DEMOGRAPHIC RESEARCH

Descriptive Finding

Fertility patterns of migrants from low-fertility countries in Norway

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Contents

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Abstract

BACKGROUND
Most research on migrant fertility focuses on immigrants from high-fertility countries who have moved to countries with lower fertility. Little is known about the fertility of immigrant women from countries where fertility is lower than in the destination country.

OBJECTIVE
This study investigates fertility rates among women from low-fertility countries who have moved to a country where fertility is comparatively higher (Norway).

METHODS
Register data on immigrant women from Poland, Lithuania, and Germany are used to calculate total fertility rates by duration of stay and to explore differences between family migrants and women who migrate for other reasons, between women of different ages at arrival, and between those who emigrated again and those who remained in Norway.

RESULTS
Among immigrants from low-fertility countries, total fertility rates are elevated in the first years after migration. This is particularly true for women from Poland and Lithuania, who often arrive as family migrants and at peak fertility age (25 to 34 years).

CONTRIBUTION
The fertility among migrants from low-fertility settings is often highest right after migration, particularly if they arrive as family migrants. Women with nonfamily reasons for migration have a time lag between immigration and peak fertility. The results underscore the usefulness of taking reason for and age at migration into account when studying immigrant fertility.

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1. Introduction

Migrant fertility is often studied in contexts where most immigrants have moved from high-fertility to lower-fertility countries. However, some countries also have a substantial number of immigrants from parts of the world where fertility is lower than in the destination country. Norway is such a country, with a substantial immigrant population from European countries where fertility is lower, most notably Poland, Lithuania, and Germany. This article examines the fertility of immigrant women from these countries and how it changes by their duration of stay in Norway.

In previous research, immigrant women's fertility is often found to be relatively high after arrival but declining by duration of stay (Mayer and Riphahn 2000; Bélanger and Gilbert 2002; Andersson 2004; Sobotka 2008; and Tønnessen 2019). To explain patterns in immigrant fertility, the literature offers hypotheses of adaptation, socialization, selection, disruption, and interrelation of events (see Kulu 2005; Milewski 2010; Wilson 2015; or Adserà and Ferrer 2015 for comprehensive overviews). Two of these hypotheses, adaptation and the interrelation of events, offer explanations for the initial high but declining fertility often observed among immigrant women. According to the hypothesis of interrelated events, many women migrate to start a family, so childbirths can be expected to follow relatively quickly after arrival. According to the adaptation hypothesis, women gradually adapt to the fertility level in the destination country from the fertility level in the origin country (which in most cases is higher). When immigrants originate from high-fertility countries, it is hard to determine which of these mechanisms is at work because both hypotheses predict high fertility right after migration and then a decline. However, when migrants move from low-fertility countries to countries with higher fertility, the adaptation hypothesis would predict increasing fertility – an adaptation from below – whereas the hypothesis of interrelated events would still predict elevated fertility right after migration.

This paper sheds light on these hypotheses by providing estimates of the total fertility rates (TFRs) of migrants from low-fertility countries in a moderate-fertility country. In addition to duration of stay, it also discusses other key aspects that can affect migrants' fertility: reason for migration, age at migration, return migration, and fertility before migration (e.g., Toulemon 2004; Mussino et al. 2012; Monti et al. 2019).

Only a few other studies have examined fertility changes by duration of stay among immigrant women from low-fertility origins in a higher-fertility setting. The results are inconclusive. Whereas immigrants from China to the United States and from the former Soviet Union to Israel are found to have low but increasing fertility by duration of stay (Hwang and Saenz 1997; Nahmias 2004; Okun and Kagya 2012), studies from Western Europe observe highest fertility right after arrival for women from low-fertility countries in Eastern Europe (Anderson 2004; Lübke 2015). Ford (1990)

finds some evidence of rising and then declining fertility for immigrants from low-fertility countries in Europe moving to the United States.

None of these studies include information on the reason for migration. Such information is found in only a few other studies on immigrant fertility (Castro Martín and Rosero-Bixby 2011; Mussino and Strozza 2012a, 2012b; Ortensi 2015). However, these studies focus on low-fertility destinations such as Spain and Italy, where few immigrants are from countries with even lower fertility.

2. Data and methods

Norway provides a good case study because it has attracted immigrants from high- as well as low-fertility settings, has had higher fertility than many other European countries (Kravdal 2016), and has high-quality data. We use data from the Norwegian population register, which includes information on all immigrants and their fertility in Norway. Among immigrant women from countries with lower fertility than in Norway, the three largest groups are from Poland, Lithuania, and Germany. We study all immigrant women (15 to 49 years) from the three countries who arrived in Norway from 2005 to 2017. In this period, the TFR in Norway fluctuated between 1.6 and 2.0, whereas the TFR ranges in Poland, Lithuania, and Germany were 1.2 to 1.5, 1.3 to 1.7, and 1.3 to 1.6, respectively (Eurostat 2020). Our study includes 30,005 women from Poland, 14,867 from Lithuania, and 9,444 from Germany, and their births in Norway up until 2018 (15,183; 7,258; and 3,225 births, respectively). Tables in the online supplementary material show numbers by arrival year and by age groups. To be registered as an immigrant in Norway, you need to (intend to) stay in the country for at least six months, so seasonal workers and short-term labor migrants are excluded from this study. At arrival, immigrants from the European Union (except Nordic citizens) have to register with the local police in order to get a personal ID number and be listed in the Norwegian population register. Here, they also have to state their main reason for staying in Norway – be it work, family (re)unification, or other reasons (Dzamarija 2013). Our data for TFRs and age-specific fertility rates (ASFRs) in Poland, Lithuania, and Germany are provided by Eurostat (Eurostat 2019 and 2020).

In this study, we use the TFR to measure fertility, or birth intensity, by duration of stay after arrival in Norway. The TFR is the sum of ASFRs, which are the number of births among women in a certain age group divided by the midyear population of all women in this age group, calculated for a certain period (we use calendar years and single-year age groups). As such, the TFR can be seen as a useful measure of fertility behavior in a certain group during a certain period (Sobotka 2008). One feature of the TFR is that it is highly affected by tempo distortions and, specifically, when looking at

migrants, by age at migration. The tempo distortions are often considered a disadvantage of the TFR as a fertility measure. In this instance, however, the timing of births is exactly what we want to explore. While the TFR after arrival says little about expected completed family size for these immigrant women, it reveals a great deal about the fertility timing and how this relates to the migration event.

3. Results

For immigrant women from Poland and Lithuania, the TFR tends to decline by years since migration (Figure 1, first and second panel). Their initial fertility in Norway is somewhat higher than the general Norwegian TFR and definitely higher than the TFR in their origin country. Women from Germany (Figure 1, third panel) have a somewhat different pattern: Their birth intensity increases from an initial level slightly above the German average and peaks around four years after migration. Separate analyses by arrival cohort (see online supplementary material) display more fluctuations; however, the trends are similar to those in Figure 1.

Figure 1: **TFR among immigrant women from Poland, Lithuania, and Germany who arrived in Norway 2005–2017, by year since migration (YSM)**
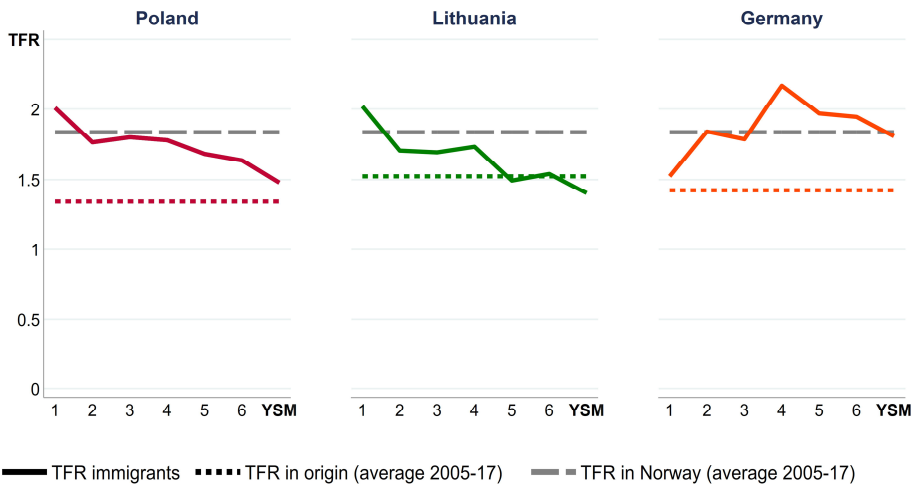
Source: Authors' elaboration is based on population data from Statistics Norway and Eurostat data.

The differences in fertility patterns may be due to several factors. Below, we explore four possible explanations: reason for migration, return migration, pre-migration births, and age at migration.

3.1 Reason for migration

For the women in this study, work and family are the main reasons why they came to Norway. However, the share in each category differs: 44% of the immigrant women from Poland were registered as family migrants, whereas this was true for 29% of the women from Lithuania and 28% of those from Germany. The higher share of family migrants among women from Poland may be partly explained by the large influx of Polish male labor migrants after the EU enlargement in 2004 and a subsequent wave of women joining these migrants in Norway.

The fertility for family migrants shows a similar pattern for women from all three origin countries (Figure 2, upper panels): Their TFR right after migration is clearly above the Norwegian level, by 0.8, 0.9, and 1.7 for women from Poland, Lithuania, and Germany, respectively. For all groups, fertility declines by duration of stay. This is not surprising, given that these women are recorded as family migrants, who often migrate to start a family. For the German family migrants, the TFR is based on just over 2,500 women, so these results should be interpreted with some care.

The category 'nonfamily migrants,' dominated by labor migrants, have somewhat different fertility patterns (lower panels): For women from all three countries, fertility is high or increasing during the first four to five years after migration, at or up to a level considerably above that of the origin countries. Nonfamily Polish migrants have higher fertility than at their origin country when they arrive in Norway, but after the peak their rates drop to below the Norwegian level. Lithuanian women seem to have rates similar to those of native Norwegians up to five years after migration, but then their rates drop below those of their origin country. German women start out below the TFR in Germany and after a peak four years after migration slowly reach the Norwegian average.

Figure 2: **TFR among immigrant women from Poland, Lithuania, and Germany who arrived in Norway 2005–2017, by year since migration and reason for migration**
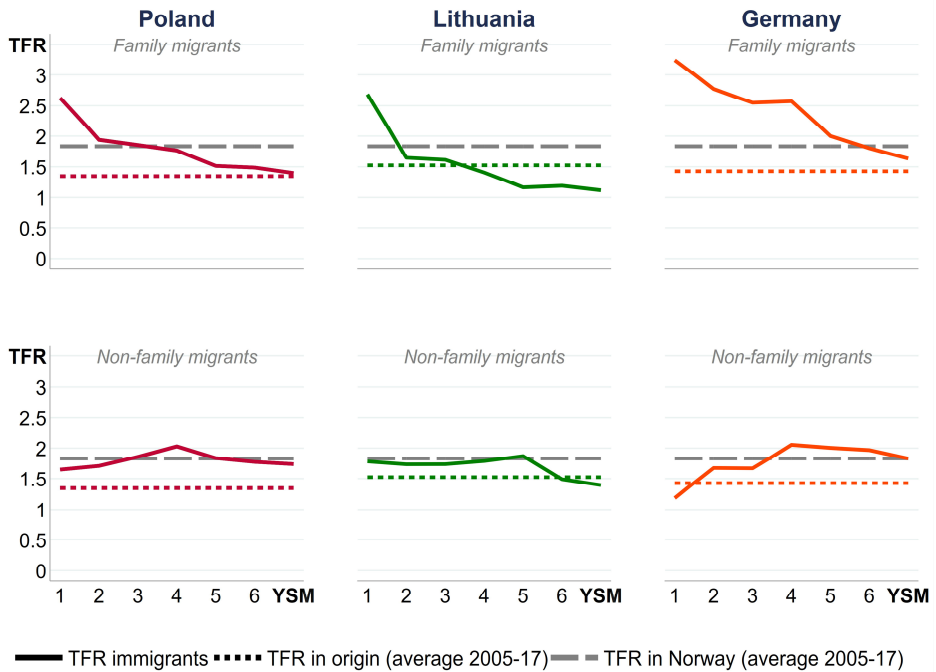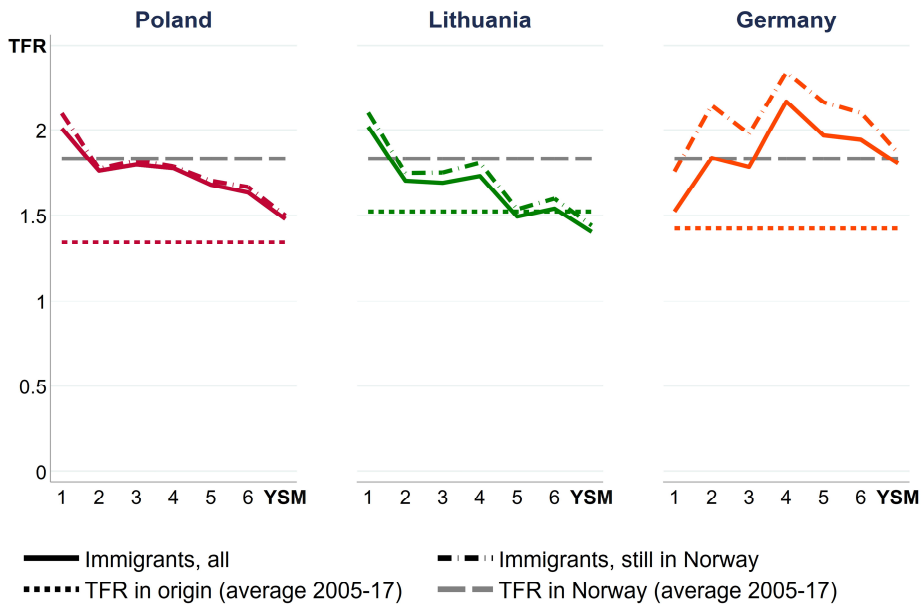

Source: Authors' elaboration is based on population data from Statistics Norway and Eurostat data.

3.2 Emigration

Some TFR changes by duration of stay may simply be explained by changing composition within each group if women with a different fertility behavior are the ones who emigrate again. In our sample, 78% of immigrant women were still in Norway at the end of 2018, whereas 21% had emigrated. These emigration shares range from 41% among German women to 17% among both Lithuanian and Polish women. For all three origin-country groups, the fertility rates increase somewhat when those who have emigrated are excluded, demonstrating that short-term stayers have lower fertility (Figure 3). The TFR for women from Germany is around 0.2 higher, whereas it is less

than 0.1 higher for those from Poland and Lithuania. Women from Germany also have a considerably higher emigration share. However, none of the slopes change when the emigrants are excluded.

Figure 3: **TFRs among immigrant women from Poland, Lithuania, and Germany who arrived in Norway 2005–2017, by age at migration, compared with TFR at origin country and in Norway**
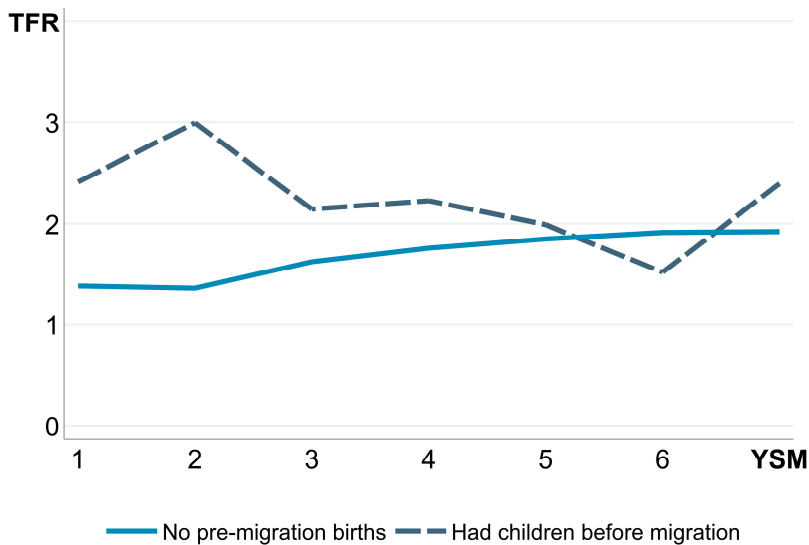

Source: Authors' elaboration is based on population data from Statistics Norway and Eurostat data.

3.3 Pre-migration births

Immigrants' fertility in destination countries can also be affected by their number of births before migration. Norwegian data on pre-migration births may be deficient for those women who did not bring their children to Norway and did not give birth in Norway, so this part of the analysis is restricted to women who came at age 15 to 29, of whom 25% had one or more registered births before their arrival. Women with pre-migration children are on average older at their arrival. For those without pre-migration births, fertility increases gradually by duration of stay, whereas the trend for those who

had children before arrival is more downward sloping (Figure 4). This may partly be explained by the age difference between the groups; the majority of those without pre-migration births are in ages where fertility rates tend to increase every year.

Figure 4: **TFRs among immigrant women from Poland, Lithuania, and Germany (pooled) who arrived in Norway 2005–2017 at age <30 years, by pre-migration fertility and years since migration**


Source: Authors' elaboration is based on population data from Statistics Norway.

3.4 Age at migration

Many studies have pointed to the importance of age at migration for migrants' fertility outcomes (Toulemon 2004; Mussino et al. 2012; Adsera et al. 2012). In Figure 5, immigrants from all three countries are pooled to get large enough samples to construct ASFRs by age at migration for five-year age groups, inspired by Toulemon (2004).

Figure 5: **ASFRs among immigrant women from Poland, Lithuania, and Germany (pooled) who arrived in Norway 2005–2017, by age at migration, compared with ASFRs in origin country and in Norway**
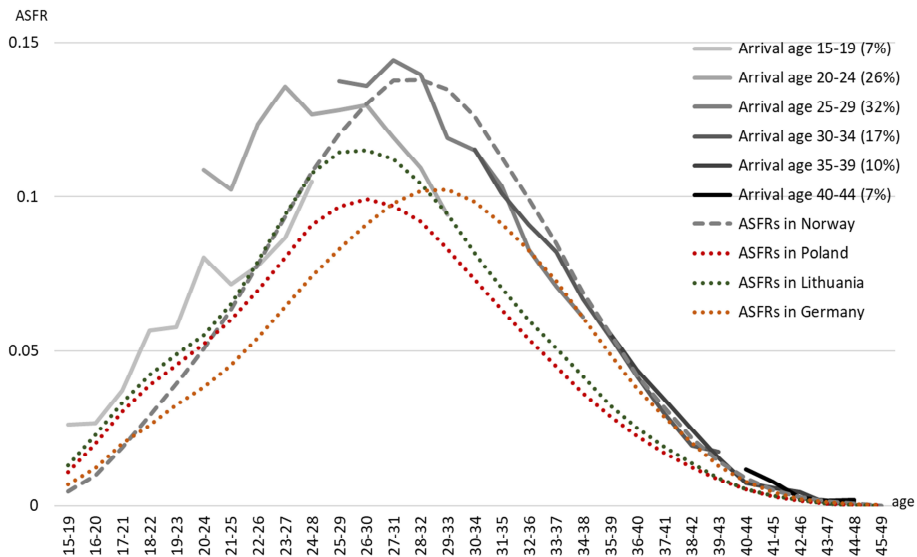
Notes: ASFRs for immigrant women are calculated for five-year age groups, whereas those for origin countries and Norway are based on single-year age groups and placed in the figure where the single year matches the average of the five-year span. The percentages in parentheses show the share of the sample.
Source: Authors' elaboration is based on population data from Statistics Norway and Eurostat data.

To some extent immigrants follow the general trend of increasing fertility until their late 20s and a decline in the 30s. However, for those who arrive before age 30, age-specific fertility right after immigration is higher than the age-specific fertility both in Norway and in the origin countries. It is also higher than for immigrant women from these countries at the same age who arrived at a younger age. However, the fertility rates of women who arrived at age 20 to 29 rapidly declines after some years, and in their 30s they have lower fertility rates than the Norwegian average, suggesting that the fertility differences between them and other women in Norway may mainly reflect different timing of births.

For those arriving after age 30, the ASFRs are also higher than that in Poland and Lithuania and relatively close to the Norwegian level. The declining fertility over time is most obvious for those who arrived at age 25 or older, whereas the trend is clearly increasing for those who came when they were 15 to 19 years old. A larger share of the

German immigrant women came in this young age group (13%), compared to women from Poland (4%) and Lithuania (also 4%).

4. Discussion

This study sheds light on hypotheses of migrant fertility in several ways. First, the univocal trend of high and decreasing TFR among family migrants, even among women from low-fertility countries, offers clear support for the hypothesis of interrelated events. Second, for nonfamily migrants, several of the migrant fertility hypotheses may be useful in explaining the observed trends. The high or increasing TFR for nonfamily migrants could be an example of adaptation from below, at least for those from Germany whose fertility clearly increases the first four to five years after migration. Since most of the women in this group are labor migrants, we may assume that labor market participation can accelerate fertility adaptation (Andersson and Scott 2005, 2008). The fact that it often takes some years to get settled in the Norwegian society and on the labor market may explain why fertility of the nonfamily migrants peaks after four to five years, at least for those from Poland and Germany. This peak may, in turn, be one reason for the following decline for some; when a group's birth intensity is particularly high, women in this group may have most of the children they intended to have and thereby feel less inclined to high birth intensity in the following years. Thus, the fertility pattern among nonfamily migrants could also be interrelated with the migration event, but with a time lag. The relatively high fertility already during the first couple of years in Norway could also indicate some support for the selection hypothesis if these migrants have higher-fertility preferences than other women at origin. However, we do not believe that the increasing fertility trend in some groups can be explained with another potential hypothesis on migrant fertility – the disruption hypothesis, which suggests that fertility is particularly low around the migration event due to stress related to the move and settling into a new place – because the initial fertility of nonfamily migrants in Norway is not particularly low compared to the TFR at the origin country and in Norway, indicating no strong post-migration disruption effect.

By using data on reason for migration we may also shed light on why previous studies on immigrants from low-fertility areas were inconclusive; in Western European destinations, a relatively large proportion of female migrants from low-fertility countries may have come for family reasons. This is hard to confirm with existing data, but it could be a reason for the high (but declining) fertility observed after immigration by Anderson (2004) and Lübke (2015) but not in non-European countries (Ford 1990; Hwang and Saenz 1997; Nahmias 2004; Okun and Kagya 2012).

Our results also show that for women who arrive at young ages, initial fertility is higher than both in Norway and at the origin country, but the general age effect of increasing fertility throughout their 20s also seems strong. Thus, although fertility for young immigrant women is relatively high after arrival, this does not necessarily imply decreasing fertility by duration of stay. This age effect may partly explain the different pattern for women from Germany since a higher share of those from Germany were in the youngest age group at arrival. The age effect warrants some caution when studying changes in immigrant women's TFR by duration of stay because the composition of immigrant women by age at migration may affect the results; if the great majority are in their early 20s, the age effect suggests that we may see an increasing TFR by duration of stay even with a strong presence of the effects proposed by the hypothesis of interrelated events (elevated fertility right after arrival). On the other hand, if the great majority are 30 years or older at arrival, they will most likely have a decreasing TFR anyway simply because of this age effect.

5. Conclusion

Most studies on migrant fertility have focused on immigrant women from high-fertility countries in a Western context. For these women, both the hypothesis of adaptation and the hypothesis of interrelated events predict a relatively high TFR right after arrival, followed by a decline with duration of stay. However, when women from low-fertility countries migrate to countries with higher fertility, the adaptation hypothesis would predict low but increasing TFR, whereas the hypothesis of interrelated events still would suggest elevated TFR after arrival.

Our results show that even women from low-fertility countries often have higher fertility rates in the first years after immigration in Norway, supporting the hypothesis of interrelated events. However, we found differences in the timing of motherhood for different types of migration. Women who come as family migrants have clearly elevated fertility rates right after arrival, before their birth intensities decline by duration of stay. For women who do not migrate primarily for family reasons, the TFR patterns are more challenging to interpret, and multiple mechanisms may be at work. Nonfamily migrants more often arrive at younger ages, and the general age effect of increasing fertility through their 20s is strong. In addition, the fact that these women's birth intensity tends to be highest four to five years after migration may indicate that migrant women who do not primarily move to start a family need time to get established on the Norwegian labor and housing markets and to build a social network, so that the fertility of these women is also interrelated with the migration event, but with a time lag. However, particularly for women from Germany, it may also be a sign

of adaptation from below – whereby fertility norms and behaviors among women from low-fertility settings change as they are exposed to a higher-fertility context.

In a context of declining fertility in many parts of Europe, such as the Nordic countries, the results of this study indicate that the contribution to the number of births from immigrant women from low-fertility countries will be highest right after their migration or after a couple of years if they do not arrive as family migrants.

6. Acknowledgements

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