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 that mark different stages of the family cycle will 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. 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. There are four main theories that have been used to describe immigrant fertility: assimilation, adaptation, disruption, and selection (Stephen & Bean, 1992; Singley & Landale, 1998; Lindstrom & Giorguli, 2002 ; Kulu, H., 2005). Although these theories are usually presented as if they were mutually exclusive a combination of them could apply at different stages of the migration career and of migrants' reproductive lives.

One of the most common theories to explain migrants' behavior in general and fertility in particular is the *assimilation* hypothesis. According to the assimilation hypothesis the fertility (behavior) of immigrants is expected, over time, to approach that of the population in the receiving country. However, the effect in temporary migrants might be different. While temporary migrants are also exposed to the norms and values of the receiving country, as long as they are planning to return to their country they may not be as motivated to assimilate to the receiving country as long-term migrants are. This is because for temporary migrants the reference group may continue to be that of their home country and thus, their fertility norms may continue to be shaped by their sending communities (Forste & Tienda, 1996).

According to the *adaptation* hypothesis immigrants are able to make short-term changes to their fertility behavior in order to maximize the gains of their migration experience. These changes could include a temporary reduction in fertility or a shortening of the birth intervals so that as many children as possible are born in the United States and obtain citizenship. In the specific case of Mexican immigrants, where a large proportion of them enter the country illegally, having a child who is a United States citizen could be seen as a long-term investment for the parents and as an advantage for the children. The fact that over 90% of foreign-born children residing in Mexico were born in the United States to Mexican parents suggests this might be the case (Lopez-Villar, 2006).

The *disruption* hypothesis is highly relevant to temporary migrants. Mexicans migrating to the United States are more likely to be men who travel alone because they are planning to return in a relatively short period of time and also because many of them travel illegally. The longer the couple remains separated the greater the disruptive effect that migration will have on fertility. Migration does not necessarily have to disrupt fertility, however. Short-duration trips or trips taken during infertile periods (i.e. while the spouse is pregnant) are unlikely to affect fertility. Also, many studies have found that temporary migration affects the timing of fertility but not the level (Andersson, 2004,

Goldstein & Goldstein, 1981). Lindstrom and Giorguli (2002) analyzed data from the Mexican Migration Project and found that while migration reduced fertility in the short term due to separation it did not affect the level of fertility within a union in the long term.

Finally, a common assumption about immigrants is that they are not a representative sample of the population in their countries of origin but that they are somehow selected; the direction of that *selection* has given rise to heated debates in the scientific literature (Borjas, 1987 & 1990; Jasso and Rosenzweig 1990, Chiquiar, 2005). If we consider migration to a higher income country as a long term investment, it should not be surprising that immigrants take into account the wellbeing of future generations when weighting the cost-benefit of making the move and could, therefore, be selected on characteristics influencing fertility outcomes such as intergenerational altruism. Further complicating the examination of this hypothesis is the fact that immigrants are usually selected along characteristics related to higher fertility norms, such as coming from large families themselves, rural communities or low socioeconomic background. Berman & Rzakhanov (2000) found that Soviet Jews who migrated to Israel in periods of high migration costs had significantly more children than members of the same birth cohort who migrated later when costs were low. Analyzing data from the 2000-2004 American Community Survey Swicegood et al. (2006) found that not only are the fertility rates of immigrant women higher than those of the native-born at every age (particularly at both extremes of the childbearing years) but most immigrant women also had fertility rates higher than those prevailing in their native countries.

When considering the selection hypothesis it is important to keep in mind that migrant selectivity with respect to fertility may be expressed as desires for higher child quality than quantity, a pattern typically characteristic of people who have smaller families. Another selection effect that is important to keep in mind is that of return migration. It has been pointed out by Jasso and Rosenzweig (1990) that couples with large families are less likely to return to their home countries and that looking only at immigrants on one side of the border might result in a biased estimate of the effects of migration on fertility. The proposed project, however, is focused on Mexicans residing in Mexico and will compare fertility outcomes of Mexicans with and without migration experience (return migrants vs. never migrants).

Main Aim. To 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.*

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.*

It is expected that U.S. migrants will have fewer children when compared to non-migrants due to the disruptive effect of international migration. The disruptive effect will be stronger for women than for men.

To test this hypothesis the completed fertility of temporary U.S.-migrants and non-migrants will be compared. 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 the probability of having a birth by three-year age groups will also be compared. Evidence on favor of hypothesis # 2 will confirm not only that migrants have lower fertility, but that this 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 .

Outcome Variables-The questionnaire contains information on *Total Fertility* (Children Ever Born) and since the respondents are adults 50 years and older most of them have completed their fertility trajectories.

Timing of fertility can be obtained from the household roster where the resident and non-resident children are enumerated and their ages are included. Therefore, the closest approximation to birth timing is to the year. An important limitation on this variable is that the date of birth of deceased children is not available.

Predictor and Control variables-The questionnaire contains information on domestic and *U.S. migration experience*. It asks questions on the *timing and length of the first U.S. trip*, *total time in the U.S.*, and *timing of return from last U.S. trip*. The survey does not

provide information on the total number of trips or on the timing of those other trips, but comparing the duration of the first trip with the total time in the U.S. allows identifying *repeat migration*. The survey also provides information on *family migration experience* by asking whether parents, siblings, and children of the respondents, as well as his/her spouse or partner have ever worked or lived in the United States.

Data Analysis Plan

The MHAS sample includes adults 50 and older who, for the most part, have concluded their reproductive lives. Since total fertility takes on positive integer values a Poisson regression analysis will be used to model and compare cumulative fertility by migration experience:

$$(1)\ \log(\mu_i) = \beta_0 + \beta_1 X_1 + \beta_i Z_i$$

Where μ is the number of children ever born and X_1 is a continuous variable indicating the length of the migration experience which will assume a value of 0 for non-immigrants. Z_i is a vector of other relevant demographic and socioeconomic variables. It is well known that few events follow an exact Poisson distribution and in previous fertility studies scholars have found that their data violated the equidispersion assumption -equal mean and variance- (Mayer et al, 2000). Stata has a regression based test to assess whether or not the data violate this assumption. Since the violation of the equidispersion assumption only affects the standard error estimates, a way to address this problem is to use robust standard error estimates or to scale the standard error by the square root of the dispersion estimate. The general linear model (*glm*) function available in statistical software packages such as Stata or SAS can easily implement this adjustment. Another approach is to use a different functional form within the exponential family such as the negative binomial, commonly used as an alternative for the Poisson distribution in the presence of under or over dispersion (Gardner, et al., 1995).

While a birth interval analysis would be ideal to assess the short term impact of U.S. migration experience on the timing of fertility, the lack of information on the time of birth of deceased children does not allow for an analysis of the time between births. Instead, to look at age specific fertility patterns I could use a set of logistic regressions to model the probability of having a birth within each three-year age period (15-17, 18-20,….,48-50).

$$(2)\ \log\left\{\frac{\Pr(Y=1)}{\Pr(Y=0)}\right\} = \beta_0 + \beta_1 X_1 + \beta_i Z_i$$

Where Y represents the main binary outcome variable indicating if the individual had a birth in that age period. X_1 is a dummy variable indicating migration experience and β_1 is the effect that migration experience has into the log odds of having a birth. A positive coefficient indicates that migration experience increase the odds of having a birth at that age while a negative coefficient means that migration has a detrimental effect on childbearing. Z_i represent the vector of relevant covariates that could confound the relationship between migration experience and childbearing. The effect of these covariates on the log odds of having a birth at that age is represented by the vector of coefficients β_i.

References

Andersson, G. (2004). Fertility Patterns of Foreign-born Women in Sweden. *International Migration Review*, Vol. 38 (2):747-775.

Berman, E. & Rzakhanov, Z. (2000). Fertility, Migration, and Altruism, *NBER Working Papers 7545,* National Bureau of Economic Research, Inc.

Borjas, G.J., (1990). Self-Selection and the Earnings of Immigrants: Reply, American Economic Review, vol. 80(1): 305-08,

Borjas, G.J., (1987). Self-Selection and the Earnings of Immigrants, American Economic Review, vol. 77(4): 531- 53

Chiquiar, Daniel, and Gordon Hanson. 2005. "International Migration, Self-Selection, and the Distribution of Wages: Evidence from Mexico and the United States," Journal of Political Economy 113 (2, April): 239–281.

Forste, R. & Tienda, M. (1996). What's Behind Race and Ethnic Fertility Patterns? Population and Development Review, 22S (December):109-133.

Gardner, W., Mulvey, E.P., Shaw, E.C. (1995). Regression analyses of counts and rates: Poisson, overdispersed Poisson, and negative binomial models. Psychol Bull; 118:392-404

Goldstein, S. & Goldstein, A. (1981): The impact of migration on fertility: an 'own children' analysis for Thailand, *Population Studies*, 35: 265-281.

Jasso, G. & Rosenzweig, M.R. (1990). The Immigrant's Legacy: Investing in the Next Generation. In: Jasso, G. & Rosenzweig, M.R. (eds). The New Chosen People: Immigrants in the United States Russell Sage Foundation, New York. Pp. 382-410.

Kulu, H. (2005). Migration and Fertility: Competing Hypotheses Re-examined. *European Journal of Population* 21:51-87.

Lindstrom, D.P. & Giorguli, S.S. (2002). The Short- and Long-Term Effects of U.S. Migration Experience on Mexican Women's Fertility. *Social Forces*, Vol. 80 (4): 1341-1368

Lopez-Villar, D. (2006). Migración de mexicanos desde y hacia Estados Unidos de América: estadísticas, problemáticas y retos [Migraton of Mexicans from and to United States of America: statistics, problems, and challenges]. Boletín de los Sistemas Nacionales Estadístico y de Información Geográfica. Vol. 1, num. 2 Available at http://www.inegi.gob.mx/

Mayer, J. & Riphahn, R.T. (2000). Fertility assimilation of immigrants: evidence from count data models. *Journal of Population Economics*, 12(2):241-61.

Singley, S. & Landale, N. (1998). Incorporating Origin and Process in Migration-Fertility Frameworks: The Case of Puerto Rican Women. *Social Forces* 76(4): 1437-1464.

Stephen, E.H. & Bean, F.D. (1992). Assimilation, Disruption and the Fertility of Mexican-Origin Women in the United States. *International Migration Review,* Vol. 26 (1): 67-88.

Swicegood, G.C., Sobezak, M., & Ishizawa, H. (2006). A New Look at the Recent Fertility of American Immigrants. Results from 21st Century. Paper presented at the Annual Meeting of the Population Association of America (Los Angeles, CA).