Fertility Intentions Within a 3-Year Time Frame: a Comparison Between Migrant and Native Italian Women

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Abstract

The body of literature on the fertility of migrants in Europe has grown significantly in recent decades. The focus has mostly been on analysing their actual behaviours, and reflection on other crucial aspects extensively analysed in studies on natives has been lacking. In particular, differences between migrants' reproductive decision-making process and that of natives are currently understudied in the European context. We will focus on the association between demographic and socio-economic characteristics and fertility intentions, comparing native Italian and migrant women in Italy. We apply logistic regression models to analyse factors associated with strong intentions to have a child (or positive fertility intention) and strong intentions *not* to have a child (or negative fertility intention) in the short term. We use data from the Social Condition and Integration of Foreign Citizens survey on households with at least one foreign member and from the Italian Gender and Generation Survey, both carried out at the national level by the National Institute of Statistics (ISTAT). Net of controlled covariates, migrant women have both higher positive and lower negative fertility intentions within a 3-year time frame than native women do. However, the patterns of fertility intentions are different for natives and migrants as a function of age, educational level, marital status, parity, homeownership and, notably, labour market status. Focusing only on migrant women, we observe that fertility intentions vary by age at arrival and time since migration and that there are significant differences by country and geographical area of birth.

Keywords Fertility · Short-term intentions · International migration · Italy · GGS data · SCIF data

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Introduction

The body of literature on the fertility of migrants in Europe has grown significantly in recent decades (e.g. Kulu et al. 2019). Thus far, the focus has mostly been on their observed demographic behaviour, i.e. the tempo and quantum of births (e.g. Andersson 2004; Milewski 2007, 2010). Previous research has failed to reflect on some other crucial aspects that have been extensively analysed in studies on natives. As Milewski and Mussino (2018) recently pointed out, differences between migrants' reproductive decision-making process and that of natives are currently understudied in the European context.

When discussing quantum fertility hypotheses (adaptation, socialization, selection, cultural entrenchment, minority status), most studies have used actual fertility to test possible variation in migrants' ideal fertility. In doing so, they are interpreting the final number of children ever born as if it were the ideal number of children, implicitly or explicitly assuming that the number of born children is not vastly different from the desired family size.

At the same time, by discussing tempo hypotheses (e.g. disruption, anticipation or interrelation of events) using actual fertility, scholars have interpreted the timing of births as if it were a perfect match with short-term[1] fertility intentions, assuming that all individuals can implement such intentions. However, in both developing and developed countries, fertility often substantially deviates from ideals and intentions (Bongaarts 2001; Morgan 2003). Actual behaviour may be the consequence of mistimed or unwanted births, which currently account for an appreciable proportion of total fertility (Helfferich et al. 2014) or of failure to realize one's fertility intentions (Adsera 2006; Spéder and Kapitány 2015). Data on actual fertility, therefore, may not be entirely suitable for studying the reproductive decision-making process, whereas data on short-term fertility intentions may be more appropriate. The issue is particularly relevant when dealing with migrants, who may move from high- to low-fertility settings and may face different institutional and labour market constraints they could not have anticipated prior to migration or during the first stage of their settlement process. Research has shown that, among natives in developed countries, the average expressed fertility preference substantially exceeds the total fertility rate. At the same time, some groups of migrants originate from countries in early and mid-transitional demographic stages, where the typically observed fertility almost always exceeds preferences (Bongaarts 2001).

Significant differences in the occurrence of mistimed and unwanted births or failure to realize fertility intentions may, therefore, exist between migrant women and natives (Finer and Henshaw 2006), following different patterns of over- and underachievement. Studies have substantiated this hypothesis, showing that there is reason to believe that higher fertility among selected migrant groups is driven more by overachievement due to unwanted births than by fulfilled intentions to have children and reach the desired high fertility (Kessler et al. 2010; Rocca et al. 2010; Hartnett 2014).

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[1] The time reference for short-term fertility intentions may vary. However, sample survey studies of short-term fertility intentions, including the present study, typically consider a 3-year time frame starting from the interview occasion. In the "Fertility Intentions in the Short Term" section, we will discuss this issue in more detail.

Interpreting actual fertility as the undisrupted realization of either ideals or short-term fertility intentions may, therefore, lead to biased conclusions if differences in actual fertility between groups are due to the combination of different fertility ideals and systematic disadvantages among specific groups in implementing childbearing intentions. While ideals have already been studied in the Italian context (Mussino and Ortensi 2018), we focus on aspects related to fertility decision-making. To this end, using fertility intentions has the potential to disclose the fertility decision-making net of the realization bias (Ajzen and Klobas 2013). The few previous studies carried out in the European context and based on migrant fertility intentions have had limited coverage in terms of the countries and migrant groups involved. Research has shown the persistence of patterns similar to those in the country of origin (i.e. non-migrant peers) among first-generation migrants, while demonstrating a gradual convergence towards patterns typical of natives among those in the 1.5 and second generations (Carlsson 2018; Puur et al. 2018).

The present paper focuses on women's short-term fertility intentions, without considering their relation to fertility outcomes. The study aims to add to the literature comparing migrants and natives in Italy, currently one of the most important receiving countries in Europe (Strozza 2010; Eurostat 2020). To the best of our knowledge, a comparison between the short-term fertility intentions of migrant and native women has never been carried out in the Italian context.

We focus on two sets of research questions.

First, we compare native Italian and migrant women:

> (RQ1) Do the short-term fertility intentions of migrants and natives differ?
> (RQ2) Do demographic and socio-economic factors play different roles in the two groups?

Second, we focus on migrant women:

> (RQ3) Do fertility intentions vary as a function of age at arrival and time since migration?
> (RQ4) Are there differences between different country of origin groups?

Theoretical Background

Migrant Fertility in Italy

The Italian case is of particular interest as regards analysing migrant fertility. First, Italy is a relatively new country of immigration. Migration flows there peaked during the first decade of the 2000s, and the second generations are only recently entering childbearing age (Colombo and Dalla Zuanna 2019). Second, there is considerable heterogeneity regarding the communities settled in the country, each characterized by specific migration and integration patterns (Strozza et al. 2003; Rossi and Strozza 2007; Blangiardo 2019; King and Okólski 2019). Finally, overall fertility in Italy is extremely low (around 1.3 children per woman), owing to the familistic welfare regime and lack of meaningful fiscal advantages for families with children (Colombo and Dalla Zuanna

2019). The fertility of migrant women is almost twice that of Italian women, with substantial differences between nationalities (Strozza and De Santis 2017).

For these reasons, there is a renewed and growing interest among scholars in fertility behaviours among migrants in Italy. Earlier studies have focused mainly on estimating the level of migrant fertility (Maffioli and Castiglioni 1995; Natale and Strozza 1997; Guerrizio et al. 2003). Attention has also been paid to the impact of migrant fertility on the structure and dynamics of the population, with particular emphasis on the total fertility rate (Golini 1968; Strozza et al. 2007; De Bartolo and Stranges 2008; Mamolo and Ferrara 2009; Giannantoni and Strozza 2015; Giannantoni et al. 2019). The most recent approach relies on new data and individual-level longitudinal analysis. Scholars have acknowledged the importance of several characteristics in shaping women's post-migration fertility, including the country of birth, cohabitation or marriage with a native, reason for and time since migration, migration pattern and religion (Mussino and Strozza 2012a, b; Ortensi 2015; Mussino et al. 2015; Stonawski et al. 2016).

Research has shown that migrants settled in Italy and originating from North Africa, particularly those in endogamous marriages, tend to have significantly higher fertility rates than those originating from Eastern European countries (Mussino and Strozza 2012a; Ortensi 2015). Country of citizenship seems to be associated with specific migration patterns and norms involving gender roles. Women who have moved for family-related reasons have elevated fertility levels after migrating, compared to those who migrated for employment-related reasons or were the first migrants in their family (Mussino and Strozza 2012b; Ortensi 2015; Stonawski et al. 2016). At the same time, a native partner can accelerate the adaptation process, increasing the risk of giving birth among migrants from lower-fertility countries than Italy and decreasing that risk among migrants from higher-fertility countries (Mussino and Strozza 2012a).

One study has also analysed migrant fertility from a spatial perspective, finding a positive and significant association between migrants' fertility and overall fertility at the province level (Vitali and Billari 2017).

A comparison with the fertility norm of the country of origin for three national groups revealed remarkable differences: Moroccan women seem to conform to the pattern of their country of origin, Albanians tend to adapt to Italian behaviours, and Ukraine women's histories suggest a disruptive effect of migration on fertility, i.e. a reduction in the occurrence of births around the time of migration (Impicciatore et al. 2020).

More recently, Alderotti et al. (2019) contributed to reflections on the impact of the Great Recession on the fertility behaviour of migrants in Italy and Sweden. They found that the probability of having a child during the economic downturn declined in Italy for long-term migrants (more than 10 years), indicating the impact of economic integration on fertility behaviours. At the same time, the crisis did not influence the so-called tempo arrival effect: the probability of giving birth for recently migrated women is always higher than that for women with a longer length of stay. In a comparative analysis of fertility change during the economic recession in Italy (and Spain), Graham et al. (2016) suggested that fertility among foreign women in Italy declined more than it did among natives, because native fertility was already very low and foreign women experienced greater economic vulnerability than their Italian counterparts did. Shifting the focus from actual fertility to ideals, Mussino and Ortensi (2018) focused on the personal ideal family size of migrants in Italy compared

to the norm in their respective countries of origin. Their results showed that differences between the respective ideal family sizes of migrants and stayers in the country of origin were higher among women from countries where large families are idealized. Moreover, they showed that conformity with the country of origin ideal was more likely among women who had migrated as adults.

Finally, the possible lack of consistency between childbearing intentions and actual fertility is a relevant issue in the Italian context as well, suggesting the importance of analysing fertility intentions separately from actual fertility. A recent report by the Italian National Institute of Statistics (ISTAT 2017) highlighted lower use of modern contraception among migrants compared to Italian natives, with significant variation between countries of origin. Similarly, data on voluntary abortion among migrant women underlined wide gaps in access to family planning services and different country-specific patterns leading to abortion (Spinelli et al. 2005). Such results confirm the added value of fertility intention data for avoiding bias due to contraception failure and fertility overachievement, which may be higher for migrants than for natives. Evidence of fertility overachievement among migrants in Italy has also emerged from qualitative studies (e.g. Decimo 2018).

Fertility Intentions in the Short Term

Short-term fertility intentions (i.e. within a 3-year time frame) are crucial when studying fertility decision-making. If we focus on desired fertility, positive intentions to have a child and behavioural control emerge as crucial factors of parity progression. As such, intentions are essential in the framework of Ajzen and Fishbein's Theory of Planned Behaviour (Fishbein and Ajzen 1975; Ajzen and Fishbein 2005). Earlier works have revealed the complexity of the concept of fertility preferences (Ajzen and Klobas 2013).

In particular, the intention to have a child within a 3-year time frame, analysed in-depth in the present paper, may differ from quantum preferences expressed without a specified time frame that are more closely linked to fertility ideals. One's desired, ideal, expected or intended number of children represents a vision. Short-term intentions, in contrast, are relatively concrete and affected by constraints such as employment and related economic issues, lack of a suitable partner, social fertility norms or a desire to delay motherhood. For these reasons, short-term intentions are not appropriate in discussions of quantum fertility. At the same time, they can provide information on mechanisms related to tempo fertility decision-making limited to the time frame covered by the survey data. Not having short-term intentions to have a child does not imply that a woman will not plan a pregnancy after the period considered in the study.

Because actual fertility may be affected by mistimed or unwanted pregnancies, on the one hand, and by infertility and involuntary infecundity, on the other (Morgan 2003), we must look at intentions if we are to correctly understand the factors associated with short-term decision-making. For example, research has underlined the effect of differentials in fertility overachievement between US natives and Hispanic migrants (Rocca et al. 2010; Hartnett and Parrado 2012; Hartnett 2014). At the same time, the trend towards postponement of fertility among women in developed countries increases the risk of fertility underachievement. The relatively small proportion of young women unable to have children increases with age, due to the cumulation of

diseases and age-related declines in fecundity, especially after 35 (Morgan and Rackin 2010). Given the difference in age-specific fertility rates between natives and migrants in Italy (ISTAT 2018), natives may be overrepresented among underachievers compared to migrants.

The few studies we are aware of that have analysed migrants' fertility intentions have found significant differences between groups. In the European context, evidence from Sweden shows convergence to destination country short-term intention patterns, with the second generation being similar to non-migrants. The first generation instead shows more positive short-term fertility intentions compared to natives, while the 1.5 generation occupies an intermediate position (Carlsson 2018).

Puur et al. (2018) recently studied the fertility intentions of Russian migrants and their descendants in Estonia, comparing non-migrants in Estonia and Russia. Their results suggest that Russian migrants and their descendants in Estonia have fertility intentions more similar to those of their counterparts in Russia than to those of Estonians. Nevertheless, aspects strictly related to integration, such as language proficiency and having a native partner, are linked to higher chances of adopting typical host country fertility intention patterns among migrants and their descendants (Puur et al. 2018). These findings indicate that cultural embeddedness matters in shaping fertility intentions.

As short-term fertility intentions are potentially negatively affected by adverse economic conjuncture (Blossfeld and Hofmeister 2007; Busetta et al. 2019), we must point out that the deep financial and economic crisis that began in 2007–2008 may have influenced our results. Even if the study was limited to intentions of overall parity progression to second birth rather than short-term intentions, Fiori et al. (2018) showed that, in Italy between 2002 and 2012, the proportion of mothers intending to have another child significantly declined and that the number of women reporting economic constraints as a reason for this substantially increased. Their findings suggest that, over the years of the Great Recession, there was a convergence of native Italian women and women of another nationality to a similar 20% chance of not wanting a second child for economic reasons; these findings may be useful in framing the results of the present study.

Based on the literature discussed above on actual fertility and driven by the research questions formulated in the introduction concerning short-term fertility (→), the hypotheses tested in the present study that compare natives and migrants are as follows:

RQ1→H1: *Migrant women should have higher short-term positive fertility intentions and lower short-term negative fertility intentions, reflecting their relatively higher fertility compared to natives in Italy*, even after controlling for demographic and socio-economic characteristics.

RQ2→H2: The literature on migrant fertility has shown a strong relationship between migration and other life-course events such as educational achievement, stable employment, marriage and fertility. Due to the interrelation between migration and the abovementioned events, the effects of sociodemographic characteristics on fertility intentions should differ between migrant and native women. We expect that *migrant women who are very young, in education, or never married and childless, for example, should express significantly higher positive short-term fertility intentions than peer native women, with a consequently different pattern in*

the predicted probabilities. Migrants might experience greater vulnerability than their Italian counterparts do with respect to adverse socio-economic conditions. Therefore, we expect that *low-educated unemployed migrant women, living in rented housing, should express significantly higher negative short-term fertility intentions than native women do.*

Restricting the analysis to the migrant population:

RQ3→H3: The reproductive model of the country of settlement influences the fertility intentions of migrant women in different ways as a function of age at arrival (or migratory generation) and time since migration. All other characteristics being equal, *migrant women should have lower positive short-term fertility intentions when exposed to the Italian reproductive model as children or young girls* (i.e. they migrated before socialization to the cultural model of the country of origin) *and for a longer period of time* (i.e. having a longer length of stay in Italy).

RQ4→H4: Foreign immigration to Italy is characterized by the significant heterogeneity of migrants' areas of origin; migrants differ in relatively marked ways in their socio-economic and demographic characteristics and behaviours. The populations of the leading immigrant groups' countries of origin have remarkably different levels of fertility: extremely low and similar to that of Italy in the case of Central and Eastern European countries and particularly high in the case of the countries of Africa and the Indian sub-continent. In the first case, we have more modern family patterns, with women playing a leading role in their own migratory experience (labour migrants and often forerunners). In the second case, we observe more traditional family and migratory patterns, in which women move mainly for family reunification and generally maintain the reproductive models, with high fertility, of the countries of origin (Guetto and Fellini 2017; Cantalini and Panichella 2019). Even when controlling for demographic, socio-economic and migratory characteristics, *migrant women from African and Asian countries should continue to have higher positive intentions of short-term fertility than the positive intentions of those from more developed countries and Central and Eastern Europe.*

Data and Method

The paper uses data from two national surveys: The multipurpose survey on families with at least one foreign member, called the *Social Condition and Integration of Foreign Citizens* (SCIF) survey, and the Italian *Gender and Generation Survey* (GGS) data on native residents. The Italian National Institute of Statistics (ISTAT) conducted these two surveys in 2011–2012 and 2009, respectively. Families were randomly sampled from the municipal population registers. In addition to collecting standard demographic and socio-economic information on women and their partners, these datasets also contain information on short-term fertility intentions. The present paper analyses fertility intentions expressed within a 3-year time frame. For the purpose of the study, we selected women aged 18–44: 6074 migrant women from the SCIF survey (only foreign born, regardless of citizenship) and 7624 non-migrant women

(only Italian born, regardless of citizenship) from the GGS (see Appendix Table 1 for the characteristics of the two groups).[2]

The two surveys asked the same question: "Do you intend to have a child in the next three years?" The response alternatives in the two surveys differed slightly, however. The survey for migrants allowed the women to answer "I don't know", while the survey involving natives did not include this option; respondents could express their indecision only by leaving the question unanswered ("Missing" category). Thus, we defined an "Unsure" category that corresponds to the "I do not know" category for migrants and to missing value for natives. However, the difference between the two response sets created some problems in the data harmonization process: The categories "I do not know" and "Missing" might have different meanings; not having the opportunity to respond "I do not know" might force women to choose a softer intention (e.g. "Probably") or decline to answer the questions. Native and migrant women may have a different perceived degree of control over their fertility, especially among migrants from countries where the fertility transition (Bongaarts 2017) is not yet complete. To overcome this problem, we created two dependent variables for use in the multivariate analysis[3]:

- "Definitely no" vs. "Other" to study *strong* negative fertility intention
- "Definitely yes" vs. "Other" to study *strong* positive fertility intention

To answer our research questions, we ran a set of regression analyses based on these two outcomes. We used logistic regression to investigate the factors that most influence the fertility intention in Italy.

To answer the first two research questions and verify the two corresponding hypotheses, we adopted an ex-post merging approach, assembling and harmonizing single datasets composed of microdata that had been collected separately.

To answer RQ3 and RQ4 and test the corresponding hypotheses, we focused only on the migrant population, analysing migration-related variables.

As independent variables, we included characteristics, collected in both surveys, that have been deemed relevant in the literature on fertility intentions:

- *Migrant background* (migrants vs. natives—ref.).
- *Age at interview* (18–24; 25–29; 30–34 – ref.; 35–39; 40–44). Age is a crucial variable: on the one hand, childbearing is an age-dependent phenomenon; on the other, age allows us to capture cohort effects. Positive fertility intentions are less frequent among very young and older women (Menniti 2005; Philipov et al. 2005; Meggiolaro 2007, 2010; Fiori 2008; Mamolo et al. 2008; Liefbroer 2009;).

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[2] Due to the sample strategy, the households including only naturalized immigrants are excluded from the migrant sample. However, according to the 2011 census, naturalized women aged 18–44 make up around 12% of all foreign or foreign-born women residing in Italy. Less than half (46.2%) of these naturalized women became Italian by marriage, and it is therefore presumed that their family does not have foreign members and does not fall within the sample design of the SCIF survey. The remaining half could instead be included in the sample design of the survey due to the possible presence of at least one foreign component (and in fact are present in our final sample). Therefore, the survey might exclude from the reference universe a share between 5 and 10% of the collective of interest, mainly women who have been naturalized through marriage.

[3] Limitations and robustness checks are presented in a separate section after the results.

- *Marital status* (never married—ref.; married and not married, including separated, divorced and widowed). Formal marriage status is strictly relevant to childbearing only among select subgroups (e.g. Muslim migrants; Westoff and Frejka 2007). At the same time, marital status may be an (imperfect) proxy for union stability, which is positively related to positive fertility intentions (Sorvillo and Marsili 1999; Liefbroer 2009). Information on the presence of a partner, irrespective of the woman's marital status, is not available.

- *Parity* (childless—ref.; one child; two children; three children or more). Positive fertility intentions decrease at higher parities (Thomson 1997; Menniti 2005; Bühler 2008; Mamolo et al. 2008; Meggiolaro 2010).

- *Educational level* (lower secondary or less—ref.; upper secondary; post-secondary or tertiary). The dimension of education is highly relevant to fertility. Native women with a higher education have higher desired fertility but also tend to postpone the transition to first birth in order to complete their education. Moreover, educated women are more likely to be engaged in the labour market (Van Peer 2002; Heiland et al. 2005; Philipov et al. 2005; Toulemon and Testa 2005; Mills et al. 2008).

- *Labour market status* (employed; unemployed; housewife or inactive—ref.; student). Labour market participation entails better wealth conditions as well as difficulty coping with a job and domestic tasks simultaneously. In the case of our study, we should pay specific attention to the Italian context and consider differences in labour market patterns for natives and migrants. The Italian labour market is heavily segmented by gender and ethnicity (Reyneri and Fullin 2011). Migrant women tend to participate in the domestic and care sector. These jobs tend to be precarious and time-consuming, limiting women's ability to reconcile work and childbearing (Fellini and Guetto 2019). Despite the growing proportion of precarious and fixed-term contracts among natives, their labour market participation could imply favourable economic conditions and welfare provisions that may not be equally available to migrants employed in low-paid and ethnically connoted jobs (e.g. elderly caregivers/"badanti"). Moreover, a select subgroup of migrant women migrate specifically to serve as a caregiver, wife and mother; for these reasons, their labour market participation is low, allowing them to instead dedicate themselves to childbearing (Ortensi 2015).

- *Homeownership* (owned housing—ref.; rented housing; other). Homeownership can be regarded simultaneously as a proxy for favourable wealth conditions and, in the case of migrants, as a proxy for the intention to settle in Italy permanently. This variable is also correlated with the lifecycle.

Additionally, every model is controlled for *Geographical area of residence* (north—ref.; centre; south and islands), because the socio-economic situation in Italy is sharply differentiated across areas. Moreover, overall fertility has been and remains different between the centre-north and the south and islands.

Other variables are included in the model on migrants only:

- *Country/Macro-area at birth* (Romania—ref.; Albania; Poland; Ukraine; EU15 and other advanced economies—AE; other European countries; Morocco; other African countries; South-Central Asia; other Asian countries; Latin America). We

considered countries with at least 300 women sampled and merged other countries into broader geographical categories.

- *Age at arrival in Italy* (15 or younger—ref.; 16–20; 21 or older). Age at arrival is strictly related to the role of socialization in childbearing (Mussino and Ortensi 2018). Women who migrated as adults are expected to share the fertility ideals of their countries of origin, while those who arrived as young children are expected to be more similar to natives.
- *Time since migration* (less than 4 years—ref.; between 4 and 10 years; more than 10 years). This variable is crucial in assessing the link between the timing of relocation and the intention to have a(nother) child.

We will discuss our findings using predicted probabilities to make the results more tangible (Williams 2012). Control variables are kept at mean values. Several interactions have been provided to compare natives and migrants and to check whether the women's characteristics work differently in the two groups.[4] Moreover, predicted probabilities related to additional migrant characteristics provide a more exhaustive picture. Interested readers will find information on the odds ratios of the pooled dataset and migrants in the Appendix (Tables 2, 3 and 4).

Results

Results from the descriptive analysis show that most women do not intend to have a child in the 3 years after the survey (Fig. 1). "Definitely not" is, in fact, the most common response among both migrants and natives (37.0% and 38.5%, respectively). Among natives, the number of respondents in the different response categories decreases as the intention to have a child becomes more substantial, such that "Definitely yes" is the least common alternative (10.4%). The smallest group is composed of undecided respondents (7.7%). Migrant women have a different pattern: "Probably yes" and "Definitely yes" are the second- and third-highest alternatives (20.8% and 15.9%, respectively), and the percentage of undecided respondents (13.7%) is higher than among natives.

Differences Between Natives and Migrants

Using the pooled dataset, the first model analyses the certainty of not wanting a child in the 3 years following the survey versus all other intentions. Similarly, the second model analyses the certainty of wanting a child in the same time frame. These two models allow us to assess whether differences between migrants and natives in the levels of positive and negative short-term fertility intentions significantly persist after the variables included in the multivariate analyses are controlled for.

According to the results of the two models, the predicted probability of not intending to have a child within 3 years, keeping the control variables at mean value, is higher

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[4] We chose to present the interactions because they provide a more comprehensive picture. Separate analyses regarding natives and migrants have also been conducted but are not shown here for space reasons and to make the results easier to read.
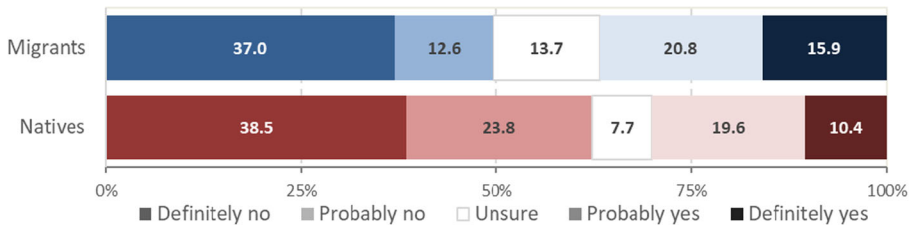
Fig. 1 Fertility intention by migrant background. Women aged 18–44. Note: The "Unsure" category corresponds to the "I don't know" category among migrants and to "Missing value" among natives. Source: Our elaboration on pooled GGS and SCIF data

among natives (36.8%) than among migrants (30.7%), as shown in Fig. 2. At the same time, migrant women have a predicted probability of 10.3% of wanting another child, and the corresponding figure among native women is 6.1% (Fig. 2). Both differences estimated by the models are statistically significant. We can thus answer the first research question (RQ1): confirming our hypothesis (H1), migrant women are more likely than native women are to plan a pregnancy in the short term, even when demographic and socio-economic characteristics are controlled for.

To assess possible differences in the effect of control variables on migrants and natives (RQ2), we interacted *migrant background* with the other explanatory variables one by one.[5]

Figure 3 presents the predicted probabilities for both models by age group and migration background. The trend in the certainty of not wanting a child by age follows a U-shaped form for both natives and migrants, but the probability for natives aged 18–24 is significantly higher than for their migrant peers. Consistently, the pattern regarding the certainty of wanting a child is also differentiated by migration background. Natives' predicted probabilities have a reversed U-shaped pattern that peaks at the 30- to 34-year age group. Among migrants, the predicted probabilities have the highest values in the first age group (18–24) and then decrease with age, assuming a lower value than for natives in the last age group only. This result provides evidence that, overall, migrants plan to have children at an earlier age than natives do. In particular, the predicted probability of wanting a child within 3 years between 18 and 24 years of age is almost 20% among migrant women and less than 5% among natives. In the next age group (25–29), there are still significant, albeit less marked, differences between the two groups: the predicted probability is 17% for migrants and 11% for natives.

Parity also seems to play different roles in the two groups of women. Migrant women have higher positive fertility intentions than natives do, especially before entering parenthood: the most significant difference between natives and migrants concerns, in fact, childless women (Fig. 4). In this category, the predicted probability of not being at all intent on having a first child is higher among natives than among migrants (23% and 13%, respectively). The predicted probability of being willing to have a first child within 3 years is lower among natives than migrants (15% and 26%, respectively).

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[5] Results are presented as predicted probabilities, making the results easy to compare. However, the larger differences found between different groups may be due—at least partly—to different baseline probabilities. For this reason, we also present ORs of the interaction product term in Appendix Table 3. We also calculated average marginal effects (AMEs) and the results confirmed our conclusions.
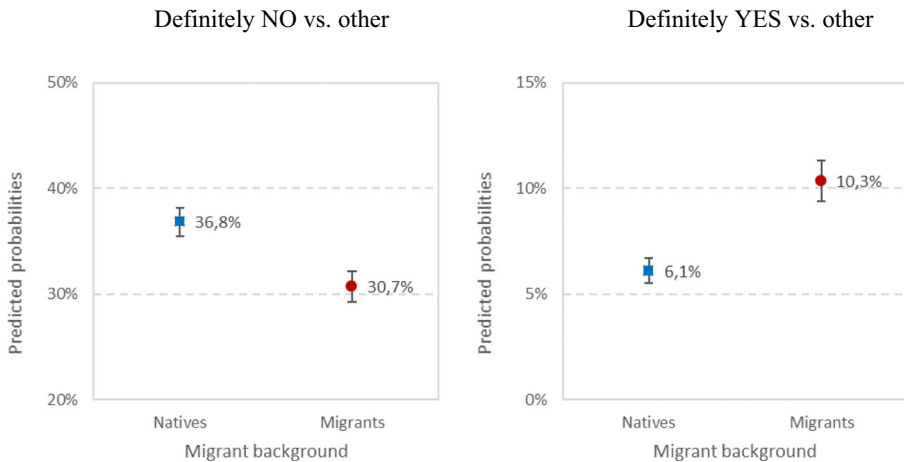
Definitely NO vs. other   Definitely YES vs. other

Fig. 2 Predicted probabilities by migrant background. Logistic regressions. Women aged 18–44. Definitely NO vs. other; Definitely YES vs. other. Control variables: geographical area of residence, age at interview, educational level, labour market status, marital status, parity, homeownership. Note: Odds ratios are presented in Appendix Table 2. Control variables kept at mean. Source: Our elaboration on pooled GGS and SCIF data

We also ran an analysis by parity because the literature shows that the rationales for having a child differ as a function of birth order (Morgan 2003). Separated models show a different effect only by age at interview. Otherwise, the effect of the control variables follows the same direction as the overall model.[6]

Looking at labour market status, we found the main differences between natives and migrants for job-seekers and students (Fig. 5). The predicted probability of not wanting a child in the following 3 years is particularly high for native students (65%) and relatively high for native job-seekers (41%). This pattern does not occur among migrant women, who have the highest probability among housewives (39%). We observed a similar trend in the predicted probability of positive intentions to have a child within 3 years. The lower probabilities are observed among native job-seekers and students (6% and 1%, respectively), while among migrant women no significant differences in positive fertility intentions are found by labour market status.

Looking at marital status, the most significant gap between natives and migrants occurs when considering never-married people and the certainty of not wanting a child. Furthermore, married and never-married migrants have a higher probability of wanting a child compared to their respective native counterparts (Fig. 6).

The educational gradient assumes a similar pattern in the two groups (Fig. 7): the highest positive fertility intentions are observed among educated women. However, the probability of not wanting a child is particularly low among low-educated migrant women (28%, compared to 40% among low-educated natives). In this case, the schedules of predicted probabilities by educational level of natives and migrants are clearly different.

Considering intentions and homeownership status (Fig. 8), the greatest difference between migrants and natives is observed among those who live in rented housing.

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[6] Due to the limited added value of this model, its results are not shown in the present paper. The table is available from the authors upon request.
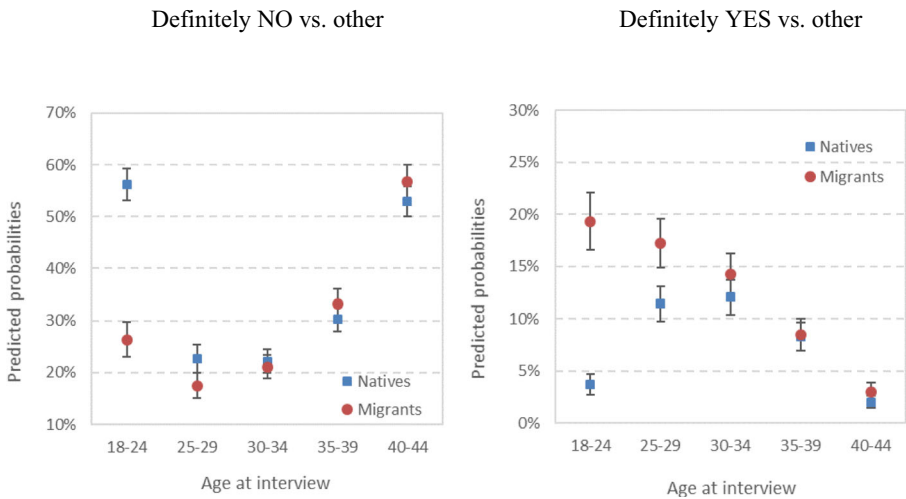
Definitely NO vs. other   Definitely YES vs. other

Fig. 3 Predicted probabilities by migrant background and age at interview. Logistic regressions. Women aged 18–44. Definitely NO vs. other; Definitely YES vs. other. Control variables: geographical area of residence, educational level, labour market status, marital status, parity, homeownership. Note: We perform logistic regression models similar to those presented in Appendix Table 2, the only exception being the included interaction. Full models and odds ratios are available upon request; however, we present the odds ratios of the product term in Appendix Table 3. Control variables kept at mean. Source: Our elaboration on pooled GGS and SCIF data

Among this group, the predicted probability of wanting a child is almost double among migrants as compared to natives (11% and 6%, respectively).
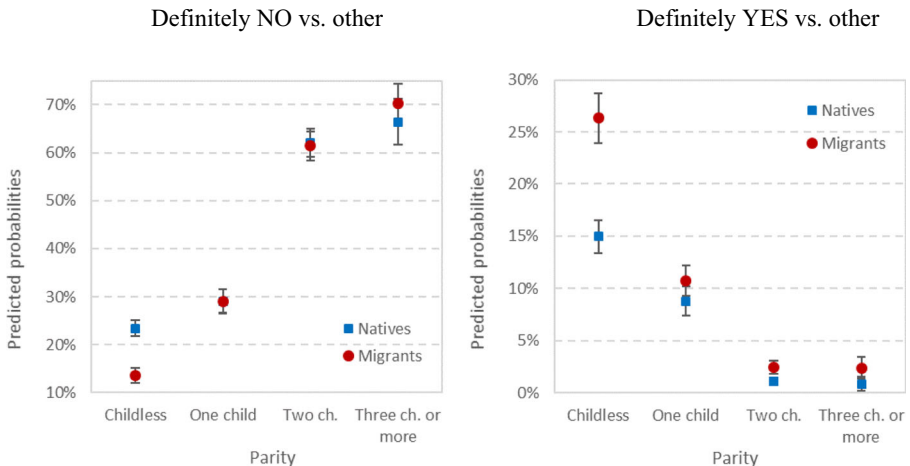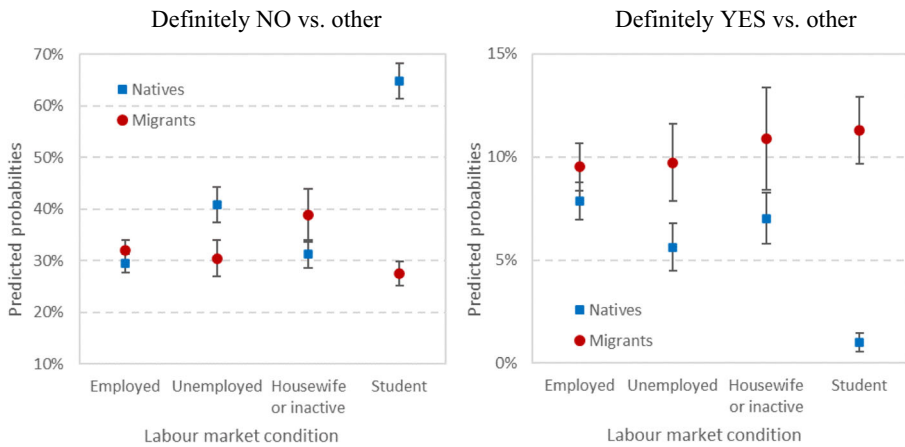
Definitely NO vs. other   Definitely YES vs. other

Fig. 4 Predicted probabilities by migrant background and parity. Logistic regressions. Women aged 18–44. Definitely NO vs. other; Definitely YES vs. other. Control variables: geographical area of residence, age at interview, educational level, labour market status, marital status, homeownership. Note: We perform logistic regression models similar to those presented in Appendix Table 2, the only exception being the included interaction. Full models and odds ratios are available upon request; however, we present the odds ratios of the product term in Appendix Table 3. Control variables kept at mean. Source: Our elaboration on pooled GGS and SCIF data

Fig. 5 Predicted probabilities by migrant background and labour market status. Logistic regressions. Women aged 18–44. Definitely NO vs. other; Definitely YES vs. other. Control variables: geographical area of residence, age at interview, educational level, marital status, parity, homeownership. Note: We perform logistic regression models similar to those presented in Appendix Table 2, the only exception being the included interaction. Full models and odds ratios are available upon request; however, we present the odds ratios of the product term in Appendix Table 3. Control variables kept at mean. Source: Our elaboration on pooled GGS and SCIF data

In sum, we can answer RQ2 by saying that some of the demographic and socio-economic factors have different impacts on the short-term fertility intentions of natives than on those of migrants.
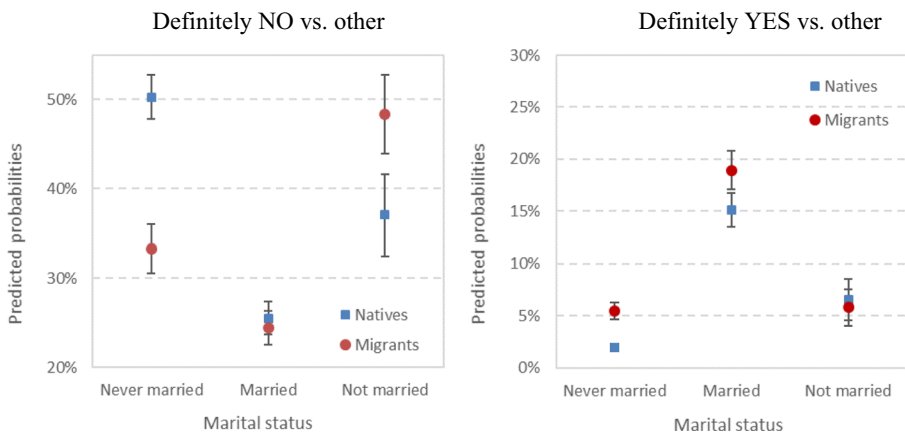

Fig. 6 Predicted probabilities by migrant background and marital status. Logistic regressions. Women aged 18–44. Definitely NO vs. other; Definitely YES vs. other. Control variables: geographical area of residence, age at interview, educational level, labour market status, parity, homeownership. Note: We perform logistic regression models similar to those presented in Appendix Table 2, the only exception being the included interaction. Full models and odds ratios are available upon request; however, we present the odds ratios of the product term in Appendix Table 3. Control variables kept at mean. Source: Our elaboration on pooled GGS and SCIF data
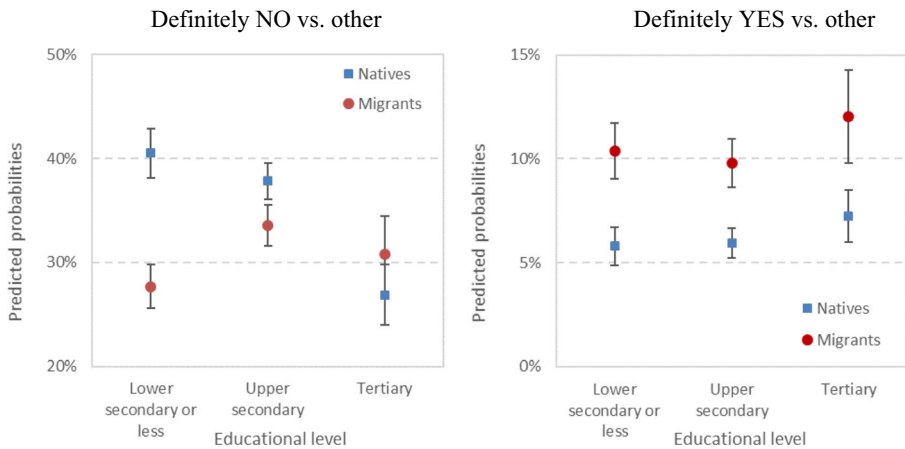
Fig. 7 Predicted probabilities by migrant background and educational level. Logistic regressions. Women aged 18–44. Definitely NO vs. other; Definitely YES vs. other. Control variables: geographical area of residence, age at interview, labour market status, marital status, parity, homeownership. Note: We perform logistic regression models similar to those presented in Appendix Table 2, the only exception being the included interaction. Full models and odds ratios are available upon request; however, we present the odds ratios of the product term in Appendix Table 3. Control variables kept at mean. Source: Our elaboration on pooled GGS and SCIF data

Differential Characteristics of Migrant Women

Restricting our analyses to the subsample of migrants (SCIF data only), it is possible to assess the effect of an additional set of variables. Among the entire set, we pay particular attention to age at arrival, time since migration[7] (RQ3) and country/macro-area at birth (RQ4).

Figures 9 and 10 show that fertility intentions vary significantly as a function of age at arrival and time since migration (RQ3). Migrant women who arrived in Italy when they were younger than 15 years (as children or youths themselves) have the highest probability of not wanting a child and the lowest probability of wanting a child.

As the time since migration increases, so does the probability of not wanting a child, and wanting a child shows the highest probability if the respondent migrated less than 4 years before the interview (12%).

It thus seems that an adaptation process is taking place that appears more marked among migrants who arrived before the age of 15 (the so-called 1.5 generation), who have undergone a relatively extended period of secondary socialization in the destination country. There is also a possible interrelation between fertility and migration, underlined by higher probabilities of wanting a child shortly after migration.

The response to RQ4 is also positive: differences in reproductive intentions among the main countries or macro-areas at birth are not negligible.

Other conditions being equal, the predicted probabilities (in Fig. 11) of not wanting a child among migrants from Morocco, the rest of Africa and more developed countries are significantly lower than those among migrants from Romania and Albania, and

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[7] To avoid collinearity bias, we ran two different models and alternatively included age at arrival and time since migration.

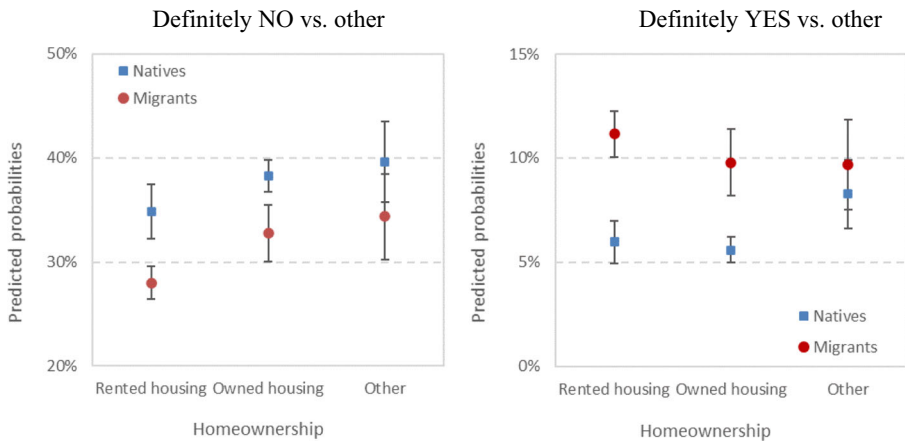## Definitely NO vs. other   Definitely YES vs. other

Fig. 8 Predicted probabilities by migrant background and homeownership. Logistic regressions. Women aged 18–44. Definitely NO vs. other; Definitely YES vs. other. Control variables: geographical area of residence, age at interview, educational level, labour market status, marital status, parity. Note: We perform logistic regression models similar to those presented in Appendix Table 2, the only exception being the included interaction. Full models and odds ratios are available upon request; however, we present the odds ratios of the product term in Appendix Table 3. Control variables kept at mean. Source: Our elaboration on pooled GGS and SCIF data

more generally, migrants from Eastern Europe. Figure 11 also shows similar findings for positive fertility intentions: African women, in particular Moroccan women, have the highest predicted probability of intending to have a child within 3 years, in this case as opposed to Albanian, Romanian and Eastern European women, but also natives of the most developed countries.
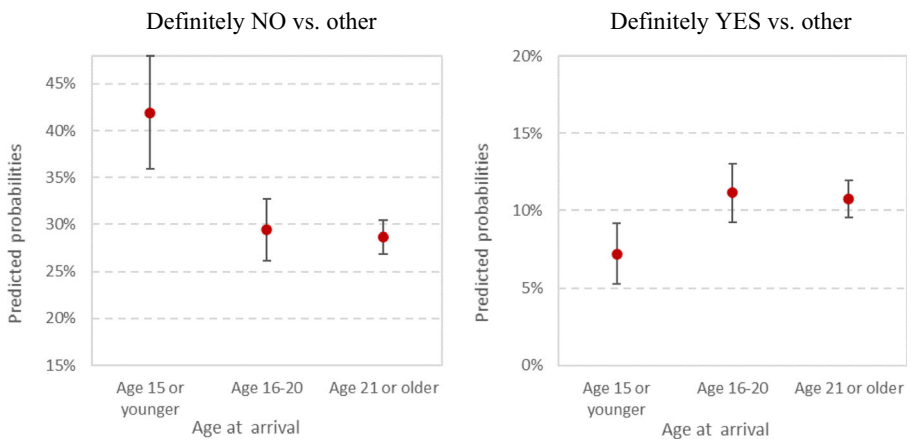
Definitely NO vs. other   Definitely YES vs. other

Fig. 9 Predicted probabilities by age at arrival. Logistic regressions. Migrant women aged 18–44. Definitely NO vs. other; Definitely YES vs. other. Control variables: geographical area of residence, age at interview, educational level, labour market status, marital status, parity, homeownership, country/macro-area of birth. Note: We perform logistic regression models similar to those presented in Appendix Table 4. Control variables kept at mean. Source: Our elaboration on SCIF data
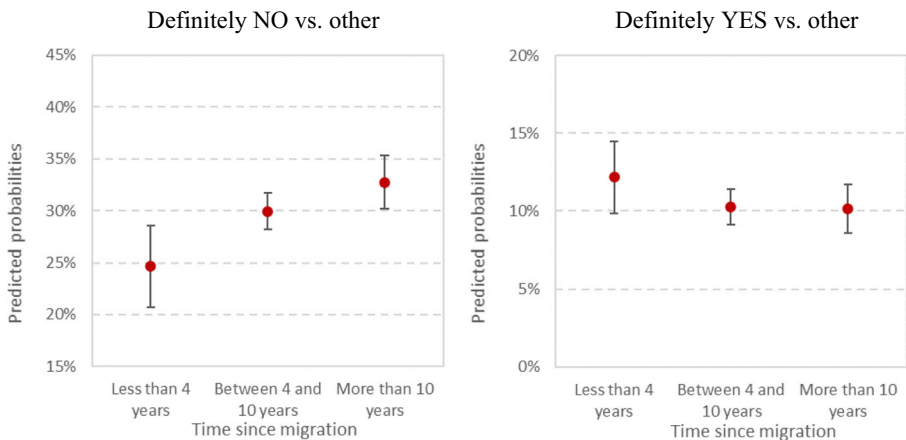
Fig. 10 Predicted probabilities by time since migration. Logistic regressions. Migrant women aged 18–44. Definitely NO vs. other; Definitely YES vs. other. Control variables: geographical area of residence, age at interview, educational level, labour market status, marital status, parity, homeownership, country/macro-area of birth. Note: We perform logistic regression models similar to those presented in Appendix Table 4. Control variables kept at mean. Source: Our elaboration on SCIF data

Robustness Checks and Limitations

While the present study helps to fill an unexplored gap in the current migration studies literature, some limitations have to be considered when reading its results. First, we pull data from two studies carried out in 2009 and 2011–2012, respectively. Factors related to the influence of the Great Recession might, therefore, have affected more the results of the 2011–2012 survey on migrants compared to the 2009 survey on natives. Our study might underestimate the occurrence of positive short-term intentions and overestimate that of negative ones, as the disruptive effects of job loss and insecure employment status may induce individuals to postpone childbearing (Ranjan 1999). However, our results show that, despite the possible effect of underestimation, migrants' short-term fertility is higher than natives'. Similarly, migrants' negative short-term fertility intentions are lower than those of natives, despite the likely effect of overestimation among migrants. These results suggest that, even after controlling for this period bias, our results would be very similar and lead to the same overall conclusions.

Second, because of the data limitation, we had to use an extreme measure of fertility based on strong fertility intentions, which, on the one hand, might have led to under- or overestimation of the differences between natives and migrants. On the other hand, taking into account *mild* intentions (i.e. Probably yes; Probably not) as well adds an extra bias to the analyses, by possibly adding new unobserved factors we cannot control for. To assess the validity of our measure and choice, we ran two different sets of robustness checks (RC)[8]:

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[8] The results will be discussed but are not shown in detail (available on request).
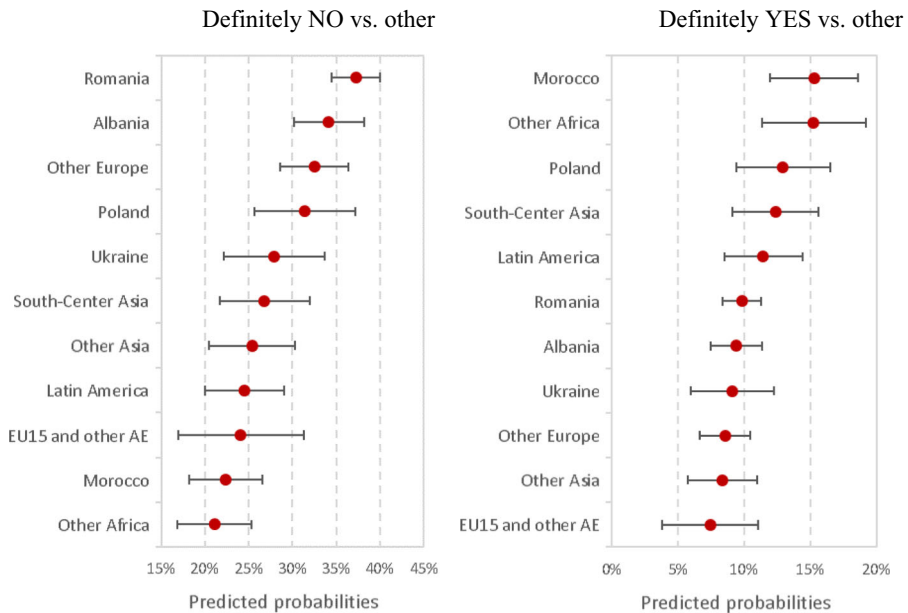
Fig. 11 Predicted probabilities by country/macro-area of birth. Linear probability models. Migrant women aged 18–44. Definitely NO vs. other; Definitely YES vs. other. Control variables: geographical area of residence, age at interview, educational level, labour market status, marital status, parity, homeownership, age at arrival. Note: We perform logistic regression models similar to those presented in Appendix Table 4. Control variables kept at mean. Source: Our elaboration on SCIF data

RC1. We combined the answers "Definitely no" and "Probably no" vs. Other and then did the same for the positive intentions (combined intentions analysis).

RC2. We removed missing values and the "I don't know" answers from the analysis and ran models using both formulations (strong and mild intentions).

Overall, the results for all RC models confirm the direction of the relationships observed using an extreme formulation of fertility intentions. The results for RC2 for negative intentions show no effect on control variables but slightly reduce the differences between migrants and natives. In the case of positive intentions, the RC2 formulation increases the ORs between migrants and natives.

Third, the approach of ex-post merging different datasets reduces the number of available variables to those collected in both surveys and could increase the probability of selection bias due to the increasing number of unobserved factors. Moreover, as with virtually all studies on fertility intentions, data limitations do not allow us to control for health problems or previous experience of infertility or fertility problems. As a growing body of literature on infertility/subfecundity has shown, uncertainty as to whether or not women will be able to give birth may prevent them from reporting a firm intention to have a child (Shreffler et al. 2016). Additionally, due to the cross-sectional nature of

the two surveys, our data do not account for intention realization. As our focus is on women's intentions, our study does not consider either the influence of the partner or the potential effect of conflicting fertility intentions. The relevance of the partner's reproductive intentions is well acknowledged in the literature, and research in the Italian context shows that lack of agreement is higher among couples in which the woman's role is less traditional (Rosina and Testa 2009). However, evidence linking childbearing intentions and reproductive outcomes in the Italian context suggests that women have a greater influence on childbearing decisions than men do (Testa et al. 2011). Moreover, information on household income or on whether the woman has a partner was not available in both surveys.

Finally, given the scarcity of studies looking at short-term fertility intentions in the European context, we cannot assess whether the Italian case might be comparable to or representative of other European countries.

Summary and Conclusion

The present study of fertility intentions within a 3-year time frame was designed to reveal factors associated with short-term fertility decision-making, net of mistimed and unwanted births or failure to realize fertility intentions, whose differential impact on the actual fertility of natives and migrants is not well understood. Despite the potential of fertility intention data, the use of them in the framework of the fertility and migration studies has thus far been limited to a few groundbreaking investigations. In the present study, we compare the fertility intentions (both positive and negative) of migrant and native women within a 3-year time frame in Italy, using two representative national surveys.

Our analysis shows that, net of controlled covariates, migrants have higher short-term fertility intentions than natives do (RQ1). Signs of overall convergence between patterns of native and migrants observed when analysing actual fertility might, therefore, be the result of difficulties in implementing fertility intentions more than of shifting norms and preferences, as Mussino and Ortensi (2018) speculated.

Another key finding is that demographic and socio-economic factors have different impacts on the short-term fertility intentions of natives as compared to those of migrants (RQ2). In line with our expectations, labour market status seemed to be differently related to native women's decision-making as compared to migrant women's. Among women born in Italy, the constraints posed by work on the process of fertility planning are substantial. On the other hand, among migrant women, labour market status seems to have a less significant and a different link. This result confirms the idea that, among migrants in Italy, economic integration has a stronger relationship with actual reproductive behaviours (Andersson and Scott 2005, 2007; Alderotti et al. 2019) than with desired or intended fertility (Mussino and Ortensi 2018).

In addition, our results suggest that native women's fertility intentions are more related to external constraints. Young age and the need to achieve one's educational and professional goals limit natives' short-term intention to have a

child. Research on Italian couples has shown a positive gradient between their fertility intentions and the degree to which they feel secure about their housing situation (Vignoli et al. 2013). For Italian natives, homeownership is one of the most crucial and symbolic milestones in family building and is, therefore, positively related to fertility. We do not observe such a pattern for migrants, however, who are instead more conditioned by the fertility they have already achieved (parity). This finding marks a difference to actual fertility and may be interpreted as a sign of overachievement. Some differences in fertility characteristics concern different patterns of transition into adulthood and family building. For migrants, homeownership is instead more associated with the long-term successful settlement process and may follow rather than precede childbearing.

Overall differences between natives and migrants are more evident when the ideal conditions are not met (e.g. living in rented housing, unemployed). Net of other variables, under these conditions, migrants have higher short-term fertility intentions than natives do, in that migrants prioritize the building of a family over full economic security. Our findings support evidence from qualitative studies (Decimo 2018) showing that, among select migrant communities, childbearing is a symbolic milestone in the consolidation of the family and might even become an emigration strategy rather than a passage heavily dependent on economic security.

When we focus on migrants, we observe that fertility intentions vary by age at arrival and time since migration (RQ3). The behaviours of migrants who arrived at a younger age seem to be more similar to those of natives, showing a higher probability of negative fertility intention in a short time frame. Few differences exist between women who migrated after having entered childbearing age; this finding suggests that the country in which women spend their early years is essential in shaping aspects related to ideal fertility, intentions and actual behaviours (Mussino and Ortensi 2018). The fertility intentions observed in our study seemed to follow the pattern proposed in the interrelation hypothesis (e.g. Andersson 2004): positive intentions are higher in the short term after migrating, while negative intentions tend to grow with time spent in Italy.

We also note significant differences in relation to the country or geographical area at birth (RQ4), which are proxies for values, fertility norms and gender equality. The contrast between the reproductive intentions of African (in particular Moroccan) and European (in particular Romanian and Albanian) women that has emerged in previous analyses on actual fertility (Mussino and Strozza 2012a, b) is also evident in short-term childbearing intentions.

Appendix

Table 1 Selected characteristics of the sample by population background. Women aged 18–44. Column percentage values

Characteristics	Natives	Migrants
Age at interview		
18–24	19.4	16.6
25–29	16.1	18.0
30–34	18.7	24.3
35–39	22.8	21.8
40–44	23.1	19.4
Marital status		
Never married	43.7	31.3
Married	48.4	57.5
Not married	7.9	11.3
Parity		
Childless	49.8	34.3
One child	21.1	27.1
Two children	23.0	26.1
Three children or more	6.2	12.6
Educational level		
Lower secondary or less	30.8	36.2
Upper secondary	51.7	49.3
Post-secondary or tertiary	17.5	14.5
Labour market status		
Employed	50.9	48.6
Unemployed	14.1	12.8
Housewife or inactive	22.3	7.6
Student	12.7	31.0
Geographical area of residence		
North	44.4	61.9
Centre	19.5	24.0
South and Islands	36.1	14.2
Homeownership		
Rented housing	23.6	60.4
Owned housing	66.6	30.3
Other	9.7	9.3
Total	100.0	100.0

Note: Descriptive analysis considers the weights of the two sample surveys to ensure that the two groups appropriately represent the related full populations in Italy

Source: Our elaborations on SCIF and GGS data

Table 2 Results of logistic regression. Pooled sample of migrants and natives. Women aged 18–44. Odds ratios (OR)

Characteristics	Def. no		Def. yes	
	OR	Sig.	OR	Sig.
Migrant background (ref. natives)				
Migrants	0.761	***	1.778	***
Age at interview (ref. 30–34)				
18–24	2.747	***	0.798	*
25–29	0.880		1.122	*
35–39	1.688	***	0.605	*
40–44	4.345	***	0.164	*
Marital status (ref. never married)				
Married	0.458	***	5.870	***
Not married	1.085		1.757	***
Parity (ref. childless)				
One child	1.801	***	0.414	***
Two children	7.083	***	0.068	***
Three children or more	9.769	***	0.064	***
Educational level (ref. lower secondary or less)				
Upper secondary	1.077	*	0.977	
Post-secondary or tertiary	0.746	***	1.229	**
Labour market status (ref. housewife/inactive)				
Employed	0.940		0.970	
Unemployed	1.123		0.852	
Student	1.523	***	0.666	***
Geographical area of residence (ref. north)				
Centre	1.048		1.030	
South and Islands	0.831	***	0.959	
Homeownership (ref. rented housing)				
Owned housing	1.205	***	0.865	**
Other	1.294	***	1.081	
Constant term	*0.497*	***	*0.121*	***
Number of observations	13,698		13,698	
Pseudo-R^2	0.160		0.174	

$*p < 0.05$

$**p < 0.01$

$***p < 0.001$

Source: Our elaborations on GGS and SCIF data

Table 3 Results of logistic regressions. Pooled sample of migrants and natives. Women aged 18–44. Odds ratios (OR) of only the product term of the interaction between one of the following characteristics and the migrant background

ORs of the product term of the interaction between one of the following characteristics and the migrant background	Def. no		Def. yes	
	OR	Sig.	OR	Sig.
Age at interview (ref. 30–34)				
18–24	0.298	***	5.131	***
25–29	0.774	*	1.324	*
35–39	1.223		0.837	
40–44	1.243	*	1.206	
Marital status (ref. never married)				
Married	1.913	***	0.457	***
Not married	3.232	***	0.306	***
Parity (ref. childless)				
One child	1.948	***	0.615	***
Two children	1.901	***	1.156	
Three children or more	2.325	***	1.408	
Educational level (ref. lower secondary or less)				
Upper secondary	1.477	***	0.915	
Post-secondary or tertiary	2.154	***	0.932	
Labour market status (ref. housewife/inactive)				
Employed	0.812		0.763	
Unemployed	0.453	***	1.118	
Student	0.148	***	7.655	***
Homeownership (ref. rented housing)				
Owned housing	1.081		0.926	
Other	1.098		0.601	**

$*p < 0.05$

$**p < 0.01$

$***p < 0.001$

Note: We perform logistic regression models interacting between one of the following characteristics and the migrant background and controlling for the other variables presented in Appendix Table 2. Each of this interaction corresponds to different models

Source: Our elaborations on GGS and SCIF data

Table 4 Results of logistic regression. Migrant women aged 18–44. Odds ratios (OR)

Characteristics	Def. no		Def. yes	
	OR	Sig.	OR	Sig.
Age at interview (ref. 30–34)				
18–24	1.091		1.569	**
25–29	0.797	*	1.262	*
35–39	1.759	***	0.561	***
40–44	4.711	***	0.192	***
Marital status (ref. never married)				
Married	0.629	***	3.621	***
Not married	1.349	*	1.316	
Parity (ref. childless)				
One child	2.432	***	0.390	***
Two children	9.823	***	0.082	***
Three children or more	16.984	***	0.073	***
Educational level (ref. lower secondary or less)				
Upper secondary	1.112		1.128	
Post-secondary or tertiary	0.984		1.681	***
Labour market status (ref. housewife/inactive)				
Employed	0.539	***	1.019	
Unemployed	0.561	***	0.968	
Student	0.456	***	1.186	
Geographical area of residence (ref. north)				
Centre	1.012		1.072	
South and Islands	0.632	***	1.055	
Homeownership (ref. rented housing)				
Owned housing	1.176	*	0.917	
Other	1.228		0.876	
Country/macro-area of birth (not included—see Figure 11)				
Age at arrival (ref. age 15 or younger)[a]				
Age 16–20	1.728	***	0.621	**
Age 21 or older	0.963		0.961	
Time since migration (ref. less than 4 years) [a]				
Between 4 and 10 years	1.308	*	0.827	
More than 10 years	1.489	**	0.816	
Constant term	0.281	***	0.205	***
Number of observations	6074		6074	
Pseudo-R^2	0.216		0.173	

[a] To avoid collinearity bias, the two variables for age at arrival and time since migration are alternatively included in two separate models. As the other variables do not show significant differences in the two alternative models, we chose to show the OR of only one of them

*$p < 0.05$

**$p < 0.01$

***$p < 0.001$

Source: Our elaborations on SCIF data

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