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# U.S.-Mexican (origin) In-Migration 1990-2000:
## *A Demographic Analysis*

*by Juan Jose Bustamante*
*Michigan State University*

# Julian Samora Research Institute

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**Abstract**

Historically, women's immigration to the United States has been understudied by social scientists. Men's migration dominates the migration literature, while women's migration is relegated to a second position. Recently, this skewed pattern is changing; though still, when research focuses on women, there is a tendency of only women scholars to undertake migration and gender studies. Thus, the intent of this paper is to fill a research gap related to gender and migration.

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# U.S.-Mexican (origin) In-Migration 1990-2000:
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The Julian Samora Research Institute is the Midwest's premier policy research and outreach center to the Hispanic community. The Institute's mission includes:

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# U.S.-Mexican (origin) In-Migration 1990-2000:
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*"The fact that people migrate is not explained by their favorable evaluation of migration. By definition, nobody does anything voluntary without some purpose, however, vague, in mind. The question of change and persistence is therefore a question of what did or did not act upon the total action (motive-plus-conduct)." (Davis 1963: 354).*

## Introduction

Historically, women's immigration to the United States has been understudied by social scientists. Men's migration dominates the migration literature, while women's migration is relegated to a second position. Recently, this skewed pattern is changing; though still, when research focuses on women, there is a tendency of only women scholars to undertake migration and gender studies. Thus, the intent of this paper is to fill a research gap related to gender and migration.

Women's and men's immigration, to the United States, is an intertwined social phenomenon that has become more strongly related, especially since the Great Depression (Gabaccia, 1994: 71). Thus, drawing on this argument, contrary to the European nation-states, the United States, historically, has been a country built by immigrants. However, most people tend to give credit to men's immigration without acknowledging women's contribution (Davis & Winters, 2001). For instance, from 1930 until 1979, Gabaccia (1994) found that women outnumbered men immigrants in each of the five decades (Gabaccia, 1994: 28). In this context, Gabaccia documented that even within the women's migration domain new changes in the nationalities patterns had occurred. Latinas, especially Mexican females, have overshadowed European immigrants in large numbers, especially in the second part of the 20th Century.

How do these women migrate? Certainly it is an interesting question. It raises interesting points, yet the major concern, in my opinion, is related to the invisibility of the women's migration process. Women's invisibility has been associated with men's migration, in the milieu of family reunification criteria (Castles & Miller, 1998; Kanaiaupuni, 2000). However, women's migration does not happen only in the context of family reunion criteria. In this sense, Hondagneu-Sotelo (1994) suggests that, even when family migration may take place as unit or stage migration, it may happen independently[1] as well (p. 39). Yet historically, as Gabaccia (1994) points out, early women migrants came to the United States as "…wives and mothers, not as job seekers" (p. 41). Without a doubt, history shapes the present and, even though women immigrate to the United States independently, they still are invisible. Lives of immigrant women and their invisibility in the United States have been recently examined by several scholars (Hondagneu-Sotelo, 2001; Parreñas Salazar, 2001). However, more theoretical and empirical work is still needed.

Recently, the U.S. Census Bureau (Guzmán, 2001) announced that Hispanics have become the largest minority in the U.S. Since Mexicans represent the largest group of Hispanics, I will focus on Mexican immigration to the U.S. In order to define Mexican (origin) individuals of both genders, I rely on Ortiz (1994): they are people of Mexican heritage born in the U.S. or immigrating here with or without proper documentation. Hence, I aim to document the

extent of recent migration from Mexico to the U.S. in order to compare the patterns for Mexican (origin) women to those for Mexican (origin) men.

Data presented in this paper are framed in the following format: *I first produce estimates of net in- and out-migration for both U.S.-Mexican (origin) women and men. And second, I draw parallels between female and male age-specific patterns of net migration and the implications for fertility and migration behavior.* While my aim is not to test any theoretical framework about Mexican migration to the United States, I intend to draw on literature about how migration is affected by gender and family relations.

Given that the United States Census of Population is conducted every 10 years, it enables demographers to estimate net migration between two census enumerations rather than relying solely just on sample surveys (e.g. the Current Population Survey — CPS). Data used in this analysis come from the 1990 U.S. Census of Population published in 1992 as the *General Population Characteristics* handbook.; from the U.S. Census Bureau, Census 2000 SF 1 and 2 (internet data); from the 1990 Vital Statistics of the United States published in 1994 as the *Volume II-Mortality Part A*; from the *National Center for Health Statistics Report 51* (2): 35 (2002) for live births.

First, through the construction of life tables for U.S.-Mexican (origin) females and males for the period 1990-2000 in the U.S., I use the life survival rate method (Smith, 1993) to estimate the age-sex-specific number of net migrants. In addition, since this a study based on secondary analysis, there is no concern about confidentiality or human subject harm because I do not have access to any personal data collected from the databases. Thus, the estimates produced here are wholly my responsibility.

## Review of Literature

Mexican patterns of migration are not explained by any specific theory. Dominant theories tend to be tied to materialistic approaches like the Neoclassical Economics Model and New Economics of Migration Model. Briefly, in the Neoclassical Economics Model, Borjas (1989) describes how labor surplus in the country of origin, also identified as the immigration market, is measured at the individual level, in which, migrant behavior is influenced by the economic and job opportunities in the country of arrival. The major argument Borjas makes relates to economic differences between two countries, such as the United States and Mexico. These economic differences would generate flows of migration, especially, when migrants (making individual decisions) weight the "binational wage gap "(Massey, et al. 1994: 710; Massey & Espinosa, 1997: 947). As a result, migration from an underdeveloped to a developed country will trigger wage equality and trade, which eventually will equalize both economies, and migration will become stationary (Borjas, 1989; Castles & Miller, 1998).

The New Economics of Migration Model, on other hand, is framed at the household level. It draws from the macro and micro economic policy and monetary failures of less developed countries (Massey, et al., 1994: 711; Massey & Espinosa, 1997: 953). Potential migrants do not migrate because of wage gaps; rather they migrate to the United States because households need a portfolio of income diversification or access to capital (Massey & Espinosa). For instance, the purpose of migrating may range from buying or building a house, buying land, starting a business enterprise (Massey & Espinosa: 954), or even securing credit or savings from abroad as provisions against local financial hardship (Caldwell, et al. 1986).

Yet, my intent is not to test these two models with data from the U.S. Census or Vital Statistics. In fact, neither the Neoclassical Economics Model nor the New Economics of Migration Model specifically looks at gender as a unit of analysis. Rather the purpose of this review of literature is to map out concrete and abstract works that analyze how Mexican migration patterns are structured by gender. Fortunately, there are now some recent studies that are breaking this new path.

Quantitative research carried out by Cerrutti and Massey (2001) suggests "…that a majority of Mexican women generally begin migrating for family reasons" (p. 197-198) which at some point such decision may be precluded by patriarchal control. However, in opposition to Cerrutti and Massey, ethnographic work produced by Hondagneu-Sotelo (1994) suggests that "…gender relations in families circumscribe migration options and decisions" (p. 7). Since power is generated within the family/household[2] milieu, there is the perception that the decision-making power about migration is skewed against women because of its patriarchal orientation. However, even when women's migration has been overshadowed by family migration (Kanaiaupuni, 2000), independent migration (migrating alone) has unlocked the invisibility of the women's experience. Hondagneu-Sotelo found, in the independent migration phenomenon, that neither men nor women were constrained by a household strategy of migration.

Gendered approval or disapproval, for migration, tends to be precluded by different levels of acceptance based on family/household organization. For instance, in some cases, accumulation of capital does not count as the major motivation of men's migration; rather it tends to occur in a cultural context as a rite of passage to prove manhood. However, the experience of women differs in three ways: social opportunity to migrate has a tendency to rely on social networks, to overcome economic hardships, and to derive from a weak patriarchal authority (Hondagneu-Sotelo, 1994).

Along these lines, recent research on gender and migration has two themes for women: one on social networks and the other on women's family or household relationships and its dynamics related to patriarchal authority.

A social network,[3] which in the scholarly arena is interpreted as a form of social capital, is a major element of the international migration process. Migration scholars have found that social networks, from Mexico to the United States, have been used as a major instrument during the immigration process. For instance, Winters, et al. (2001) found a significant correlation between community and family networks and the immigration experience. This finding is even more supported, in the family location, by Curran and Rivero-Fuentes (2003). In general terms, Winters, et al. suggest families and communities that have historical patterns of migration tend to use largely their household and community networks as key resources to migrate (p.169). Winters, et. al. briefly mention that gender composition, at the household level, does not affect the decision to migrate. Yet, they acknowledge that migration tends to occur more often if men outnumber women, in the household (p. 169). Along these lines, Davis and Winters found that even when female migration is substantially influenced by female networks, nonetheless, it is also, suppressed by family *male-centered* networks (p. 18).

Female migration, for Kanaiaupuni, instead has two sides. First, female migration tends to be more relevant before marriage than after marriage (p. 1334). This argument supports Hondagneu-Sotelo's 1994 findings in which independent women's experience of migration differs from the men's migration experience. In addition, Kanaiaupuni found that unmarried women's migration (independent) is triggered more on economic grounds than for family reasons. However, when the women's marital statuses change, women tend to migrate less because of family constraints (p. 1337).

Furthermore, according to Curran and Rivero-Fuentes, significant support for women's independent migration comes from female social networks. Even so, women are 80% less likely to migrate than men (p. 300). Curran and Rivero-Fuentes do not expand their analysis to tell why this occurs. Yet they acknowledge women get aid from male and female networks as well.

Thus far, the literature suggests that women's migration reflects the patriarchal structure of some Mexican families. Hence, it is important to note how the social capital component, for those women who migrate alone, becomes crucial, especially when access to social networks intertwines financial and emotional support.

First, one side of the literature has suggested that female's migration is constrained by patriarchal authority that may come from conservative fathers or husbands. Then the New Economics of Migration Model would suggest that migration is motivated, at the household level, as a strategy of income diversification. So far, recent literature related to the women's migration experience suggests, according to either case, that support or constraint is still embedded in the traditional patriarchal household model reflecting current patterns of quantitative research. However, there are other family, household, or community stimuli that reflect the autonomous side of the Mexican women's migration experience.

Previous research carried out by Hondagneu-Sotelo suggests that part of independent female's migration decision is not deterred by patriarchal constraints or as a strategy of income diversification. Rather, female's migration decision is measured, mainly, by an *imperfect* expectation of labor market inherent to individual economic decisions. Family relationships are not static and, even in those families that are dominated by patriarchal authority, access to opportunities and social networks is negotiated.

For instance, ethnographic research found the major *initial* motivation of Mexican women migrating to the Pacific Northwest were driven by the U.S. labor market (Andrews, et al., 2002). Yet, even when Mexican women's initial incentive to come to the United States was driven by economic reasons, Andrews, et al. found that 35% of women interviewed came solely to reunite with their husbands, 50% came as independent immigrants, and 15% as a negotiated combination of family reunification and potential working opportunities (p. 441: Table 6).

Andrews' findings suggest that a Mexican female's migration, in fact, occurs either in the independent or the family reunification context and that the two motives are not mutually exclusive. Whether initial independent or family reunification migration's decision is taken at the individual or the household level is still unknown. Andrews neither discussed household income diversification strategies nor patriarchal constraints as major incentives of migration. In this context, the family migration approach is tackled by Hondagneu-Sotelo (1994) in two models: the family-unit and family-stage migration.

Family-unit migration takes place when the entire family/household migrates in a single event. If men, women, and children migrate simultaneously as a group, there is the assumption that the decision process is taken in an egalitarian context (p.75). Contrary to the family-unit migration, the decision process of the family-stage migration is quite different. Despite women's concerns, fathers or husbands migrate first (p. 57), followed then by the wives and children. However, Hondagneu-Sotelo suggests that a *posteriori* female's decision to migrate is often gained through family or household negotiations. Among some women's arguments to get aid and sometimes permissions from their husbands to migrate is, in fact, family reunification, mainly for the benefit of children,

and economic aid, in the form of employment for the family-unit (p. 71). When none of these arguments work, women challenge patriarchal authority through their own female social networks (Hondagneu-Sotelo: 475).

Women who migrate independently tend to use female networks as the major instrument of migration. The social situation of Mexican women who migrate varies by their marital status. Some are still married; others are single, either with or without children, divorced, or widowed. Yet, the commonality among these women is their decision to migrate on an independent basis. Hondagneu-Sotelo suggests independent women's decision to migrate alone is precipitated by economic hardships in their place of origin, and assisted by other women in the form of social networks. While the rationale to migrate features weak patriarchal constraints on single women and economic needs for single mothers, divorced, widowed, or even married women, most women migrating alone draw on female networks. Bastida, in her 2001 ethnographic work, found that social networks in the form of kinship ties shaped women's decisions to migrate. Receiving families' support and stability overcame economic uncertainty through social support (p. 566).

Thus, taking into account a gendered migration context, I posit the following questions: *(1) how much of the total population (Mexican origin) growth comes from net natural increase and net in-migration? (2) What fertility implications do net in-migration patterns have for young age cohorts within the United States? (3) Are there differences or parallels for females and males? And, using the age specific-cohort, (4) what ages experience more net in-migration than others?*

**Data and Methodology**

Estimates calculated for this project come from secondary data analysis. I used data published by the U.S. Bureau of the Census (U.S.Census-1990, 1992; U.S.Census-2000, 2003a; U.S.Census-2000, 2003b) and National Center for Health Statistics (National-Vital-Statistics-Reports, 2002; U.S.Vital-Statistics-1990, 1994). In order to produce in- and out-net migration estimates for U.S.-Mexican (origin) population, by age cohorts and gender, I used the Life-Table Survival-Rate Method (Shryock & Siegel, 1976: 358).

I generated two abridged life tables (Appendix A and B) for U.S.-Mexican (origin) females and males, with data from the 1990 U.S. Census Bureau and the National Center for Health Statistics (National-Vital-Statistics-Reports, 2002; U.S. Census-1990, 1992; U.S. Vital-Statistics-1990, 1994). The 1990 Census data provided the denominators, the mid-year estimates of U.S. residents in a particular age-sex grouping. The numerators were the counts of deaths, the number of deaths registered for persons in that age-sex grouping in 1990. The quotient (nMx, column 4 in the upper panel of the appendices) is the observed age-sex-specific death rate in 1990, calculated by using the computer program SURVIVAL 4.1 (Smith, 1993).

Note that the life table is abridged because 10-year age groupings were used between exact ages 5-85. With the survival 4.1 program, I computed the probabilities of dying within a particular age interval (nqx, see column 6 of both appendixes) from the observed age-sex-specific death rates by means of the Barclay method. The Barclay method assumes that except in the infancy and at the oldest age grouping (85 and older), deaths are evenly distributed across the ages x to (x + n) years. However, it assumes that only .3 of the person-years lived in the first year

of life ($1L_0$) are contributed by those dying in infancy ($1d_0$, se Row 1, Column 4 in bottom panel of both Appendices), since infant deaths typically occur in the first week after birth. Thus, for the calculation of the number of person-years of life lived in an age interval x to (x + n) (n years long starting at age x), the reader is referred to Barclay (1958); see this function in column 5 of lower panel in Appendices A and B.

In order to use the 1990 Life Tables to calculate net migration, by cohort age, we infer that the life table reflects a stationary population. Thus, a stationary population must comply with the following conditions (Preston, et al. 2002):

- The age-specific death rate is constant.
- The number of births every year is constant.
- There is no in-migration and out-migration.
- The age-specific population neither grows nor declines in numbers.

If these assumptions hold, then the 10-years survival rate for someone initially aged [x to (x + n)] in 2000 can be calculated as:

$$nS_x = nL_{x+10} \div nL_x^{10}$$

In addition, there is a set of special calculations, for survival rates, for those individuals who were born between 1990 and 2000:

For those born between April 1, 1995 and March 31, 2000, survivorship must be to the interval 0-4 in 2000:

*($1L_0 + 4L_1$) ÷ 5 (100,000) = $5S_0$; where there is the assumption that these individuals have survived 2.5 years.*

For those born between 4/1/1990 and 3/31/1995, survivorship must be to the interval 5-9 in 2000;

*$5L_5$ ÷ 5 (100,000) = $5S_5$; where there is the assumption that these individuals have survived 7.5 years.*

And, for those individuals older than 75 years (open-ended) in 1990, the equation is the following:

*$S_{75} = T_{85} \div T_{75}$[10], where the T's represent the number of person-years to be lived from the birthday indicated in the subscript until death.*

This survival rates will be true if two more conditions hold:

1. Net undercount and net overcount, of the census, remains the same at Census 1 and Census 2, and
2. No change occurs in the survivorships rates between the censuses (Johnson 2003).

Thus, I could multiply the enumerated population in 1990 by its 10-year survival rate to estimate the number of its survivors that should have been enumerated in the 2000. A higher-than-expected enumeration can be attributed to net in-migration; if lower than expected, net out-migration.

## Results

The total U.S.-Mexican (origin) population (both genders), on April 1, 1990, accounted for 13,495,938 individuals (U.S. Census-1990, 1992) while on April 1, 2000, there were 19,348,722 U.S.-Mexican (origin) individuals (both genders) counted (U.S. Census-2000 2003b). In total, the U.S.-Mexican (origin) population experienced an increment of 43.37% or 5,852,784 individuals.

We have come out with the number of 5,852,784 U.S.-Mexican (origin) individuals as the total increment between 1990 and 2000 years. The estimate of net migration obtained, by the life-table survival-rate method is a total of 1,700,852 individuals, females and males (Appendix A and B). My first research question is: *how much of the total population (Mexican origin) growth comes from net natural increase and net in-migration?*

Thus, I found that the U.S.-Mexican (origin) population, between 1990 and 2000, has experienced a total net in-migration increment of 29%, and 71%, the excess of births over deaths. Hence, *why do fertility rates account for more than two-thirds of the increment of population?* One reason is that for females of age groups, 10-44 in 2000, and for males, 5-44 in 2000, are the ones that experienced net in-migration (Appendices A and B). The rest of age groups above or below experienced net out-migration. Certainly, net in-migration of young women and men in the prime childbearing ages will foster the growth of the Mexican-origin population through many births that will exceed the number of deaths (the difference being net natural increase).

*Are there differences or parallels for females and males?* Net in-migration for females differs from that of males, especially in magnitude. For females, it represents barely 11% of U.S. Mexican (origin) population increment, for males, 18%. Another way of emphasizing the greater volume of Mexican male (relative to female) net in-migration to the United States in 1990-2000 is to note that the ratio is 1:7 in favor of males. *What ages experience more net in-migration than others?* There are two specific age groups that generated the highest net in-migration figures for 1990-2000. I found that the 15-24 and 25-34 age groups for females in 2000 accounted for 367,272 individuals for the former, and 448,395 for the latter. Regarding males, I found that the 15-24 and 25-34 age groups report 678,279 for the former and 553,545 for the latter (Tables 1 and 2). At the age group of 15-24, for every female who net in-migrated, between 1990 and 2000 years to the United States, there are 1.85 males who net in-migrated as well. By the same token, in the age group of 25-34, for every female who net in-migrated, between 1990 and 2000 years to the United States, there is a net of 1.24 males who in-migrated. In other words, the net in-migration gender gap is narrower for the age group 25-34 than 15-24, but is still large. So far, two parallels between in-migration estimates for females and males have been identified.

There are two implications. First, net in-migration of females at ages 15-34 is higher relative to the other ages; it can contribute significantly to the birth rate of the Mexican origin community in the U.S. Second, the tendency of men in the prime reproductive ages to immigrate to the U.S. from Mexico without wives is more substantial than that of similar women The data in Tables 1 and 2 do not reveal the marital status composition of the immigrants, but it does appear that independent (alone) migration is more common for men than women, especially in the prime reproductive ages. These interpretations answer Questions 3 and 4.

## Discussion

There is no single theoretical approach to interpret the rapid growth of the Mexican-origin people in the United States through net migration and natural increase (the excess of births over deaths). I decomposed the explosive growth in the Mexican-origin population into the contributions by net migration (29%) and natural increase (71%). As a result I found that, contrary to the popular belief, net migration is the *minor* reason for the explosion in numbers of Mexican-origin people in the U.S.

The new question becomes why high fertility is the larger part of the story. Forste and Tienda (1996) advise that Mexican women have lower fertility right after migration to the U.S.; and perhaps the hardship of foreign migration to the U.S. are eased when immigrant women are not saddled with the responsibilities of motherhood. But foreign-born Mexican women compensate later by bearing more children that their native-born Mexican counterparts.

Pyle (1999) describes how the globalization process affects the economic status of women in Third World nations. Pyle argues that the global market system sponsored by multinational corporations and world funding agencies such as the International Monetary Fund and World Bank promote greater economic disadvantage and poverty among Third World women in

## Table 1. Estimation of Age Specific Net Migration and Total Net Migration of US Mexican (origin) Females, by Life Table Survival Rate Method, for 1990-2000

| AGES 1990 | AGES 2000 | POPULATION Census 4/1/1990 (1) | Census 4/1/200 (2) | xLn+10 (3) | xLn (4) | 10 YEAR SURVIVAL RATES (3)÷(4)=(5) | FORWARD METHOD Survivors (1)x(5)=(6) | Net Migration (2)-(6)=(7) | REVERSE METHOD Younged Population (2)÷(5)=(8) | Net Migration (8)-(1)=(9) | ESTIMATED OF NET MIGRATION Average [(7)+(9)]÷2=(10) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All ages | All ages | 6474754 | 9197385 | | | | | 847847 | 9376521 | 613376 | 630611 |
| Births, 1995-2000 | Under 5 | 1240507 | 1056784 | 496255 | 500000 | 0.99251000 | 1231216 | -174432 | 1064759 | -175748 | -175090 |
| Births, 1990-1994 | 5-9 | 1047884 | 1016241 | 495425 | 500000 | 0.99085000 | 1038296 | -22055 | 1025625 | -22259 | 22157 |
| Under 5 | 10-14 | 772763 | 850788 | 495425 | 496255 | 0.99832747 | 771471 | 79317 | 852213 | 79450 | 79384 |
| 5-14 | 15-24 | 1343813 | 1707076 | 988251 | 990851 | 0.99737599 | 1340287 | 366789 | 1711567 | 367754 | 367272 |
| 15-24 | 25-34 | 1252903 | 1695255 | 984209 | 988251 | 0.99590995 | 1247779 | 447476 | 1702217 | 449314 | 448395 |
| 25-34 | 35-44 | 1203602 | 1259547 | 977573 | 984209 | 0.99325753 | 1195487 | 64060 | 1268097 | 64495 | 64278 |
| 35-44 | 45-54 | 806220 | 770369 | 961643 | 977573 | 0.98370454 | 793082 | -22713 | 783130 | -23090 | -22901 |
| 45-54 | 55-64 | 449467 | 411011 | 920871 | 961643 | 0.95760173 | 430410 | -19399 | 429209 | -20258 | -19829 |
| 55-64 | 65-74 | 322730 | 267758 | 828160 | 920871 | 0.89932249 | 290238 | -22480 | 297733 | -24997 | -23739 |
| 65-74 | 75-84 | 165811 | 126291 | 650459 | 828160 | 0.78542673 | 155054 | -28763 | 160793 | -36621 | -32692 |
| 75-older | 85-older | 125842 | 36265 | 525233 | 1175692 | 0.44674370 | 56219 | -19954 | 81176 | -44666 | -32310 |

Estimation of Age Specific Net Migration and Total net migration for Mexican (origin) Males, by the Life Table Survival Rate method, for the U.S. 1990-2000.

$_{10}$

nSx = nLx+10 ÷ nLx

### In addition, there are two assumptions:

1. Net undercount and net overcount must remain constant at Census 1 and Census 2.
2. Survivorships rates do not change between the censuses (Johnson, 2003).

### Also, there are calculations for survival rates for individuals who were born between 1990 and 2000.

4/1/1995 and 3/31/2000, survivorship must be in the interval 0-4;

(1L0 + 4L1) ÷ 5 (100,000) = 5S0  There is the assumption that these individuals have survived 2.5 years.

4/1/1990 and 3/31/1995, survivorship must be in the interval 5-9;

5L5 ÷ 5 (100,000) = 5S5  There is the assumption that these individuals have survived 7.5 years.

$_{10}$

### And, for individuals older than 75 age     $_{\infty}$S75 = T85÷ T75

Source of the Data: US Census Bureau 1990 and 2000; National Statistics Report. (2002). Live Births. National Center for Health and Statistics 51 (2): 35.

# Table 2. Estimation of Age Specific Net Migration and Total Net Migration of US Mexican (origin) Males, by Life Table Survival Rate Method, for 1990-2000

| AGES 1990 | AGES 2000 | POPULATION Census 4/1/1990 (1) | Census 4/1/200 (2) | xLn+10 (3) | xLn (4) | 10 YEAR SURVIVAL RATES (3)÷(4)=(5) | FORWARD METHOD Survivors (1)x(5)=(6) | Net Migration (2)-(6)=(7) | REVERSE METHOD Younged Population (2)÷(5)=(8) | Net Migration (8)-(1)=(9) | ESTIMATED OF NET MIGRATION Average [(7)+(9)]÷2=(10) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | All ages | 7021184 | 10151337 | | | | | 1079001 | 10443029 | 1061481 | 1070241 |
| Births, 1995-2000 | Under 5 | 1302558 | 1106767 | 495405 | 500000 | 0.99081000 | 1290587 | -183820 | 1117033 | -185525 | -184673 |
| Births, 1990-1994 | 5-9 | 1057806 | 1064887 | 494222 | 500000 | 0.98844400 | 1045582 | 19305 | 1077337 | 19531 | 19418 |
| Under 5 | 10-14 | 805378 | 896456 | 494222 | 495405 | 0.99761205 | 803455 | 93001 | 898602 | 93224 | 93113 |
| 5-14 | 15-24 | 1402247 | 2064269 | 979265 | 988485 | 0.99067259 | 1389168 | 675101 | 2083705 | 681458 | 678279 |
| 15-24 | 25-34 | 1519569 | 2041260 | 961924 | 979265 | 0.98229182 | 1492260 | 548600 | 2078059 | 558490 | 553545 |
| 25-34 | 35-44 | 1424400 | 1427826 | 940954 | 961924 | 0.97819994 | 1393348 | 34478 | 1459646 | 35246 | 34862 |
| 35-44 | 45-54 | 872497 | 811769 | 908788 | 940954 | 0.96581554 | 842671 | -30902 | 840501 | -31996 | -31449 |
| 45-54 | 55-64 | 451361 | 394161 | 842109 | 908788 | 0.92662865 | 418244 | -24083 | 425371 | -25990 | -25036 |
| 55-64 | 65-74 | 296430 | 227899 | 710770 | 842109 | 0.84403563 | 250197 | -22298 | 270011 | -26419 | -24359 |
| 65-74 | 75-84 | 165811 | 95104 | 493007 | 710770 | 0.69362382 | 115010 | -19906 | 137112 | -28699 | -24303 |
| 75-older | 85-older | 83491 | 20939 | 297372 | 790379 | 0.37623975 | 31413 | -10474 | 55653 | -27838 | -19156 |

*Estimation of Age Specific Net Migration and Total net migration for Mexican (origin) Males, by the Life Table Survival Rate method, for the U.S. 1990-2000.*

$$_nS_x = {_nL_{x+10}} \div {_nL_x}$$

*In addition, there are two assumptions:*
1. Net undercount and net overcount must remain constant at Census 1 and Census 2.
2. Survivorships rates do not change between the censuses (Johnson, 2003).

*Also, there are calculations for survival rates for individuals who were born between 1990 and 2000.*
4/1/1995 and 3/31/2000, survivorship must be in the interval 0-4;

$$(_1L_0 + _4L_1) \div 5\,(100{,}000) = {_5S_0}$$ There is the assumption that these individuals have survived 2.5 years.

4/1/1990 and 3/31/1995, survivorship must be in the interval 5-9;

$$_5L_5 \div 5\,(100{,}000) = {_5S_5}$$ There is the assumption that these individuals have survived 7.5 years.

And, for individuals older than 75 age    $_\infty S_{75} = T_{85} \div T_{75}$

comparison to men. The feminization of work (women tend to work for lower wages in limited or unskilled jobs), in Third World nations, has lead to social and economic inequalities that are more severe for women than men. This exploitation pattern happens through women's subcontracting and paid household work.

Along these lines, it is seen plausible that women should be at least as responsive as men to economic incentives to migrate from Mexico to the United States. It is puzzling why the migration of Mexican women to the U.S. has been largely ignored by students of international migration. Even in Los Angeles where the majority of women working as domesticas are of Mexican origin, they have not come to the United States sponsored by guest worker programs (Hondagneu-Sotelo, 2001). Rather, it seems that macro-economic factors set off international migration. For instance, between 1990 and 2000, Mexico experienced a socio-economic transformation associated with recurrent fiscal crises (Springer & Molina, 1995) where subtle and gradual changes to export-led economy have triggered women's out-migration. This out-migration from Mexico and in-migration to the United States, of women labor, has been predominately labor segmented to *domestica* work (Hondagneu-Sotelo, 2001) and garment industry (Spener & Capps, 2001). Hence, migration to the United States is still rooted in materialistic models. Whether initial migration decision is based on weak patriarchal authority or economic constraints, ethnographic work suggests that women's independent migration is impelled by both.

According to the results calculated in this study, 71% of the total U.S.-Mexican population increment in 1990-2000 was due to *fertility behavior* that was also connected with current *migration* patterns. For instance, Caldwell (2001) suggests that fertility behavior is not immune to globalization. Caldwell argues that upheavals of fertility behavior happen simultaneously in developed and less developed countries. Meanwhile, Presser (2001) argues that fertility models have not taken, historically, gender as its focus. Fertility behavior models, according to Presser, focus on women's education and labor status, leaving aside other factors related to gender and family systems. Presser and Caldwell suggest that fertility behavior models must take into account, not only the global socio-economic factors but also the attitudes, beliefs, and ideologies related to fertility control. Presser goes a step further when she implies that Coale's (1973: 65) propositions of declining fertility must be engendered: the decision to have a child (or not) made through women's calculus of conscious choice, must be advantageous for women, and these women must be able to access contraceptive measures that fit their desires. Along these lines, Presser argues that since the availability of contraceptive devices, especially the pill, has changed perceptions of women regarding fertility, demographic research should focus on the determinants of delayed childbearing.

Tsui (2001) argues that public programs have increased access to clinical and non-clinical contraceptive devices impacting fertility behavior. However, the access to these clinical and non-clinical methods depends on a women's conscious, rational choice. On the other hand, Robinson (1997) says that a desire for certain number of children (numeracy in fertility desires) reflects a balancing act against the perceived cost of children and of contraception to space or prevent their births. Children are considered commodities in which quantity is not a priority anymore; rather parents tend to focus more on quality as a long-term investment.

To examine this approach, Axinn and Barber (2001) examine the correlation between mass education and fertility behavior. They note that community and family structure may affect women's fertility behavior, in terms of contraception use, related to schooling. The simultaneous model highlights "that children's schooling impacts parental decisions about

fertility limitation." Or parents may learn during the school process of their first child if it is worth enough to have another child and when it becomes uneconomic, to adopt contraception. Indeed Axinn and Barber suggest that the correlation between education and fertility decline is not absolute, and may lie between these two models. Proximity of school is important when it comes to measure fertility behavior. They propose three assumptions: (1) neighbors influence other neighbors to push (latently) their children to attend school; (2) contraception will increase if wealth flows reverse as a consequence of schooling; and (3) there is a synergy in the proliferation of schools. Family planning centers may be created close to the education centers, which at some point may affect fertility behavior.

Regardless of children's numeracy motivation, Tsui (2001) advises: "family planning centers are out there, use them!" However, as Erickson found in her 1998 research with Latino teenagers, pregnancy prevention programs have focused on mainstream teenagers driven by the political momentum. "…under Republicans we get abstinence and adoption programs, and under Democrats we get family planning and ameliorative programs for teen mothers" (p. 159). Since mainstream pregnancy is a private issue that may lead to abortion, underclass pregnancy, more likely, leads to childbearing.

Thus, childbearing becomes more visible for society where policymakers and politicians blame the underclass for all the social injustices the underclass suffers as consequence of childbearing. Also, a significant number of Latina teenagers are immigrants or second generation individuals. And because many of the prevention programs are politically driven, they are designed for mainstream teenagers. Baca Zinn (1999) suggests that the study of immigrant families must avoid cultural reductionist explanations where, many times, they are blamed for the society's problems (p. 239), in this case Latino teenage childbearing. Any behavior that goes beyond the scope of these pregnancy preventive programs is considered deviant. Since the high fertility rates characterizing Latina immigrants are driven by teenaged childbearing; teen mothers are considered deviant.

Erickson (1998) argues that Latina childbearing in East Los Angeles has a cultural context as well. For example Latina teenagers' lack of information about birth control or contraceptive use implies, as Erickson points out, four constraints: (1) medical side effects and fearness; (2) medical visits for oral contraception method; (3) fear of sexual permanent or temporary disruptions; and (4) "…mother or partner prohibiting contraceptive use" (p. 133). Several Latina teenagers come from Latin American countries where sexual education, within the family context, is banned. Then, teenagers who in-migrate to the United States tend to be misinformed about contraceptive use. Indeed, there are some micro- and macro-structural variables that influence the under-using or non-using of contraceptives such as their availability, access to family-planning clinics, and transportation. Even though mainstream teenagers take for granted the use and availability of contraceptives, Latina teenagers are culturally and economically constrained (p. 147).

Although Erickson (1998) acknowledges that structural inequality drives Latina teen pregnancy, and thus childbearing, she relies more on arguments that address the cultural context of Latina teen pregnancy. Erickson's cultural argument is partially supported by Raley (1999), who argues that the underclass is powerless against economic and structural forces that have secluded them in ghettos (p. 261). Poor people are voiceless. Poverty in the inner-city is driven by the lack of opportunities, and the institutional apathy of the government.

In this socioeconomic context, childbearing is, many times, the only way in which teenagers "…can assert their grown-up status" (Raley, 1999: 267) where social construction of adulthood is culturally shaped. In this way, Erickson acknowledges the intersection of gender, economic status, and culture in creating pronatalist pressures for teenaged childbearing. I argue that these pressures weigh more heavily on young girls and women who have immigrated to the U.S. from Mexico than on their peers born in the United States.

## Conclusion

My estimates of net migration separately by age and sex for Mexican-origin residents in the U.S. between 1990-2000 cannot show whether the migrants came alone, with immediate relatives, or were joining immediate relatives already in the U.S.

Forste and Tienda (1996) hold that Mexican women are perhaps selected for immigration to the United States, but then catch up with and exceed the fertility rate of native-born Mexican women. This must be a large part of the reason why natural increase (the excess of births over deaths) made a much larger contribution than net migration did to the growth of the Mexican population in the 1990s. Future research on Mexican-immigrant women should investigate how they timed their births relative to their immigration to the U.S., and how their labor-force opportunities (expected or achieved) postponed or accelerated their births. I argue that qualitative approaches (in-depth interviews or focus groups) will shed light on these questions.

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**Endnotes**

i   *Independent migration, according to Hondagneu-Sotelo (1994), is carried out by men/women alone with out explicitly family/household sponsorship (p. 87).*

ii  *I use interchangeably, through the text, the concept family/ household. Glenn (1999) defines family as a social unit tied by blood or marriage who conduct productive and reproductive labor among many other tasks (p. 79-80). Rapp (1999) describes households as the "…empirically measurable units within which people pool resources and perform certain tasks" (p. 181), usually production and reproduction of labor, consumption and socialization.*

iii *Massey et al. (1994) offers a comprehensive evaluation of the major migration theories. Social networks are defined as social and kinship ties that individuals, with common interests, use as strategy and resource to migrate (p. 728).*

# Appendix A[1][2][3]

## Life Table U.S. Mexican (Origin) Females 1990
## U.S. Mexican Females, 1990

| Int | N | D | M | S.E. | q | p | S.E. |
|---|---|---|---|---|---|---|---|
| | $_nx$ | $_nx$ | $_nx$ | $M$ | $_nx$ | $_nx$ | $p$ |

**[N(0) = 188115]**                                                                 (Linear)

| Int | N | D | M | S.E. | q | p | S.E. |
|---|---|---|---|---|---|---|---|
| .0 | 186925 | 1296 | .006933 | .0001919 | .00689 | .99311 | .0001907 |
| 1.0 | 633330 | 237 | .000374 | .0000243 | .00150 | .99850 | .0000971 |
| 5.0 | 1343813 | 210 | .000156 | .0000108 | .00156 | .99844 | .0001077 |
| 15.0 | 1252903 | 463 | .000370 | .0000171 | .00369 | .99631 | .0001711 |
| 25.0 | 1203602 | 542 | .000450 | .0000193 | .00449 | .99551 | .0001926 |
| 35.0 | 806220 | 729 | .000904 | .0000333 | .00900 | .99100 | .0003319 |
| 45.0 | 449467 | 1076 | .002394 | .0000721 | .02366 | .97634 | .0007126 |
| 55.0 | 322730 | 2051 | .006355 | .0001359 | .06159 | .93841 | .0013175 |
| 65.0 | 197414 | 3025 | .015323 | .0002580 | .14233 | .85767 | .0023965 |
| 75.0 | 96985 | 3407 | .035129 | .0005040 | .29881 | .70119 | .0042867 |
| 85.0 | 28857 | 2946 | .102090 | .0017823* | 1.00000 | .00000 | .0000000 |

*Estimated as M(1-M)/N*

| Int | l | S.E | d | L | a | e | S.E. |
|---|---|---|---|---|---|---|---|
| | $x$ | $l$ | $_nx$ | $_nx$ | $_nx$ | $x$ | $e$ |

(Linear)

| Int | l | S.E | d | L | a | e | S.E. |
|---|---|---|---|---|---|---|---|
| .0 | 100000 | .00 | 689 | 99367 | .08 | 83.24 | .0828586 |
| 1.0 | 99311 | 19.07 | 149 | 396888 | 1.60 | 82.81 | .0818694 |
| 5.0 | 99163 | 21.34 | 155 | 990851 | 5.00 | 78.93 | .0816099 |
| 15.0 | 99008 | 23.84 | 365 | 988251 | 5.00 | 69.05 | .0813465 |
| 25.0 | 98642 | 29.17 | 443 | 984209 | 5.00 | 59.29 | .0808978 |
| 35.0 | 98199 | 34.70 | 884 | 977573 | 5.00 | 49.53 | .0805754 |
| 45.0 | 97315 | 47.38 | 2302 | 961643 | 5.00 | 39.94 | .0799025 |
| 55.0 | 95013 | 83.36 | 5852 | 920871 | 5.00 | 30.78 | .0775596 |
| 65.0 | 89161 | 147.61 | 12690 | 828160 | 5.00 | 22.47 | .0730968 |
| 75.0 | 76471 | 248.37 | 22850 | 650459 | 5.00 | 15.37 | .0634232 |
| 85.0 | 53621 | 371.20 | 53621 | 525233 | 9.80 | 9.80 | .0000000 |

**CDR = 2.45**       **S.E. = .0182**

**Survival 4.1E**    **3/18/2003**

[1] 1990 Census of Population. (1992). *General Population Characteristics. United States.* Bureau of the Census.

[2] 1990 Vital Statistics of the United States. (1994). *Volume II-Mortality Part A.* National Center for Health Statistics.

[3] National Statistics Report. (2002). Live Births. National Center for Health and Statistics 51 (2): 35.

# Appendix B [1][2][3]

## *Life Table U.S. Mexican (Origin) Males 1990*[1][2][3]
## *U.S. Mexican Males, 1990*

| Int | N $_{n}x$ | D $_{n}x$ | M $_{n}x$ | S.E. $M$ | q $_{n}x$ | p $_{n}x$ | S.E. $p$ |
|---|---|---|---|---|---|---|---|
| **[N(0) = 188115]** | | | | | | *(Linear)* | |
| .0 | 196009 | 1656 | .008449 | .0002067 | .00838 | .99162 | .0002052 |
| 1.0 | 660617 | 329 | .000498 | .0000274 | .00199 | .99801 | .0001096 |
| 5.0 | 1402247 | 340 | .000242 | .0000131 | .00242 | .99758 | .0001312 |
| 15.0 | 1519569 | 2477 | .001630 | .0000325 | .01617 | .98383 | .0003222 |
| 25.0 | 1424400 | 2772 | .001946 | .0000366 | .01927 | .98073 | .0003625 |
| 35.0 | 872497 | 2153 | .002468 | .0000525 | .02438 | .97562 | .0005189 |
| 45.0 | 451361 | 2042 | .004524 | .0000979 | .04424 | .95576 | .0009571 |
| 55.0 | 296430 | 3247 | .010954 | .0001820 | .10385 | .89615 | .0017253 |
| 65.0 | 165811 | 3976 | .023979 | .0003371 | .21412 | .78588 | .0030103 |
| 75.0 | 66282 | 3564 | .053770 | .0006837 | .42377 | .57623 | .0053884 |
| 85.0 | 17209 | 2086 | .121216 | .0024880* | 1.00000 | .00000 | .0000000 |

*\*Estimated as M(1-M)/N*

| Int | l $x$ | S.E $l$ | d $_{n}x$ | L $_{n}x$ | a $_{n}x$ | e $x$ | S.E. $e$ |
|---|---|---|---|---|---|---|---|
| | | | | | *(Linear)* | | |
| .0 | 100000 | .00 | 838 | 99232 | .08 | 76.18 | .0855292 |
| 1.0 | 99162 | 20.52 | 197 | 396173 | 1.60 | 75.82 | .0847785 |
| 5.0 | 98964 | 23.18 | 240 | 988445 | 5.00 | 71.97 | .0845541 |
| 15.0 | 98725 | 26.52 | 1596 | 979265 | 5.00 | 62.13 | .0842983 |
| 25.0 | 97128 | 41.14 | 1872 | 961924 | 5.00 | 53.07 | .0835458 |
| 35.0 | 95256 | 53.55 | 2322 | 940954 | 5.00 | 44.02 | .0832384 |
| 45.0 | 92934 | 71.92 | 4111 | 908788 | 5.00 | 34.99 | .0826242 |
| 55.0 | 88823 | 112.42 | 9224 | 842109 | 5.00 | 26.38 | .0805345 |
| 65.0 | 79599 | 183.39 | 17044 | 710770 | 5.00 | 18.86 | .0772417 |
| 75.0 | 62555 | 279.62 | 26509 | 493007 | 5.00 | 12.63 | .0713950 |
| 85.0 | 36046 | 373.60 | 36046 | 297372 | 8.25 | 8.25 | .0000000 |

**CDR = 2.45       S.E. = .0182**

**Survival 4.1E       3/18/2003**

[1] 1990 Census of Population. (1992). *General Population Characteristics. United States.* Bureau of the Census.

[2] 1990 Vital Statistics of the United States. (1994). *Volume II-Mortality Part A.* National Center for Health Statistics.

[3] National Statistics Report. (2002). Live Births. National Center for Health and Statistics 51 (2): 35.