

The fertility of Latin American and Caribbean women in Spain: adaptation, maintenance or interruption?

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Abstract

This paper's aim is to analyse the fertility behaviour of migrant women from Latin America and the Caribbean in Spain, looking for a relationship between fertility in home and host countries. We specifically discuss the integration of Latin American women, exploring whether they choose to uphold their reproductive behaviour, and therefore the existing level of fertility in their home country or whether, conversely, they adapt to the fertility patterns of the host country. Adopting a longitudinal perspective and applying multivariate survival models to data from the 2007 National Survey of Immigration, we show that adaptation, maintenance and interruption patterns coexist in migrant fertility. Our results highlight the importance that family conditions on arrival have in reproductive behaviour.

Key words: Migration, fertility, integration, Latin Americans, Spain.

Resumen

La fecundidad de las mujeres latinoamericanas y caribeñas en España: ¿adaptación, mantenimiento o interrupción?

El objetivo de este trabajo es analizar la fecundidad de las mujeres inmigrantes procedentes de América Latina y el Caribe en España, poniéndola en relación con la fecundidad en el origen y en el destino. Así se aborda el debate sobre la integración de las mujeres latinas observando si optan por mantener su comportamiento reproductivo y, por lo tanto, el nivel de fecundidad existente en su país de origen o por el contrario, si se adaptan al de la sociedad de destino. Adoptando una perspectiva de análisis longitudinal y usando modelos multivariantes de supervivencia con datos procedentes de la Encuesta Nacional de Inmigrantes 2007, los resultados muestran la convivencia de procesos de adaptación, mantenimiento e interrupción en la fecundidad inmigrante. Destaca la importancia de las condiciones familiares a la llegada en el comportamiento reproductivo.

Palabras clave: Inmigración, fecundidad, integración, latinoamericanos, España.

INTRODUCTION

The study of migrant fertility has for decades been a major topic in the social sciences in general and in demography in particular. On the one hand, this is because it is a determining factor in demographic dynamics, both in the societies of origin and especially in the societies of destination, given that these latter host countries tend to record low levels of fertility. On the other hand, the fertility of the migrant population has become a leading indicator of the degree of integration of the different migrant groups in their host destinations.

This latter perspective will be the focus of our research. The aim is to analyse whether the fertility of the Latin American women that have migrated to Spain fits the pattern of Spanish women in terms of both intensity and calendar, or whether, by contrast, it reflects the reproductive behaviour of their home societies.

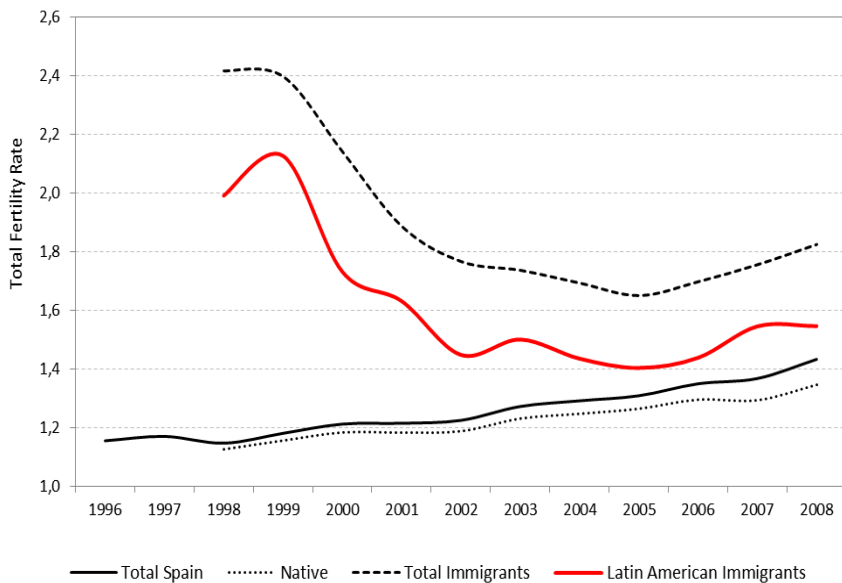
We focus exclusively on the Latin American and Caribbean population because it was the largest collective during the boom in migration at the beginning of the 21st century in Spain (Muñoz de Bustillo & Antón, 2010). A collective that presents both a certain cultural homogeneity as regards its host society and a high degree of heterogeneity in terms of the factors that inform its reproductive behaviour, such as personal and family circumstances, or the demographic transition stage from the home society (Roig-Vila & Castro-Martín, 2007; Castro-Martín & Rosero-Bixby, 2011; del Rey *et al.*, 2015). This study considers solely the behaviour recorded in the recent migrant wave up to 2007. This cut-off point permits us to analyse fertility without the interference generated by the economic crisis, which has led to significant changes in the reproductive behaviour of migrants regardless of their degree of integration or assimilation in the host country.

The main difference in migrant fertility as regards studies on fertility in general stems from the actual process of migrating. The displacement and the implications it entails have an impact on migrant women's reproductive behaviour, both prior to the migration and immediately after it (Toulemon, 2004; Devolder & Bueno, 2011; del Rey & Grande, 2015). This requires adopting a dynamic view of fertility in order to separate the effect of migration from the possible process of assimilation and integration in the host country. This explains why we adopt a longitudinal perspective that enables us to observe the level of migrant women's fertility from the

very time of arrival, and analyse its evolution over the course of their residence in the country.

Firstly, regarding the evolution of the overall fertility rate between 1998 and 2007 (Figure 1), the fertility rate of migrant and Latin American women at the onset of the boom in migration was much higher than among Spanish women. But that rate has gradually fallen in line with the local population as the migratory process has become consolidated. Nevertheless, this standard rate used for studying fertility does not consider the different stages in the migration process; in other words, it does not differentiate between women that have just arrived and those that have been in Spain for some time, so it does not account for the impact that the time of migration has on fertility.

Figure 1: Total fertility rate in Spain as per the mother's origin, 1997-2007

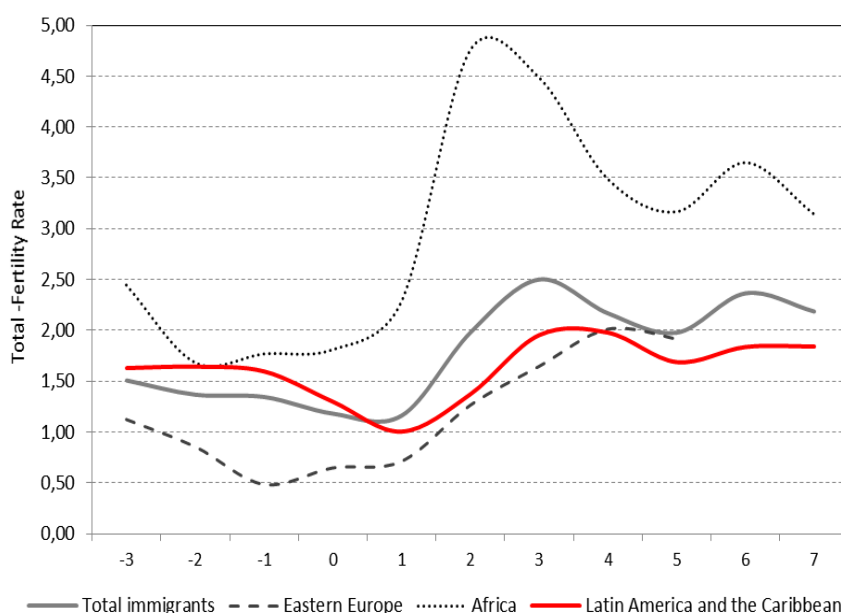


Source: Author's own work based on the Statistics on the Natural Movement of People [*Estadísticas del Movimiento Natural de la Población*] and the Continuous Municipal Register [*Padrón Municipal Continuo*] (Spain's National Office of Statistics - INE).

Secondly, considering the time of arrival (Figure 2) provides a very different pattern of fertility among the migrant population. The results show the impact that the time of migration has on fertility in both the period immediately before and the one immediately after. Nevertheless, isolating the upheaval caused by the displacement lies at the heart of this study's purpose, namely, to discover whether migrant fertility tends to fall in line with

the local Spanish population or whether, by contrast, this fertility tends to reflect the rate in the home country.

Figure 2: Total fertility rate of migrants arriving in Spain between 1995 and 2007 as per the year of arrival by provenance



Source: Author's own work based on the 2007 National Survey of Immigration [Encuesta Nacional de Inmigrantes] (INE).

REFERENCE FRAMEWORK: THE MIGRANT POPULATION'S REPRODUCTIVE BEHAVIOUR

The vast majority of the studies on migrant fertility in the host country focus solely on the population from less developed countries, which tends to record a higher level of fertility than the host country (for Spain's case, see: Bledsoe *et al.*, 2007; Roig-Vila & Castro-Martín, 2007). This is the case considered here and wherein lies the importance of understanding reproductive behaviour, both because of its transcendence for the overall birth rate in the host country (del Rey & Cebrián, 2010), and as a way of measuring the degree of integration in the host country.

From a demographic perspective, fertility is the outcome of, on the one hand, certain socio-economic characteristics of women/couples (Coleman, 1994; Kahn, 1994; Milewski, 2007), and on the other, the existence of certain ideals and values on the family arising from the prevailing cul-

tural paradigm, which is in turn the result of that society's demographic transition phase (Bongaarts, 2003; Andersson, 2004; Roig-Vila & Castro-Martín, 2007; Sobotka, 2008). Migration automatically implies a change in the cultural pattern of reference in reproductive behaviour, which together with new social and economic conditioning factors may lead to a change in the fertility of migrant women. The prior research that studied the migrant population's fertility in relation to the host country's fertility tends to highlight the following behaviour.

For decades now, the prevailing research stream has reported the existence of an *assimilation – adjustment* process, whereby migrants gradually bring their reproductive behaviour in line with the host country (Kahn, 1988 and 1994; Andersson, 2004; Parrado & Morgan, 2008).

A second stream contends that certain migrant groups tend to *uphold* the host country's reproductive norms and patterns (Abbasi-Shavazi & McDonald, 2002). Maintaining the fertility of origin is very closely linked to family migrations and to frequent contacts with the home country. Other studies seek to attribute this lack of adjustment to the host country's reproductive pattern to a *selection* process among migrants (Goldstein, 1973; Feliciano, 2005; Bledsoe *et al.*, 2007; Sobotka, 2008) or to a process of *segmented assimilation* due to exclusion and difficulties in integrating (Portes & Zhou, 1993).

A third stream has noted the existence of a process of *interruption - break* in the migrant population's fertility, generally caused by the time of migration and the separation of partners (Ford, 1990; Stephen & Bean, 1992; Carter, 2000; Toulemon, 2004; Kulu, 2005; Lindstrom & Giorguli, 2007; Milewski, 2007). The very act of migration therefore informs a highly specific reproductive behaviour before, during and after the displacement. This means that when studying reproductive trends and the degree of adjustment to the host country's pattern, there is a need to consider the "time of migration". Several studies have shown that the fertility of the Latin American population migrating to Spain has changed significantly around the time of displacement, both before and after the migration (Devolder & Bueno, 2011; del Rey & Grande, 2015). However, a major issue when analysing the impact of the "time of migration" is the lack of longitudinal data on reproductive records prior to the migration (Toulemon, 2004; Kulu, 2005; Roig-Vila & Castro-Martín, 2007; Parrado, 2011), which explains the paucity of such studies. Our research uses a data source that provides us with the marital and reproductive state in the home country, and in

turn enables us to consider those situations in the reproductive behaviour in the host country.

Based on the above, we formulate the following working hypothesis:

- Hypothesis 1: in general, we consider the existence of an assimilation process for the entire migrant population under study, although we expect that process to be significantly affected or even interrupted around the time of the migration.
- Hypothesis 2: the persistence or maintenance of the home patterns will be greater among migrants from societies in earlier stages of demographic transition and among those in advanced stages of the family lifecycle.
- Hypothesis 3: by contrast, we expect those migrants from societies in advanced stages of demographic transition and those that migrate at an earlier age, and who therefore are involved in greater socialisation with the values of the host country, to record greater assimilation in terms of their fertility.

DATA SOURCE AND METHOD: A LONGITUDINAL APPROACH

The study of the reproductive behaviour of migrant women conducted here is based largely on the 2007 National Survey of Immigration (shortened in Spanish to ENI-2007) conducted by Spain's National Office of Statistics (INE). Consistent with the proposed objective, a subsample of 3,157 cases has been selected —out of the 15,465 cases overall— corresponding to the Latin American and Caribbean women that arrived in Spain between 1990 and 2007. As reported in previous studies (Castro & Rosero-Bixby, 2011; Del Rey *et al.*, 2015), ENI-2007 has significant advantages for studying the interaction between migration and fertility because it allows the perspective of a longitudinal analysis through the rebuilding of complete records of migration and births. These longitudinal data can be used to observe women's fertility before and after migration.

Nonetheless, ENI-2007 has certain limitations for the study of the migrant population's reproductive behaviour. On the one hand, rebuilding the record of births does not allow us to work with a more accurate measurement of time than years; for example, the month of arrival is recorded solely for those that did so after 2004. Furthermore, it does not provide detailed data for rebuilding the migrants' entire employment record during their time in Spain. This impedes the use of longitudinal records that re-

late reproductive behaviour and job mobility, as mutually interdependent processes.

Besides the data extracted from ENI-2007, the descriptive analysis of the migrant population's reproductive behaviour in Spain uses data from the Continuous Municipal Register and the INE's Vital Statistics or *Movimiento Natural de la Población* (MNP). The data for the population's fertility patterns in home countries have been gathered from secondary sources (CELADE, 2001 and CELADE, 2013) and from the population censuses in each one of the different countries selected in Latin America and the Caribbean.

Secondly, the data have been processed in two stages. First, a description and interpretation of the traditional indicators of fertility, as are the total rate and the specific rates by age, with the novelty being the inclusion of the time of arrival. Different models of survival in discrete time have then been applied to control for the variables that may affect reproductive behaviour, both those involving personal and family characteristics, and those involving provenance.

The models of survival allow analysing the occurrence of an event over time; that is, the relative likelihood or conditional probability of the birth of a first child after migration. The duration of the transition has been calculated by considering the year of arrival and the year of the birth of the first child in the host country. The ENI-2007 database has therefore been converted into records corresponding to woman-years, with the result being 37,884 records corresponding to women from Latin America and the Caribbean arriving in Spain between 1990 and 2007, and of child-bearing age during the period in question. The dependent variable is the time elapsed between the time of arrival and the birth of the first child in the host country, or six years living in Spain without having a child. The observation period for the reproductive trajectory has been restricted to the first six years after migration so as not to overstate the likelihood of the birth of the first child among the women arriving at the start of the observation period and, in turn, understate the migrants that have arrived more recently. This is important because 47.9% of Latin American migrant women arrived in Spain after 2001; in other words, almost half the women would not exceed six years of residency.

RESULTS AND DISCUSSION: THE DETERMINANTS OF FERTILITY

The analysis of the migrant population's fertility in the host country is orchestrated around the choice between adopting the host country's pattern

and upholding the home country's reproductive paradigm. As noted, this requires paying attention to several aspects: some involve fertility in general, such as cultural references or certain socioeconomic characteristics, while others refer to the actual impact at the time of migration. We will start by relating migrants' fertility to home and host populations.

Migrants' fertility in relation to their home and host countries

We first analyse migrants' fertility in relation to that in their home countries and in Spain, considering both the indicator of intensity and the calendar via rates by age.

Table 1 shows the trend in the total fertility rate (TFR) for different countries in Latin America, as well as for migrant women in Spain in 2007. The first thing to notice about this mainstream indicator is that Latin American women in Spain record a much lower fertility rate than in their home countries, albeit slightly higher than Spain's (1.37). Compared to the 2.37 children per woman for Latin America and the Caribbean as a whole, migrant women in Spain have only 1.56 children.

Although it is a circumstantial indicator, the differences observed initially enable us to formulate a number of hypotheses: one, there is a process of *adjustment* to the reproductive behaviour in the host country; two, there is a process of *selection* in migrations, which means that migrants arriving in Spain from Latin America would not be representative of the overall population, and three, there is a combination of these two hypotheses. Despite the difficulty inherent to measuring the impact of selectivity due to the limitation of the data sources, one may posit that greater fertility is related to the women's socioeconomic background in their host countries. This should be taken into account in view of the significant differences in fertility according to socioeconomic status and the difference between rural and urban areas in Latin America (Rosero-Bixby, 2004; Grande, 2012).

Furthermore, the higher the fertility rate is in the home country, the higher the rate among women migrating to Spain, which shows that the pattern in the home country clearly has an impact. On the other hand, one cannot ignore the fact that the TFR is a measure fixed in time, so an analysis of migrant women's fertility may be distorted by a possible arrival effect, as shown in Figure 2. In other words, by measuring the fertility rate in 2007, many of the newly arrived Latin American women tend to reduce their fertility on a temporary basis, as proposed by Hypothesis 1, and especially those migrating from countries that were last to join the boom in migration to Spain.

Table 1: Trend in the TFRs in Latin America and selected countries in 1955-2010 and among Latin American migrant women in Spain in 2007

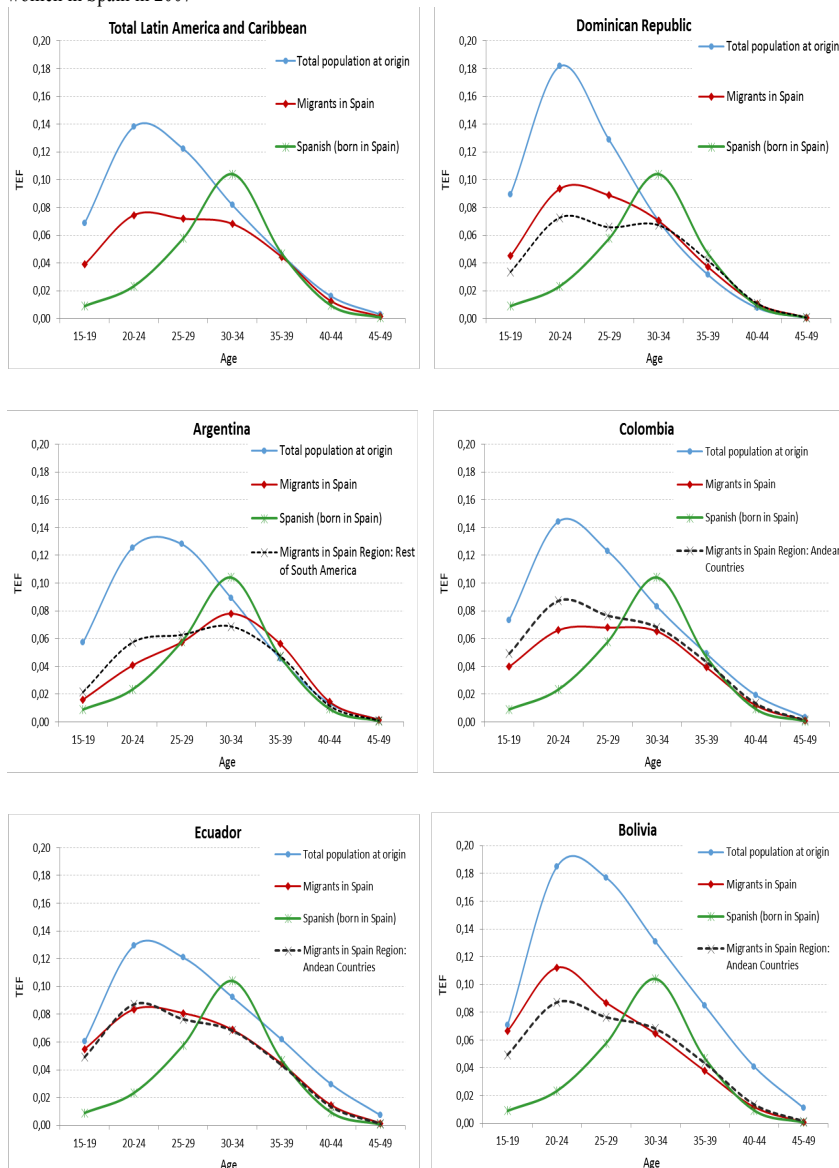
	Evolution of the TFR in Latin America						TFR Immigrants in Spain
	1955- 1960	1965- 1970	1975- 1980	1985- 1990	1995- 2000	2005- 2010	2007
<i>Latin America</i>	5.94	5.57	4.50	3.42	2.74	2.30	1.56
Cuba	3.70	4.30	2.15	1.85	1.61	1.49	1.20
Honduras	7.50	7.42	6.60	5.37	4.30	3.31	1.47
México	6.80	6.75	5.25	3.63	2.67	2.37	1.10
Nicaragua	7.50	6.95	6.35	5.00	3.60	2.76	1.27
R. Dominicana	7.64	6.65	4.76	3.47	3.05	2.67	1.73
<i>Region: Mexico, Central America and the Caribbean</i>							1.46
Bolivia	6.75	6.56	5.80	5.00	4.32	3.50	1.90
Colombia	6.76	6.18	4.34	3.17	2.70	2.45	1.46
Ecuador	6.70	6.50	5.40	4.00	3.10	2.75	1.74
Perú	6.85	6.56	5.38	4.10	3.10	2.43	1.52
<i>Region: Andean Countries</i>							1.70
Argentina	3.13	3.05	3.44	3.05	2.63	2.25	1.32
Brasil	6.15	5.38	4.31	3.10	2.45	1.95	1.43
Chile	5.49	4.44	2.80	2.65	2.21	1.90	1.26
Paraguay	6.50	6.15	5.20	4.77	3.88	3.08	1.47
Uruguay	2.83	2.80	2.89	2.53	2.30	2.12	1.32
Venezuela	6.46	5.90	4.47	3.65	2.94	2.55	1.22
<i>Region: Rest of South America</i>							1.35

Source: CELADE (2013) for the trend in Latin America, and MNP and Continuous Municipal Register for migrants in Spain.

This may explain the relatively low TFRs compared to their home countries among women from Honduras, Nicaragua and Paraguay, who began to arrive in Spain in significant numbers from 2006 onwards. In contrast, by 2007 women from the Dominican Republic and Bolivia, with a higher TFR, were recovering their fertility rate following the fall recorded around the time of migration. We will be returning to this matter in due course to analyse the impact that the time of arrival has on fertility.

Figure 3 shows the Age Specific Fertility Rate (ASFR) for the selected countries and the regional total for women in the home countries, migrants in Spain in 2007, and Spanish women in 2007, which enables us to see their reproductive calendars.

Figure 3: ASFRs in Latin America and selected countries in 2005-2010 and among Latin American migrant women in Spain in 2007



Note: The data provided by CELADE (2001) for the ASFRs in Latin America should be taken with some caution as the figures provided are estimations, although the margin of error is not excessive because of the temporal proximity of the estimation that informs the comparative analysis.

Source: CELADE (2001) for Latin America and the Caribbean and MNP and Continuous Municipal Register for Spanish and migrant women in Spain.

The Latin American population is characterised by a reproductive calendar that is concentrated at an early age, and highly influenced by sexual initiation and by the decrease in child-bearing in ages over 30 (Chackiel, 2004; Di Cesare, 2007). This distribution is in stark contrast with the significantly delayed reproductive calendar among Spanish women, who have the highest ASFR of between 30 and 34.

Regarding the migrant population's behaviour, the results reveal major differences depending on the home country and region, which confirms that their reproductive patterns are very heterogeneous. Broadly speaking, it may be affirmed that Latin American migrants in Spain uphold an earlier reproductive calendar than Spanish women, yet at the same time less concentrated in younger ages than in their home countries. Nevertheless, there are certain specific aspects that are worth mentioning.

First, a special case involves migrant women from the Dominican Republic, Ecuador and Bolivia, who record a higher fertility rate at young ages compared to the same behaviour among Spanish women. By contrast, Argentinean women—and generally all the other women from South America—concentrate their reproductive calendar as of the age of 30, with a behaviour that is closer to that among Spanish women, which is explained by the fact these countries are at more advanced stages in their demographic transition. In sum, the maintenance of this trend corroborates the effect of cultural models on migrant women's reproductive behaviour.

Second, although an early reproductive calendar is upheld, it is delayed in relation to that of women overall in the home country. In all the countries selected, the reproductive calendar of migrant women is delayed compared to their compatriots in their home country. Therefore, and besides the lower rate, the fertility of Latin American migrant women compared to their home country is concentrated more between the ages of 30 and 39, and less at younger ages.

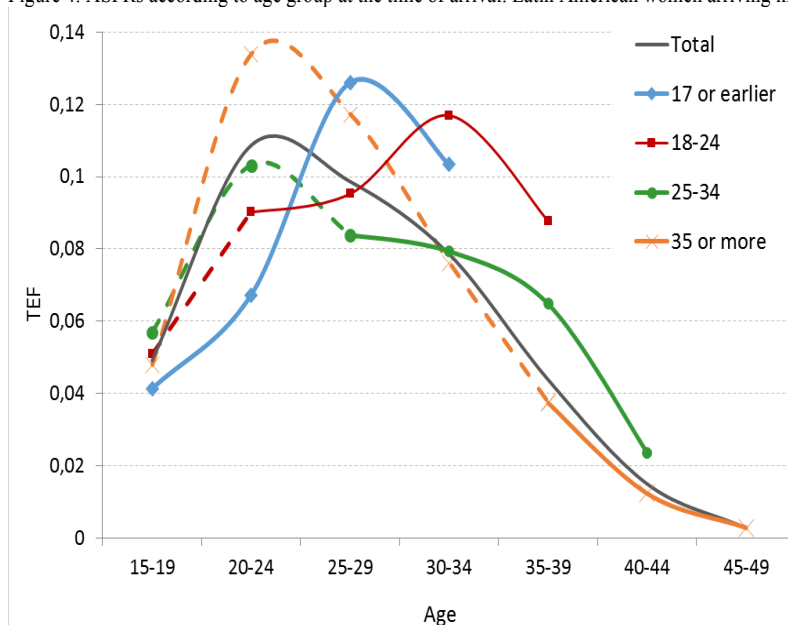
The impact of time of arrival on migrant fertility

One of the main advantages of retrospective data is that they provide information on migrants' fertility before and after migration by adopting a longitudinal perspective. Firstly, ASFRs are used to study the impact that age at the time of arrival in Spain has on the reproductive calendar of Latin American women in their entirety, and secondly, the same rates are analysed for the three different regions studied.

Figure 4 shows the differences in the reproductive calendar according to age upon arrival. Except in the case of women aged 35 or over upon

arrival, there is no complete information on the reproductive calendar for all the other groups because the study focuses solely on migrants arriving in the period 1990-2007, which means that in 2007 they were still of child-bearing age. Despite this shortcoming in the observations, three main tendencies can be singled out.

Figure 4: ASFRs according to age group at the time of arrival. Latin American women arriving in 1990-2007



Note: the dashed line indicates the period prior to the migration and the solid line indicates the period after on an approximate basis for each age group according to age upon arrival.

Source: Author's own work based on ENI-2007.

Firstly, the women that migrated to Spain towards the end of their reproductive cycle (aged 35 or over) have an early calendar, with high fertility rates at young ages, following a similar pattern to their home countries. In this case, the migration does not have any effect, as the fertility rates continue to fall after arrival due the stage in the lifecycle in which the migration takes place.

Secondly, those women that arrived fully immersed in their reproductive cycle showed that migration did indeed have an impact on their reproductive calendar. On the one hand, there is a containing effect on fertility prior to migration that is reflected in lower fertility rates at young ages. Thus, the Latin American women that arrived between the ages of 18 and 24 record a low fertility rate at the ages when they migrated, while the

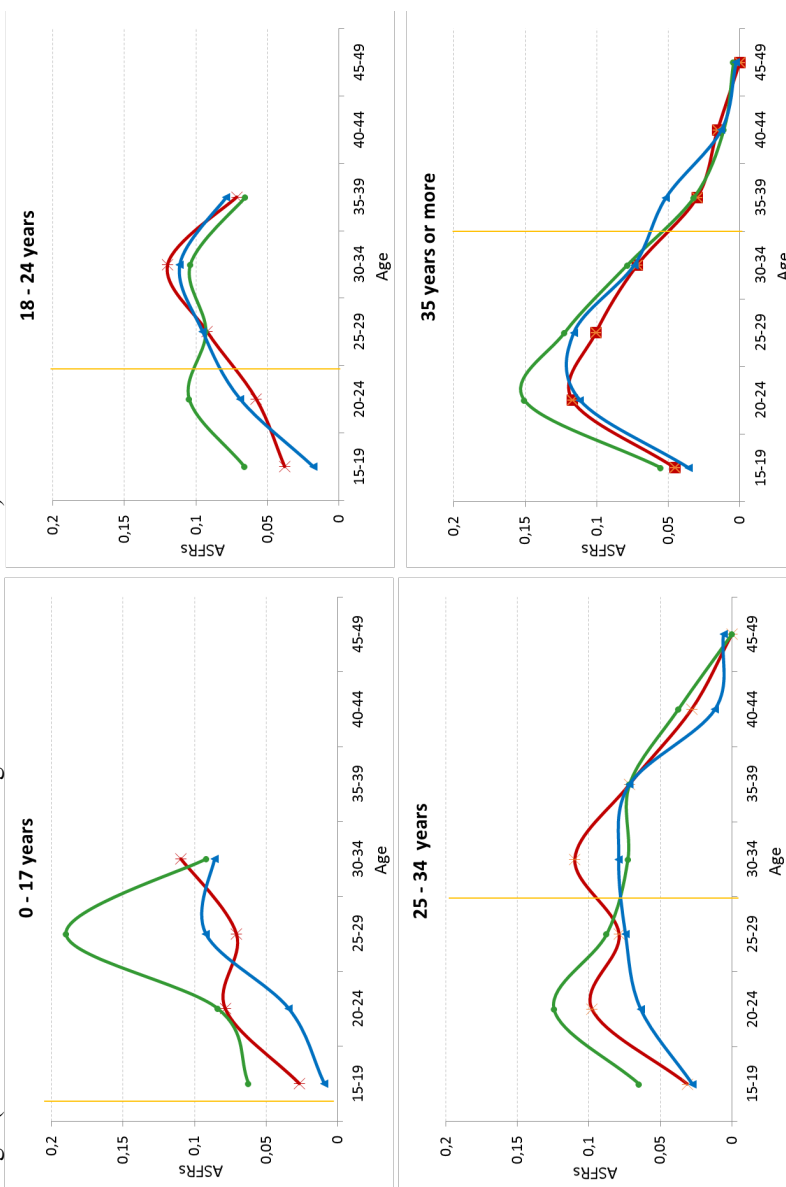
women that arrived in Spain aged between 25 and 34 record a clear drop in their fertility at these ages. On the other hand, there is a clear upturn or recovery in fertility after migration. For those women that arrived aged between 18 and 24, their peak age for becoming mothers is between 30 and 34. By contrast, those women that arrived between the ages of 25 and 34 recorded a certain prolongation in their fertility at older ages regarding those that were 35 or over upon arrival.

Thirdly, the Latin American women that arrived in Spain before or at the start of their reproductive cycle, in other words, as minors, initially record a later calendar, concentrating their fertility as of the age of 25. In this case, migration does not appear to impact upon reproductive models, and although these are incomplete observations, as the women have not yet completed their reproductive cycle, their behaviour is fairly similar to that of the host population. These results may be interpreted as a sign of adjustment to the host country's models, either through assimilation due to their scant socialisation in their home countries or because they are affected by a similar structure of opportunities as Spanish women that conditions the delay in fertility for the younger arrivals.

When breaking the data down by region of origin (Figure 5), major differences are again observed according to age upon arrival and region of origin. Migrants from Andean regions stand out from other groups because of their higher fertility rate and their earlier calendar for all age groups upon arrival. This reflects the typical reproductive models in their home countries. The most noteworthy aspect is the greater fertility at young ages of Andean women that migrated before the start of their reproductive cycle (arrivals under the age of 18). These results reveal that this collective has a lower tendency to adapt. Nevertheless, it is also important to consider the different sociodemographic characteristics of Andean migration compared to other groups, which we will control for in due course through the use of multivariable models.

The analysis conducted according to region of origin reveals that the behaviour of the women arriving fully immersed in their reproductive cycle (aged 18-24 and 25-34) is clearly affected by the migration: a fall in fertility coinciding with the time of migration and a subsequent upturn after their first years of residence in the host country. This therefore confirms an interruption effect that leads to a certain delay in their reproductive calendar.

Figure 5: Age-Specific Fertility Rates (ASFRs) according to age group at the time of arrival and regions of origin (Latin American women arriving between 1990 and 2007)



Note: The vertical line separates the periods before and after the migration for each age group according to age upon arrival.

Source: Author's own work based on ENI-2007

Determinants of reproductive behaviour in the host country

Finally, several discrete-time regressions have been conducted to provide the determinants of the likelihood or conditional probability of having a first child in Spain during the first six years after arrival. Three models have been estimated that consider different independent variables that may be affecting the probability of having this first child (Table 2a, Table 2b, Table 2c). The first model includes sociodemographic characteristics related to the migration. The second one also includes family circumstances at the time of arrival and their evolution throughout the study period. The third one also includes the initial labour status in Spain and in the home country before migrating.

The region of provenance has a significant impact on the three models controlling for third variables. The likelihood of having the first child in the host country diminishes for the collectives of non-Andean women, with Andean women being the reference category. These differences are more significant when controlling for family circumstances and labour status in models 2 and 3 (Table 2a, Table 2b, Table 2c). These results confirm the existence of a different reproductive behaviour depending on provenance, which basically means Andean women are more prone to uphold the cultural and reproductive norms and patterns of their home country. We cannot rule out the existence of different selection processes and even the greater family component in Andean migration (Grande & del Rey, 2012).

Regarding migration's characteristics, the year and age upon arrival, they are statistically significant in the three models. On the one hand, the older a fertile migrant woman is upon arrival, the lower the likelihood of having the first child in Spain. Migrant women reaching the end of their reproductive cycle (aged 35 or over) are less likely to have their first child in Spain, with this effect being highly significant. Women at the start of their reproductive cycle (aged 15-24) are slightly more likely to have their first child than those that arrived between the ages of 25 and 34, which is the reference category, but this difference disappears when controlling for family circumstances (model 2). On the other hand, the conditional probability of having the first child diminishes significantly the more recent the arrival is, which stands to reason given the shorter time in Spain to observe their reproductive behaviour, and also due to the reduction that the time of migration entails in fertility in the first years of residence, as noted in the general pattern (Figure 2). The year of arrival is interesting here as a control variable that avoids any distortion of the results.

Table 2a: Conditional probability of having a first child after migrating.
Discrete-time event history analysis for Latin American migrant women in a
fertile age (15-49) arriving in Spain between 1990 and 2007

		Model 1		
		Odds Ratio	Robust Std. Err	Sig.
Region of origen	Mexico, Central America and the Caribbean	0.667	0.090	**
	Andean (ref.)	1		
	Rest of South America	0.813	0.084	*
Year of arrival		0.923	0.009	***
Age at arrival	15-24	1.133	0.101	**
	25-34 (ref.)	1		
	35-49	0.190	0.033	***
Level of Education	Primary or less	0.973	0.114	
	Secondary (ref.)	1		
	Higher	0.878	0.095	
Spanish nationality before migration	No (ref.)	1		
	Yes	0.914	0.233	
Reasons for migration	No economics (ref.)	1		
	Economics	0.900	0.087	
	No family reunification (ref.)	1		
	Family reunification	1.078	0.110	
Children before migrating	No children (ref.)			
	1 son			
	2 o more sons			
Civil status and coexistence throughout the period	Singles			
	Married and living with the spouse			
	Married and not living with the spouse			
	Separated, widows			
Marriage (married only)	Endogamous			
	Mixed with Spanish (ref.)			
	Mixed third country			
Initial occupation in Spain	High industrial and services			
	Industrial and services (ref.)			
	Industrial low and services			
	Never worked in Spain			
Occupation at source before migrating	High industrial and services			
	Industrial and services (ref.)			
	Industrial low and services			
	Unemployment			
	Studies			
	Housekeeping			
	N	13.586		
	Adjusted by clusters (individuals)	2.621		
	Log likelihood	-2416.116		
	Wald chi2	187.20		
	Prob > chi2	0.0000		
	Pseudo R2	0.049		

*** Significant to 99.9% (P<0.001) / ** Significant to 99% (P<0.01) / * Significant to 95% (P<0.05) / • Significant to 90% (P<0.10)

Source: Author's own work based on ENI-2007

Table 2b: Conditional probability of having a first child after migrating. Discrete-time event history analysis for Latin American migrant women in a fertile age (15-49) arriving in Spain between 1990 and 2007

		Model 2		
		Odds Ratio	Robust Std. Err	Sig.
Region of origin	Mexico, Central America and the Caribbean	0.618	0.086	***
	Andean (ref.)	1		
	Rest of South America	0.721	0.076	**
Year of arrival		0.935	0.010	***
Age at arrival	15-24	1.031	0.099	
	25-34 (ref.)	1		
	35-49	0.238	0.043	***
Level of Education	Primary or less	1.106	0.134	
	Secondary (ref.)	1		
	Higher	0.716	0.078	
Spanish nationality before migration	No (ref.)	1		
	Yes	1.069	0.264	
Reasons for migration	No economics (ref.)	1		
	Economics	1.024	0.103	
	No family reunification (ref.)	1		
Children before migrating	Family reunification	0.953	0.099	
	No children (ref.)	1		
	1 son	0.687	0.080	***
Civil status and coexistence throughout the period	2 o more sons	0.337	0.054	***
	Singles	0.308	0.038	***
	Married and living with the spouse	1		
Marriage (married only)	Married and not living with the spouse	0.804	0.144	
	Separated, widows	0.463	0.086	***
	Endogamous	0.810	0.112	
Initial occupation in Spain	Mixed with Spanish (ref.)	1		
	Mixed third country	0.363	0.105	***
	High industrial and services			
Occupation at source before migrating	Industrial and services (ref.)			
	Industrial low and services			
	Never worked in Spain			
	High industrial and services			
	Industrial and services (ref.)			
	Industrial low and services			
	Unemployment			
	Studies			
	Housekeeping			
	N	13.586		
	Adjusted by clusters (individuals)	2.621		
	Log likelihood	-2333.978		
	Wald chi2	354.31		
	Prob > chi2	0.0000		
	Pseudo R2	0.082		

*** Significant to 99.9% (P<0.001) / ** Significant to 99% (P<0.01) / * Significant to 95% (P<0.05) / • Significant to 90% (P<0.10)

Source: Author's own work based on ENI-2007

Table 2c: Conditional probability of having a first child after migrating. Discrete-time event history analysis for Latin American migrant women in a fertile age (15-49) arriving in Spain between 1990 and 2007

		Model 3		
		Odds Ratio	Robust Std. Err	Sig.
Region of origen	Mexico, Central America and the Caribbean	0.629	0.089	***
	Andean (ref.)	1		
	Rest of South America	0.664	0.072	***
Year of arrival		0.935	0.010	***
Age at arrival	15-24	1.192	0.118	•
	25-34 (ref.)	1		
	35-49	0.234	0.043	***
Level of Education	Primary or less	1.112	0.141	
	Secondary (ref.)	1		
	Higher	0.693	0.085	**
Spanish nationality before migration	No (ref.)	1		
	Yes	1.241	0.302	
Reasons for migration	No economics (ref.)	1		
	Economics	0.999	0.105	
	No family reunification (ref.)	1		
Children before migrating	Family reunification	0.994	0.106	
	No children (ref.)	1		
	1 son	0.660	0.077	***
Civil status and coexistence throughout the period	2 o more sons	0.337	0.055	***
	Singles	0.304	0.038	***
	Married and living with the spouse	1		
Marriage (married only)	Married and not living with the spouse	0.727	0.133	•
	Separated, widows	0.452	0.085	***
	Endogamous	0.774	0.109	•
Initial occupation in Spain	Mixed with Spanish (ref.)	1		
	Mixed third country	0.372	0.108	***
	High industrial and services	0.886	0.175	
Occupation at source before migrating	Industrial and services (ref.)	1		
	Industrial low and services	0.930	0.095	
	Never worked in Spain	0.976	0.173	
	High industrial and services	1.198	0.149	
	Industrial and services (ref.)	1		
	Industrial low and services	1.045	0.157	
	Unemployment	0.949	0.149	
	Studies	0.640	0.096	**
	Housekeeping	1.019	0.170	
	N	13.400		
	Adjusted by clusters (individuals)	2.583		
	Log likelihood	-2283.763		
	Wald chi2	391.98		
	Prob > chi2	0.0000		
	Pseudo R2	0.087		

*** Significant to 99.9% (P<0.001) / ** Significant to 99% (P<0.01) / * Significant to 95% (P<0.05) / • Significant to 90% (P<0.10)

Source: Author's own work based on ENI-2007

Level of education does not have a significant effect, except when including the variables on job status (model 3). In this case, and consistent with the literature, migrants with more schooling have a lower conditional probability of having their first child in Spain.

The other explanatory variables related to migration, nationality upon arrival and reasons for migrating, do not have a significant effect on any one of the three models, at least during the first six years of residence. The null effect of having Spanish nationality at the time of arrival may be because legal status is not a condition *sine qua non* that guarantees better circumstances that favour forming a family in the host country, at least for the recent migration from Latin America. Neither may it be concluded that having a child in the host country is any less of a “priority” among those women that migrate for economic reasons than those that do so for family reasons, as reported by other studies on migrants as a whole in Spain (Castro & Rosero-Bixby, 2011; Del Rey *et al.*, 2015).

Prior family circumstances and their evolution over the first six months of residence have a highly significant effect on the likelihood of having the first child in Spain; an effect that remains when including the variables on job status. In this third model, women that have had a child before migrating reduce their conditional probability of becoming mothers in Spain (34%) compared to those that are childless upon arrival, with this reduction reaching 66% among women that already have two or more children upon arrival.

Partnership status and cohabiting with a spouse upon arrival likewise have an important effect on the probability of having a child. Compared to married women living with their spouse in Spain, Latin American migrant women that are not in a partnership are much less likely to have a child in the first six years. Thus, in both models single women have a 70% less probability of having a child, and those that are separated or widowed have a 50% lower probability than married women living with their spouse. In turn, married women that are not living with their spouse are also less likely to have a child in Spain than those that are cohabiting or transitioning into this situation by regrouping with their husband. Nevertheless, this last difference is only significant when controlling for job status.

The nationality of the spouse over the period of study also has an interesting effect in the models. Compared to women married to a Spanish national, those that are in a mixed marriage with a spouse from a third country have a 62% less probability of having a child. Nevertheless, the difference between a mixed marriage with a Spanish national and marriage

to a fellow national is not especially great (only in model 3), indicating a lower probability of becoming mothers during the first six years for those women in endogamous partnerships compared to mixed marriages with a Spanish national.

In sum, the importance of the prior reproductive situation and marital status are confirmed as factors that condition women's fertility in the host country. Firstly, there is the importance of the prior reproductive situation linked to the interrelationship between fertility and migration. Secondly, the results indicate that family circumstances and marital status are closely related and even condition the reasons for migrating, which explains their lack of statistical significance. Thirdly, the influence of a settled family is a key factor that favours fertility in the host country. Accordingly, the results are consistent with the perspective of the New Economics of Labour Migrations (NELM), whereby international migratory movements are due largely to family strategies and dynamics (Stark, 1991).

Finally, the variables on initial job status and in the home country before migrating do not have a significant impact on the likelihood of having the first child in Spain in the first six years of residence. Only those women that were studying in their home country before migrating have a significantly lower probability of becoming mothers in Spain. This would be explained by the different type of migration among these women: many of them are adolescents that migrated together with a relative or moved to Spain to continue their studies. This different type of migration has favoured their greater adaptation to the models of fertility in the host country or being affected by the same structure of opportunities as Spanish women, which reduces the fertility rate and delays its calendar. This finding, the importance of the type of migration and age upon arrival on the fertility of migrant Latin American women in Spain, is consistent with findings along the same lines, for example, for the case of Italy (Mussino & Strozza, 2012).

CONCLUSIONS

The overriding aim here has been to analyse the models of fertility among migrant Latin American and Caribbean women arriving in Spain between 1990 and 2007 from the perspective of their integration in the host country. The results have revealed a complex and diverse reality for the reproductive pattern from the different perspectives studied, reflecting the very heterogeneity of Latin American migration to Spain.

Firstly, the comparative view regarding women as a whole in their home countries and in the host country has confirmed there is a major interaction

between fertility and migration. The migrant collective has certain particularities both in their calendar and in their fertility rate that differ from those in the home and host countries.

Nevertheless, the results have also revealed the influence that cultural models and socialisation in the home country have on migrants' reproductive behaviour. Thus, Andean women have a higher fertility rate than other collectives, a less delayed reproductive calendar, and a greater probability of becoming mothers during their first years in the host country. For their part, all the other South American women behave in a similar way to Spanish women, with a lower fertility rate and a more delayed calendar. In this sense, the greater similarity between home and host countries among the latter with regard to the phases of demographic transition would explain the lower likelihood of having children in the host country.

Secondly, the findings reveal a significant interaction between fertility and migration also regarding the effect of the time of arrival. The fertility of Latin American migrants drops at the time of migration and during the first years of residence in Spain, which is consistent with hypothesis 1. There is a subsequent recovery in fertility. The diverging reproductive behaviour of the different age cohorts upon arrival reveals the influence of the interruption effect and recovery on the reproductive calendar, especially among those migrants that arrived in the middle of their reproductive cycle. The extent of these tendencies depends on the region of origin and age upon arrival. This hiatus in the reproductive process and in starting a family within the lifecycle due to migration is consistent with prior results both for the sum of migrants in Spain (Devolder & Bueno, 2011; del Rey & Grande, 2017) and, for example, for migrant women in Sweden (Anderson, 2004), or for Hispanic migrants in the US (Parrado, 2011).

Thirdly, there are different reproductive behaviours among migrants in the host country that are determined by different sociodemographic and socioeconomic circumstances, and particularly dissimilar family circumstances. One of this work's main findings is the importance of family circumstances as a determinant of migrants' reproductive behaviour. The results show that fertility in Spain is favoured by migrating without having had children and by cohabitation with the spouse in the host country.

Returning to the initial research question and the hypotheses formulated, the results reveal a certain maintenance of the cultural pattern, a major break in fertility during the migratory process, and a process of adjustment to the reproductive behaviour of Spanish women mediated by socioeconomic and family circumstances.

Finally, the very context of economic crisis, applying the brake on new arrivals, reducing the stock of Latin American migrants, and the effects of unemployment, provides openings for future lines of research regarding the migrant population's fertility models. For example, it would be interesting to address migrants' process of consolidation and settlement in Spain and its repercussion on models of fertility, and in addition analyse the possible convergence or not of reproductive models among second generations. In this sense, the new economic scenario that has modified the structure of opportunities also in terms of reproductive behaviour, together with the end of the "arrival effect", would explain the drop in fertility among the migrant population that has been observed in recent years following the onset of the crisis.

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