between 4 centrality levels in the period 2004-2013 by their reason for immigration.

Immigrants who have immigrated earlier due to education show the highest rate of emigration during this period (see Figure 1). However, they had a clear decline in their emigration rate from about 25 percent down to 12-15 percent. Labor-immigrants also show relatively high rates of emigration, but also with a declining trend throughout the period. Nordic immigrants differ from the two previous immigrant groups with more even emigration rates throughout the period and with a somewhat increasing trend towards the end of the investigation period.

The other immigrant groups show moderate and low emigration rates. Refugees show mostly the lowest emigration, with annually emigration rates between 1-2 percent. Immigrants with unspecified reason for immigration also show low emigration rates, mostly due to their higher average age caused by the fact that the majority of them immigrated before the concept of reason for immigration was first introduced into the statistics in 1990.

Figure 1. Emigration and domestic migration between 4 levels of centrality in Norway among immigrants by reason for immigration 2004-2013. Percent
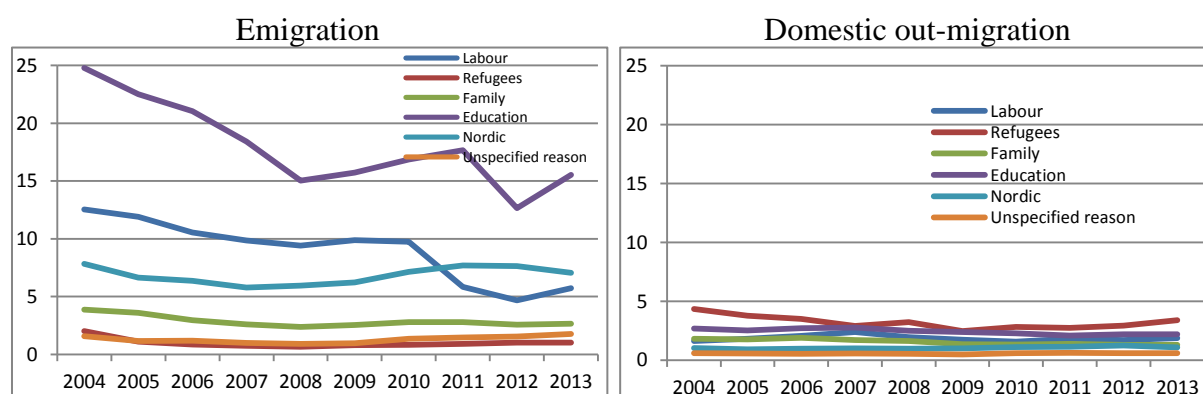
Immigrants with family as reason for immigration show moderate emigration rates, albeit somewhat higher than the refugees. Family-immigrants represent a large but heterogeneous group, where family reunion with refugees dominated before 2007 and with labor immigrants since then. Many family-immigrants also come to Norway due to family formation with non-immigrant persons.

Similarly, the Figure shows the percentage of each immigrant group that has chosen to move domestically in Norway from one centrality level to another centrality level in each of the years. The first thing to notice is that domestic migration rates between centrality levels are generally much lower than the corresponding emigration rates. However, while refugees are the immigration group with lowest rate of emigration, they consistently show the highest rate of domestic migration. Education-immigrants are also relatively mobile internally in Norway, and are among the immigrant groups closest to refugees, while immigrants with unspecified reason for immigration and Nordic immigrants are those with the lowest migration rate between centrality levels within Norway.

5. Emigration and domestic migration among immigrants by level of centrality accounted for individual characteristics

In this section we estimate probabilities that immigrants move inland from the central level they were resident, as well as probabilities of emigrating from the same centrality level. We do also estimate probabilities of still be living in a municipality at the centrality level they are registered settled in the base year, given as probabilities neither to move out nor to emigrate. An important reason for estimating these probabilities accounted for a number of individual identifiers is that beyond the domestic relocation and emigration rates we showed in the previous section are different combinations of immigrant groups by gender, age, educational level and residence time, as well as different attachments to the labor market.

We have estimated these probabilities using cross-sectional data, given their residency in 2012 and their outcomes to be either still resident at the same level of centrality, or relocate domestically or emigrate in 2013 from the centrality level the immigrants resided in 2012.

Estimates are made at the individual level as linear regressions, and so that each immigrant's likelihood of not to move, relocate domestically to another centrality levels or emigrating is estimated partially. Estimates are given as a set of dummy variables for each immigrant within each group by gender, age groups, level of education, duration of residence and labor market status for each individual in each immigrant group by their reason for immigration as well as for Nordic immigrants. We have chosen the following reference groups; female immigrants, those aged 62-74 years, those with unspecified education, those with a long time of residence of 16 years or more, those outside the labor force and finally immigrants with unspecified reason for immigration. Each immigrant gets either the value 1 or 0 within each variable group other than the reference groups. If the values are 0 within each variable group other than the reference group, the individual is found to be in the reference group. The results of the estimates thus become a measure of the probability of immigrants in each of the variable groups with regard to no migration, moving out domestically and emigrating in relation to each of the reference groups.

Table 1 shows estimation results for the least central municipalities at centrality level 1, where male immigrants have a slightly higher probability of emigrating than female immigrants, that younger immigrants in working age have a higher probability of emigration than immigrants in middle and older age groups and that immigrants with short duration of residence show higher probability to emigrate than those with longer residence time.

Male immigrants also show a slightly higher probability of moving out domestically from the least central municipalities than female immigrants. Immigrants in the age group 15-24 years have a lower likelihood of relocating domestically than immigrants in the age group 25-35 years, while the probability of out-migration then decreases with age. The duration of residence is also important for the likelihood of relocating inland, and immigrants in the reference group with the longest duration of residence show the least likelihood of relocating

domestically. Thereafter the probability of out-migration increases with falling duration of residence.

Table 1 Estimated differences in probability for not to move, for domestic out-migration and emigration among immigrants in 2013 who in 2012 were settled in the least central municipalities at centrality level 1

Dummy variables:	No migration from centrality level 1		Domestic out-migration from centrality level 1		Emigration from centrality level 1	
	Estimate	t-Value	Estimate	t-Value	Estimate	t-Value
Gender:						
Men	-0,015***	-3,99	0,007**	2,27	0,008***	3,67
Age-groups:						
15-24 years	-0,079***	-7,83	0,050***	5,96	0,041***	6,68
25-35 years	-0,057***	-6,16	0,039***	5,14	0,029***	5,17
36-61 years	-0,033***	-3,80	0,016**	2,29	0,027***	5,13
Educational level:						
Primary	0,043***	7,87	-0,018***	-4,04	-0,022***	-6,73
Secondary	0,040***	7,75	-0,015***	-3,50	-0,024***	-7,78
Higher (1-4 years)	0,029***	5,12	-0,008*	-1,73	-0,022***	-6,41
Higher (5 years or more)	0,000	-0,01	0,014**	2,43	-0,012***	-2,89
Duration of residence:						
0-2 years	-0,087***	-12,19	0,040***	6,88	0,050***	11,69
3-5 years	-0,067***	-9,45	0,017***	2,96	0,052***	12,08
6-10 years	-0,048***	-6,39	0,018***	3,00	0,030***	6,74
11-15 years	-0,028***	-3,45	0,003	0,40	0,026***	5,35
Labour market statuses:						
Employed	0,078***	16,61	-0,017***	-4,42	-0,058***	-20,29
Employed/in education	0,031***	3,65	0,021***	2,92	-0,049***	-9,50
In education	-0,001	-0,15	0,037***	4,77	-0,034***	-6,10
Unemployed	0,025***	2,86	0,014**	1,98	-0,036***	-6,85
Reason for immigration:						
Labour	0,050***	5,84	-0,025***	-3,62	-0,025***	-4,89
Refugee	-0,025***	-2,83	0,094***	12,62	-0,071***	-13,05
Family reunion/formation	0,062***	7,27	-0,021***	-3,02	-0,040***	-7,74
Education	-0,054***	-3,99	0,001	0,09	0,052***	6,34
Nordic immigrants	-0,018**	-2,23	-0,015**	-2,19	0,036***	7,19

Levels of significance: 99 % ***, 95 % **, 90 % *.   Number of observations = 30 124.
Note: As reference groups we use immigrants who are females, in age of 62-74 years, with non-specified education level, 16 years and longer time of residence, are outside the remaining labor force and with non-specified reason for immigration.

In terms of educational level, it is clearly the highest probability of emigration among immigrants with unspecified education followed by immigrants with long higher education, while immigrants with education from secondary school show the lowest probability of emigration. Contrary to emigration, immigrants with long higher education are the most likely to relocate domestically from this centrality level, but immigrants with unspecified education show the second highest probability of out-migration. The lowest probability of relocating inland is found among immigrants with primary education.

Taking into account the labor market connection, it is the immigrants outside the workforce who clearly show the highest probability of emigrating from the least central municipalities. Thereafter, there are small differences in the likelihood of emigration among immigrants who were registered as unemployed and those who were registered in education, while the probability of emigration is relatively lower for those who are both undergoing education and at the same time registered in a job, while immigrants who are registered as employed in 2012

is the group of immigrants who clearly show the least probability of emigrating from the least central municipalities.

Immigrants under education show the highest probability of moving inland from the least central municipalities. Then follow immigrants who were registered as both employed and under education, while immigrants who were registered as unemployed show a somewhat higher probability of out-migration than immigrants who were outside the labor force. Immigrants who were registered as employed also show the lowest probability of moving out domestically from the least central municipalities.

When looking at immigrants by their reason for immigration, there are Nordic immigrants closely followed by immigrants with education as reason for immigration who clearly show the highest probability of emigrating. Immigrants with family and work as reason for immigration show both lower probabilities of emigrating from this centrality level than immigrants from the reference group with unspecified reason for immigration. Clearly the lowest probability of emigrating from this level of centrality is found among immigrants with escape as the reason for immigration.

Immigrants with work and family as reason for immigration closely followed by Nordic immigrants are those showing the least probability of moving domestically from the least central municipalities. Immigrants with education as reason for immigration show slightly higher out-migration probability than immigrants from the reference group with unspecified reason for immigration, while refugees clearly show the highest probability of moving out domestically from the least central municipalities.

Regarding the likelihood of still being resident in the least central municipalities at centrality level 1 should reflect the likelihood of either emigrating and/or relocating domestically from this level of centrality. As we notice, immigrant women have a slightly higher likelihood of remaining settled at this level of centrality than immigrant men, as well as the probability of remaining settled increases with age.

Similarly, immigrants with long higher education and with unspecified education show the least probability of still being resident in the least central municipalities, while immigrants with their highest level of education at primary and secondary school are those most likely to remain resident at this level of centrality.

In terms of duration of residence the likelihood of continued settlement is also clearly expectative, with a clearly increasing probability of being still resident with increasing residence times.

Furthermore, immigrants with education and escape as reason for immigration and Nordic immigrants show the least probability of still living in the least central municipalities, while immigrants with work and family as reason for immigration show the highest likelihood of staying. The fact that family immigrants here show close coincidence with labor immigrants and not with refugees are affected by the fact that family reunion with labor immigrants has been stronger than family reunion with refugees since 2007.

Even in less central municipalities at centrality level 2, the highest emigration is among immigrants with unspecified education levels, while there are small differences in emigration probability among immigrants in the other education groups, although with a slightly higher probability of emigration among immigrants with a long higher education and the lowest among those with short higher education. Immigrants under education are most likely to

emigrate, while employed immigrants also here show the lowest probability of emigration. Furthermore, education immigrants show the highest likelihood of emigration, while refugees clearly show the least probability to emigrate.

There is also a higher probability of domestic out-migration among male immigrants than for female immigrants from this centrality level, and the probability of out-migration is decreasing with increasing age. Immigrants with long higher education show the highest likelihood of domestic relocation, while immigrants with primary education show the least probability of relocation. Out-migration probability is highest among immigrants with short duration of residence, before falling with increasing residence time. Furthermore, the probability of migration is highest for those undergoing education, while immigrants who were employed clearly show the lowest probability of moving out. In the less central municipalities there are also refugees showing the highest probability of out-migration, while Nordic immigrants show the lowest probability of domestic relocation.

Immigrants with an unspecified level of education also clearly show the highest likelihood of emigration from the somewhat central municipalities. Here too, immigrants with long higher education are closest, while those with primary and secondary education show the lowest probability of emigration. Measured by labor market status, immigrants outside the labor force show the highest likelihood of emigration, while employed immigrants show the lowest probability of emigration. Furthermore, education immigrants show the highest likelihood of emigration, while refugees have the least probability of emigration.

Immigrant men also show higher domestic out-migration probability than female immigrants, and the likelihood of relocation decreases with the age. Immigrants with long higher education show the highest probability of out-migration followed by immigrants with unspecified education, while immigrants with primary education show the lowest probability of out-migration. There is also a decreasing probability of moving out with increasing residence times. Again, immigrants who were in education show high probability of out-migration, while employed immigrants show the lowest probability of out-migration from this centrality level. While refugees show the highest probability of out-migration, there are labor immigrants who show the lowest probability to relocate from the somewhat central municipalities.

Finally, in Table 2 we show similar estimation results for resident immigrants in the most central municipalities at centrality level 4.

As in other centrality levels, immigrant men also show higher likelihood of emigration than immigrant women. Emigration is also decreasing with increasing age, with the highest probability of emigrating from the most central municipalities among the immigrants aged 15-24 years, and by far the lowest among immigrants in the age group 62-74 years. Immigrant men also show a slightly higher probability of moving domestically than female immigrants at this centrality level, and the out-migration probability is falling by increasing age.

Immigrants' duration of residence is also important, and the probability of emigrating is clearly decreasing with increasing time of residence, with very high probability of emigrating among those with the shortest residence time of 0-2 years, and lowest probability of emigrating among immigrants with 16 years or longer residence time. Immigrants also show a decline in the probability of domestic out-migration with increasing duration of residence.

Table 2 Estimated differences in probability for not to move, for domestic out-migration and emigration among immigrants in 2013 who in 2012 were settled in the most central municipalities at centrality level 4

Dummy variables:	No migration from centrality level 4		Domestic out-migration from centrality level 4		Emigration from centrality level 4	
	Estimate	t-Value	Estimate	t-Value	Estimate	t-Value
Gender:						
Men	-0,009***	-13,17	0,001***	2,84	0,008***	11,73
Age-groups:						
15-24 years	-0,041***	-22,15	0,005***	7,15	0,046***	26,88
25-35 years	-0,018***	-10,97	0,002***	3,83	0,026***	16,98
36-61 years	-0,014***	-9,42	0,001	1,06	0,022***	15,97
Educational level:						
Primary	0,041***	38,92	-0,001***	-3,42	-0,040***	-40,88
Secondary	0,038***	37,61	-0,001**	-2,07	-0,038***	-39,71
Higher (1-4 years)	0,034***	31,59	-0,001	-1,58	-0,034***	-33,37
Higher (5 years or more)	0,031***	25,06	0,000	0,20	-0,031***	-26,7
Duration of residence:						
0-2 years	-0,062***	-49,74	0,004***	8,84	0,060***	51,52
3-5 years	-0,031***	-24,93	0,002***	5,44	0,029***	25,49
6-10 years	-0,015***	-12,19	0,002***	4,57	0,013***	11,69
11-15 years	-0,010***	-8,11	0,001**	2,13	0,009***	7,94
Labour market statuses:						
Employed	0,057***	65,83	-0,001***	-3,68	-0,054***	-67,22
Employed/in education	0,060***	41,72	0,002***	3,71	-0,060***	-44,89
In education	0,031***	20,09	0,002***	3,44	-0,031***	-21,96
Unemployed	0,038***	25,69	0,003***	4,90	-0,039***	-28,19
Reason for immigration:						
Labour	0,002	1,29	0,001**	2,33	-0,003**	-2,29
Refugee	0,026***	19,86	0,001***	3,12	-0,027***	-22,51
Family reunion/formation	0,022***	17,4	0,000	-0,96	-0,021***	-17,98
Education	-0,089***	-48,18	0,002***	3,52	0,087***	50,58
Nordic immigrants	-0,043***	-31,93	0,001*	1,67	0,043***	33,89

Levels of significance: 99 % ***, 95 % **, 90 % *. Number of observations = 420 029. Note: See Table 1

The probability of emigrating by the immigrants' educational level also follows the pattern in the other centrality levels, as immigrants with unspecified education show the highest likelihood of emigration followed by immigrants with long higher education. Also in the most central municipalities, immigrants with primary and lower secondary schools show the least probability of emigration. A bit surprising is that immigrants with a long higher education show the highest likelihood of moving out from the most central municipalities. There are, however, small differences in probability of out-migration between the different education groups, but where immigrants with primary education show the lowest probability of moving out from the most central regions.

Regarding the immigrants' status in the labor market, it is clear that immigrants outside the labor force in general show the highest probability of emigration from the most central municipalities. At the other end of the scale, we find the lowest probability of emigration among immigrants registered as employed in 2012. Considering domestic migration, there are immigrants registered as unemployed that show the highest likelihood of moving out of the central regions, while employed immigrants also here show low probability to out-migrate.

Immigrants with education as reason for immigration also clearly show the highest likelihood of emigrating from the most central regions, but also Nordic immigrants show high probability of emigration. Like in the other centrality levels, it is refugees that show the lowest probability of emigrating also from the most central regions, followed by immigrants

with family as reason for immigration. Immigrants with education as reason for immigration also show the highest likelihood of relocating domestically from the most central municipalities, while immigrants with family as reason for immigration are the least likely to relocate inland. However, it should be noted that there are small differences in out-migration probabilities from the central municipalities across immigrants by reason for immigration.

As expected, the probability to remain living in the central municipalities is lower among male immigrants than among female immigrants, which is mostly related to the higher probability of emigration among immigrant men.

The probability of staying is also at this centrality level increasing with the age, with the lowest likelihood of staying among immigrants aged 15-24 years and most likely to stay among immigrants aged 62-74 years.

With regard to the level of education, immigrants with unspecified education show a significantly lower probability of staying in the most central municipalities than the other education groups. But here too, immigrants with long higher education show the second lowest probability of staying, while immigrants with primary and secondary education show the highest likelihood to remain staying in the most central municipalities.

As expected, the likelihood of staying is systematically increasing with the duration of residence. Regarding labor market status, immigrants who are registered as employed clearly show the highest probability of staying in the most central municipalities, followed by employed immigrants who are also registered under education. Immigrants who are outside the labor force clearly show the lowest probability of staying in municipalities with high centrality.

Finally, immigrants with escape and family as reason for immigration show the highest likelihood of remain staying in the most central municipalities, while immigrants with education as reason for immigration and Nordic immigrants clearly show the lowest probability of staying, and then primarily because of high probability to emigrate.

6. Emigration and domestic migration among immigrants by centrality and family situation accounted for individual characteristics
In this section, we estimate differences in probabilities for not moving, moving domestically and emigrating from each of the centrality levels by the size of the immigrant families. The estimates are made in a similar manner as the in previous section. We use families with 5 persons or more as a reference group for family size, while simultaneously accounting for the composition of the families by gender, age, educational level, duration of residence, labor market status and reason for immigration at the individual level by the same reference groups as in the previous section.

In Table 3a we estimate the probability of immigrant families to stay, migrate inland and emigrate from the least central municipalities at centrality level 1. Immigrants in "one-person families" clearly show the highest probability of emigration. There is almost no difference in probability of emigration between immigrants in families with 2 and 4 members, while the reference group of families with 5 persons or more has a slightly higher probability of emigration than families with 3 members. However, only single-person families show significantly higher likelihood of emigration than families with 5 persons or more.

The likelihood of relocating inland from municipalities at centrality level 1 is also clearly highest in single-person families followed by families with 2 persons, while persons in

families with 5 members or more are slightly more likely to move than families with 3 and 4 persons.

The likelihood of not moving, and thus still remain in the least central municipalities, is as expected, clearly lowest in "one-person families" followed by families with 2 persons. Highest probability of staying in the least central municipalities shows families with 4 persons.

Table 3a Estimated differences in probability for not to move, for domestic out-migration and emigration among immigrants in 2013 who in 2012 were settled in the least central municipalities at centrality level 1. Immigrants in the age 15-74 years by family size in 2012

Number of family members in Norway	No migration from centrality level 1		Domestic out-migration from centrality level 1		Emigration from centrality level 1	
	Estimate	t-Value	Estimate	t-Value	Estimate	t-Value
1 person	-0,064***	-9,57	0,037***	6,76	0,029***	7,25
2 persons	-0,009	-1,23	0,008	1,31	0,003	0,57
3 persons	0,007	0,95	-0,002	-0,32	-0,003	-0,56
4 persons	0,012*	1,67	-0,014**	-2,29	0,003	0,6

Levels of significance: 99 % ***, 95 % **, 90 % *.   Number of observations = 30 124.
Note: The estimates are calculated relatively to immigrants in families in Norway with 5 persons or more as a reference group, and accounts for the composition of population by gender, age, education level, duration of residence, labor market status and reason for immigration.

Similar results for immigrant families in the less central municipalities at centrality level 2 also show the highest probability of emigration among immigrants living in "one-person families" (see Table 3b). Here, immigrants in families with 4 members show a slightly higher probability of emigration than families with 2 members, while immigrants in families with 3 members show the lowest probability of emigration, although none of the estimates in the last three groups are significantly different from families with 5 persons or more.

Table 3b Estimated differences in probability for not to move, for domestic out-migration and emigration among immigrants in 2013 who in 2012 were settled in less central municipalities at centrality level 2. Immigrants in the age 15-74 years by family size in 2012

Number of family members in Norway	No migration from centrality level 2		Domestic out-migration from centrality level 2		Emigration from centrality level 2	
	Estimate	t-Value	Estimate	t-Value	Estimate	t-Value
1 person	-0,128***	-15,31	0,096***	13,23	0,032***	6,91
2 persons	-0,031***	-3,39	0,029***	3,56	0,002	0,44
3 persons	-0,015*	-1,61	0,017**	2,13	-0,001	-0,22
4 persons	-0,012	-1,23	0,008	0,98	0,004	0,77

Levels of significance: 99 % ***, 95 % **, 90 % *.   Number of observations = 20 391. Note: See Table 3a.

The likelihood of relocating inland is clearly the highest for immigrants living in "one-person families", while the probability of out-migration then falls with the family size.

As expected, this also provides the least probability of single-person families to remain in the less central municipalities, while the likelihood of staying increases with the family size.

When we turn to the somewhat central municipalities at centrality level 3, there are still immigrants living in single-person families that show the highest probability of emigration (see Table 3c). Thereafter, there are small variations in the probability of emigration among immigrants in the other family sizes, although some higher probability among immigrants in families with 4 persons and least probability of emigration in families with 3 persons.

The probability to relocate domestically from the somewhat central located municipalities is also by far the highest among immigrants living in "one-person families". Then the probability of migration is systematically decreasing with the family size.

This also gives an expected result regarding the likelihood of remaining in the somewhat central municipalities, with the lowest probability of staying among immigrants living in "one-person families", followed by those registered in families with 2 persons. There are immigrants registered in families with 5 persons or more who are most likely to stay in municipalities at centrality level 3.

Table 3c Estimated differences in probability for not to move, for domestic out-migration and emigration among immigrants in 2013 who in 2012 were settled in somewhat central municipalities at centrality level 3. Immigrants in the age 15-74 years by family size in 2012

Number of family members in Norway	No migration from centrality level 3		Domestic out-migration from centrality level 3		Emigration from centrality level 3	
	Estimate	t-Value	Estimate	t-Value	Estimate	t-Value
1 person	-0,078***	-20,33	0,046***	15,24	0,031***	12,16
2 persons	-0,018***	-4,21	0,017***	5,24	0,000	0
3 persons	-0,007	-1,56	0,007**	2,23	-0,002	-0,63
4 persons	-0,007	-1,58	0,004	1,25	0,001	0,53

Levels of significance: 99 % ***, 95 % **, 90 % *. Number of observations = 63 091. Note: See Table 3a.

Finally, we look at similar estimates for immigrant families who live in the most central municipalities at centrality level 4 (see Table 3d). Immigrants living in "one-person families" differ even more from the others at this level of centrality with regard to very high probability of emigration. Immigrants in other family sizes differ slightly from corresponding family sizes at the other levels of centralities, because the probability of emigration is somewhat higher in families with 4 persons and 5 persons or more than in families with 2 and 3 persons.

Domestic migration from this centrality level is, however, more prospective, because immigrants who live in "one-person families" show the highest probability of out-migration, and that the probability then falls systematically with the family size.

As expected, this provides a relatively low probability among immigrants living in "one-person families" to continue to stay in the most central municipalities. Then, persons registered in families with 2 and 4 persons show a lower likelihood of staying in the most central municipalities than persons registered in families with 5 persons or more, and especially in families with 3 persons that show the highest probability of staying in this centrality level.

Table 3d Estimated differences in probability for not to move, for domestic out-migration and emigration among immigrants in 2013 who in 2012 were settled in central municipalities at centrality level 4. Immigrants in the age 15-74 years by family size in 2012

Number of family members in Norway	No migration from centrality level 4		Domestic out-migration from centrality level 4		Emigration from centrality level 4	
	Estimate	t-Value	Estimate	t-Value	Estimate	t-Value
1 person	-0,035***	-29,48	0,005***	12,68	0,029***	26,14
2 persons	-0,002	-1,42	0,003***	5,76	-0,002	-1,51
3 persons	0,003***	2,61	0,001*	1,94	-0,005***	-4,02
4 persons	-0,003**	-2,29	0,000	0,07	0,003**	2,1

Levels of significance: 99 % ***, 95 % **, 90 % *. Number of observations = 420 029. Note: See Table 3a.

In section 2 we put forward a question that not only the size of the immigrant families matter, but also that the composition of these families is of importance for the probability to emigrate or out-migrate.

In the estimates below, we therefore measure the emigration and out-migration probabilities by centrality among immigrants living in families consisting of members who are all immigrants in relation to immigrants living in corresponding family sizes consisting of both immigrant and non-immigrant members as reference groups. The estimates for immigrant families consisting of only immigrants are thus considered as dummy variables. For obvious reasons, we do not include "one-person families", as a single-person immigrant family consists of only one immigrant, and will not find its counterpart in other types of immigrant families of the same size. The estimates are also here accounted for different composition of the families by gender, age, level of education, duration of residence, labor market status and reason for immigration.

We start with immigrant families in the least central municipalities at centrality level 1. As we see from Table 4a, there is systematically higher likelihood of emigration from this centrality level among immigrants in immigrant families with only immigrants than among immigrants in corresponding family sizes consisting of both immigrant and non-immigrant members. The differences are highest in families consisting of 2 persons, while the smallest differences in probability of emigration are found in families with 4 persons.

Table 4a Estimated differences in probability for not to move, for domestic out-migration and emigration among immigrants in 2013 who in 2012 were settled in the least central municipalities at centrality level 1. Immigrants 15-74 years in families with only immigrants relatively to families with both immigrants and non-immigrants by family size in 2012

Number of family members in Norway	No migration from centrality level 1		Domestic out-migration from centrality level 1		Emigration from centrality level 1	
	Estimate	t-Value	Estimate	t-Value	Estimate	t-Value
2	-0,033***	-4,22	0,011*	1,74	0,020***	4,57
3	-0,003	-0,34	-0,008	-1,04	0,010**	2,27
4	-0,018**	-2,06	0,019**	2,48	0,001	0,07
5 or more	-0,038***	-2,78	0,038***	3,10	0,003	0,53

Levels of significance: 99 % ***, 95 % **, 90 % *. Number of observations = 16 750.
Note: The estimates are calculated for immigrants with only immigrants in their families in Norway relatively to immigrants that also have non-immigrants in their family as a reference group, and accounted for the composition of population by gender, age, education level, duration of residence, labor market status and reason for immigration.

The results are not that clear regarding the domestic migration from the least central municipalities. Here immigrants in families with only immigrants and 4 and 5 persons or more show the highest probability of out-migration compared to immigrants in the corresponding family sizes with both immigrants and non-immigrants. Immigrant families with only 3 immigrants have, however, a lower probability of out-migration than immigrants in the corresponding family size with both immigrant and non-immigrant members, but the probability of out-migration is not significantly lower.

These differences give, however, a result that the probability of remain living in the least central municipalities are generally lower among immigrants in families with only immigrants than among immigrants in families with both immigrant and non-immigrant members. The highest difference is here in families with 2 persons and 5 persons or more, while there are

small differences in the likelihood of remain living between families with immigrants and those with immigrants and non-immigrants in families with 3 persons.

Similar results for the less central municipalities at centrality level 2 shows that the trend of higher probability of emigration among immigrants in families with only immigrants than in families with both immigrants and non-immigrants also is present at this level of centrality. In particular, this is the case for families with 2 and 3 persons (see Table 4b).

There are mostly immigrants in families with only immigrants who show the highest probability of out-migration from the less central municipalities, where families with 2 and 5 immigrants or more are those who show the highest probability of out-migration relative to immigrants in similar family sizes with both immigrants and non-immigrants.

This also gives a clear majority of families with only immigrants among those who show the lowest probability of remain living in the less central municipalities. As we can see, this probability is lower in all immigrant families except from families with 4 persons.

Table 4b Estimated differences in probability for not to move, for domestic out-migration and emigration among immigrants in 2013 who in 2012 were settled in less central municipalities at centrality level 2. Immigrants 15-74 years in families with only immigrants relatively to families with both immigrants and non-immigrants by family size in 2012

Number of family members in Norway	No migration from centrality level 2		Domestic out-migration from centrality level 2		Emigration from centrality level 2	
	Estimate	t-Value	Estimate	t-Value	Estimate	t-Value
2	-0,030***	-2,97	0,016*	1,98	0,015***	2,92
3	-0,018*	-1,89	0,013	1,54	0,009**	2,13
4	0,003	0,32	-0,003	-0,29	-0,003	-0,48
5 or more	-0,027**	-2,00	0,025**	1,98	0,003	0,66

Levels of significance: 99 % ***, 95 % **, 90 % *. Number of observations = 11 527. Note: See Table 4a.

When we turn to the somewhat central municipalities at centrality level 3, there is a higher probability of emigration among immigrants in families with only immigrants with 2 and 3 persons than among immigrants in corresponding family sizes consisting of both immigrants and non-immigrants (see Table 4c). On the other hand, immigrants in families with only 4 immigrants and 5 immigrants or more show slightly lower emigration probabilities than immigrants in corresponding family sizes with both immigrants and non-immigrants.

Table 4c Estimated differences in probability for not to move, for domestic out-migration and emigration among immigrants in 2013 who in 2012 were settled in somewhat central municipalities at centrality level 3. Immigrants 15-74 years in families with only immigrants relatively to families with both immigrants and non-immigrants by family size in 2012

Number of family members in Norway	No migration from centrality level 3		Domestic out-migration from centrality level 3		Emigration from centrality level 3	
	Estimate	t-Value	Estimate	t-Value	Estimate	t-Value
2	-0,020***	-4,43	0,011***	2,98	0,008***	3,17
3	-0,015***	-3,28	0,010***	2,76	0,005*	1,86
4	-0,007	-1,44	0,004***	2,62	-0,004	-1,61
5 or more	-0,002	-0,25	0,007	1,28	-0,007**	-2,11

Levels of significance: 99 % ***, 95 % **, 90 % *. Number of observations = 37 162. Note: See Table 4a.

However, if we look at domestic relocation from the somewhat central municipalities, there is generally higher probability of out-migration among immigrants in families with only immigrants than in corresponding family sizes with both immigrants and non-immigrants.

This also generally reduces the likelihood of remain living in the somewhat central municipalities at centrality level 3 among immigrants in families with only immigrants than in mixed immigrant and non-immigrant families. Highest is the differences in the probability of remain living at this centrality level in families with 2 and 3 persons.

Estimates for immigrant families in the most central municipalities at centrality level 4 clearly show higher emigration probabilities among immigrants in families consisting of only 2, 3 and 4 immigrants than in corresponding family sizes consisting of both immigrants and non-immigrants (see Table 4d). In families with 5 persons or more, the probability of emigration is also higher among immigrants in families with only immigrants, but the differences from similar families with both immigrants and non-immigrants are clearly lower, and the differences are not significantly higher.

Table 4d Estimated differences in probability for not to move, for domestic out-migration and emigration among immigrants in 2013 who in 2012 were settled in central municipalities at centrality level 4. Immigrants 15-74 years in families with only immigrants relatively to families with both immigrants and non-immigrants by family size in 2012

Number of family members in Norway	No migration from centrality level 4		Domestic out-migration from centrality level 4		Emigration from centrality level 4	
	Estimate	t-Value	Estimate	t-Value	Estimate	t-Value
2	-0,010***	-7,62	-0,002***	-2,78	0,012***	10,29
3	-0,010***	-7,58	0,001	1,06	0,009***	7,69
4	-0,013***	-8,32	0,001	0,08	0,013***	9,05
5 or more	-0,002	-0,98	-0,001	-0,42	0,001	0,31

Levels of significance: 99 % ***, 95 % **, 90 % *. Number of observations = 243 258. Note: See Table 4a.

With regard to domestic relocation from the most central municipalities, the results are somewhat more mixed, where immigrants in families with only 2 immigrants and 5 or more immigrants showing lower out-migration probabilities than immigrants in families with both immigrant and non-immigrant members, but only the first is significantly lower. On the other hand, immigrants in families with only 3 and 4 immigrants, show somewhat higher out-migration probabilities than immigrants in similar family sizes with both immigrants and non-immigrants, although not significantly higher.

Immigrants in families with only 2, 3 and 4 immigrants show all significantly lower probabilities of remain living in the most central municipalities at centrality level 4 than immigrants in corresponding family sizes with both immigrant and non-immigrant members. Immigrants in families with only 5 or more immigrants also show a slightly lower probability of staying at this level of centrality than immigrants in corresponding family sizes with both immigrants and non-immigrants, but the probability is not significantly lower.

In order to further investigate how much elements of non-immigrants means for the mobility of families with immigrants, we have looked at emigration and domestic out-migration rates among immigrants in families with different involvements of non-immigrants. We have divided the so-called "mixed" families with both immigrants and non-immigrants into three groups; one of which consisting of families with more immigrants than non-immigrants, the other which includes families with equal numbers of immigrants as non-immigrants, while the third has less immigrants than non-immigrants. Based on the hypotheses we have previously stated, we expect less mobility with higher involvement of non-immigrants in the family.

The results confirm much of these expectations because the lowest frequency of emigration is found in families where immigrants constitute a minority. We also found higher emigration

rates in families where immigrants are in majority than in families consisting of as many immigrants as non-immigrants. This support the assumption that the non-immigrant involvement in the family helps reduce emigration. However, there is one exception to this pattern, and it concerns immigrants with escape as reason for immigration. These show a slightly higher rate of emigration in families with less immigrants than non-immigrants.

There is also a tendency for higher domestic mobility with higher percentage of immigrants in the family. We also see a certain trend that domestic out-migration is higher in families with the same number of immigrants and non-immigrants than in families where immigrants represent a minority. The results thus indicate that the inclusion of non-immigrants in the family of immigrants seems to reduce the mobility, be it out of the country through emigration as well as in terms of domestic relocations.

7. Conclusions

The findings include that male immigrants are more likely to emigrate than female immigrants and that younger immigrants of working age have a higher probability to emigrate than middle-aged and older immigrants. These results apply to all centrality levels.

We find that the probabilities for emigration and domestic migration decrease when the duration of residence increases. These results are also rather robust across centrality levels.

Immigrants with education as reason for immigration show the highest emigration probability, followed by Nordic immigrants and labor immigrants, while immigrants with family and especially those with escape as reason for immigration show low likelihood of emigrating. Migration frequencies domestically are mostly lower than emigration frequencies, but refugees stand out with a higher tendency to move domestically than to emigrate.

Measured by educational level, it is consistently immigrants with unspecified education that show the highest emigration probability followed by those with long tertiary education, while immigrants with compulsory and secondary education are those who are the least likely to emigrate.

With regard to labor market status, it is immigrants who are outside the labor force and the educational system who are most likely to emigrate, followed by immigrants who have been registered as unemployed. Immigrants who were registered as employed are those who are the least likely to emigrate. Our findings are thus consistent with the finding of other emigration studies that conclude that labor market participation strengthens the ties to the host country.

Against the background of immigrants' family size and family composition, it is registered unaccompanied immigrants in "one-person families" that show the highest mobility, be it both out of the country as well as between regions. There is a tendency that the mobility decreases with the immigrants' family size. It is more likely to emigrate among immigrants living in immigrant families with only immigrants than among immigrants who also have non-immigrant family members, like non-immigrant spouse and/or children born in Norway to immigrant parents. We thus conclude that higher proportion of non-immigrants in the family is associated with reduced mobility of families with immigrants, both considering emigration as well as regarding domestic relocation.

All immigrant groups show the highest tendency to emigrate from the most central municipalities. Education- and labor- immigrants have also high emigration rates from less central municipalities, and Nordic immigrants show high emigration from the least central

municipalities. All immigrant groups show the highest domestic relocation tendency from the less and least central municipalities, especially among refugees, while the tendency to relocate domestically is lowest from the most central municipalities. Internal migration among immigrants thus draws in centralizing direction.

Initially, we mentioned that European countries will rely on immigration because of future labor shortages due to the ageing of the population and low birth rates. Our analysis shows that immigrants who are well integrated into employment are inclined to remain, while those not in the work force are experiencing the highest rates of emigration. Immigrants with long higher education are also showing high rates of probability of emigrating. This conspicuous contradiction provides a need of more in-depth analyses. Two questions that arise are why some immigrants become employed but others not, and what is the effect of the relatively compressed Norwegian wage structure, i.e., that unskilled workers obtain relatively high wages whereas high-skilled workers obtain relatively low wages as compared to many other Western countries.

References

Balderas, J. U. and M. J. Greenwood (2010). "From Europe to the Americas: a comparative panel-data analysis of migration to Argentina, Brazil, and the United States, 1870-1910." Journal of Population Economics 23: 1301-1318.

Borjas, G. J. (1999). "Immigration and Welfare Magnets." Journal of Labor Economics 17(4): 607-637.

Bratsberg, B., H. M. Edvardsen, O. Raaum and K. Sørlie (2005). "Utflytting blant innvandrere i Norge." Søkelys på arbeidsmarkedet 2: 181-192.

Cappelen, Å. and T. Skjerpen (2014). "The Effect on Immigration of Changes in Regulations and Policies: A Case Study." JCMS: Journal of Common Market Studies 52(4): 810–825.

Cappelen, Å., T. Skjerpen and M. Tønnessen (2015). "Forecasting Immigration in Official Population Projections Using an Econometric Model." International Migration Review, Wiley Blackwell, vol. 49(4), pages 945-980, December.

Constant, A. and D. S. Massey (2003). "Self-selection, earnings, and out-migration: A longitudinal study of immigrants to Germany." Journal of Population Economics 16: 631-653.

Constant, A. and K. F. Zimmermann (2007). "Circular Migration: Counts of Exits and Years Away from the Host Country." IZA discussion papers no. 2999.

de Coulon, A. and F.-C. Wolff (2006). "The Location of Immigrants at Retirement: Stay/Return or 'Va-et-Vient'?" IZA discussion papers(2224).

Dumont, J.-C. and G. Spielvogel (2008). International Migration Outlook: Sopemi - 2008 Edition, OECD.

Dustmann, C. (2003). "Children and return migration." Journal of Population Economics 16(4): 631-653.

Ekhaugen, T. (2005). "Immigrants on welfare: Assimilation and benefit substitution." Memorandum, Department of Economics, University of Oslo 18/2005.

Friberg, J. H. (2012). "The Stages of Migration. From Going Abroad to Settling Down: Post-Accession Polish Migrant Workers in Norway." Journal of Ethnic and Migration Studies 38(10): 1589-1605.

Gibson, J. and D. McKenzie (2011). "The microeconomic determinants of emigration and return migration of the best and brightest: Evidence from the Pacific." Journal of Development Economics 95(1): 18-29.

Jensen, P. and P. J. Pedersen (2007). "To Stay or Not to Stay? Out-Migration of Immigrants from Denmark." International Migration 45(5): 87-113.

Kangasniemi, M. and M. Kauhanen (2013). "Who leaves and who stays? Outmigration of Estonian immigrants from Finland and its impact on economic assmiliation of Estonian immigrants in Finland." Norface migration: Discussion paper 2013-01.

Kim, K. and J. E. Cohen (2010). "Determinants of International Migration Flows to and from Industrialized Countries: A Panel Data Approach Beyond Gravity." International Migration Review 44(4): 899-932.

Klinthäll, M. (2007). "Refugee Return Migration: Return Migration from Sweden to Chile, Iran and Poland 1973-1996." Journal of Refugee Studies 20(4): 579-598.

Kornstad, T.; T. Skjerpen and L. S. Stambøl (2016): *Utvandring blant innvandrere i Norge – Del 2: Analyser basert på mikrodata*. Reports 2016/27, Statistics Norway.

Kornstad, T.; T. Skjerpen and L. S. Stambøl (2017): Why do immigrants to Norway leave the country or move domestically? - Some important facts. In Ingrid Muenstermann (ed.) "*People's Movements in the 21st Century - Risks, Challenges and Benefits",* InTech, pp. 207-227.

Longva, P. (2001). "Out-Migration of Immigrants: Implications for Assimilation Analysis." Memorandum 4/2001, Department of Economics, University of Oslo.

Lund, M. (2009). "Når byggeplassene stenger - hva gjør arbeidsinnvandrerne da? Integreringskart 2009", IMDI-rapport 7-2009. Integrerings- og mangfoldsdirektoratet.

Massey, D. S. (2006). "Building a comprehensive model of international migration." Working paper prepared as part of the Center for Strategic and International Studies Project on Long-Term Immigration Projections.

Pettersen, S. (2013). Utvandring fra Norge 1971-2011. Reports 30/2013, Statistics Norway.

Ruyssen, I. and G. Rayp (2014). "Determinants of Intraregional Migration in Sub-Saharan Africa 1980-2000." Journal of Development Studies 50(3): 426-433.

Skjerpen, T., L. S. Stambøl and M. Tønnessen (2015a): *Utvandring blant innvandrere i Norge – Del 1: Litteraturstudie, makroanalyse og regionale mønstre*. Reports 2015/17, Statistics Norway.

Skjerpen, T., L. S. Stambøl and M. Tønnessen (2015b): Innvandrere som utvandrer igjen, *Economic Analyses* – 2/2015, Statistics Norway.

Statistiska centralbyrån (2012): "Modell för at skatta återutvandring efter grund för bosättning." Bakgrundsmaterial om demografi, barn och familj 2.

Tysse, T. I. and N. Keilman (1998). "Utvandring blant innvandrere, 1975-1995." Reports, Statistics Norway 98/15.

Vassenden, K. (2015): "Å forstå kvaliteten på den norske inn- og utvandringsstatistikken – som del av større sammenhenger", kommer som Notat, Statistics Norway.

Van Hook, J. and W. Zhang (2011). "Who Stays? Who Goes? Selective Emigration Among the Foreign-Born." Population Research and Policy Review 30: 1-24.

Zaiceva, A. and K. F. Zimmermann (2012). "Returning Home at Times of Trouble? Return Migration of EU Enlargement Migrants during the Crisis." IZA discussion papers 7111.