

“Educational Assortative Mating and Inequality: A Test from a Latin American Perspective”

(Extended Abstract)

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Introduction. Recent research highlights the potential association between educational assortative mating (EAM) and socioeconomic inequality. The influence between these two phenomena is bi-directional. On the one hand, given that economic inequality is largely driven by returns to schooling, educational assortative mating induces inequality among households, as partners pool their economic resources (Burtless 1999, Gottschalk and Danziger 2005). On the other hand, growing economic disparities (in the form of earnings returns) between educational groups will reduce the probability and the incentives for intermarriage across educational levels. This latter factor appears to account for a substantial portion of the increase in EAM in the US over the last three decades (Schwartz and Mare 2005, Mare and Schwartz 2006).

EAM is also affected by factors orthogonal to economic inequality. Among them, the literature has highlighted the timing between finishing school and establishing a union (Mare 1991, Halpin and Chan 1995); compositional effects driven by differential distribution of married and cohabiting couples combined with different levels of EAM across union types (Blackwell & Lichter 2000, Jespen and Jespen 2002); the national level of economic and cultural development (Smits et al. 1998); and status exchange between educational and other desirable attributes such as high racial status (Merton 1941, Gullickson 2006).

International comparative analysis is a useful tool to understand the extent to which these factors induce variation in spousal educational resemblance. To date, however, research concerns

only a handful of industrialized nations, and systematic cross-country comparisons are almost non-existent¹.

This paper presents a systematic analysis of EAM in Brazil, Chile, Mexico and the US. The objectives are twofold: To describe the levels and patterns of assortative mating of these Latin American nations in comparative perspective; and to explain sources of cross-country variation, with an emphasis on the influence of socioeconomic inequality. Given that the Latin American countries included in the analysis are among the most unequal in the world (Gini index Brazil= .591, Chile= .572, Mexico= .546 and US= .408 respectively [United Nations 2006]) they constitute adjudicative cases to explore the potential association between inequality and assortative mating.

Data and Methods: Data come from the 2000 Brazilian, Mexican and US Census, and the 2002 Chilean Census, homogenized by the IPUMs project. I select co-resident married and cohabiting couples. These “prevailing unions” are a result of union formation, selective union dissolution and educational upgrading after union formation. To reduce bias emerging from these effects, I restrict the sample to couples in which the male partner is between the ages of 30 and 35. I distinguish six levels of educational attainment of male and female partners: No education, primary schooling, some secondary education, secondary graduate, some college, and college graduate.

I first provide descriptive information on observed rates of assortative mating across countries. Given that these figures are affected by the marginal distribution of educational attainment, I then evaluate levels of EAM across countries using the log-multiplicative layer effect model (Xie 1992, Erikson and Goldthorpe 1992). To analyze the pattern of EAM across nations, I test

¹ Smits et al. (1998) is an exception, although in order to ensure comparability, authors use highly aggregated educational categories, Blossfeld and Timms ed. (2003) present a study of thirteen European countries, and Esteve & McCaa (2005) study Brazil and Mexico using a comparative framework, but neither of them analyzes data pooled across countries.

a set of nested log-linear models, and select the best fitting one using standard fit statistics. The preferred model is as follows:

$$\log (F_{ijk}) = \lambda + \lambda_i^H + \lambda_j^W + \lambda_k^C + \lambda_{ik}^{HC} + \lambda_{jk}^{WC} + \lambda_{ij} + \lambda_{ic}^{Pk} + \gamma_{ijk}^{HWC}$$

where H denotes husband's education ($i=1, \dots, 6$), W denotes wife's education ($j=1, \dots, 6$), C denotes country ($k=1, \dots, 4$), P denotes female hypergamy ($\lambda_i=1$ for $i>j$, 0 for $i \leq j$), and γ_{qk} represents the change in difficulty of crossing educational barrier q in country k relative to the country chosen as

baseline for comparison ($\gamma_{ijk}^{HWC} = \sum_{q=j}^{i-1} \gamma_{qk}$ for $I > j$, $\sum_{q=i}^{j-1} \gamma_{qk}$ for $I < j$, and 0 for $I = j$). Note that the term λ_{ij}

omits the superscript H and W, signaling a symmetric baseline association common for all countries and λ_{ic} captures asymmetries with a single, country-specific parameter. Country-specific "crossing parameters" γ capture variation in assortative mating across nations. This basic model is then expanded to include variables potentially driving international variation in assortative mating.

Findings. The main findings based on the basic and expanded versions of the model are as follows:

1) There are substantial differences not only in the level but also in the pattern of spousal educational resemblance across countries. Given international variation in the EAM pattern -- i.e. variation in the difficulty of crossing different educational barriers -- country rankings are highly sensitive to the number and type of educational categories used in the analysis. In order to meaningfully rank levels of EAM across countries, I create an aggregate measure based on the weighted average of barriers to intermarriage, where the weights are the number of individuals affected by each barrier in each country. This measure places Brazil and the US as the least homogamous and Chile as the most homogamous country.

2) *Within Latin American countries*, the pattern of EAM is isomorphic with the pattern of economic inequality. Specifically, the difficulty of crossing educational barriers to intermarriage closely corresponds to the economic distance between educational groups in terms of earnings returns.

3) However, differences in EAM *between countries* are not related to international variation in the level of economic inequality. In particular, Brazil -- the most unequal of the countries considered -- is significantly *less* homogamous than all other countries. This finding is robust to the use of different educational classifications and modeling strategies.

4) The “Brazilian anomaly” is *not* explained by a) A weaker association between income and educational attainment in Brazil; b) Compositional effects resulting from the larger percentage of Brazilian unions that are cohabitations, given that cohabiting couples have lower educational resemblance than married couples ; or c) Exchange between racial and educational status within multiracial couples. The analysis provides qualified support for the status exchange theory within white male-black female Brazilian couples, but shows that these patterns do not account for the generally high level of educational intermarriage in Brazil. The paper concludes by speculating about the causes of the “Brazilian anomaly” and discussing implications of this analysis for the comparative study of assortative mating.

References:

- Blackwell, D. and D. Lichter. 2000. “Mate Selection Among Married and Cohabiting Couples” *Journal of Family Issues* 21 (3): 275-302.
- Blossfeld, H.P. and A. Timm. 2003. *Who Marries Whom? Educational Systems as Marriage Markets in Modern Societies*. Dordrecht: Kluwer Academic Publishers, 2003.
- Burtless G. 1999. “Effects of growing Wage Disparities and Changing Family Composition on the U.S. Income Distribution” *European Economic Review* 43:853–65.
- Erikson, R. and J. Goldthorpe. 1992. *The Constanta Flux*. Oxford: Oxford U. Press.
- Esteve, A. and R. McCaa. 2005. “Homogamia Educacional en México y Brasil, 1970 – 2000: Pautas y Tendencias” Paper presented at the International Union for the Scientific Study of Population XXV International Population Conference Tours, France, July 18-23.

- Gottschalk P, Danziger S. 2005. "Inequality of Wage Rates, Earnings and Family Income in the United States. 1975–2000" *Review of Income and Wealth* 51:231–54
- Gullickson, A. 2006. "Education and Black-White Interracial Marriage" *Demography* 43(4): 673–689.
- Halpin, B. and T.W. Chan. 2003. "Educational Homogamy in Ireland and Britain: Trends and Patterns" *British Journal of Sociology* 54(4) : 473–495.
- Jespen, L. and C. Jespen. 2002. "An Empirical Analysis Of The Matching Patterns Of Same-Sex And Opposite-Sex Couples" *Demography* 39 (3): 435-453.
- Mare, R. 1991. "Five Decades of Educational Assortative Mating" *American Sociological Review* 56(1):15-32.
- Mare, R. and C. Schwartz. 2006. "Income Inequality And Educational Assortative Mating: Accounting For Trends From 1940 To 2003" Paper presented at the 2006 PAA Meeting.
- Merton, R. 1941. "Intermarriage and the Social StructureF Fact and Theory" *Psychiatry* 4: 361-374.
- Schwartz, C. and R. Mare. 2005. "Trends in Assortative Marriage from 1940 to 2003" *Demography* 42(4): 621-646.
- Smits, J., W. Ultee, and J. Lammers. 1998. "Educational Homogamy in 65 Countries: An Explanation of Differences in Openness Using Country-Level Explanatory Variables." *American Sociological Review* 63:264-85.
- Xie, Yu 1992. "The Log-Multiplicative Layer Effect Model for Comparing Mobility Tables" *American Sociological Review* 57 (3): 380-395.