Fertility outcomes among temporary Mexican migrants to the United States

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Background

From a life-course perspective changing household demands such as marriage or childbirth are expected to have considerable influence in the timing and frequency of migration. At the same time migration is expected to have a great influence in family life (Massey et al., 1993). Since migrants are more likely to undertake the trip during their main reproductive years it is expected that the migration experience will have an effect on family formation by competing with other life-course transitions. The present study will examine the association between U.S. migration experience and fertility by comparing completed fertility as well as age-specific fertility patterns among Mexicans with and without U.S. migration experience.

Hypothesis 1. *Mexicans with U.S. migration experience will have fewer children than those without migration experience and this experience will be more disrupted for women than for men.*

Hypothesis 2. *The probability of having a birth among U.S. migrants is going to be lower (more disrupted) during the peak migration ages (25-35 years old) when compared to non-migrants.*

I expect U.S. migrants to have fewer children when compared to non-migrants due to the disruptive effect of international migration. I also expect that migration will have a stronger disruptive effect for women than for men.

To test this hypothesis I will compare completed fertility by migration experience. In general, the longer the time in the U.S. the greater the expected disruption on fertility would be. If immigrants are compensating for the time apart by having children at a faster rate later, however, then looking only at completed fertility might disguise any short term disruption. To assess short term effects on fertility I will also look at the probability of having a birth by five-year age groups. Evidence on favor of hypothesis # 2 will confirm not only that migrants have lower fertility, but that it is due to disruption. A

confirmation of hypothesis # 1 (lower complete fertility among return migrants), but not of hypothesis # 2 (lower age-specific fertility among U.S. migrants) may be because the reason one observes lower fertility among migrants is selection and controlling for the selective factors in the age-specific models eliminated these differences. Moreover, if fertility does not vary by time spent in the U.S. that would suggest selection as the mechanism behind the lower fertility rather than the migration experience itself.

Data

The Mexican Health and Aging Study (MHAS) is a prospective panel study of health and aging conducted in Mexico in 2001 with a follow-up in 2003.The baseline survey is a national representative sample of Mexicans born before 1951 (ages 50 and over in 2001) as well as their spouse or partner regardless of their age.

The design of the MHAS was based on the Health and Retirement Study (HRS) to facilitate cross-national comparison. The MHAS collected demographic information of the respondents as well as data on health status, household characteristics, support networks and financial transfers across generations. Of special interest for this study is the fact that the survey includes migration history of the respondents, as well as that of their parents and their offspring. Furthermore, the study oversampled the six Mexican states from which most of the migration to the United States originates.

The interviews were conducted by the Instituto Nacional de Estadistica Geografia e Informatica (INEGI) in Mexico, which is the government entity in charge of conducting the population and labor censuses in Mexico. The survey took an average of 80 minutes and it had a response rate of 90%, which is very high for a population-based survey. Data files and documentation information are publicly available at http://www.mhas.pop.upenn.edu .

Preliminary Results

A descriptive analysis of the analytic sample, divided by gender and migration status in Table 1, shows that the mean age of the respondents ranges from 62 to 65 with US migrant men and women being slightly older than their non-migrant counterparts. For this generation the mean level of education is below elementary

school, at around four years. Women with US migration experience are the group with the highest level of education. On average, these women have a level of education equivalent to full elementary school.

Men and women who ever lived in the United States have very different characteristics and very different migration experiences. Return men migrants are more likely to reside on less urban areas (those with less than so many inhabitants) in one of the high-migration states. On the other hand, return female migrants are more likely to reside in more urban areas than their female counterparts and than men with US migration experience. They are also less likely to come from high migration states than men migrants. The time that they spend in the United States is, on average, larger than that of their male counterparts (7.9 vs. 5.2 year) and they appear to undertake the trip at older ages. This could be because their trip is done to join their partners or their children who have previously migrated. In any case, Mexican women migrating during this period were not a common occurrence and are expected to be a highly selected group.

Table 1. Descriptive Statistics of the Analytic Sample by Gender and Migration Experience. Mexican Men and Women 50 years and older residing in Mexico in 2001.

Variables	Non-migrant Men *n=3,724*	US-migrant Men *n=694*	Non-migrant Women *n=5,062*	US-migrant Women *n=196*
Age, mean (SD)	62.4 (10.0)	64.2 (10.1)	63.6 (10.6)	64.4 (10.0)
<60	47.8%	38.2%	44%	32.8%
60-74	38.2%	43%	38.5%	51.7%
75+	14%	18.8%	17.5%	15.5%
Years of education	4.4 (4.6)	3.7 (4.2)	3.6 (3.8)	6.0 (5.7)
None	27.2%	29%	34.6%	21.2%
Some elementary	35.4%	43.3%	32.8%	32.8%
Elementary	15.6%	15.6%	16%	8.4%
More than elementary	21.8%	12.1%	16.6%	37.6%
Mean age of union	24.2 (6.4)	24.1 (6.1)	20.2 (5.6)	21.6 (5.9)
Ever in a union	95.1%	96.2%	92.7%	94.1%
Ever separated/divorced	20.3%	19.5%	22.4%	35.2%
More urban area	42.1%	35.6%	49.6%	56.9%
High-migration state	14.4%	42.1%	19.2%	24.7%
Number of children	5.6 (3.7)	6.3 (3.9)	6.0 (3.7)	4.9 (3.6)
Ever had children	92.6%	93.5%	92.6%	87.1%

TIME IN THE US				
Mean number of yrs		5.2 (8.7)		7.9 (10.4)
25th percentile		1 yr		1 yr
Median		2 yrs		4 yrs
75th percentile		5 yrs		9 yrs
AGE OF FIRST TRIP				
Mean age		27.0 (10.4)		32.1 (16.3)
25th percentile		20		22
Median		25		34
75th percentile		32		41
Source: MHAS 2001, weighted estimates				

The graphs and descriptive statistics suggest that the fertility distributions are right-skewed and over-dispersed (variance about 2.5 larger than the mean). The negative binomial distribution is often more appropriate than the poisson distribution in cases of over-dispersion (variance exceeding the mean). While the Poission distribution assumes that the mean and the variance are the same, the negative binomial has an extra parameter that can be used to model the variance independently of the mean. The nbvargr Stata command was used to compare how well the complete fertility variable fits both the Poisson and negative binomial distributions and the negative binomial appeared to be a better fit (see graphs below). Also, in Stata, the negative binomial analysis includes a test of the over-dispersion parameter alpha. This likelihood ratio test confirms that the over dispersion is statistically significant for men and women.

Graph 1. Complete Fertility Distribution by Gender and Migration Experience

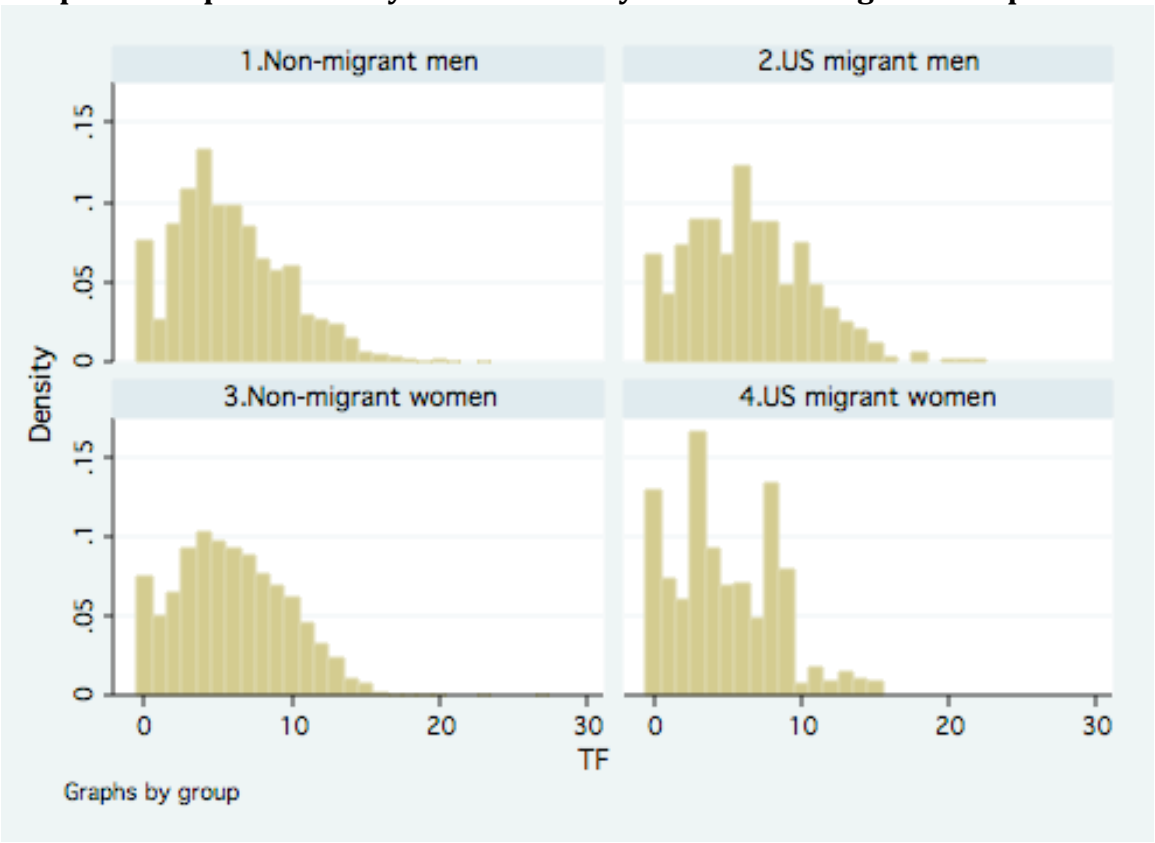

Table 2 shows the results of the negative binomial regression of U.S. migration experience on total fertility. The unadjusted model suggests a positive relationship between migration and fertility for men (significantly more children) while the opposite being true for women. Those with migration experience seem to have significantly less children than their non-migrant counterparts. However, after adjusting for age composition, education, union status, and community characteristics the effect of migration on fertility appears to be disruptive for both men and women and this effect is higher for women than for men this confirming the first hypothesis.

Table 2. Negative Binomial Regression Results Predicting Total Number of Children by Gender. Coefficients are expressed as Incidence Rate Ratios

	Men		**Women**	
	Unadjusted	**Adjusted**	**Unadjusted**	**Adjusted**
US migration experience	1.10*	0.91*	0.82*	0.18**

Source: MHAS, 2001 weighted statistics
* p < .05, **p < .01

While complete fertility provide an overall view of the relationship between migration and fertility looking at fertility patterns help to understand the timing of the disruption in fertility. For women, the disruption occurs at the mean migration ages (30-35 years old), while for men Graph 2 shows the "unadjusted" effects of migration on fertility mainly at older ages (more spread out fertility). However, once demographic characteristics are accounted for, the difference is no longer significant for men.

Table 3. Age-Specific Fertility Rates

Age	1.Non-migrant Men	2.US migrant Men	3.Non-migrant Women	4.US migrant Women
15-19	20.72969	19.94701	90.94749	105.7904
20-24	112.7284	132.3006	209.2631	195.8664
25-29	207.7377	214.3541	243.8639	200.8143
30-34	213.3143	209.8325	190.6401	140.5249
35-39	174.7393	206.8875	125.861	107.463
40-44	109.1256	136.0388	52.27143	39.16202
45-49	57.08034	62.11524	10.00098	3.242665

Graph 2