

**Fertility Behavior of Migrants and Nonmigrants
from a Couple Perspective:
The Case of Senegalese in Europe**

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Abstract (max 300 words):

The aim of this paper is to examine the relationship between migration and fertility. Thereby, we have a special look on migrant selection processes by comparing Senegalese migrants to Europe with the Senegalese staying back home in Africa. Particularly, we are interested in the following research questions: *What are the differences between migrants and nonmigrants in terms of fertility timing and quantum? Is differential fertility behavior of migrants and stayers the result of migrant selection processes on socio-economic or on unobservable characteristics?* In order to answer these questions, our theoretical framework builds on some of the major hypotheses that have been developed to explain the effect of migration on fertility and vice versa: disruption, interrelation of events and selection.

For the empirical analysis of this paper we use data collected in the framework of the MAFE-Senegal (“Migrations between Africa and Europe”) project. This project collected longitudinal retrospective life-history data in origin and destination countries. Using couples as the unit of analysis (2,500 partnerships) we compute Kaplan-Meier estimates and discrete-time hazard models to analyze the timing of the first and of higher-order births. First results indicate that there are no big differences for the first birth between Senegalese migrants in Europe and nonmigrants in Senegal: both groups follow very similar dynamics. But for higher-order births, migrants do have a much lower risk to experience these events. This might indicate that Senegalese migrants in Europe are a very selected group, not only in terms of socioeconomic characteristics, but also with differential fertility patterns.

Extended Abstract

1) Theoretical considerations and hypotheses

There is a battery of theoretical approaches and mechanisms describing the relationship between internal and international migration and fertility, and family formation in general. They are partly competing, partly complementary and have the common goal of explaining the impact of geographic mobility (internal and international migration) on family building patterns of the migrant population (Kulu 2005).

The *selection hypothesis* argues that the fertility behavior of migrants differs from the one of non-migrants due to the fact that migrants are a selected group with fertility patterns that are more similar to the one of the host country than to the one of their origin country (Kulu 2005, Milewski 2007). The *adaptation hypothesis* states that the initial characteristics in fertility behavior are different in origin and destination countries and over time migrants' behaviors converge to the one of the host country (Andersson 2001). The *socialization hypothesis* states that the first generation of migrants maintains the fertility patterns of their origin country and only the subsequent generations, born in the host country, converge to the patterns of their native-born counterparts (Milewski 2007). The *disruption hypothesis* affirms that in the time directly after migration, migrants have a low fertility level as a result of the "disruptive factors" inherent to the migration process (Kulu 2005: 53). And finally, *interrelation of events* is the last hypothesis, which argues that migration itself is not the reason for higher fertility, but rather are higher levels of fertility the coincidence of migratory processes and family building at the same time (Andersson 2004).

Although the main focus of this paper is on the selection hypothesis, also the other hypotheses will be touched upon, mainly disruption and interrelation of events.

Selectivity with respect to Socioeconomic Status

Intercontinental migration from Sub-Saharan Africa to Europe involves overcoming a long geographic distance (in comparison to migration within the African continent), implying a relatively high amount of financial resources and knowledge (González-Ferrer et al. 2014). Thus, not the poorest ones are those who manage migrating from Senegal to Europe, but rather those with a certain educational and financial level (see also van Dalen et al. 2005; Lucas 2006). In a recent study that uses the same dataset as this paper does, it has been shown that Senegalese immigrants in Europe are a positively selected group of their population of origin in terms of socioeconomic status (González-Ferrer et al. 2014). Senegalese men and women with Secondary and Tertiary education are significantly more likely to settle over to Europe, compared to those with only Primary or less education. Also individuals belonging to households with assets (properties) are more likely to migrate to Europe than those without.

This positive socioeconomic selectivity of migrants is also important when explaining fertility behavior of migrants compared to non-migrants. Generally speaking, in most developing countries, poorer, lower educated and rural women have higher fertility levels than their wealthier, higher educated and urban counterparts. Socioeconomic status effects fertility through differentials in contraceptive use and age at marriage, among others. This relationship has been proven in several wide-range comparative studies in all developing countries, with a varying size of the effect in different regions and countries (Weinberger 1987, Castro-Martín and Juárez 1995, Bongaarts 2003, Schoumaker 2004). Weinberger (1987) finds that in Sub-Saharan Africa there is a strong negative relationship between current and completed fertility and education. Schoumaker (2004) also shows for 25 developing countries that fertility varies by economic status. The poorest women are the ones with the largest families, the youngest age at marriage and who use less contraceptive methods. Bongaarts (2003) finds differences in wanted and unwanted fertility according to educational attainment, whereby for countries like Senegal, still in the early stage of the fertility transition, differences among educational groups are bigger for wanted than for unwanted fertility.

So we know that there is a clear negative relationship between socioeconomic status (education, poverty) and fertility quantum and timing. Furthermore, we know that Senegalese migrants are positively selected in terms of education and socioeconomic status. This leads us to the formulation our first hypothesis:

H1: Senegalese migrants to Europe are a positively selected group in terms of their socioeconomic status. Therefore, the migrants' fertility levels are lower than those of the non-migrants.

Disruption & Interrelation of Events

In the African context transnational family arrangements are frequent and more prevalent than reunification in the destination countries (Baizán, Beauchemin and González-Ferrer 2011). In fact, in many cases, and not as the result of migration, partners and also parents and children do not necessarily live together under the same roof (Beauchemin, Caarls and Mazzucato 2013). Therefore, transnational families with the husband living in Europe and the wife and children staying behind in Senegal are a common praxis. So the couple is separated over a shorter or longer period of time, and as a logical consequence childbearing is postponed (disrupted) leading to a smaller number of children in the long run. So, the above explained disruption hypothesis might apply to the Senegalese case if husbands migrate alone to Europe, leaving behind their wives.

H2: Male migration to Europe leads to disrupted fertility due to couple separation.

Lindstrom and Giorguli Saucedo (2007) found relatively high birth rates of Mexican migrants in the US in comparison to women staying behind in Mexico. Especially female migration to the US leads to a very fast transition to the first birth, in contrary to the proposed disruptive effect of migration on fertility. The authors interpret this as a legal strategy to give birth to a child in the US to obtain US-citizenship for that child in order to also regularize the legal status of the parents themselves. Moreover, this could be also the result of the interrelation of migration and family formation, which has been found in several other settings (Milewski 2007 for immigrants in Germany, Andersson 2004 for Sweden). Bledsoe, Houle and Sow (2007) examined from an ethno-demographic point of view the fertility behavior of Gambian migrants in Spain. They find that this migrant group has a higher number of children per person than do Gambians have in the origin country. The authors explain this phenomenon with "child accumulation" as a result of Spanish restrictive migration laws. These policies make that Gambians circulate their family members mainly through marriage and childbearing, which explains the high fertility rates among this migrant group.

Based on these previous studies we expect also for Senegalese women to have a very rapid transition to the first birth, since migration and marriage is closely connected for this group. Therefore, our fourth hypothesis is as follows:

H3: Female migrants who follow their husband to Europe have a very fast transition to the (mostly first) birth. Migration and fertility are two interrelated events.

2) Contributions & Relevance

The paper aims at filling several gaps in current research:

- Studies on fertility behavior in the context of intercontinental migration are scarce. To what extent can existing theoretical approaches developed to describe migration and fertility events also be applied to long-distance migrations, especially in the context of still high fertility rates at origin?
- The migrant selection hypothesis – comparing migrants with non-migrants - has been hardly tested

mainly due to data availability

- Childbirth after marriage migration ("marriage at a distance") reinforces the hypothesis of the interrelation of migration and fertility events.
- The couple perspective of our analysis makes it possible to examine migration decisions and the timing of births, regardless of choice of partners and potential separations.

3) Data and methods

For the empirical analysis of this paper we use data collected in the framework of the MAFE-Senegal ("Migrations between Africa and Europe") project.¹ In the framework of this project longitudinal life-history data was collected in origin and destination countries. In 2008, about 200 current Senegalese migrants were interviewed in Spain, France and Italy, respectively. Furthermore, some 1000 individuals were interviewed in Senegal.² In Spain, a second round of the survey was conducted in 2011. This second round of interviews, called MESE ("Migraciones Entre Senegal y España"), adds 405 individuals to the original sample of Senegalese migrants in Spain. Life-history data includes residential histories as well as fertility and nuptiality dynamics and thus makes it possible to analyze the interrelation of both trajectories that are addressed in this paper. The MAFE-MESE data allows to analyze the different steps of the migration process and family formation separately as well as to study the timing and order of these events. This unique dataset allows comparing migrants with non-migrants, since both groups have been interviewed. Many previous studies on fertility and migration had to combine several different databases in order to have these two comparison groups.³ Our data sampled nonmigrants, current migrants at different stages, as well as return migrants, what allows us to study migration processes and childbearing over the whole life-course and in different constellations of partnerships.

In order to meaningfully compare the reproductive behavior of migrants and nonmigrants throughout their reproductive cycle, a couple dataset was constructed, comprising a total of 2,500 partnerships. The distribution of transitions within partnerships can be seen in the Appendix. All analyses are computed by gender of the respondent, since the data does not provide all the information for the respective partner (e.g. age of partner not available).

The statistical methods include Kaplan-Meier estimates and discrete-time hazard models to analyze the timing of the first and of higher-order births.

4) Preliminary results

As a first step, Kaplan-Meier survival curves are computed. In Figure 1, the transition to first and second birth for men and women are illustrated (individual perspective). With regard to the transition to the first child, there are no big differences for those individuals who migrated at least once to Europe, and those who never lived in Europe. This holds true for men and women. With regard to the second birth (Fig. 1, bottom), differences between both groups under comparison are visible: Male and female nonmigrants seem to have a quicker transition after the first child to a second child. Furthermore, migrants are less likely to go for the second child, while almost all nonmigrants experience a second birth. This suggests that there are important quantum differences in fertility between migrants and nonmigrants.

¹ The MAFE project is coordinated by INED (C. Beauchemin) and is formed, additionally by the Université catholique de Louvain (B. Schoumaker), Maastricht University (V. Mazzucato), the Université Cheikh Anta Diop (P. Sakho), the Université de Kinshasa

² For a detailed description of the MAFE-sampling procedure see Beauchemin and González-Ferrer (2011)

³ See for example Lübke (2015), who combined European Social Survey data and Labor Force Survey data in order to study fertility behavior of Polish women in Britain and in Poland.

[Figure 1 about here]

The models in Table 1 analyze in which way the couple's migration experience influences the transition to a first and a second birth. The migration variable accounts for the yearly couple-specific migration status throughout the partnership. Not surprisingly, couples in which the husband is alone in Europe, and thus is separated from his wife, have a significantly lower risk of experiencing first and second births compared to couples with both partners living in Senegal. Couples with both partners residing in Europe have the same risk of having a first child compared to their nonmigrant counterparts, however, they have a lower risk of having a second child.

[Table 1 about here]

Table 2 analyses the lifetime migration experience of couples. Apparently, only husbands who migrated at least once to Europe have a lower second birth risk compared to those who never migrated. Further analyses are needed here in order to disentangle why there are divergent results depending on who was sampled in the survey.

[Table 2 about here]

Finally, in Table 3 all births in all unions are considered. The coefficients suggest that couples with migration experience have a significantly lower risk throughout their partnership of having children. Tables 1 to 3 also reveal that education is an important predictor for birth outcomes, for both migrants and nonmigrants.

[Table 3 about here]

Selected references:

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Figures and Tables

Figure 1: Kaplan-Meier Survival curves: Transition to first and second child by migration experience and sex (individual perspective)

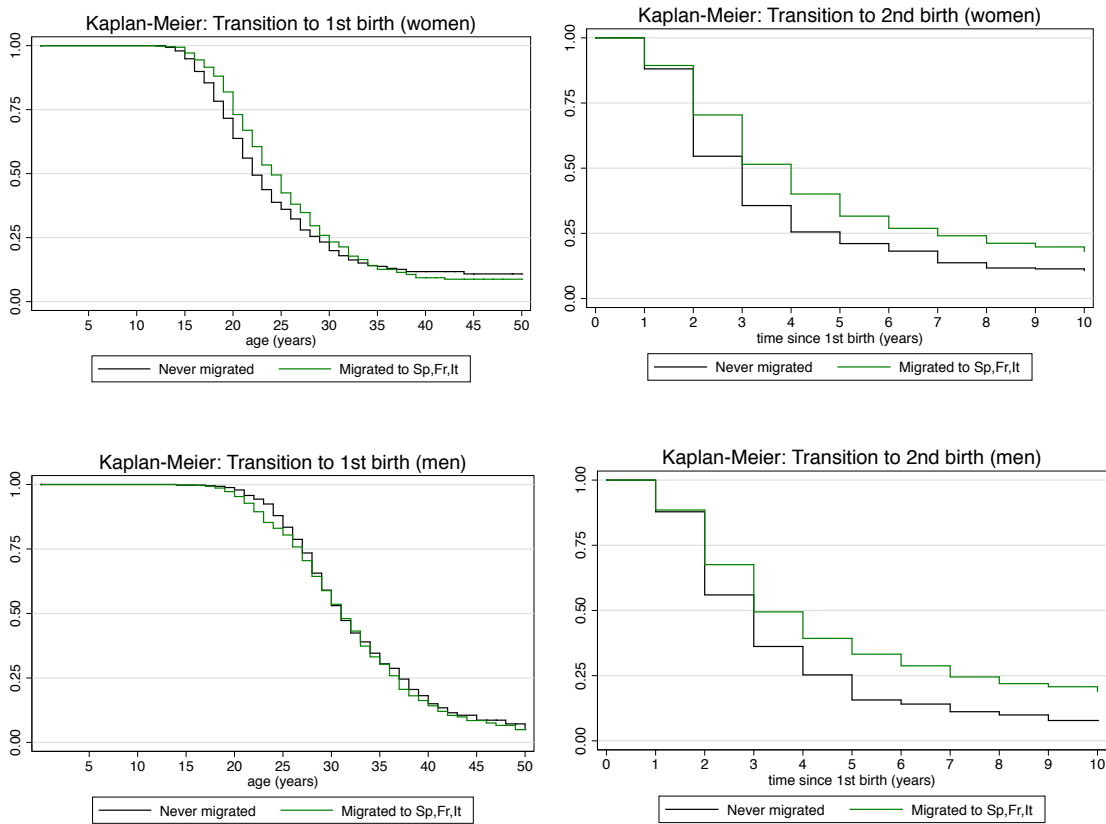


Table 1: Logistic discrete-time hazard model: Relative risk of having a first and a second birth across couple's current migration experience (odds ratios)

		Respondent is...			
		... wife		... husband	
		birth 1	birth 2	birth 1	birth 2
Couple's migration experience in t-1 (time-varying)	<i>Both in Senegal</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
	<i>Husband in Europe</i>	0.50**	0.44 ***	0.70**	0.27 ***
	<i>Both in Europe</i>	1.09	0.72 *	0.8	0.50 ***
Education	<i>Primary or less</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
	<i>Some Secondary</i>	1	0.73 *	0.85	0.75 **
	<i>Some Tertiary</i>	0.33***	0.68	0.72	0.69 *

Models control also for: age, age(log), union duration, union duration (log), birth cohort, time since last birth (for higher order births), first union, polygamous union;

Source: MAFE-MESE, weighted. * p<0.10 , ** p<0.05 , *** p<0.001

Table 2: Logistic discrete-time hazard model: Relative risk of having a first and a second birth across couple's lifetime migration experience (odds ratios)

		Respondent is...			
		... wife		... husband	
		birth 1	birth 2	birth 1	birth 2
Lifetime migration experience (time constant)	Never migrated	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
	Migrated at least once	0.78	0.79	0.88	0.42 ***
Education	<i>Primary or less</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
	<i>Some Secondary</i>	1.02	0.72 *	0.85	0.78 *
	<i>Some Tertiary</i>	0.35 ***	0.68	0.73	0.78

Models control also for: age, age(log), union duration, union duration (log), birth cohort, time since last birth (for higher order births), first union, polygamous union;

Source: MAFE-MESE, weighted. * p<0.10 , ** p<0.05 , *** p<0.001

Table 3: Logistic discrete-time hazard model: Relative risk of having a birth across couple's lifetime migration experience (odds ratios; births as repeated event)

		Respondent is...	
		... wife	... husband
		all births	all births
Lifetime migration experience (time constant)	Never migrated	<i>Ref.</i>	<i>Ref.</i>
	Migrated at least once	0.80 **	0.66 ***
Education	<i>Primary or less</i>	<i>Ref.</i>	<i>Ref.</i>
	<i>Some Secondary</i>	0.85 *	0.70 ***
	<i>Some Tertiary</i>	0.46 ***	0.62 ***

Models control also for: age, age(log), union duration, union duration (log), birth cohort, time since last birth (for higher order births), first union, polygamous union;

Source: MAFE-MESE, weighted. * p<0.10 , ** p<0.05 , *** p<0.001

Appendix:

Distribution of migration transitions/events within couples in the histories of Senegalese couples (Sn=Senegal; Eur=Europe)

At union formation 1st transition 2nd transition

