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Migration and Fertility of Peruvian Women in Chile and Spain

Migración y fecundidad de las mujeres peruanas en Chile y España

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ABSTRACT

The aim of this paper is to compare the reproductive behavior between the Peruvian migrations South-South to Chile and South-North to Spain. We analyze different fertility indicators constructed from microdata to Chile Population Census (2012), Peru Population Census (2007) and Spanish Natural Population Movement (2007). The results show important differences in fertility between South-South and South-North Peruvian migrants, associated with the different patterns of selectivity, the greater weight of socialization in South-South migrants, and the importance of reception contexts in the degree of integration into the reproductive behavior of the host country.

Keywords: 1. fertility, 2. South-South migration 3. selectivity, 4. Chile, 5. Spain.

RESUMEN

Este artículo compara el comportamiento reproductivo de las migrantes peruanas que se dirigen a Chile con el de aquellas que lo hacen a España. Se analizan indicadores de la fecundidad construidos a partir de los censos de Chile (2012) y Perú (2007), y el Movimiento Natural de la Población de España (2007). Los resultados muestran que la fecundidad difiere significativamente entre las migrantes peruanas sur-sur y sur-norte, vinculada a las diferentes pautas de selectividad, al mayor peso de la socialización en las migrantes sur-sur, y a la importancia de los contextos de recepción para entender el grado de integración en las pautas reproductivas de destino.

Palabras clave: 1. fecundidad, 2. migraciones sur-sur 3. selectividad, 4. Chile, 5. España.

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INTRODUCTION

Aging, Fertility and South-North and South-South Migration[3]

As an eminently demographic phenomenon, international migrations have had and still have very important effects on the population structure. They also have an impact on aging, a trend that is currently of great concern in countries that have reached a post-transition phase or a second demographic transition. The increase in life expectancy in the elderly and the decrease in fertility rates (which in some cases is below the level of intergenerational replacement) accentuate the aging process, causing a shortage of young people entering the labor market which along with changes in the population structure give rise to a demand for immigrant workers to compensate for this population imbalance (Van de Kaa, 1987, 2002; Bongaarts, 2001). These trends, which characterize the second demographic transition, have been more evident since the late 1990s, with significant social and economic implications (Lee and Mason, 2011).

In this regard, there are two aspects that are of particular concern. On one hand, the direct and indirect contribution made by the immigrant population in the societies of destination (Canales, 2015). Despite the significant effect on the population structure, migratory movements do not fully compensate for the negative effects of aging and the decrease in the relative weight of the workforce, as shown by research for the case of south-north migrations in Europe (Bijak, Kupiszewska, Kupiszewski, Saczuk, and Kicinger, 2007; Castro and Rosero-Bixby, 2011) or for south-south migrations in Costa Rica (Reboiras, 2015). On the other hand, in the countries of origin, migration causes a transfer of the demographic bonus, given the impossibility of taking advantage of the window of opportunity represented by a population structure with a heavier active and reproductive age population and a smaller dependent population. However, migration is driven by both a demographic and social complementarity, according to the labor market segmentation theory of destination countries (Piore, 1979; Massey, Arango, Hugo, Kouaouci and Pellegrino, 1998).

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The objective of this article is to study the interrelationship between fertility and migration by analyzing the reproductive patterns of Peruvian migrants in Chile and Spain, defined as migrants because their place of birth is different from the country of destination, regardless of whether or not they have attained nationality. In other words, the aim is to compare the behavior of the south-south and south-north flows of Peruvian women. One of the main features of this approach is that, despite its importance in quantitative terms, south-south migration has not yet received the necessary attention from the social sciences, and to a lesser extent the comparison with south-north migration. This situation is associated, among other reasons, with the lower availability and quality of existing databases (Ratha and Shaw, 2007; Hujo and Piper, 2007).

To carry out this objective, the country of birth (Peru) is first used as the defining criteria for immigrant status. Secondly, since both migratory flows are, to a large extent, of an economic nature, a certain homogeneity in the immigrants' objectives is guaranteed. In addition, both Chile and Spain, although with different intensities and stages in the demographic transition, share a clear trend towards population aging and a notable increase in economic immigration since the end of the twentieth century, so there is a similarity between the contexts of reception that allows the proposed comparison. At the same time, the main heterogeneous aspect continues to be two of the main destinations of Peruvian migrants during the last decades: together with Argentina, Chile is considered one of the main destinations of the south-south movements of Peruvian migrants while Spain stands out as a new destination since the 90s of south-north flows, despite the fact that the United States continues to be the first objective of the north for Peruvians. Along with the destination, which entails different migration pathways and selectivity processes, key differentiating features of immigrant women that can influence the selectivity of flows and their reproductive patterns are analyzed: socioeconomic origin (educational level), legal integration (acquisition of nationality at destination) and integration into the labor market (labor situation). The South-South migration boom of Peruvians in Chile has been called the “fifth migration wave” (Navarrete, 2007). According to data from the Department of Foreigners and Migration (DEM, 2016) and the National Statistics Institute of Chile (INE-Chile, 2016), immigrants have risen from less than 200,000 in 2001, 300,000 in 2010 — about 2% of the total population— to more than half a million in 2015, representing 3% of the total number of residents. Peruvians are by far the main immigrant group in Chile: more than a third of all immigrants are Peruvians, which means around 2% of the total population and a total of 119,366 Peruvians in 2012 (INE-Chile, 2012).

In the case of Spain, according to the National Statistics Institute (INE-España, 2017), in 1998 foreign-born residents represented only 2.9% of the population; a decade later in 2008, Spain had more than 6 million immigrants, 13.1% of the total population. In this immigration boom, Latin Americans have represented the main region of origin; however, the flow of Peruvians to Spain has been much less than that of other Andean countries such

as Ecuador, Colombia or Bolivia. Even so, the number of Peruvians living in Spain went from 47,304 in 2001 to 162,425 in 2008, representing slightly less than 3% of the total number of immigrants in that country (INE-España, 2017). The impact of the serious economic crisis that began in 2008 and its effects on the labor market have caused a radical change in the context of welcoming immigrants in Spain (Esteban, 2011; Grande, Paniagua and Del Rey, 2016). This impact has led to significant flows of returns or re-migration to third countries, particularly among Latin American immigrants (Recaño and Jáuregui, 2014). 66,687 Peruvians were living in Spain during 2006, which is 58% less than at the time prior to the outbreak of the aforementioned crisis (INE-España, 2017). As a result, for the purposes of this article, the fertility of Peruvian women in Spain in 2007 is studied, which enables the study of the comparison between south-north and south-south migration without the distortion caused subsequently by the outbreak of the economic crisis.

After this introduction, the article is structured in four other paragraphs. In the second section, a review of the main hypotheses explaining the reproductive behavior of the immigrant population is presented as a theoretical framework. The third section explains the data sources used and the methodology used. The fourth section presents the results of the research. Finally, the fifth section summarizes the main findings in a miscellaneous way and proposes, based on them, the discussions and lines of research that open from the analysis.

THEORETICAL FRAMEWORK AND WORKING HYPOTHESIS

In accordance with the New Economy of Labor Migration (NEML), it is possible to consider that international migratory movements are fundamentally a consequence of family dynamics and strategies (Stark, 1991). Theories of social networks and social capital also stress the importance of family or community structures and bonds to explain migration and its duration over time. From these two perspectives, family relations are essential when it comes to defining migration projects, integration processes in the destination society and the reformulation of family structures (Poggio and Woo, 2000), including fertility in the host country. In addition, the feminization of migrations, which translates into a quantitative increase and the fact that women are increasingly the main agents of their migratory process (Castles and Miller, 1993; Donato, Gabaccia, Holdaway, Manalansan and Pessar, 2006), highlights the impact of immigrants' reproductive patterns on their own integration processes and on the population structure of the destination countries.

The review of the literature on the reproductive behavior of immigrant women provides an analytical framework from which the working hypotheses for this study are formulated. First, from a longitudinal perspective, a large number of studies have confirmed the existence of an interruption in fertility at the time of migration and in the pre- and post-

migration period as a result, on the one hand, of economic reasons, such as the cost of migration or economic uncertainty and problems at the first moment after arrival; and, on the other hand, of family reasons such as separation from spouses or the postponement of marriage (Massey and Mullan, 1984; Stephen and Bean, 1992; Carter, 2000; Andersson, 2004; Grande and del Rey, 2017).

As a consequence of this interruption of women's reproductive paths caused by the migratory movement, Toulemon (2004) argues that there is a high concentration of fertility after the first year of residence in the destination social group, given the postponement of having children during the migratory movement. Furthermore, over time, family reunification or the formation of couples again stimulates fertility (Schoorl, 1990; Anderson, 2004; Kulu, 2005; Toulemon and Mazuy, 2004). For example, in the case of migrations of Peruvians to Argentina, Rosas (2009) stresses the importance of women as pioneers of south-south migratory movements in the interference between migration and family patterns, such as marital status and descendancy. Although this research does not adopt a longitudinal perspective, these theories must be present, as they confirm the strong interrelationship between fertility and migration, calling into question, first, the fact that immigrant women have a much higher fertility than native women (this perception is due to the fact that the fertility of the former is concentrated in a specific period); and second, that the decrease in fertility linked to the longer period of residence is due to a process of adaptation (but rather to the fact that after recovering fertility, which was postponed, this fertility declines and stabilizes).

Second, the literature has focused on how patterns of integration in the host society influence the reproductive behavior of immigrants. The classical theory of assimilation underlines that immigrant women progressively adapt or assimilate —depending on the length of stay in the destination country and across generations— their reproductive behavior and preferences to those of native women (Ford, 1990; Kahn, 1994; Parrado and Morgan, 2008; Mayer and Riphahn, 2000; Anderson, 2004). The degree of similarity or difference between the society of origin and the host society (stage of demographic transition, cultural values related to family and motherhood, among others) will mark the speed and nature of this adaptation of reproductive behavior (Bongaarts, 2003; Sobotka, 2008). Following this hypothesis of adaptation, it would be expected to observe a lower fertility and a more delayed reproductive calendar in the Peruvians who have migrated to Chile and Spain with respect to the Peruvians who have remained in their country. Furthermore, when comparing the fertility level between south-north and south-south migrants, it is expected to find lower fertility and a greater delay in the reproductive calendar among the former, reproducing the existing differences between the natives of Spain and Chile.

In the relation between integration and fecundity highlighted in the literature, there are two aspects that deserve special attention. On the one hand, a key aspect of integration processes is the labor situation and occupational insertion in the destination country. In this sense, the classic theory of assimilation states that women's greater participation in the labor market leads to a reduction in their level of fertility, indicating, for example, the opportunity cost of having children (Becker, 1962) or women's greater economic autonomy from the perspective of the second demographic transition (Lesthaeghe, 1992). The theories of intersectionality emphasize the importance of gender relations between the family and labor relations, insofar as the permanence or departure of immigrant women from the labor market are determining factors in their fertility patterns (Flippen, 2014). For example, the search for upward mobility by immigrant women entails adopting a reproductive behavior that does not limit their labor trajectory in the host country (Alba and Nee, 1997).

On the other hand, also from the theories of integration, the legal status in the destination country has a special influence on women's reproductive patterns. The hypothesis of legality argues that undocumented women, without a residence permit or who have not yet acquired nationality, find an incentive to increase their fertility in the host society to the extent that maternity can provide benefits for obtaining legal residence or nationality and contributes to generating links and rights in the destination country (Toulemon and Mazuy, 2004; Bledsoe, Houle and Sow 2007). Thus, it would be expected that both for Peruvians who have migrated to the north and those who have migrated to the south, a higher fertility is observed among those who have not obtained the nationality of the country of destination.

Third, faced with the theory of integration, numerous studies have found empirical evidence that maintains that migrants maintain throughout their life cycle the socialized reproductive norms and preferences in their countries of origin (Abbasi-Shavazi and McDonald, 2002; Kulu, 2005; Milewski, 2007; Del Rey, Cebrián, Grande, Antón and Fernández-Macías, 2015). These standards can be reinforced by transnational links (Landale and Oropesa, 2007; Lichter, Johnson, Turner and Churilla, 2012). Only in the following generations would a convergence with the native guidelines be expected. The intensity of transnational ties and care also determine the family reproductive sphere, as has been shown in the case of the recent Latin American migrations in Spain (Parella, 2007). Assuming this perspective, it would be expected that migrants maintain an intensity and a calendar of their fertility similar to that of their compatriots with the same socioeconomic characteristics but who have not emigrated, given the enormous differences in demographic behavior in Latin America explained by socioeconomic inequalities or by rural-urban cleavage (Chackiel, 2004).

Fourthly and lastly, other works have emphasized the consequences of selectivity of migrations. In other words, migrants are not a random sample of their societies of origin but have distinctive features —observable and unobservable— with respect to the population as a whole that does not migrate. This selectivity means that migrants have fertility levels closer to those of the host society than to those dominant in their country of origin, which would be the same, even if they did not migrate (Kreyenfeld, 2002; Feliciano, 2005; Akee, 2010). In general, people migrating from developing regions are often (even if they had not undertaken migration) characterized by delayed marriage, reduced fertility and increased labor participation compared to their home societies (Lindstrom and Giorguli, 2007; Castro and Rosero-Bixby, 2011). Despite the limitation of accurate data and the impossibility of assessing how migrants would have behaved if they had stayed in their country of origin, different selectivity processes can be expected to make a difference in the reproductive behavior of south-north and south-south migrants. Thus, greater patterns of positive selection in the south-north flow than in the south-south would result in lower fertility and a longer delay in the reproductive calendar in the first than in the second.

Alongside this, some research highlights the reasons for migration as an element of migration selectivity, highlighting greater fertility for women who migrate for family reasons as opposed to those who migrate for economic reasons (Cerruti and Massey, 2001; Castro and Rosero-Bixby, 2011; Mussino and Strozza, 2012; Del Rey and Grande, 2015). Women who migrate for employment and become part of the working population at destination, especially if they have to maintain transnational economic ties with the family at origin, have greater incentives to postpone the birth of their children for the first few years after the migration event (Mussino and Strozza, 2012).

SOURCES AND METHODOLOGY

These working hypotheses are verified using microdata from the census and birth records of the three countries studied. For the analysis of the fertility of Peruvian immigrants in Chile and Chilean natives, data from Chile's 2012 Population and Housing Census provided by the National Statistics Institute of Chile are used (INE-Chile, 2012). Although the 2012 Chilean Census was withdrawn as an official source due to technical problems; previous work confirms that the microdata from this census reliably gathers the immigrant population residing in Chile and can be used for research (Valeria-Soto, Gil-Alonso and Pujadas, 2016). In the case of Spain, data from two registers are used: the Continuous Municipal Register of 2007 and 2008, which provides population stock data (INE-España, 2017), and the 2007 Natural Population Movement, which provides data on births (INE-España, 2008a). Lastly, in order to compare with the total population in the country of

origin, which therefore has not migrated, data from the 2007 Population Census of Peru of the National Institute of Statistics and Informatics of Peru are used (INEI-Perú, 2007).

Therefore, three sources of data from different administrative registers are used, making it possible to compare and not be burdened by insufficient sample sizes; however, the comparison of three sources from different countries and disparate designs prevents the availability of some sociodemographic variables, which is particularly interesting for the study of migratory phenomena and, specifically, of the time spent in the receiving society.

Various demographic indicators are used to measure the fertility level and reproductive calendar of different groups of immigrants and natives. Data from 2012 are used for Chile, and from 2007 for Peru and Spain, thus avoiding the distortion caused by the crisis that broke out in Spain in 2008.

First, the *Total Fertility Rate* (TFR) is an indicator of periodic or conjunctural fertility that measures the average number of live births a woman will have at the end of her fertile period. The TFR shows the pattern of fertility at the specific moment, allowing comparison between countries of origin of the immigrant population and the native population of the country of destination according to different socio-demographic characteristics of the population. Since this is a rate, by definition, the population is considered to be in the middle of the period (for the case of Spain using the Municipal Register of 2007 and 2008), and fertility is reconstructed during the last 12 months in order to know the births during the last year from the census of Chile 2012 and Peru 2007.

Second, *Age-Specific Fertility Rates* (ASFRs) are used, which are the quotient between the births of women in each five-year age group and the births of women in that age group for one year. In other words, ASFR represents the relative age distribution of the TFR, with the advantage of being able to study and compare the reproductive calendar.

Finally, to avoid the distortion caused by changes in the reproductive calendar and by the interrelationship between migratory movement and fertility measured by the above indicators, it is necessary to calculate the Cohort Fertility Rate (CFR). The CFR measures the average number of live births that women have during their entire reproductive period, so it is only known when women in a given cohort complete their fertile lives. Its advantage is that it allows us to know whether or not the replacement level is reached, theoretically located at 2.1 children per woman, making it a very good indicator to compare the immigrant population, native and in the country of origin. Following the work of Castro and Rosero-Bixby (2011), this article calculates the CFR for cohorts born between 1952 and 1966, given that in all the cases studied their reproductive period has been completed or almost completed. However, it must be taken into account in the interpretation of the results that the women of those cohorts had the majority of their children in the 1970s and 1980s, generally before migrating.

In order to contrast the different hypotheses arising from the literature review, three characteristics will be considered (which may explain the differences in their reproductive behavior) of immigrant women: a) socio-economic origin, measured by educational level, b) legal integration in the destination country, observed in the acquisition or not of the nationality of the destination country, and c) integration in the destination labor market, through the labor situation of women.

Since the register of residents of the Continuous Municipal Register of Spain does not include the educational level or the employment situation (although it does have nationality data), the distribution of the data has been taken from the information available in the 2007 National Immigrant Survey (INE-España, 2008b).

Table 1 shows the distribution of these socioeconomic characteristics among women in Peru, as well as among Peruvian migrants in Chile and Spain. These data show different patterns of selection and integration between the two migratory flows: while in south-south migration the lowest age at arrival stands out, in south-north migration the highest average level of education and the highest acquisition of the nationality of destination attract attention.

Table 1. Socio-economic characteristics of interest of women of reproductive age (15-49 years old), Peruvians in Chile and Spain and population at origin

		Women in Peru 2007	*Peruvian Migrants in Chile 2012*	*Peruvian Migrants in Spain 2007*
Age at arrival	Under 15 years old	n/a	17.41	6.57
	From 15 to 34 years old	n/a	60.77	70.5
	Over 34 years of age	n/a	21.82	22.96
Level of education	Elementary or less	26.6	9.2	8.2
	Secondary	57.2	76.6	58.4
	Higher Education	16.2	14.2	33.4
Nationality country of destination	Yes	n/a	7.4	33
	No	n/a	92.6	67
Labor situation	Economically Active	42.1	70.6	74.9
	Economically Inactive	57.9	29.4	25.1

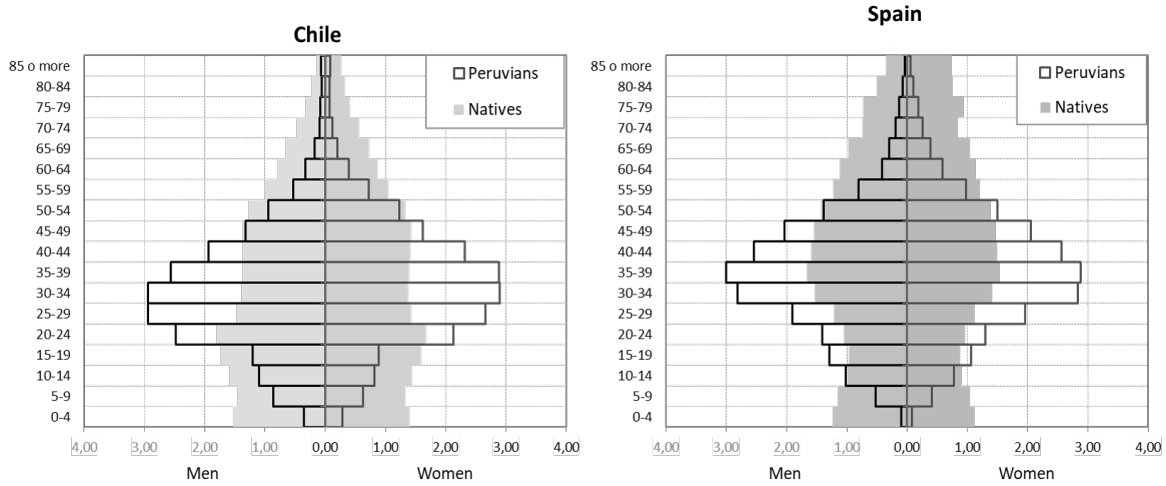
Source: Prepared by the authors based on the 2012 Population Census of Chile (INE-Chile, 2012), Population and Housing Statistics of Peru (INEI-Perú, 2007), Natural Movement of the Population 2007 (INE-España, 2008a), Continuous Municipal Register 2007 (INE-España, 2017) and National Immigrant Survey 2007 (INE-España, 2008b).

RESULTS

Population Structure

Before focusing on the reproductive patterns, it is important to analyze the impact of migratory flows on the structure of the population of the destination countries. Both in the case of south-south migrations from Peru to Chile and south-north migrations from Peru to Spain, a young structure is observed with the stock of immigrants of both sexes concentrated in the active age (graph 1). This is the consequence of an international movement, mostly of an economic nature. It should be noted that in the selected years 70% of Peruvian women living in Chile and almost three quarters of those living in Spain are active in the labor market, that is, they work or are looking for work (table 1).

Graph 1. Comparative population pyramids of Peruvian immigrants and natives in Chile 2012 and Spain 2012L



Source: Prepared by the authors based on Chile's 2012 Population Census (INE-Chile, 2012) for the native Chilean population and Peruvian immigrants in Chile, and Spain's 2012 Continuous Municipal Register (INE-España, 2017) for the native Spanish population and Peruvian immigrants in Spain.

The Peruvian immigrant population has a double effect on the aged structure of the native population that can be seen in the population pyramids of both destination countries, although with a more notable aging in Spain than in Chile. On the one hand, as has already been said, immigration is an injection of active population that slightly reduces the dependency ratio of host societies. On the other hand, it means an increase in the number of women of reproductive age: between 15 and 49 years old. The relative proportion of Peruvian immigrants is much higher than that of native women in both cases, as shown in Graph 1. In other words, in addition to the direct contribution of people of economically

active age, through new births immigration can contribute to a rejuvenation of the population in the medium and long term.

Reproductive Guidelines of Migrant Women

The reproductive guidelines studied show important differences between the population in the country of origin and the emigrated population, between natives and immigrants, and between south-south and south-north Peruvian migrations.

Table 2. Comparative Synthetic Index of Fertility and Final Fertility of Peruvian immigrants Cohort in Chile (2012) and Spain (2007), women in Peru (2007) and native population in Chile (2012) and Spain (2007)

	Synthetic Fertility Index	*Final fertility of cohort (born 1952-1966)*
Peruvian Migrants in Chile	2.36	2.91
Under the age of 15 at the time of migration		2.25
15-34 years old at time of migration		2.41
Over 35 years of age at the time of migration		2.97
Peruvian Migrants in Spain	1.51	1.86
15-34 years old at time of migration		1.35
Over 35 years of age at the time of migration		2.11
Peru	2.41	3.85
Chile (natives)	1.94	2.64
Spain (natives)	1.25	1.76*

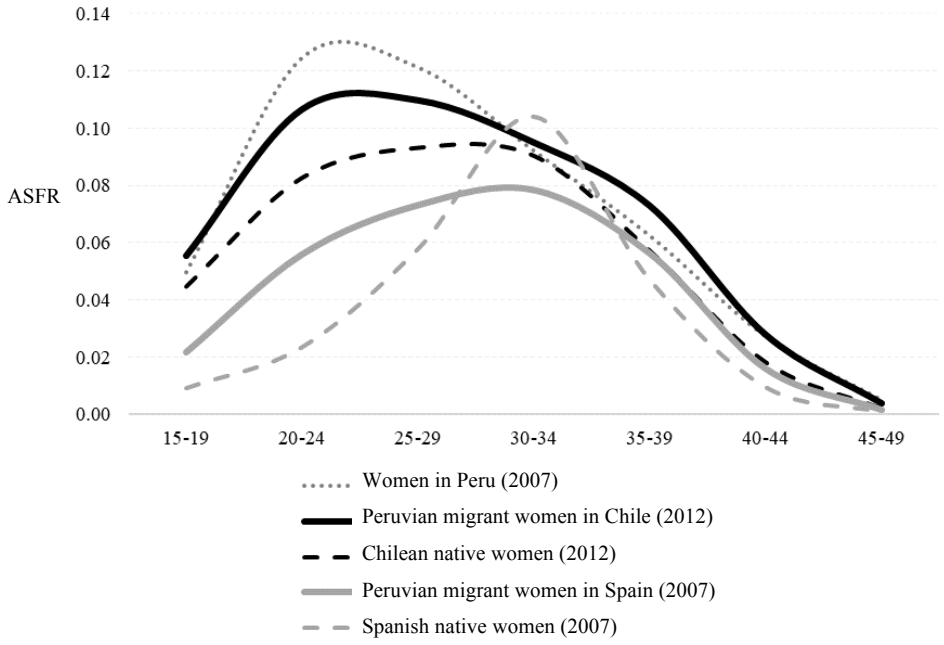
* Data taken from Sardón (2006, p.240).

Source: Prepared by the authors based on Population Census 2012 of Chile (INE-Chile, 2012), Population and Housing Census of Peru (INEI-Perú, 2007), Natural Movement of the Population (INE-España, 2008a) and Continuous Municipal Register 2012 of Spain (INE-España, 2017).

In the first place, a higher fertility is observed among Peruvian migrants than among those native to the countries of destination. Table 2 shows these differences in both TFR and CFR. In the case of Chile, native women had an average of 1.94 children, reflecting a mature phase of the demographic transition, while the number of children of Peruvian women residing in Chile was 2.36 children. A similar relationship is observed in the case of Spain. At that time the natives had an average of 1.25 children and the Peruvian immigrants, 1.51. The CFR reaffirms this difference between natives and immigrants, but also shows a clear trend of a progressive decrease in the final fertility according to the age they had at the time of migration and, therefore, of greater similarity with the natives; that is to say, that the average decreases depending on the younger one arrived at the destination country.

On the other hand, if the reproductive calendar is observed through the ASFR (graph 2), it is concluded that the natives present in the two study cases a more delayed calendar than the Peruvian immigrants. In both cases, up to the age of 29, the fertility of the immigrants is much higher than that of the native women, especially for the Peruvian women in Chile, who have their highest ASFR in that age range. Between the ages of 30 and 34, the differences between native women and immigrants in Chile are not significant; although the latter maintain a higher ASFR, a much higher fertility is observed in that age range among native women compared to immigrants in Spain, although these also reach their highest ASFR at that age, although with a much less concentrated calendar than that of local women. From the age of 35 onwards, in both cases there is a higher fertility of immigrants compared to native women, as a consequence of the need to "recover" interrupted fertility due to the effect of the migratory movement itself.

Graph 2. Comparison of Specific Fertility Rates by Age in Peru, Chile and Spain according to native population and Peruvian immigrants



Source: Prepared by the authors based on Population Census 2012 of Chile (INE-Chile, 2012), Population and Housing Census of Peru (INEI-Perú, 2007), Natural Movement of the Population (INE-España, 2008a) and Continuous Municipal Register 2012 of Spain (INE-España, 2017).

Second, unlike non-migrant Peruvians, female migrants have lower fertility and a more delayed reproductive calendar (Table 1 and Graph 2). In this sense, at first sight the evidence seems to reinforce the hypothesis of selectivity, given that Peruvian immigrants have lower fertility and a more delayed reproductive calendar than their compatriots in Peru. Although there are significant differences between those who live in Spain and those who live in Chile, the latter's behavior is more similar to that of women in Peru.

From these first two comparative exercises it can be concluded that the fertility of Peruvian immigrant women follows a kind of double movement. The first confirms the hypothesis of socialization, which would confirm that, compared to native women, immigrants maintain to some extent a reproductive behavior more similar to that of origin, or at least a complete assimilation of the reproductive patterns of destination is not observed. Moreover, such assimilation occurs to a greater extent when the host society has reached an earlier age (in the case of both Chile and Spain); therefore, reproductive socialization has taken place not only in the country of departure, but also in the host society.

At the same time, following the hypothesis of assimilation and selectivity, there is a second movement, which causes that compared to the Peruvians who have not migrated,

the immigrants adopt a less intense reproductive behavior and with a more delayed calendar, thus approaching the guidelines of the natives. Between both movements (which push and determine the fertility of the immigrants) placing it between that of the population of origin and that of the natives, the effect of the interrelation of events between fertility and migratory movement comes into play.

Thirdly, the results show that reproductive behavior is significantly different between south-south and south-north migrants, with TFR 2.36 and 1.51 respectively (Table 2), and with a delayed schedule for those who migrated to the European country as opposed to those who migrated to the neighbor country of the Southern Cone (Graph 2). On the one hand, the Peruvians that migrated to Spain show a reproductive behavior closer to the patterns of the Spanish natives, due to the important selectivity of the south-north flow and the greater weight of the adaptation factor. On the other hand, those residing in Chile show a less differentiated fertility level with respect to the country of origin, that is to say, more determined by socialization at origin than by assimilation, although with a calendar notably more delayed than that of the Peruvians who have not migrated.

These differences between south-south and south-north migrations are explained, on the one hand, by the late fertility and the lower number of children of Spanish natives, which generates a context that influences the patterns of assimilation more than does the context of Chilean reception. As it has been demonstrated for the case of Peruvian women in Argentina (Rosas, Cerezo, Cipponeri and Gurioli, 2008) the context and characteristics of the destination population determine, directly and indirectly, fertility levels and the differences between natives and immigrants.

On the other hand, given the scarce antiquity of migrations in both cases, due to certain patterns of selectivity of migrations towards the north and towards the south, which would represent a part of that difference that is not due only to assimilation. Peruvian migrants in Spain, compared to those who have gone to Chile (as observed in Table 1) have a higher level of education and greater economic capital, since the investment for migration to Europe is significantly higher, so it is possible to assert counterfactually that these women would have had fewer children than the average even without having undertaken migration. In order to investigate the possible patterns of selectivity, the TFR and ASFR are analyzed according to the different socioeconomic characteristics selected.

Fertility According to Level of Studies

Table 1, which shows the distribution of the socioeconomic characteristics of the target populations, reflected strong differences in the educational level of Peruvian women of childbearing age in Peru, Chile and Spain. These data allow us to affirm that there is a clear positive selection in both migratory movements, but much more intense in the south-

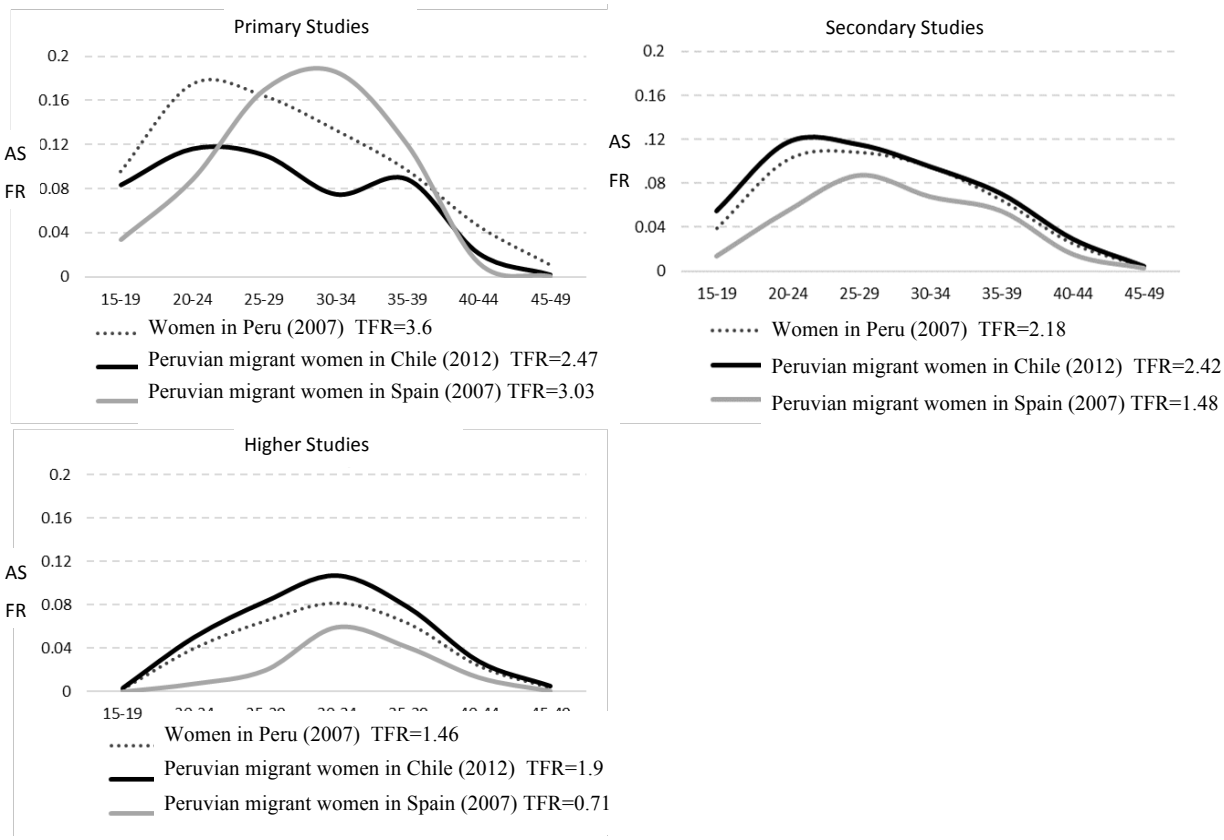
north migrations than in the south-south ones. In Peru, there is a greater presence of fertile women with basic education (primary or less). But among south-south migrants in Chile there are three quarters who have secondary education, far above the percentage among the population at origin. Among south-north migrants in Spain more than a third have higher education, while only 14.2% of Peruvians in Chile and 16.2% of those who have not migrated reach that level. How does this selectivity, according to educational level, affect reproductive behavior?

The ASFR by age and last grade of studies (graph 2) confirm the selectivity hypothesis. In other words, the lower FER among south-north Peruvian migrants is largely due to the lower fertility of women with higher education, who are over-represented in this migratory flow. However, significant differences continue to be observed at the same educational level. On the one hand, in the south-south migration to Chile, Peruvians present a slightly higher fertility and a calendar similar to the population at origin with secondary and higher education levels, which would reinforce the importance of socialization patterns. This is not the case for Peruvians who live in Chile and have a lower level of education, probably with their fertility marked by difficulties in integrating into the labor market and economic conditions that encourage motherhood.

On the other hand, in the case of the south-north movements, Peruvians in Spain show significantly less intense fertility and a more delayed calendar than the population of origin and their compatriots in Chile. In other words, at the same level of studies, the fertility of Peruvian women in Spain shows a tendency similar to the patterns of the natives of the destination society.

In the explanation of these differences according to type of migration, both the interrelation of events as well as the possible greater delay in the calendar due to the migratory movement in the south-north migration than in the south-south, and the processes of integration and labor insertion in destination (which are different according to level of studies; for example, see the higher fertility of Peruvian women in Spain who have a lower level of education, such as the reasons for migration itself) the type of transnational contact with the society of origin and the regrouping processes that determine reproductive patterns throughout the life cycle and which articulate themselves in different ways in south-south and south-north migrations.

Graph 3. Comparison of Specific Fertility Rates by Age of Peruvian Immigrants in Chile and Spain according to level of studies

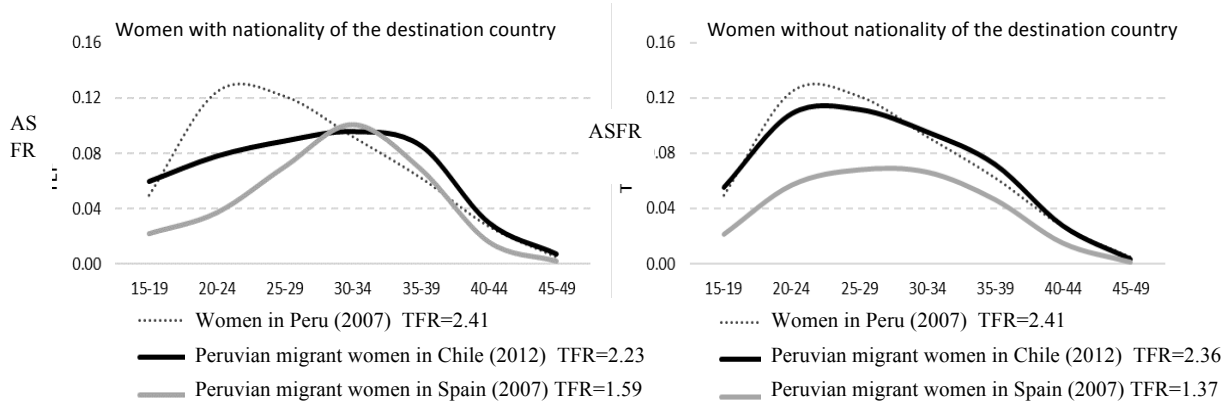


Source: Prepared by the authors based on Population Census 2012 of Chile (INE-Chile, 2012), Population and Housing Census of Peru (INEI-Perú, 2007), Natural Movement of the Population (INE-España, 2008a) and Continuous Municipal Register 2012 of Spain (INE-España, 2008b).

Fertility According Nationality Acquisition in the Country of Destination

To test the hypothesis of legality and the effect of integration processes in the host society, graph 4 represents the ASFR by age, comparing migrants who have obtained the nationality of the country of destination with those who have not acquired it (even if they are residing legally). It should be remembered that access to nationality is very different in both cases of study. One-third of Peruvians of reproductive age residing in Spain in 2007 had acquired Spanish nationality; however, only 7.4% of Peruvians living in Chile have Chilean nationality (Table 1). These differences are caused by the different criteria established by States for the acquisition of nationality and by the migrants' own decisions according to their needs related to the value of the legal status in destination or to the future plans of the migrants.

Graph 4. Comparison of Specific Fertility Rates by Age of Peruvian immigrants in Chile and in Spain according to acquisition or not of the nationality of the country of destination



Source: Prepared by the authors based on Population Census 2012 of Chile (INE-Chile, 2012), Population and Housing Census of Peru (INEI-Perú, 2007), Natural Movement of the Population (INE-España, 2008a) and Continuous Municipal Register 2012 of Spain (INE-España, 2017).

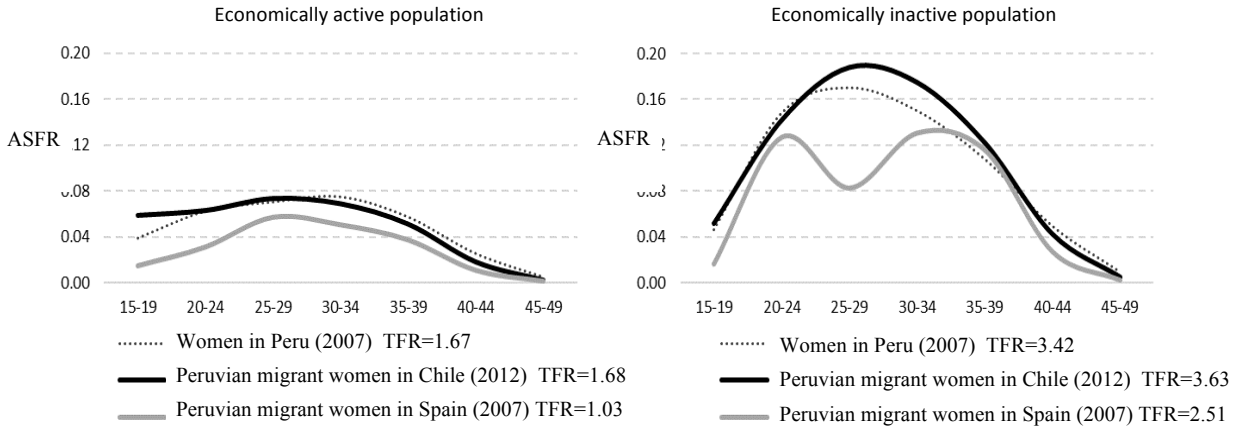
In the case of south-south Peruvian migrants, the acquisition of the nationality of destination (although it is a minority) is associated with a lower level of fertility, and above all, with a much delayed reproductive calendar compared to those who have not acquired the nationality, who show a very similar behavior to that of their compatriots who have not emigrated. In the case of south-north migrants, the relationship is inverse. Peruvians in Spain who have acquired nationality have a more delayed reproductive calendar and a higher TFR than those who do not have nationality (1.59 as opposed to 1.37 children per woman). The delay in the reproductive calendar is explained by the interruption hypothesis, due to the postponement of child raising during the first years after migration, which ends up delaying the age at which children are born and, at the same time, it encourages the length of time needed to acquire nationality.

The delay in fertility shown by migrants who acquire nationality presents evidence in favor of the assimilation hypothesis, showing a calendar more similar to that of native women among those who have a better legal insertion. However, in the case of south-north migrants, the higher fertility among those having nationality contradicts the postulates of the hypothesis of assimilation of the patterns of the natives, that is, a better legal integration does not imply a reproductive behavior more similar to that of the natives as it does occur in south-south migrants. For Peruvians in Spain, the initial economic objective of migration, together with the significant weight of pioneering women, means that economic and legal integration is prioritized to a large extent initially after arrival, and then the objectives of family reunification and integration are addressed.

Fertility According to Employment Situation

Finally, the reproductive behavior of migrant women also shows notable differences with respect to their employment situation, comparing economically active women (working or actively seeking work) and inactive women. The prevailing economic motive in both migratory flows marks a starting-point difference: compared to only 42% of Peruvian women of reproductive age who are economically active in Peru, the percentage rises to 70.6% among Peruvian women in Chile and up to 74.9% in those who migrated to Spain. Looking at the ASFRs by age for active and inactive women, a very similar reproductive behavior is observed between the population at origin and south-south migrants in Chile. The most significant differences appear again in the case of south-north migrations to Spain, which, although maintaining the same pattern of much higher fertility among inactive women, in both labor situations they have a lower TFR than those of Peruvians in Chile and Peru.

Graph 5. Comparison of Specific Fertility Rates by Age of Peruvian Immigrants in Chile (2012) and in Spain (2005-2007) according to employment situation



Source: Prepared by the authors based on Population Census 2012 of Chile (INE-Chile, 2012), Population and Housing Census of Peru (INEI-Perú, 2007), Natural Movement of the Population (INE-España, 2008a) and Continuous Municipal Register 2012 of Spain (INE-España, 2017) and National Inmigrant Survey (INE-España 2008b).

In short, the pattern of selectivity of migratory movements and their economic motivation, which imply the greater incorporation of women into the labor market, can explain the lower fertility of immigrants, if compared with the total population. Given these significant differences between economically active and inactive women, it can be concluded that occupational and reproductive decisions are joint for immigrant women. Thus, their fertility depends to a large extent on the family or economic objective of

migration, and on the subsequent work strategies of women that are closely linked to the labor market situation of their partners. In this sense, the literature underlines the sustainability of patriarchal family models among south-north Latin American migrants (Sana and Massey, 2005), explaining the exit of immigrant women from the labor market in favor of child care and custody (Del Rey and Grande, 2015). For example, the progressive increase in female labor participation and motherhood among economically active women have been two important achievements in behalf of gender equality linked to the development of the welfare state during the last decades in Spain (Miller-Moya, 2004), which in the medium term could be assimilated by the migrants who integrate in this context of reception.

CONCLUSIONS

The results of this work confirm the complexity of the reproductive behavior of immigrant women. By studying the relationship between migration and fertility by comparing south-south and south-north migration, the findings conclude that the type of international movement distinguishes between the five hypotheses discussed in the literature (interruption, assimilation, legality, socialization and selectivity). From the evidence presented in these pages three questions can be formulated that help to unravel that complexity.

Who are the women who migrate? This is the first question that reveals the differences in the reproductive behavior of migrants with respect to the population of origin and between south-south and south-north migrants. The differences in fertility intensity, in the final offspring and in the reproductive calendar are a consequence of the fact that a non-random part of the population at origin has migrated. Specifically, a strong positive selectivity has been observed in Peruvian migration in Spain, which explains its lower fertility and delay in the reproductive calendar compared to women at origin as well as to Peruvian women in Chile. Greater similarity in behavior when controlled by social origin or labor situation. The lower positive selectivity in migration from Peru to Chile explains why its behavior is more similar to the population of origin.

If selectivity is decisive, then the second question to be answered is: to what extent do migrants maintain reproductive behavior similar to that of their compatriots at home who have similar socioeconomic characteristics? Two factors are essential in this regard. On the one hand, the importance of age on arrival in the country of destination in the fertility of female migrants has been demonstrated: the younger the migration was undertaken, and therefore the socialization at origin was lower, the reproductive patterns tend to be more similar to those of the natives. On the other hand, the results show that the weight of socialization at origin is more decisive in south-south Peruvian migration than in south-north Peruvian migration. Although the process of socialization can be reinforced in a

"transnational living" encouraged by the new technologies, the type of border migration and the more temporary nature of Peruvian migration to Chile means that reproductive socialization plays a more decisive role in this case. In comparison, in the case of south-north migration to Spain, the greater investment to undertake the journey or the cost of living in the destination explains why interruption plays a more relevant role.

Third, to know to what extent reception contexts limit or push socialized reproductive patterns at origin, another question must be opened: how do migrants integrate into the receiving society? Reproductive behavior is strongly linked to the processes of social and economic integration of the immigrant population, even though recent migrations have been analyzed. The evidence does not allow us to assume the predominance of classical assimilationist theory, but rather the selectivity of migrations and the interrelation of events that determine fertility have been highlighted as elements of socialization, making it more or less similar to that of the natives. A factor widely used as a proxy for integration, such as the acquisition of nationality, has shown that the increase in the time of residence in the country of destination does not imply reproductive behavior per se more similar to that of the natives. In contrast, the data suggest that the fertility of female migrants is influenced by the stage of the life cycle, the interruption caused by migration itself, and the economic and family situation in the host society. Finally, this research has carried out a comparison between south-south and south-north migrations that has allowed to unravel some aspects of the validity of the different theories in force in the literature for those contexts: Peruvian migrants in Chile and in Spain. While it is true that, although they share some trends that have made this comparison particularly attractive, the phase of demographic transition, the development of welfare states and the feminization of the labor market are, among others, features of the reception contexts that distinguish the two host societies by articulating the reproductive behavior of Peruvian migrants in different ways.

Translator: Yahaira Nava Morán

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