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Natives' and immigrants' fertility intentions in Europe: the role of employment

Les intentions de fécondité des natifs et des immigrés en Europe : le rôle de l'emploi

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AUTHOR'S NOTE

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Introduction

- 1 Research on immigrant fertility has gained increasing attention over the last decades. While low fertility regimes persisted in most European countries, the number of immigrants in the continent has increased sharply (from 50 million in 1990 to 82 million in 2019; United Nations 2019; see e.g. Carella and Pace 2001), and in this context, immigrants' contribution to total fertility became a topic of primary interest. In several European countries, births to immigrant women represent more than 10% of all births [Sobotka 2008]; however, there is evidence showing that in the aftermath of the Great Recession immigrants' fertility might have fallen more pronouncedly among immigrants than natives [Sobotka 2017].
- 2 Perspectives about immigrants' fertility pointed at the importance of factors such as immigrants' country of origin, length of stay in the destination country and reason for

migration as predictive factors of immigrants' childbearing [see e.g., Kulu 2005, Impicciatore *et al.* 2020]. Other recent studies on fertility determinants devoted great attention to employment-related factors (e.g., the spread of temporary contracts, the labour market uncertainty generated by the Great Recession) to explain childbearing fluctuations in Europe. Regarding immigrants' employment, it is known that they tend to be disadvantaged in the labour market compared to native workers in several dimensions, because they face more obstacles in accessing employment, they often occupy low status occupations and have time-consuming or low skilled jobs. However, only a handful of studies have focused on the relationship between immigrants' employment and fertility, providing mixed and highly context-dependent evidence: for example, Andersson and Scott [2005] found a positive association between women's employment and transition to motherhood among Swedish immigrants, while Wood and Neels [2017] found that, in Belgium, immigrant women are more likely to adopt childbearing strategies as an alternative to labour market participation. Few other studies addressed the employment/fertility link among immigrants [e.g., Alderotti *et al.* 2022 for Italy], but it is still unclear how labour market dynamics relate to immigrants' fertility outcomes across European countries. Most research on fertility has focused on childbearing behaviours, disregarding the ideational dimensions represented by attitudes and intentions, which are of primary importance to complete the picture through a better understanding of the normative side of fertility [Milewski and Mussino 2018].

- 3 With this study, we aim to provide further evidence about the employment/fertility link among immigrants by focusing on the relationship between employment conditions and fertility intentions – instead of behaviours, also adopting a European comparative perspective with their native counterparts. We aim at shedding some light on dynamics around immigrants' childbearing in the host country by scrutinising fertility intentions of immigrants with different employment status across Europe considering the age at which they arrived and their origin. In addition, contrary to most research on the subject, which focussed on women, we also analyse short-term fertility intentions of men¹. This allowed us to recognize men's role on decision making processes related to couples' fertility [Thomson 1997] and to highlight gender differences in the influence of employment conditions on fertility intentions of women and men among immigrants and natives.
- 4 Finally, we explored whether and how the Great Recession – i.e., the worldwide financial crisis started in 2007/2008 and which hit, albeit with different intensities, most countries of the world – has influenced the relationship between employment and intended fertility by comparing waves 2 and 5 of the European Social Survey, which refer to years 2004 and 2010 respectively. Previous research has already showed that the Great Recession has strongly affected fertility [e.g., Testa and Basten 2014, Matysiak *et al.* 2021], while much less is known about how fertility intentions have changed in the aftermath of the crisis. Despite this time comparison does not allow for a direct testing of the effect of the Great Recession on fertility intentions, the availability of the two datasets collected in 2004 and 2010 makes it possible to shed some lights on whether and how the employment/fertility intentions link has changed in the aftermath of the Great Recession compared to a pre-crisis year.
- 5 The remainder of the paper is organized as follows. The next section presents the theoretical background, the state of the art and research hypotheses of our research. In

the subsequent section, we describe data used and the methodology. Results is divided into four subsections. The first presents descriptive results regarding the proportions of men and women who declare to be definitely intended to have a(nother) child considering different employment conditions, both among natives and immigrants. The second explores, using multivariate analysis techniques, differences among immigrants and natives with diverse employment conditions on the probability of definitely intending to have a child. The third, focused on immigrants only, studies the relationship between employment and fertility intentions considering the country of origin and the age at their arrival in the host country. The fourth is about the role played by other variables in shaping natives' and immigrants' fertility intentions. The final section concludes and highlights study's limitations.

Theoretical background, state of the art and research hypotheses

- 6 Our review of the most recent state of the art follows a general-to-specific rationale. First, we discuss findings on the influence of employment both on fertility decisions and intentions and then we concentrate the attention on studies focused on immigrants' fertility intentions, trying to disentangle evidence about this relationship. Second, we summarize the results of previous research on the influence of variables exclusively related to fertility intentions of immigrants, such as age at arrival and the context of origin. Thus, our first set of research hypotheses contrast natives and immigrants' fertility intentions in relation to their employment status while the second regards only immigrants and their characteristics.
- 7 The relationship between employment and fertility decisions has been widely discussed by microeconomic theories² [Becker 1960, 1991]. According to this perspective, unemployment may generate two different effects on the demand for children. The first is an income effect, in which births are postponed or forgone given the greatest economic difficulty associated to being unemployed while facing the elevated costs of having a child [Dixit *et al.* 1994, Ranjan 1999, Morgan *et al.* 2011]. The second is a substitution effect, where births are not put in standby despite being unemployed, this because being out of the labour market implies having more time to dedicate to childbearing and rearing, in particular when the woman is unemployed [Butz and Ward 1979, Friedman *et al.* 1994, Alderotti *et al.* 2021]. Within this approach, some interesting differences have been stressed, for example, Adserà [2011] stated that income and substitution effects might change according to how individuals perceive unemployment, in terms of its duration. Thus, individuals may postpone having a child until the threat is gone (income effect) or may have them anyway because they do not know how much longer it would take to return to a most favourable situation (substitution effect). These options might be particularly important in a context of persistent economic uncertainty, as the one experienced during the economic recession started in 2008, and when considering that differences between natives and immigrants are expected to arise when facing economic hardship [Fromentin *et al.* 2017, Van Setten *et al.* 2017].
- 8 Generally speaking, demographic research about the relationship between employment and fertility has boomed after the Great Recession, which renewed the interest towards the employment sphere as a main determinant of fertility outcomes in high-income

countries. Analysing fertility rates for a set of European countries, Goldstein *et al.* [2013] showed that countries that were hit hardest by the financial crisis experienced the strongest reduction in fertility, especially at younger ages. This was confirmed by other studies, such as that by Comolli [2017], which also included the United States, and that of Matysiak *et al.* [2021], which used regional-level data for Europe and found that the fertility drop in the aftermath of the crisis was driven by the rise in unemployment rates. Other studies have shown differences on the influence of macroeconomic conditions on fertility according to the ethnic origin. More specifically, non-nationals' fertility responses to unemployment during the Great Recession were pro-cyclical and stronger for non-nationals than for nationals [Seltzer 2019; García-Pereiro and Paterno 2021]. A useful concept to approach and disentangle substitution and income effects on immigrant subgroups' fertility comes from *cumulative contingencies* [Mayer 1986, Mynarska *et al.* 2015]. In this perspective, the accumulation of experiences lived by immigrants since their arrival to the host country and of its consequences (positive or negative) on their migratory projects - which might cumulate as advantages or disadvantages- are likely to have an influence on immigrants' fertility choices.

- 9 We expect that this theoretical approach will also hold when trying to explain the link between employment and fertility intentions given that, as stated by several scholars specialized on the subject [Schoen *et al.* 1999, Philipov *et al.* 2006], fertility intentions are key for understanding fertility decision-making, especially when the time interval is specified and short.
- 10 As stated by Testa and Basten [2014], the reproductive uncertainty of childbearing intentions deriving from the economic uncertainty remains a crucial relationship that has been understudied in the literature. Few studies have been conducted on this topic and, despite using a wide variety of measures to approach economic uncertainty (i.e.: job characteristics, perception of income security, perception of resilience, etc.), almost all have identified economic security as an important building block for family formation processes. For instance, Begall and Mills [2011] found that objective indicators of labour market conditions strongly predict women's intentions to become mothers, while perceiving high levels of work stability increases the likelihood to intend to have a second child. Other studies found mixed results for women: good or improved employment conditions might facilitate or obstacle the intention to have a child, in the first case, by increasing resources to produce the desired fertility outcome [Hanappi *et al.* 2017]; in the second, by raising incompatibilities with childrearing and care responsibilities [Modena and Sabatini 2012]. Fahlén and Oláh [2018] also found that even if women's secure employment stimulates motherhood plans, unemployment does not suppress the intention to have the first child.
- 11 Some studies found that men's fertility intentions are as negatively influenced by employment conditions as women's [Neyer *et al.* 2011, Fahlén and Oláh 2018], while other studies found that men's persistent employment discontinuity is more strongly negatively related to woman's positive fertility intentions than her unemployment condition [Busetta *et al.* 2019]. Novelli *et al.* [2021] also analyzed the socio-economic determinants of fertility intentions in Italy - including the role of employment - finding crucial differences between men and women. Analysing Swiss data, Bernardi *et al.* [2013] found that women who work or aim to have a career are less likely to report positive fertility intentions. Gatta *et al.* [2021] found that childbearing decisions are more responsive to the capacity of recovery after job loss than the stability of the

current employment but more for men than for women, which shed some light on the role of men as main income providers of the family in some contexts. Regarding employed men, changing from a more to a less stable job decreases their positive fertility intentions, especially in times of economic uncertainty or recession [Ahmad 2011, Vignoli *et al.* 2020].

- 12 One of the greatest limitations of this body of research, at least as far as this contribution is concerned, is that most of the analyses did not distinguish between immigrants and natives, and only few included the migratory background as a control variable. It is well known that fertility responses to scarce economic conditions tend to vary among population subgroups [Vignoli *et al.* 2012, 2019, Matysiak *et al.* 2021]. But again, whether and how the relationship between fertility intentions and employment status varies according to the migratory background has been very little explored on empirical studies. Research focused on immigrants has produced mixed results, although we can also rely on few studies that have focused on comparing natives and immigrants' fertility, reporting a positive relation between employment and childbearing for both groups [Andersson and Scott 2005, Lundström and Andersson 2012, Wood and Neels 2017].
- 13 Regarding immigrants, Alderotti and Trappolini [2021] found that unemployment negatively affects fertility intentions of immigrants in Italy, but this effect is stronger for men than for women. In the same country, Mussino *et al.* [2021] reported that students and unemployed native women have lower likelihoods of definitively wanting a child, but not significant differences were found among immigrant women according to their labour market status. Another study on Polish migrant families in Ireland showed that improvements in migrants' economic and employment situation after the move positively influence the decision to have another child [Klimek 2017]. Evidence on Sweden, instead, showed that unemployment -relative to full-time employment- is not associated with positive fertility intentions [Carlsson 2018].
- 14 It is well known that immigrants' fertility decisions are not homogeneous, instead they vary greatly according to the country origin. For example, in Europe immigrant women (if compared to native women) tend to have a lower fertility if they come from Eastern European countries, similar or even lower for women from EU-15 countries and North America and higher for African women. However, differences may arise according to the European country in which immigrants have settled [Kulu *et al.* 2017, Mussino and Cantalini 2020, Wilson 2020].
- 15 Mussino and Ortensi [2018] tested cultural socialisation theory by analyzing the effects of country of origin and age at arrival, finding that both are important determinants of the fertility decisions of immigrants. Following this line, Puur *et al.* [2018] showed that fertility intentions are highly responsive to cultural maintenance in terms of social norms, values and attitudes socialized in the country of origin.
- 16 Fertility intentions might also be influenced by the reproductive models of both the country of origin and of the host country based on the age at which immigrants moved, determining the role of socialization [Adserà *et al.* 2012, Mussino and Ortensi 2018, Tønnessen and Wilson 2020, Mussino *et al.* 2021]. Immigrants who arrived during childhood or adolescence have socialized in the host country and their fertility intentions might differ from those of immigrants who arrived to the country of settlement later, who have socialized in the country of origin.

- 17 As reported above, previous studies showed that fertility intentions of immigrants differ according to the age at arrival and the country of origin [Mussino and Ortensi 2018, Puur *et al.* 2018, Mussino *et al.* 2021]. However, it remains unclear whether and how the employment-fertility intentions link will change according to these characteristics.
- 18 Previous research has also identified other important factors affecting fertility intentions. Age has been proven to be a crucial variable for childbearing related issues. The likelihood of having positive fertility intentions decreases as age increases – after a certain threshold [Philipov *et al.* 2006, Liefbroer 2009, Spéder and Kapitány 2009]. The intention to have a child tends to decrease as the number of children already had increases, that is, higher parities correspond to lower positive fertility intentions [Testa 2006, Billari *et al.* 2009, Begall and Mills 2011]. Fertility has been systematically related to the educational attainment, and fertility intentions are not an exception, but this relationship varies greatly across European countries and among population subgroups and immigrant origins [Kulu *et al.* 2017, Carlsson 2018, Mussino *et al.* 2021].
- 19 About the intentions of having a(nother) child in the near future of immigrants and natives, and based on the literature review, we test the following research hypotheses:
- RH1: we expect that individuals not being employed or having a limited-time employment are less likely to want to have a(nother) child than those with time unlimited employment, and this holds for both natives and immigrants.
 - RH2: we do not expect results to be gender neutral. The positive influence of employment on fertility intentions may be stronger for men than for women, independently of the migratory background.
- 20 Whenever possible we compared and contrasted results referred to the period before the Great Recession (2004) and the aftermath (2010) of the Great Recession to highlight observed differences.
- 21 Then, our attention shifts only to immigrants, in particular to those characteristics that mostly influence their fertility in the host country. On the one hand, one may argue that immigrants who arrived at younger ages are also those with a more stable employment, having more time to enhance their integration and consolidate their labour market position in the host country. On the other hand, compositional differences in terms of the country of origin may also mediate this relationship, given that immigrants' integration in the labour market also respond to their social capital and experiences lived before migration. As a result of the aforementioned differences between immigrant groups and based on the literature, we assume the following:
- 22 RH3: it is likely that the link between employment and fertility intentions will also vary according to immigrants' age at arrival to the host country and that this relationship will be further influenced by immigrants' origin.

Data and methods

- 23 We use data from the European Social Survey³ (ESS). Albeit not specifically targeted on immigrant subpopulations, the ESS provides harmonised information across several countries, which allows reaching a sample size adequate for statistical analyses, with the added value of a European comparative perspective. Data on migration background includes information about respondent's place of birth, allowing us to identify

immigrants basing on their country of origin, and about the respondent's age when they first came to live in the host country. In particular, waves 2 and 5 – collected respectively in 2004 and 2010 – are the only ones including information about respondents' fertility intentions. Incidentally, the availability of these two waves – one before the onset of the Great Recession, and the other one in the aftermath of the Great Recession – allows us to provide some hints about how the economic crisis might have affected the employment/fertility nexus among vulnerable populations such as immigrants.

- 24 We select men and women aged 15 to 39. To be able to compare the two waves (i.e., 2004 vs. 2010), we restrict our sample to individuals residing in one of the twenty-two countries included in both waves: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, and the United Kingdom. As a result, our analytical sample includes 12,126 native men, 13,514 native women, 1,173 immigrant men, and 1,431 immigrant women.
- 25 Our dependent variable is based on the question about fertility intentions: “Do you intend to have a child in the next three years?” – with possible answers “Definitely not”, “Probably not”, “Do not know”, “Probably yes”, “Definitely yes”. We recoded the variable about fertility intentions into a binary variable taking on value 1 for “Definitely yes” and 0 otherwise. Results of previous studies have found that positive fertility intentions are good predictors of future fertility behaviours, in particular, certain intentions are more closely linked to future outcomes than less certain intentions [Schoen *et al.* 1999, Toulemon and Testa 2005]. In particular, it was shown that positive and certain fertility intentions represent the best predictors for actual fertility, while not certain positive intentions tend to systematically overestimate fertility outcomes [Mencarini *et al.* 2015, Régnier-Loilier and Vignoli 2011].
- 26 The main independent variable is the respondent's employment condition at the time of the interview (employed with unlimited-time contract; employed with time-limited contract; self-employed; not employed⁴). The set of control variables include the important determinants of fertility intentions already discussed in the background session as: age in classes (younger than 24; 25-29; 30-34; 35-39); educational level (up to lower secondary; upper secondary; tertiary); country of residence (clustered into five groups following Esping-Andersen's [1999] classification of welfare typologies: 1 – Scandinavian countries, characterised by social-democratic welfare; 2 – France, Belgium, the Netherlands (the so-called “conservative” welfares), plus the UK and Ireland (liberal); 3 – Southern European countries, with a familistic welfare regime; 4 – German speaking countries (which are also labelled as “conservative”, but we made an *ad-hoc* category for them due to the relatively large sample size); 5 – Other Central and Eastern European countries, with socialist or post-socialist welfare states); parity⁵ (childless vs. individuals who already have at least one child); whether the respondent lives with their partner/spouse (0 if not, 1 if yes); and ESS wave (2004 vs. 2010). We preferred controlling for the “cohabitation status” instead of civil status because civil status may have a very different meaning – and, thus, a very different nexus with fertility – across the countries analysed, between natives and immigrants, and among immigrant subgroups. Models only on immigrant subpopulations also include controls for country of birth (grouped in two large categories: highly developed countries, hereafter HDC; and high migratory pressure countries, hereafter HMPC⁶) and for age at

arrival (15 years old or younger vs. older than 15). As for the latter variable, the choice of 15 as the threshold age is conventional, and it refers to the fact that women who migrated as adults tend to have the same fertility ideals of their countries of origin, while those arrived as young children (i.e., before age 15) are more similar to natives [see e.g., Mussino and Ortensi 2018].

- 27 Descriptive statistics are provided in Table 1.
- 28 First, we provide some descriptive findings about natives and immigrants' employment and fertility intentions in Europe. Second, we pool together natives and immigrants to study the relationship between employment and fertility intentions across the two waves - i.e., before and in the aftermath of the Great Recession - and interacting the employment status with the migration background. Finally, considering only immigrants, we rely on logistic models to study the relationship between employment and fertility intentions according to their age at arrival and specifically for those from HDC and HMPC (by using interaction terms). All models are gender specific.

Table 1 – Descriptive statistics

	Natives		Immigrants	
	Men (N=12,126)	Women (N=13,514)	Men (N=1,173)	Women (N=1,431)
Fertility intentions				
<i>Definitely yes</i>	10.1%	13.8%	12.0%	15.2%
<i>Other</i>	89.9%	86.2%	88.0%	84.8%
Employment				
<i>Unlimited-time empl.</i>	44.9%	44.5%	45.6%	43.3%
<i>Time-limited empl.</i>	23.6%	30.3%	24.7%	28.9%
<i>Self-empl.</i>	9.8%	9.0%	5.7%	6.0%
<i>Inactive</i>	21.7%	16.2%	24.0%	21.8%
Age				
15-24	39.5%	27.4%	35.6%	24.1%
25-29	18.6%	20.6%	18.8%	21.9%
30-34	20.4%	26.3%	21.8%	25.2%
35-39	21.5%	25.7%	23.8%	28.8%
Education				
<i>Up to lower secondary</i>	27.7%	34.2%	25.7%	29.7%

<i>Upper secondary</i>	49.5%	39.0%	46.2%	39.6%
<i>Tertiary</i>	22.8%	26.8%	28.1%	30.7%
Country				
<i>Scandinavian countries</i>	18.5%	16.5%	16.6%	15.1%
<i>France, Belgium, NL, UK, Ireland</i>	21.3%	30.1%	23.3%	31.7%
<i>Southern Europe</i>	13.6%	22.7%	14.8%	21.4%
<i>German speaking countries</i>	14.1%	21.8%	12.5%	22.4%
<i>Other CEE countries</i>	32.5%	8.9%	32.8%	9.4%
Parity				
<i>Childless</i>	71.5%	64.2%	54.4%	46.6%
<i>Has at least one child</i>	28.5%	35.8%	45.6%	53.4%
Cohabitation status				
<i>Lives with partner/spouse</i>	40.5%	50.4%	48.0%	60.9%
<i>Does not live with a partner</i>	59.5%	49.6%	52.0%	39.1%
Country of origin				
<i>HDC</i>	-	-	24.4%	25.4%
<i>HMPC</i>	-	-	75.6%	74.6%
Age at arrival				
<i>15 or younger</i>	-	-	46.1%	41.8%
<i>Older than 15</i>	-	-	53.9%	58.2%

Source: Authors' elaboration on ESS data.

Results

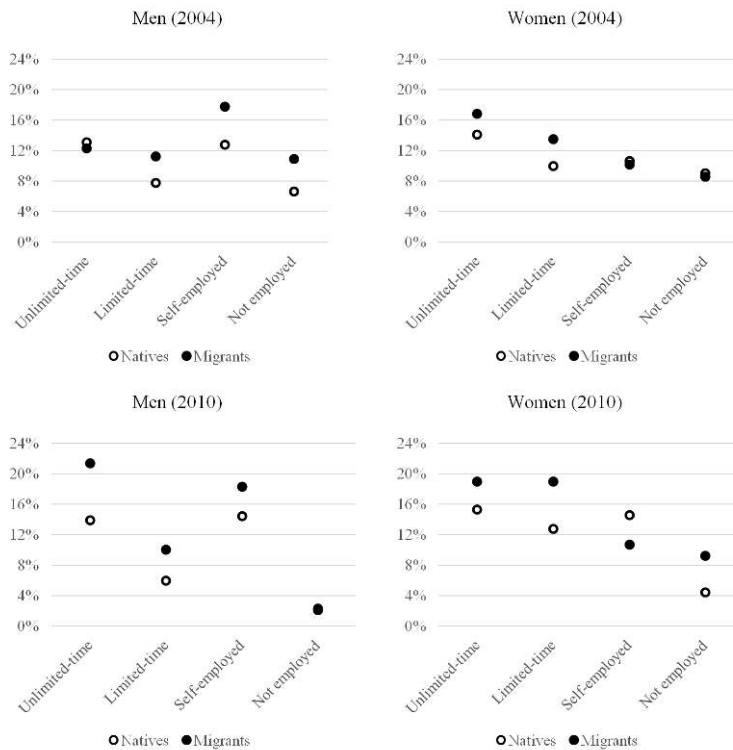
Descriptive findings

- 29 Figure 1 shows the proportions of men and women who declare to be definitely intended to have a(nother) child in the next three years across different employment conditions, both among natives and immigrants, separately for the two waves (2004 and 2010). It emerges clearly how immigrants are more likely to have positive fertility

intentions than natives in most cases, regardless gender, employment condition and wave.

- 30 Among men, those with unlimited-time contracts and self-employed have the highest probabilities of being definitely intentioned to have a child. The pattern is very similar for natives and migrants, with the latter group regularly showing higher probability of positive fertility intentions. Interestingly, the probability of intending to have a(nother) child for men with unlimited-time contracts are higher in 2010 than in 2004 – possibly suggesting the importance of having a stable employment position in the aftermath of the Great Recession (the proportions are 13.9% and 12.4% for men with unlimited-time employment in 2010 and 2004, respectively). On the other hand, the proportion of men with positive fertility intentions is the smallest among non-employed men in 2010 (i.e., around 2.1% both for natives and migrants). The proportion of women who definitely intend to have a(nother) child is also highest among those with unlimited-time contracts. Similarly to what we observe among men, the proportion of women with unlimited-time contracts and with positive fertility intentions is higher in 2010 than in 2004). Interestingly, while native and migrant self-employed women have roughly the same probability of intending to have a(nother) child in 2004, self-employed migrant women are less likely to intend to have a(nother) child in 2010 (i.e., 14.6% vs. 10.8%).
- 31 To conclude, albeit descriptive, these figures suggest that employment matters for fertility intentions, possibly to different extents not only among natives and immigrants and among men and women, but also over time. In the next paragraph, we move to the next step by exploring more into detail the relationship between employment and fertility intentions through statistical models.

Figure 1 – Estimated proportion of individuals who definitely intend to have a(nother) child by migration background and employment condition



Source: Authors' elaboration on ESS data.

Employment and fertility intentions among natives and immigrants

- 32 We used binary logistic regression models to analyse how the probability of definitely intending to have a child changes across individuals with different employment conditions. We run gender-specific models, separately on the 2004 and 2010 waves. We pooled natives and immigrants together and used interaction terms to allow the effect of employment conditions to change between natives and immigrants, keeping control variables at their mean values. For the sake of brevity, and in order to keep the focus of the study, we only reported results about the role of employment (Table 1). Full models are reported in the Appendix (Table A). Results are reported in terms of Average Marginal Effects (AMEs, hereinafter) and express the change in the probability of answering 'definitely yes' to the question about fertility intentions in terms of percentage points (pp).
- 33 Among men, using data from 2004, we did not find any significant effect of employment on fertility intentions among neither natives nor migrants. Significant results emerged among women instead. Among native women, having a time-limited employment slightly reduces the probability of being intentioned to have a(nother) child by 1.9 pp; while among migrant women, self-employed and not-employed are less likely to be intended to have a(nother) child by 7.3 and 5.7 pp, respectively. Interestingly, when we consider data from 2010, results suggest that employment conditions are more strongly related to fertility intentions for men. Among native men, time-limited employment and non-employment are related to a lower probability of definitely intending to have

a child by 3.0 and 3.4 pp respectively. Among immigrants, effects are even stronger than among natives: time-limited employment is related to a decrease by 5.8 pp in the probability of having positive fertility intentions, while non-employment leads to a lower probability of positive fertility intentions by 11.1 pp. Among women, non-employment is related to a lower probability of positive fertility intentions (by 4.0 pp) only among natives. Among immigrants, self-employment and non-employment reduce the probability of being definitely intended to have a(nother) child by 3.9 and 2.5 pp respectively, but results are not statistically significant.

Table 2 – Binary logistic regression on the probability of being definitely intended to have a(nother) child, by gender, place of birth and year. AMEs are reported only for the variable about employment.

	2004		2010			
	Natives		Immigrants		Immigrants	
	AME		AME	AME	AME	
<i>Ref. Unlimited-time employment</i>						
MEN						
Time-limited emp.	-0.007		0.022	-0.030 ***	-0.058 *	*
Self-emp.	0.004		0.074	0.007	0.002	
Not emp.	0.002		-0.012	-0.034 **	-0.111 **	**
WOMEN						
Time-limited emp.	-0.019 **		-0.043	0.005	0.022	
Self-emp.	-0.016		-0.073 *	0.004	-0.039	
Not emp.	0.009		-0.057 *	-0.040 ***	-0.025	

Note: * p<0.10; ** p<0.05; *** p<0.01. Models include controls for: age, educational level, grouped country of residence, parity, and cohabitation status.

Employment and fertility intentions among immigrants: the role of age at arrival

- 34 Finally, we analysed the relationship between employment and fertility intentions only among immigrants taking into account two major factors, namely the country of origin – divided into two large groups, i.e., highly developed countries and other countries – and the age at their arrival in the host country (15 or younger vs. older than 15). As a consequence of this double stratification, sample sizes become quite small; thus, we preferred to use a dummy variable for employment status (employed vs. non-

employed). As explained in the previous section, we only report AMEs of the employment variable to keep the focus on the topic, while full models are provided in the Appendix (Table B).

Table 3 – Binary logistic regression on the probability of being definitely intended to have a(nother) child, by gender, group of country of birth and age at arrival, only immigrants. AMEs are reported only for the variable about employment.

	Age at arrival: 15 or younger			Age at arrival: older than 15		
	<i>Pooled</i>	<i>HDC</i>	<i>HMPC</i>	<i>Pooled</i>	<i>HDC</i>	<i>HMPC</i>
	AME	AME	AME	AME	AME	AME
<i>Ref. Employed</i>						
MEN						
Not employed	-0.072 **	-0.037	-0.084 ***	-0.089	-0.024	-0.108
WOMEN						
Not employed	-0.059	-0.047	-0.065 *	-0.047	-0.091 *	-0.034

Note: * p<0.10; ** p<0.05; *** p<0.01. Models include controls for: age, educational level, parity, cohabitation status, and wave.

Source: Authors' elaboration on ESS data.

- 35 Table 3 shows the results of this last set of estimations, including those from models without interaction between immigrants from HDC and HMPC (i.e., for the pooled set of immigrants). Results clearly confirm that being employed is a prominent factor for declaring positive and certain fertility intentions among immigrants, and that this is especially true for those coming from HMPC who arrived in their host countries when they were 15 or younger. While several estimates in the table show non-significant results (possibly due also to the small sample size especially among HDCs), being not employed decreases the likelihood of being definitely intended to have a(nother) child among men who migrated at age 15 or earlier by 7.2 pp, (-3.7 pp for those from HDC, not significant, and -8.4 pp for those from HMPC); while no significant results emerged among men who migrated when they were older than 15. The lack of employment is also related to a significantly lower probability of having positive and certain fertility intentions among female immigrants from HMPC who migrated before age 15 (by 6.5 pp) and among women who migrated from HDC when they were older than 15 (-9.1 pp).

Other variables related to fertility intentions

- 36 In this paragraph, we briefly comment on the relationship between the other variables included in the models and fertility intentions. Albeit not the focus of this study, we believe that this might provide further insights into the study of natives' and migrants' fertility intentions. Tables 4 shows the AMEs of the variables omitted in Table 2 (full models are reported in Table A in the Appendix).

37 As regards the role of age, we generally find that the probability of being definitely intended to have a(nother) child is highest between age 25 and 34. The variable about education suggests that individuals with higher education are more likely to report positive and certain fertility intentions than those with lower secondary education (or lower). For example, women with tertiary education were more likely to definitely intend to have a(nother) child by 3.6 pp in 2004 and by 5.4 pp in 2010 than the lower educated. The role of the country of residence is quite heterogeneous; however, it proves the importance of country differences in the study of fertility intentions. For example, men from “Continental Europe” (e.g., the group including France, Belgium, the Netherlands, the UK and Ireland), showed higher chances of having positive fertility intentions than those from Scandinavian countries in 2004, as well as women for the year 2010. It is also worthy to notice that, despite their traditionally lower fertility rates, Southern European countries did not show a significantly lower probability of reporting positive fertility intentions. This result clearly suggests that lower fertility in Southern Europe is more a problem of unmet needs rather than lower intended fertility. Interestingly, we found no significant difference in the probability of being definitely intended to have a(nother) child among natives and migrants in 2004, while such difference becomes significant in 2010 (by 4.7 pp for men and by 2.2 pp for women). Finally – and not unexpectedly – we found that individuals who already have at least one child are systematically less prone to report positive fertility intentions, and that individuals who cohabit with a partner (either married or not) are much more likely to report positive fertility intentions.

Table 4 – Binary logistic regression on the probability of being definitely intended to have a(nother) child by place of birth and year, for MEN. AMEs are reported.

	2004				2010			
	Men		Women		Men		Women	
	AME		AME		AME		AME	
Age class (ref. <25)								
25-29	0.075	***	0.099	***	0.083	***	0.062	***
30-34	0.086	***	0.047	***	0.078	***	0.087	***
35-39	0.012		-0.034	***	0.036	***	-0.020	*
Education (ref. lower sec.)								
Upper secondary	0.006		0.013		0.008		0.028	***
Tertiary	0.037	***	0.036	***	0.029	***	0.054	***
Country (ref. Scandinav.)								
France, Belgium, NL, UK, Ireland	0.018	*	-0.001		-0.002		0.025	**

<i>Southern Europe</i>	0.014		-0.014		-0.004		-0.015	
<i>German speaking countries</i>	-0.001		-0.024	*	0.013		0.025	
<i>Other CEE countries</i>	0.015		-0.021	*	0.024	**	0.008	
Place of birth (ref. native)								
<i>Immigrant</i>	0.011		0.011		0.047	***	0.022	*
Parity (ref. childless)								
<i>Has at least one child</i>	-0.089	***	-0.097	***	-0.078	***	-0.102	***
<i>Lives with partner/spouse</i>	0.202	***	0.169	***	0.154	***	0.154	***

Note: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$. AMEs for the variable about employment are omitted because already shown in Table 2.

Source: Authors' elaboration on ESS data.

Discussion and conclusion

- 38 Fertility and migration are two of the most prominent topics in recent demographic research. Their interrelation is especially important in the realm of research about low (and lowest-low) fertility, as migrations have been often considered a possible buffer to falling fertility rates in several European countries. Recent research has intensively focussed on the role of employment in shaping fertility intentions [e.g., Vignoli *et al.* 2020] and behaviours [e.g., Alderotti *et al.* 2021], also specifically on migrant subpopulations [e.g., Dupray and Pailhé 2018]. By using data from the European Social Survey, we focussed on fertility intentions rather than on fertility behaviours, to shed some lights on how employment might shape the decision-making processes linked to childbearing, possibly to different extents for natives and migrants and over time (before and in the aftermath of the Great Recession). Accordingly, this study's aim was to assess i) the relationship between employment conditions and fertility intentions among immigrants and natives across Europe; ii) immigrants' childbearing intentions in the host country considering the role of age at arrival and the origin (coming from HDCs or HMPCs) in shaping the relationship between future fertility intentions and current employment status; iii) short-term fertility intentions of men and gender differences; and iv) if the employment/fertility intentions relationship has changed to different extents among natives and immigrants in the two time periods considered (i.e., before and in the aftermath of the Great Recession).
- 39 As a result of the differences between natives and immigrants, our findings partially support our first research hypothesis while identifying an income effect on fertility intentions (RH1). Employment matters for positive and certain fertility intentions of natives and immigrants but some important differences observed over time deserve to be highlighted. First, having an unlimited-time employment became more a precondition to fertility intentions for both immigrant and natives in 2010 compared to 2004. Second, the difference in the link between fertility intentions and employment

was higher for natives in 2004 but switched becoming largest for immigrants in 2010. This might be indicating a stronger response of immigrants' fertility intentions - compared to natives' - to the persistent economic uncertainty experienced during the Great Recession. In this sense, the hit of the crisis to an already precarious employment situation of immigrants' may have caused an accumulation of disadvantages [Mayer 1986, Mynarska *et al.* 2015] that negatively influenced their fertility intentions in the host country. This result is in line with Vignoli *et al.* [2020] who found that, within a context of economic hardship, individuals transitioning to a less stable job position are less likely to hold positive fertility intentions, and it is also supporting findings of previous studies reporting divergent childbearing responses between nationals and non-nationals during the Great Recession [Seltzer 2019, García-Pereiro and Paterno 2021].

- 40 As expected, and confirming our second research hypothesis (RH2), the role played by the employment status on fertility intentions is not gender neutral. The negative influence of having a time-limited employment and non-employment on positive and certain fertility intentions is stronger for men than for women, independently of the migratory background. In particular, these effects are larger among immigrant men than among natives. This result is supporting studies by Neyer *et al.* [2013] and Fahlén and Oláh [2018] who found that fertility intentions of men are negatively related to employment conditions and, as reported by Gatta *et al.* [2021], this might be reflecting the still predominant role of men as main provider of earnings in the family.
- 41 We found interesting results when shifting our attention to immigrants only (RH3). Findings indicate being employed as a key determinant for being definitely intended to have a(nother) child, especially for immigrants from HMPC who arrived in the host country when they were 15 or younger.
- 42 These results are in line with those of Wood and Neels [2017] confirming that having arrived at younger ages, immigrants not only have socialized mostly in the country of settlement but also have had enough time to work on their integration, in general, and their labour market integration, in particular, consolidating their socioeconomic position in the host country.
- 43 Our study comes with some limitations. First, the relatively small sample size did not allow either origin country-specific, union status-specific, or parity-specific analyses, which would have potentially added further insights in the understanding of the employment/fertility nexus. The relatively small sample size of migrant subgroups also prevented us from using a finer grain variable to control for parity; thus, we could only distinguish between childless individuals and those who have at least one child. For the same reason, it was not possible to run models separately by country of destination. While it is true that this might hide some country-specific patterns in the relationship between employment and fertility, it should also be noticed that our results hold after controlling for (groups of) country of destination. We also acknowledge that the category of "non-employed" individuals is admittedly very heterogeneous, and this may hide potentially offsetting patterns among the subgroups included (i.e., unemployed, inactive, and students). We made a robustness check by re-running our analysis after excluding students from the non-employed; results proved to be consistent, despite losing statistical precision due to reduced cell sizes - especially among migrants. As regards the time frame, the two periods analysed may involve compositional changes in the country-specific stocks of immigrants, and this, in turn,

may be – at least partially – responsible for the effects found. In addition, the ESS does not include information about the reason behind the migration, migratory models and projects, which are well-known predictors of immigrants' fertility. For example, women who migrate following a family project tend to show higher fertility levels than those who migrate for employment purposes [Mussino and Strozza 2012, Ortensi 2015], and this may influence the intention to have a(nother) child. Finally, we did not take into consideration the length of stay in the destination country when studying migrants' fertility intentions, as we decided to focus on the role of the age at arrival and the two variables cannot be tested together easily; nevertheless, we acknowledge that the length of stay may also play an additional role in shaping migrants' fertility (intentions).

- 44 Despite its limitations, this study contributes to the understanding of immigrants' fertility in several ways (e.g., by shifting the focus towards fertility intentions – an under researched topic -rather than behaviours, and by exploiting the information on the duration of the contract, which, thus far, has been mostly disregarded among immigrants), providing new insights in the role played by employment and possibly fostering new research on the topic. We are aware that observed changes in the relationship between employment and fertility intentions between 2004 and 2010 may not be exclusively a consequence of the Great Recession. However, we strongly believe that our analyses represent a relevant contribution to recent literature in light of the scarce evidence available about changes in fertility intentions during times of economic hardship.

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APPENDIXES

Table A – Binary logistic regression on the probability of being definitely intended to have a(nother) child, by gender, place of birth and year. Full models. Odds ratios are reported.

	2004				2010			
	Men		Women		Men		Women	
Age (ref. 15-24)								
25-29	2.60	***	2.48	***	3.03	***	1.86	***
30-34	2.89	***	1.63	***	2.89	***	2.26	***
35-39	1.22		0.59		1.80	***	0.77	*
Education (ref. lower sec.)								
Upper secondary	1.08		1.17		1.11		1.37	**
Tertiary	1.54	***	1.48	***	1.42	**	1.76	***
Country (ref. Scandinav.)								
France, Belgium, NL, UK, Ireland	1.25	*	0.99		0.97		1.28	**
Southern Europe	1.19		0.86		0.95		0.84	*
German speaking countries	0.98		0.77	*	1.17		1.28	
Other CEE countries	1.21		0.80	**	1.32	*	1.09	

Employment (ref. unlimit.)								
<i>Time-limited empl.</i>	0.91		0.80	**	0.67	***	1.05	
<i>Self-empl.</i>	1.07		0.84		1.09		1.04	
<i>Inactive</i>	1.01		1.13		0.62	*	0.63	***
Place of birth (ref. native)								
<i>Immigrant</i>	0.83		1.37	*	1.78	***	1.18	
Place of birth*employment								
<i>Time-limited empl.*immig.</i>	1.44		0.83		0.88		1.14	
<i>Self-empl.*immig.</i>	1.79		0.56		0.94		0.67	
<i>Inactive*immig.</i>	0.84	*	0.51	*	0.46		1.29	
Parity (ref. childless)								
<i>Has at least one child</i>	0.33	***	0.36	***	0.38	***	0.37	***
<i>Lives with partner/spouse</i>	10.10	***	6.89	***	6.28	***	4.92	***
N	7,058		7,929		6,210		6,983	

Note: * p<0.10; ** p<0.05; *** p<0.01.

Source: authors' elaboration on ESS data.

Table B - Binary logistic regression on the probability of being definitely intended to have a(nother) child, by gender, group of country of birth and age at arrival, only immigrants. Full models. Odds ratios are reported.

	Arrived <=15		Arrived >15	
	Men	Women	Men	Women
Age (ref. 15-24)				
25-29	1.80	0.89	3.19	* 1.19
30-34	2.26	0.76	3.05	* 1.15
35-39	1.34	0.59	2.40	0.53 *
Education (ref. lower sec.)				
<i>Upper secondary</i>	1.43	1.24	0.90	1.05
<i>Tertiary</i>	0.71	2.38	** 1.68	* 1.00

Country (ref. Scandinav.)							
<i>France, Belgium, NL, UK, Ireland</i>	0.68		1.11		1.19		1.14
<i>Southern Europe</i>	0.61		1.59		0.99		0.43 **
<i>German speaking countries</i>	0.80		1.02		0.97		0.71
<i>Other CEE countries</i>	0.32 *		0.79		1.35		0.87
Employment (ref. inactive)							
<i>Employed</i>	1.50		2.38 *		0.83		3.66
Place of birth (ref. HDCs)							
<i>HMPCs</i>	0.24		0.95		1.95		3.32 *
Place of birth*employment							
<i>Employed*HMPCs</i>	3.30 *		0.92		0.57		0.39
Parity (ref. childless)							
<i>Has at least one child</i>	0.94		0.32 ***		0.36 ***		0.40 ***
<i>Lives with partner/spouse</i>	3.96 ***		5.38 ***		5.56 ***		4.40 ***
Wave (ref. 2004)							
<i>2010</i>	1.91 **		1.03		0.86		1.09
N	488		515		635		831

Note: * p<0.10; ** p<0.05; *** p<0.01.

Source: authors' elaboration on ESS data.

NOTES

1. One of the few exceptions is the work of Neyer *et al.* (2013) on Eastern and Western European countries.
2. We are aware of the importance of the adaptation, socialization, disruption and interrelation of events approaches to explain fertility behaviours of migrants. As testing for these hypotheses goes far beyond the main purpose of this article, our theoretical background is focused on those contributions that have studied the fertility intentions/employment link. For a detailed description of these theories please refer to Milescki (2010) and Kulu and González-Ferrer (2014).
3. The European Social Survey is a cross-national survey conducted across several European countries since 2001. Data are collected via face-to-face CAPI interviews in all participating countries. National samples are representative of all persons aged 15 and over, resident within private households in each country, regardless of their nationality, citizenship or language

4. The category of 'not employed' is a residual category including all individuals who do not have a job at the time of the interview (i.e., unemployed, inactive, homemakers, students, etc.). Students represent the largest subgroup in this residual category (around 50%); thus, we run robustness check by excluding them from the inactive group. Results are robust and are briefly discussed in the conclusion.
 5. The ESS dataset does not include information about parity. Following Begall and Mills (2011) we have built a proxy based on the number of children living in the household.
 6. HDCs include Europe except Eastern European countries, North America, Israel, Japan and Australia; the remaining countries belong to the HMPCs group.
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ABSTRACTS

In several European countries, births to immigrant women represent more than 10% of all births [Sobotka 2008]; however, there is evidence showing that in the aftermath of the Great Recession migrants' fertility might have fallen more pronouncedly among migrants than natives [Sobotka 2017].

With this study, we aim to provide further evidence about the employment/fertility link among migrants by focusing on the relationship between employment and fertility intentions - instead of the behaviours. In fact, most research on migrant fertility has focused on childbearing behaviours, disregarding the ideational dimensions represented by attitudes and intentions, which are of primary importance to complete the picture through a better understanding of the normative side of fertility [Milewski and Mussino, 2018]. We do this relying on data from the European Social Survey and focusing on two years, 2004 and 2010, i.e. just before and just after the 2008 financial crisis (the 'Great Recession'). The analysis of developments over this short period allows us to understand the link between fertility intentions and employment in a period characterised by a severe economic crisis. Scrutinising the fertility intentions of migrants with different employment status across Europe, we aim to shed light on dynamics around migrants' childbearing in the host country.

Dans plusieurs pays européens, les naissances de femmes immigrées représentent plus de 10 % de l'ensemble des naissances [Sobotka 2008] ; cependant, des éléments montrent qu'au lendemain de la Grande Récession, la fécondité des migrants pourrait avoir chuté de manière plus prononcée chez les migrants que chez les autochtones [Sobotka 2017].

Dans cette étude, nous souhaitons apporter de nouvelles connaissances sur le lien entre emploi et fécondité chez les migrants en étudiant la relation entre les intentions d'emploi et de fécondité - plutôt que les comportements. En fait, la plupart des recherches sur la fécondité des migrants se sont concentrées sur les comportements de procréation, et ont négligé les dimensions idéelles représentées par les attitudes et les intentions, qui sont pourtant de première importance pour compléter le tableau à travers une meilleure compréhension du côté des normes concernant la fécondité [Milewski et Mussino, 2018]. Pour ce faire, nous nous appuyons sur les données de l'ESS relatives aux années 2004 et 2010, soit juste avant et juste après la crise financière de 2008 (la "Grande Récession"). L'analyse des évolutions sur cette courte période permet de saisir le lien entre intentions de fécondité et emploi dans une période caractérisée par une grave crise économique. Plus généralement, cet article apporte un éclairage sur la façon dont les migrants appréhendent la procréation dans le pays d'accueil selon leur situation d'activité.

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