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Population projections for Sweden, Norway, Denmark, and Finland, 2015–2065

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Abstract. The ethnic and religious compositions of Nordic populations have been projected by Eurostat (Lanzieri, 2011), the Pew Research Center (2015), and Statistics Denmark (2015). These studies are updated and complemented in this paper. Lanzieri's consideration of the native population is supplemented by taking into account assimilation via marriages between natives and foreign-background persons. Immigration to Nordic countries increased significantly in 2015, but, on the other hand, immigration restrictions have been put in place. Therefore, there are no reliable estimates of future immigration. In this situation, the paper's "what if" projections, incorporating the average 2012–2014 net immigration level, serve as useful reference information. The projected demographic changes are similar in the four Nordic countries. The development is fastest in Sweden; in 2065, the share of the native population is to decrease to 49%, the Western population is projected to fall to 63%, and the Muslim population increase to 25%.

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Contents:

1. Introduction

The continual increase in the number of foreign-background individuals during recent decades is an unprecedented demographic development in Nordic countries in which the populations have previously been very homogeneous. In the four Nordic countries considered - Sweden, Norway, Denmark, and Finland - their starting points with respect to this new development have been different. Sweden received refugees during the 1940s, as well as many foreign workers in later decades, while Finland's present immigration began with an influx of refugees in 1990. After their initial beginnings, each country's foreign-background population increase has been rather similar (cf. the beginning of the graphs in Figure 1). Iceland's foreign-background population growth has been similar to that of the aforementioned countries (cf. Statistics Iceland, 2017). Iceland was not included in this research since there were not enough available parameters for an accurate cohort-component model.

Regarding the future, it is evident that the driving forces of immigration (including refugees, foreign workers, students, and spouses) will prevail and are regulated by each country's immigration policy. The purpose of this study is to delineate major future changes to the ethnic and religious populations of four Nordic countries as a result of immigration. The developed model can be used to study the effects of different net immigration levels. As an informative reference, the paper's projections are based on average immigration levels during 2012–2014 (before the crisis year of 2015 and its consequences in 2016).

Nordic statistical centres make long-term population projections. Because ethnicity and religion are not registered, the centres' projections do not include proper projections for these aspects. Ethnic matters are partially taken into account in Statistics Denmark's projections for both Western and non-Western populations (Statistics Denmark, 2016) and the projections of Statistics Denmark and Statistics Norway for three groups. These groups are the immigrants, their descendants, and 'persons of Danish origin' (Statistics Denmark, 2016) or 'the rest of the population' (Statistics Norway, 2016).

In the coming decades, this division will still work rather well; however, later on in this century, the third and further immigrant generations will grow, whereby the third group will include many foreign-background individuals. In fact, if immigration stopped entirely in Denmark, for example, all persons would eventually be of 'Danish origin' after some time. Statistics Norway also has a classification system that takes third generation immigrants into account (Dzamarija, 2014); however, this classification system is not used in their projections. In Finland, the mother language is registered (Statistics Finland, 2017), which results in some information on the population's ethnicity and religion. City of Helsinki Urban Facts (2016) has made population projections for different language groups within Greater Helsinki.

The best means of tracking the ethnic and religious compositions of the Nordic countries would involve censuses like those used in the United Kingdom. A simple extrapolation of British censuses indicates that white Britons will be in the minority by approximately 2070. This is confirmed by Coleman's demographic projections (Coleman, 2010). Even though censuses would also be useful in Nordic countries, no official discussion has occurred regarding their potential use.

In addition to Statistics Denmark's and Statistics Norway's projections mentioned previously, the following ethnic predictions have been made for Nordic countries. Coleman (2006: 416) estimated that, if the trends continue, Sweden would have a majority foreign-origin population by the end of the century. Eurostat (Lanzieri, 2011) has prepared projections for up to 2061 for the foreign-background people of Sweden, Denmark, and Finland (but not for Norway which does not belong to the EU). We will update these projections and also present a fore-

cast for Norway by applying the same methodology that Lanzieri uses. We will complement Lanzieri's methodology by also considering assimilation via marriage between natives and foreign-background persons. Concerning religion, the major new development due to immigration is the increase in the number of Muslims. The Pew Institute has made Muslim projections for all Nordic countries (Pew Forum, 2011; Pew Research Center, 2015). We will update these projections. Interest in population projections in Nordic countries has been minor among politicians and the public. Perhaps this is due to a general distrust of forecasts and uncertainty regarding the consequences of changes to the ethnic and religious population compositions. However, some simple, unprofessional predictions that indicate significant changes have been presented in social media, and some politicians have asked their statistical centre to provide projections regarding ethnicity and religion as well.

We will next describe the population divisions used in the present study. In the Pew Forum (2011), the whole population is divided into Muslims and non-Muslims. In the present study, the non-Muslim group is divided further into two populations: natives and persons with a foreign background. Thus, three groups are considered here: (a) the native population, (b) the Muslim population, and (c) the non-Muslim population with a foreign background. Another division into the Western and non-Western population, as used by Statistics Denmark and Norway, is also considered. As in the Pew Forum (2011), the Muslim population is considered as a group of its own, since relatively few non-Muslims become Muslims and relatively few Muslims leave Islam.

According to the main classification principles of the Nordic statistical centres, persons are *of foreign background* if they are born abroad or both of their parents are born abroad. Others are *of national - Swedish, Norwegian, Danish, or Finnish - origin.* In this study, the term *native population* is used. It is approximated before January 1, 2015, as people who, according to the classification of the statistical centres, are of national origin. However, later in this century, the third and further immigrant generations will form an ever-bigger proportion of the people of national origin, as defined by the statistical centres. Therefore, to better approximate the native population after January 1, 2015, we apply the following two approaches.

First, in Section 5, we approximate - in the same way as Lanzieri (2011) in his most advanced model 4 of the Eurostat projections - the native population as a group of its own. Correspondingly, the initial size of the native population is taken to be the number of people of national origin on January 1, 2015, as defined by the statistical centres, and all descendants of these persons are regarded as natives. In biological terms, the native population's share reflects the genetic portion of the historic ethnic population. On the other hand, the native population is slowly changing due to marriages between natives and foreign-background persons. Therefore, in the second approximation, we take into account marital assimilation. Thereby, it is assumed that foreign-background persons who marry a native - or at least their descendants in future generations - will become natives. For programming reasons, we make the simplification that a foreign-background person marrying a native becomes a native. Marital assimilation is considered in Section 6. As a third approach, we describe the ethnic composition by considering the combined Western population, which consists of natives and Western foreign-background persons, as defined by Statistics Denmark and Norway. This is explained in more detail in Section 7. Before considering these different models for Nordic countries, we describe the basic features of demographic modelling in Section 2 and take a general look at European immigration in Section 3.

2. Demographic projections that take immigration into account

In this paper, we consider the demographic changes that occur due to migration. Herein, the prediction of these changes is based on the standard demographic *cohort-component* method (see, e.g., Preston et al., 2001). In this technique, each subpopulation is divided into age groups: at the beginning of each year, we consider the number of persons aged 0 years, 1 year, 2 years, and so on. If, for example, at the beginning of a year, there are one thousand persons aged 50, a year later we have one thousand

persons aged 51, minus those who had died during the previous year, plus the net immigration of those who had immigrated and turned 51 during the year. A particular case is the individuals whose age is 0 years at the beginning of a year. These are babies who were born during the previous year. Their number depends on women's fertility.

Statistical centres have historical data on the mortality and fertility of various age groups, as well as on net immigration. Population projections require estimates of the future values of these variables. Mortality has been decreasing in European countries and based on historical mortality values, we can extrapolate future mortality rates. One model for doing so is the one used by Statistics Sweden (2015: 137). Fertility in the Nordic countries is somewhat below the replacement level of 2.1 children per woman, and in most projections, it is assumed that it will remain at about the present level. In those European countries in which the fertility is much below the replacement level, one can anticipate that it will potentially increase due to an expected increase in state support for families with children. In some ethnic and religious groups, fertility is higher than the average. The most significant group with a higher-than-average fertility rate is Muslims, for whom the Pew Research Center (2015) has made fertility projections.

Net immigration is the most uncertain quantity in these projections because it depends on the country's migration policy and conflicts abroad. In fact, net immigration to Western European countries is now so extensive that uncertainties in the other factors are not significant compared with the uncertainties in net immigration. After demographic modelling, one can easily vary the predicted values to see how uncertainties in those values affect the projections. In the present study, these considerations are described in the Sensitivity analyses section.

Net immigration is also a central variable in the sense that even if it seems small compared to the total population, it causes significant population changes surprisingly rapidly. Consider Sweden as an example. In 2009, the net immigration of non-natives was 63,000 people. This is only 0.7% of the total population of 9,400,000. But let us look at how the numbers of native Swedes and persons with foreign background changed during 2009. In 2009, native Swedes gave birth to 86,000 babies, and mothers with foreign background gave birth to 26,000 babies. That is, the number of individuals with foreign background increased by 63,000 + 26,000 = 89,000 persons, which is higher than the increase of native Swedes, which was 86,000.

Hence, net immigration must be compared to the number of new babies, not the entire population. If migration continues such that in each year after 2009 the increase due to births and immigration of non-natives is larger than that of natives, it is evident than in, say, one hundred years, individuals with foreign background will be the majority. This development is speeded still further by the fact that due to differing age distributions, more natives than non-natives will die during the coming decades. The cohort-component method takes all these aspects into account.

Coleman (2013) describes in detail the demographic modelling of population changes due to immigration. Besides the Eurostat study (Lanzieri, 2011), which is the most import reference for the present study, Coleman mentions the following European studies dealing with ethnic projections: OPCS (1979) for ethnic minority populations in England and Wales; Ulrich (2001) for Germany; the only ethnic projection prepared by Statistics Sweden (2003); Lebhart and Münz (2004) for Austria; Tsimbos (2008) for Greece; Coleman (2010) and Rees et al. (2012) for the UK; Stoeldraijer and Garssen (2011) for the Netherlands; and regular projections in Denmark and Norway mentioned above (Statistics Denmark, 2016; Statistics Norway, 2016).

3. Immigration to Nordic countries compared to other European countries

We look here at the Nordic countries in the context of Europe which can be divided into two parts: Western European countries and Central-Eastern European countries. Herein, the latter group is defined as including the formerly socialist countries of Poland, Romania, the Czech Republic, Hungary, Serbia, Bulgaria, Slovakia, Croatia, Bosnia-Herzegovina, Albania, Lithuania, Macedonia, Latvia, Slovenia, Estonia, Montenegro, and Kosovo.

In some Western European countries, after World War II, immigrants from other Western and non-European states assisted in rebuilding the country and helped their expanding economies which were experiencing a shortage of workers. In contrast, in more recent years, immigration in most Western countries has been based more on refugees and the spouses and relatives of those with a foreign background. Also, many international students stay in the country where they studied.

In Western Europe, attitudes toward immigration have been mostly positive, particularly among politicians and the media. A striking indication of this is that in 1975, the Swedish Parliament unanimously declared Sweden a multicultural country (Sveriges Riksdag, 1975). However, in the last few years, especially after the immigration crisis of 2015, the majority of Swedish politicians have made a complete about-face. For example, one politician who voted for a multicultural Sweden in 1975 stated 41 years later that the decision had been an error. She now says that she 'feels like living in a foreign country where every third person comes from a country with a totally different culture, religion, and living habits' (Lantz, 2016). Furthermore, the Swedish government has now restricted the immigration of foreign spouses as much as the European Union allows. However, there are many EU and UN regulations and agreements concerning, for example, refugees. Hence, it is not easy to restrict immigration: Statistics Sweden (2017) projects that net immigration in 2017 will be 94,000 and will decrease to 51,000 in 2026.

In Central-Eastern Europe, international immigration during socialism was modest; however, a significant number of Russians moved into the Balkan countries. Since the fall of socialism, Central-Eastern Europe has not attracted many refugees because the social benefits are generally smaller than in Western Europe. Also, there has been no significant demand for foreign workers. On the contrary, many have moved to other EU countries to earn higher salaries. Unlike in Western Europe, there has been no ideological support for multiculturalism in Central-Eastern Europe. One reason for this is that people appreciate their national cultures because they were threatened by the socialist culture which was dominated by the Soviet Union. Also, for example, Hungary has the historical experience of Muslim domination. In Central-Eastern Europe, many leading politicians have stated their opposition to multiculturalism and their desire to preserve their national, European cultures. Many point to bad experiences in Western Europe related to the immigration of Muslims.

This division in Europe concerning immigration is reflected in demography. In Central-Eastern European countries, the average share of foreign-born people is 7%, and in Western European countries, it is 13% (United Nations, 2017). Regarding Muslims, the difference is more significant because Muslims are mainly from the Middle East, Asia, and Africa which comprise very different ethnic and religious groups compared to those of Europeans. If we exclude the Central-Eastern Europe countries that have a historical Muslim population (Albania, Bosnia-Herzegovina, Bulgaria, Kosovo, Macedonia, and Montenegro), the share of the Muslim population in 2010 was on average 0.9% in the other considered Central-Eastern countries. In contrast, in Western European countries, the average percentage of the Muslim population in 2010 was 4.1%, and it is growing rapidly: the share is projected to be 8.3% in 2050 (Pew Research Center, 2015). After this general background information, we will consider the population projections in the four Nordic countries specifically.

4. Main parameters of the population projection models

Due to the turmoil in immigration matters in 2015, there are no reliable forecasts for future immigration. Therefore, in this study, immigration is taken to be constant, based on the average net immigration for 2012–2014. Hence, the results serve as useful reference information regarding the long-term effects of immigration at the 2012–2014 level. This net level is 64,000 immigrants in Sweden, 42,000 in Norway, 22,000 in Denmark, and 17,000 in Finland. Net immigration is taken as consisting of non-natives since the numbers of emigrating and immigrating natives can be assumed to be relatively similar in the future. Table 1 presents the main parameters of the projection models, with the data

Table 1. Main parameters of the projection models

	Sweden	Norway	Denmark	Finland
Number of natives 1.01.2015 (statistical centres)	7,655,149	4,360,839	5,002,242	5,149,042
Number of Muslims 1.01.2015 (Pew Research Center)	535,000	215,000	260,000	55,000
Number of non-Muslims with foreign background 1.01.2015 (statistical centres)	1,557,206	589,963	397,473	267,711
Fertility rates (TFR) after 1.01.2015 for natives and non-Muslims (statistical centres)	1.84–1.88	1.74–1.77	1.73–1.90	1.7
Fertility rates (TFR) for Muslims				
2010–2015 (Pew Research Center)	2.86	2.35	2.77	3.4
2045–2050 (Pew Research Center)	2.54	2.22	2.5	3.0
Percentage of immigrating persons (net) who are Muslims (statistical centres)	53%	18%	25%	22%
Percentage of immigrating persons (net) who come from a Western country (stat. centres)	25%	72%	61%	37%
Foreign-background persons who marry a native, as percentage of the native population (Wiik, 2014)	8%	8%	8%	8%
Average net immigration 2012–2014 (statistical centres)	64,000	42,000	22,000	17,000
Percentage of Western foreign-background inhabitants of all foreign-background persons 1.01.2015 (statistical centres)	40%	53%	36%	29%

Source: See parentheses

sources in parentheses. The following points provide additional information about the models:

All values concerning immigration are based on net immigration for 2012–2014. The cohort-component method is used in the computer program, for which the initial age groups of different populations are obtained from statistical centres' data banks.

Muslims' fertility rate estimates for 2015–2050 are based on the Pew Research Center (2015). During 2050–2065, they are assumed to decrease linearly towards the replacement TFR value 2.1 in 2100 (in line with the United Nation's converging fertility projections).

The percentage values of immigrating Muslims are generally determined by assuming that the share of Muslims among persons coming from a country is the same as in the country's population.

According to Statistics Norway and Denmark classifications, Western countries include European Union countries, Norway, Iceland, Switzerland, the USA, Canada, Australia, New Zealand, and some midget countries.

Predictions for the increase in the length of life are based on the model presented by Statistics Sweden (2015: 137).

Intermarriage percentages are discussed in Section 6.

5. Projection of the native and Muslim population 2015–2065

The computer results in Sweden's case are illustrated in Table 2 (population numbers are for January 1). According to the table, the Muslim population grows annually at 4.1% due to fertility being above the replacement level and the yearly net intake of 34,000 new Muslim immigrants (= 0.53*64,000; cf. Table 1).

Fig. 1 shows how the share of the native population approaches 50% in Nordic countries. In Sweden in 2065, the native population makes up 49% of the population.

Fig. 2 presents the development of the Muslim population. The increase of slope around 2015 in Sweden's case is due to the rise in Muslim net immigration during recent years: the average for 2012–2014 is 40% higher than that for 2009–2011. In 2065, the Muslim population share in Sweden is about 25%, in Norway and Denmark 12%, and in Finland 7%.

6. Projection of the native population with assimilation via marriages

According to Statistics Norway (Wiik, 2014), 8% of persons of Norwegian origin who marry have a foreign-background spouse. The same percentage is also used here for the other Nordic countries (estimates for the three other countries vary from 6% to 8%). According to Skans and Åslund (2010), it seems that a relatively constant number of natives marry a foreign-background person; in the three biggest Swedish cities, the mixed-marriage rate has remained practically the same for 20 years, despite a significant increase in the number of foreign-background persons living there.

In the Eurostat report, Lanzieri (2012) discusses future trends in intermarriages and states that opposing factors influence the future intermarriage rate. In this kind of situation, when there is no clear direction for the future development, it is a valid modelling practice to use the present value. Therefore, the percentage of 8% is a constant in

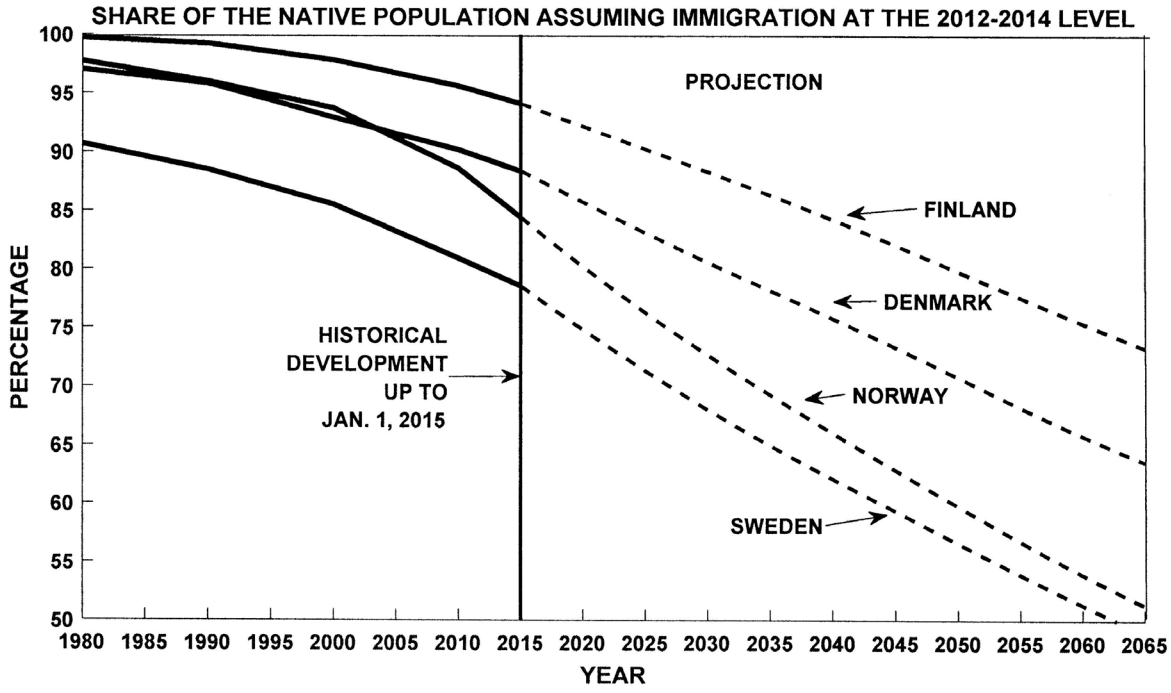

Fig. 1. History (1980–2015) and projection of the native population. For 2015–2065, net immigration is taken to be constant, based on the average value for 2012–2014 (cf. Table 1)
Source: Statistical centres (1980–2015), own calculations (2015–2065)

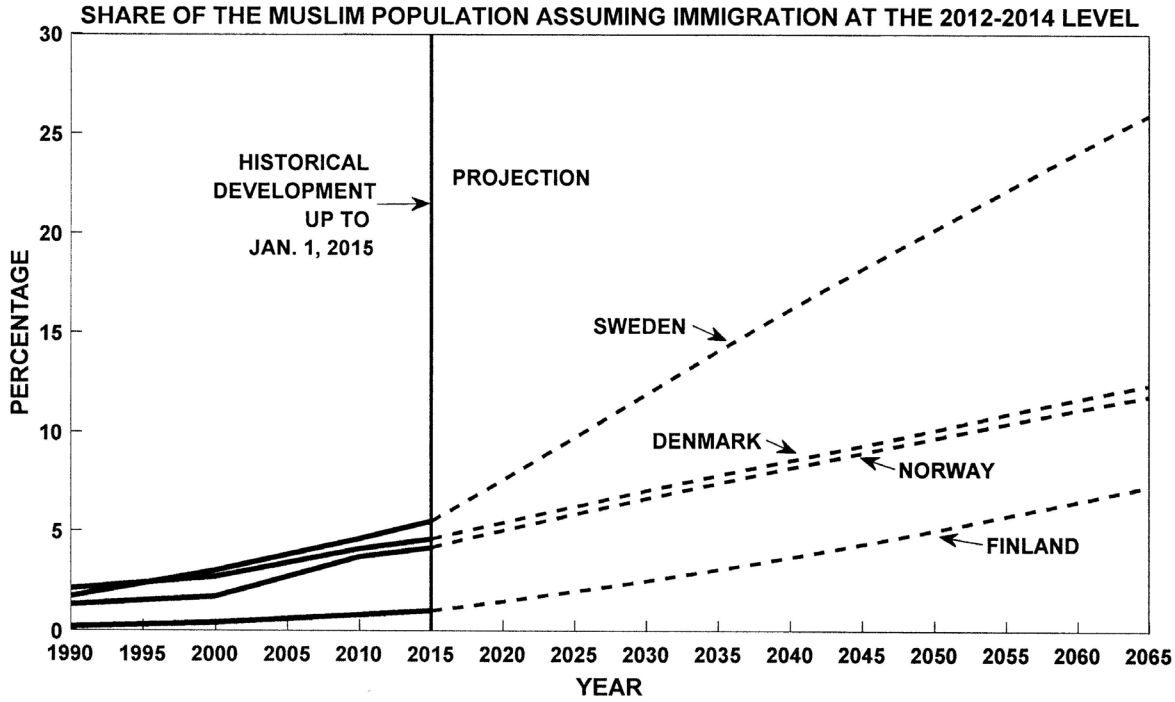

Fig. 2. History (1990–2015) and projection of the Muslim population, assuming constant net immigration based on the average value for 2012–2014 (cf. Table 1)
Source: Statistical centres (1990–2015), own calculations (2015–65)

the present projections. No studies on mixed origins in consensual unions currently exist, and it is assumed that the share in these is the same as in marriages. Using these intermarriage assumptions, and by regarding a foreign-background person as a native when they marry a native, the native population share increases relatively little compared to the projections given in Fig. 1. In Sweden's case in 2065, the native population share rises by three percentage points, from 49% to 52%; the increase in percentage points is three in Norway and five in Denmark and Finland. This indicates that Lanzieri's considerations of the native population are, in practical terms, accurate enough.

Table 2. Results for Sweden assuming net immigration at the 2012–2014 level

Year	Native Swedes	Muslims	Non-Muslims with foreign background	New-borns to natives	New-borns to non-natives	New immigrants (net)
2015	7,655,000	535,000	1,557,000	81,200	37,600	64,000
2020	7,672,000	778,000	1,803,000	84,600	45,100	64,000
2025	7,693,000	1,051,000	2,041,000	83,500	51,500	64,000
2030	7,690,000	1,347,000	2,262,000	78,800	56,900	64,000
2035	7,661,000	1,660,000	2,467,000	78,600	61,900	64,000
2040	7,626,000	1,987,000	2,662,000	80,500	68,300	64,000
2045	7,592,000	2,329,000	2,867,000	79,900	77,600	64,000
2050	7,550,000	2,692,000	3,091,000	77,100	88,200	64,000
2055	7,497,000	3,080,000	3,327,000	74,900	96,800	64,000
2060	7,432,000	3,485,000	3,562,000	73,000	102,900	64,000
2065	7,364,000	3,903,000	3,791,000	72,100	108,300	64,000

Source: Own calculations

However, in future studies, natives' foreign-background spouses could be included in the native population; this would resemble the statistical centres' definition that if a person and one parent are born in the country but one parent is born abroad, the person is of national origin. We note that the number of new immigrants is nowadays so high that they are not absorbed via marrying members of the native population, as was mainly the case previously. The dominant effect of immigration is clear in Sweden's case (Table 2). In 2015, the number of net immigrants (64,000) is almost 80% of the number of children born to natives (81,200). That is, as the native population is approximately stable, roughly 80% of the natives would have to marry a foreign-background person for the immigrants to merge completely into the native population via marriage.

7. Projection of the Western population

Historically - most visibly in royal families - virtually all persons who came from a Western country to a Nordic country, and stayed there, merged into the native population via marriage - or the person's descendants did so eventually. On the other hand, unions between natives and non-Westerners have been, and continue to be, rarer for ethnic and cultural reasons.

Consequently, a relevant approach to delineate the ethnic composition of a country is to pay attention to the combined *Western population*, consisting of natives and Western foreign-background persons. Nowadays, ethnic non-Westerners live in Western countries, but, as a sound approximation, we can still assume that immigrants coming from Western countries are Westerners. We divide the population into Western and non-Western parts and regard descendants of the Western population as Westerners and do the same for the non-Western population. To avoid mixed populations, we view non-Westerners who marry a Westerner as Westerners. This resembles the statistical centres' definition that if a person and one parent are born in the country, but one parent is born abroad, the person is of national origin. Statistics Denmark uses Western/non-Western classifications in marriages. For example, from the 2015 data, one can conclude that 4% of persons of Western origin who marry have a spouse belonging to the non-Western population. For other Nordic countries, we can determine a rough estimate of 6%.

Fig. 3 depicts projections for the Western population. In 2065, the share of the Western population decreases to about 65% in Sweden and to around 85% in other Nordic countries. The percentage for the Western people in Denmark in 2050 is 86%, which is three percentage points lower than that given in the Statistical Yearbook (Statistic Denmark, 2016 which assumes a much smaller net immigration rate.

8. Sensitivity analyses

Sensitivity analyses have been conducted concerning the parameters of the model. For example, if in Sweden's case the used intermarriage percentage of 8% is increased to 15%, then the native population (including the foreign spouses) in 2065 only increases by three percentage points, from 52% to 55%. Furthermore, in Sweden's case, if we run the model while decreasing the fertility of the natives by 10%, their share in 2065 only reduces from 48.9% to 47.7%. Likewise, if we increase the fertility of Muslims by 10%, the natives' share just drops by 0.8 of a percentage point.

When making similar sensitivity analyses concerning other parameters of the model, while considering realistic uncertainties in them, we do not see fundamental changes in the results, except when net immigration is considered. For example, if Sweden's net immigration is increased by 10% (from 64,000 to 70,400), the share of the native population decreases by 1.6 percentage points (from 48.9% to 47.3%). Clearly, net immigration is the only parameter that can be altered significantly (by political decisions), and thus fundamentally change the projections. Also Coleman (2006) states that the population projections are most sensitive to assumptions about migration.

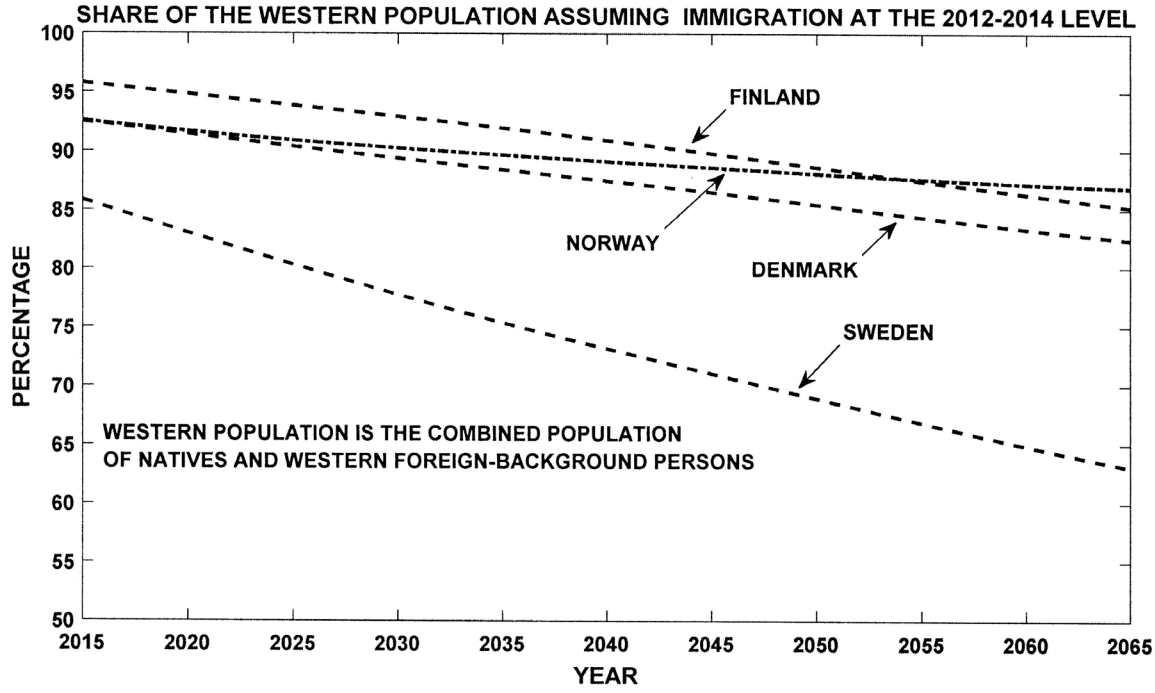

Fig. 3. Projection of the Western population (natives and Western foreign-background people). Western countries include EU countries, Norway, Iceland, Switzerland, the USA, Canada, Australia, and New Zealand. Net immigration is taken to be constant, based on the average value for 2012–2014 (cf. Table 1)
Source: Own calculations

9. Comparisons with earlier projections and other countries

The Eurostat projections (Lanzieri, 2011: 31–33) for the foreign-background population of the three Nordic EU countries in 2061 (using the most advanced model 4) are as follows (the corresponding percentage obtained in the present study is in parentheses):

- Sweden 39% (49%)
- Denmark 36% (34%)
- Finland 20% (25%).

The Pew Research Center (2015) offers the following estimates for the Muslim population share in 2050 (the corresponding percentage obtained in the present study is in parentheses):

- Sweden 12.4% (20%)
- Norway 8.9% (9.7%)
- Denmark 8.5% (10%)
- Finland 3.4% (4.9%).

The significant deviances in the projections for Sweden are due to increased immigration levels, which could be taken into account in the present, and thus more recent, study. In Lanzieri (2011: 34), the cumulative net migration to Sweden during 2008–2061 is 1,697,000 persons, whereas the corresponding number in this research is 3,456,000, based on the 2012–2014 average. Furthermore, as mentioned in Section 5, there has been a significant increase in Muslim immigration to Sweden.

We will next compare the Nordic projections with those in other European states. The Pew Research Center (2015) has prepared projections of the Muslim population in 2050 for every country in the world, enabling the comparison of the Nordic states to other European countries in this respect. According to the present study, the Muslim population in 2050 would vary between 4.9% (in Finland) and 20% (in Sweden). According to the Pew Research Center (2015), in 2050, the average percentage of the Muslim population in Western European countries is 8.3% and in Central-Eastern European countries (excluding those countries with a historical Muslim community, as mentioned above), it is 1.7%.

The present study did not find data on the foreign-background populations of every European country because many countries make population projections only for the entire community. However, the Eurostat study (Lanzieri, 2011: 31–34, Model 4) provides foreign-background population projections for 2061 for each of the 27 EU countries. As indicated previously, in the present study, the projected foreign-background population for 2061 in the four Nordic countries varies from 25% (in Finland) to 49% (in Sweden). The Eurostat study found an average percentage of 39% for Western European EU countries in 2061 (the small nations of Cyprus, Luxembourg, and Malta excluded). The highest percentage of the projected foreign-background population in 2061 is 54.2% in Austria. The corresponding average portion in Central-Eastern EU countries would be 16%. We see that there are differences between the various Nordic countries, but on the whole, they are in line with the general trends in Western Europe.

10. Discussion

In this type of demographic study, we can only project the development of different population groups. It is up to every individual to personally evaluate the cultural and political consequences of these projections. Coleman (2009) gives a demographer's account of the possible implications of immigration. Further, the Oxford Professor Paul Collier (2013) provides a thorough, balanced analysis. One major visible change, which Skans and Åslund (2010) describe in Sweden's case, is segregation concerning living areas, workplaces, schools and marriages.

Attitudes towards immigration divide the population in each Nordic country to a greater extent than the classic division into left- and right-wing parties. There are, however, some differences in attitudes to immigration in the Nordic countries. It seems that Norwegians are mainly positive in this regard; according to a 2017 attitude study by Statistics Norway, the share of respondents who agreed with the statement 'most immigrants make an important contribution to Norwegian working life' was 71% (Blom, 2017). The Swedes seem to have mostly negative attitudes; in a poll (Ipsos, 2017), only 25% agreed with the statement 'immigration has generally had a positive impact on your country'. Note that these percentages for Norway and Sweden are practically the same as those in Table 1, describing the share of immigrants coming from a Western country: 72% for Norway and 25% for Sweden.

Some expect that the differences between various groups will continue to grow and eventually create changes in the predominant culture. Some assume that these differences will reduce and that there will be assimilation and better integration between the various groups. It was observed in Section 6 that the most potent form of assimilation - marriage between a native and foreign-background person or between persons with Western and non-Western backgrounds - will probably not be significant during the next 50 years due to immigration volumes. However, cultural assimilation and integration will naturally occur as well. The strongest controversy concerns Islam, which according to the Inglehart-Welzel Cultural Map, is farthest from the Nordic Lutheran values (World Values Survey, 2015). A possible concern is also the fact that a religious or ethnic group may act differently as a dominant group as compared to the present minority position.

In every Nordic country, there is a party whose primary agenda is to decrease immigration (Bartlett et al., 2011). Further, some old parties have backed regulations that limit immigration. However, it is not easy to limit immigration. For instance, there are international agreements concerning refugees and foreign spouses; private firms benefit from foreign workers; and when the number of persons with foreign backgrounds increase, there are more individuals who can help their countrymen to enter the Nordic country. Further, there are many international students who choose to remain in the country where they studied. An additional reason for the growth of foreign-background populations in the four Nordic countries under study is the fact that fertility in some immigrant groups is higher than that of the native population. Statistics Sweden (2018) provides fertility projections based on the Human Development Index of the mother's country of birth. In Finland, there are fertility statistics and predictions based on language groups (City of Helsinki Urban Facts, 2016).

11. Conclusion

In this paper, the considerations on religion are similar to those of the Pew Research Center. Ethnic development is considered from three different angles: dealing with the native population (as in the Eurostat projections by Lanzieri, 2011), the native population with assimilation via marriage, and the Western population (in line with the definitions of Statistics Norway and Denmark). It turned out in Section 6 that the most potent form of assimilation, marriage between a native and foreign-background person is not significant during the next 50 years, due to immigration volumes. Thus, Lanzieri's methodology of making projections is accurate enough.

Immigrants from over one hundred countries have entered the Nordic countries. The paper's ethnic and religious outlines concerning this development indicate that unprecedented historical changes are occurring in the previously homogeneous countries of Sweden, Norway, Denmark and Finland (see Figures 1–3). The surprisingly fast population changes can be understood by comparing the net immigration level to the number of newborns, rather than the total population (cf. Section 2).

The projected population changes presented in Figures 1–3 are not surprising when one looks at the known historical development indicated by the solid lines in Figures 1 and 2. In the text, several driving forces of immigration are mentioned; Collier (2013) devotes the second chapter of the book to discussing the acceleration of migration. According to Pew Research Center (2017), even if the net immigration to, for example, Sweden would be zero in the future, the estimated 8.1% share of Muslims in 2016 is projected to increase to 11.1% in 2050.

Nordic governments have restricted immigration, especially after the crisis in 2015. However, from the perspective of demography, these restrictions are not major: they will somewhat slow down the pace of the population changes but not stop them. Among the Nordic politicians, there has been no public discussion about the demographic developments and how the immigration policy could affect them. The vital subject of demographic changes seems still to be taboo among the politicians; Collier (2013) discusses migration taboos in his book. In the context of discussions on immigration, demographic projections like those included above are meant to present neutral, useful information. Furthermore, demographic models can delineate the effects of various immigration policies.

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