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Union Formation Implications of Race and Gender Gaps in Educational Attainment: The Case of Latin America

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Abstract

We use census microdata to assess the levels of educational homogamy in six Latin American countries: Argentina, Brazil, Chile, Costa Rica, Ecuador and Mexico. This paper contributes to the literature on homogamy in three ways. First, by conducting a comparative analysis between countries belonging to the still little-studied region of Latin America, which is still undergoing intense and varied processes of demographic, economic, social, and political modernization. Second, by simultaneously including variables of structural and individual nature. Finally, by making progress with respect to the interactions between educational homogamy and other important variables associated with high levels of social inequality in the region: race, ethnicity and birthplace.

Keywords

Educational Homogamy; Latin America; Marriage; Assortative Mating

Introduction

Spousal unions between people with similar characteristics (homogamy) constitute a classic topic in the field of family studies. From the beginning, authors from diverse disciplines have given special attention to the way in which men and women form unions, describing the relationship between the processes and institutions linked to partner selection and the reproduction of social inequality (e.g., Lévi Strauss, 1969; Bourdieu, 2004; Simmel, [1917] 1986). Virtually all studies conducted to date have concluded that unions between people with similar characteristics make up the predominant pattern (Kalmijn, 1998). Variables such as race (Qian, 1997), religion (Kalmijn, 1991), occupation (Hout, 1982), age (Bozon, 1991; Cabré, 1993), residential proximity (Katz & Hill, 1958) and education (Mare, 1991) have been used to study homogamy. Precisely this last variable has been the object of growing interest by researchers in recent years. The influence of education originates in its efficiency as a principle of differentiation within the social structure (Bourdieu, 2006). Studies elaborated in this regard confirm a tendency for people to form couples with others from the same level of educational attainment, especially at the extremes of the educational hierarchy (Smits, 2003; Schwartz & Mare, 2005; Esteve & McCaa, 2007).

Although these studies have considerably expanded our knowledge about this phenomenon, comparative work on an international scale is rather scarce. This shortage becomes more obvious when working with so-called “developing” countries, most research on the subject having been done in the context of countries with advanced economies. One of the sparsely studied regions in this regard is Latin America. The analysis of marriage market composition and its structure along various axes of social inequality, such as race, ethnicity,

gender, birthplace or education, is of particular interest, especially considering the developments in recent decades resulting from modernizing processes occurring with greater or lesser intensity across the region.

Among some of the most significant transformations starting in the 1960s directly associated with the family and the role of women in Latin American societies are: an acceleration in the processes of the demographic transition, high rates of female workforce participation and the mass incorporation of women into the formal education system (Ariza & De Oliveira, 2001; Arriagada, 2002). These have contributed to reduce gender differences in educational outcomes and workforce participation. Global fertility rates declined in the region from 5.89 to 2.74 children per female over the last five decades, while the proportion of workers in the secondary and tertiary sectors rose from 28% to 75% in the same period (CEPAL, 2009).

The present work is inspired by a series of comparative studies set in motion years ago by several researchers (Ultee & Luijkx, 1990; Blossfeld & Timm, 2003; Smits, 2003; Esteve & McCaa, 2007). Our purpose is to assess the levels of educational homogamy in six Latin American countries: Argentina, Brazil, Chile, Costa Rica, Ecuador and Mexico. We hope to contribute to the literature related to this topic in three ways. First, by conducting a comparative analysis between countries belonging to the still little-studied region of Latin America, which is still undergoing intense and varied processes of demographic, economic, social, and political modernization. Second, by simultaneously including variables of structural (sex-ratio, size and ethno-racial heterogeneity of the population) and individual nature (sex and education), rare practice among the few studies conducted in this area. Finally, this work makes progress with respect to the interactions between educational homogamy and other important dimensions associated with high levels of social inequality in the region: race, ethnicity and birthplace.

The questions guiding this study can be formulated in the following terms: (1) to what extent do the analyzed countries present similarities in relation to their patterns of educational homogamy? (2) How do these patterns of homogamy vary when crossed with other variables for race, ethnicity and birthplace that also structure the dynamics of social inequality in the region? To answer these questions, we apply a series of logistic regression models. The paper does not examine causality between societal changes and educational assortative mating or vice versa; rather we aim at investigating and comparing educational assortative mating patterns in six Latin American countries after controlling for individual and marriage market characteristics. Among these characteristics, particular attention is given to the effect of social heterogeneity on educational homogamy. The data used come from census microdata samples from the IPUMS project, based at the Minnesota Population Center (2008). All individuals between 30 and 39 years old, who at the time of the census (year 2000 census) were married or in free union were selected.

The article develops over five sections. The background and hypotheses section presents the basic concepts and approaches applied to homogamy studies. We conclude this section with the formulation of several hypotheses about the effects of education, and ethno-racial heterogeneity on educational homogamy. This follows with a description of the data, methods and variables used in the analysis. We discuss the advantages of applying logistic regression models over log-linear analysis to address the research questions. The next two sections present the descriptive findings and the results of the logistic regression models. The final section summarizes and discusses the results obtained in light of the designed hypotheses, as well as the limitations and possible future directions.

Background and hypotheses

We apply here the term *homogamy* when a couple is formed by two people similar with respect to some socially significant trait linked to the system of social hierarchy. Such traits can be ascribed (ethnicity, race) or socially acquired (education, religion, occupation, etc.). To refer to the opposite situation (i.e. unions between people with different characteristics), we use the term *heterogamy*. As well, a woman's position within the couple¹ is usually taken as the reference point to distinguish two types of situations: *hypergamy*, when a woman forms a couple with a man who is better positioned in relation to the system of social hierarchy; or *hypogamy*, when a woman holds the higher position than her partner in that hierarchy.

Studies on homogamy enjoy a long tradition in the social sciences. Burgess (1943) locates the first literature reviews on the topic in 1912, with the work of Harris (1912), Jones (1929) and Richardson (1939). Among some of the weaknesses that characterized the studies conducted in those years, Burgess himself mentions the strong emphasis placed on the physical and intellectual characteristics of the spouses, as well as the lack of a systematic effort to research the influence of social and cultural factors on selective pairings. Over the following decades, various authors (Davis, 1941; Merton, 1941; Hollingshead, 1950; Winch, Ktsanes, & Ktsanes, 1954; Coombs, 1961; Kerckhoff, 1964; Trost, 1965; Murstein, 1967) contributed decisively to the theoretical and conceptual refinement of this field, proposing various approaches to explain the factors behind partner selection. However, it was in the eighties when the focus of studies first shifted to underscore the structural mechanisms behind marital decisions (Surra, 1990) and to develop methodologies to ascertain the effects of structure on pairing behavior (Hout, 1982; Goldman, Westoff, & Hammerslough, 1984; Schoen, 1986; Gray, 1987; McCaa, 1993). Most research conducted at present has been nurtured by these developments, mainly with regard to the use of log-linear statistical models.

In general terms, contributions can be classified into two major groups (South, 1991; Pullum & Peri, 1999) depending on the emphasis granted to the different factors involved during the process of partner selection: a) approaches linked to the social exchange theory, and b) those oriented in greater measure to study the structural characteristics of marriage markets. In the former case, under the premise that selection processes operate through market mechanisms, the process of choosing a spouse or partner is essentially an act of transactional nature (Goode, 1963; Lévi Strauss, 1969). Such approaches tend to reflect, to a greater or lesser extent, the principle of maximizing utility, oriented toward those characteristics positively valued by society: beauty, economic capital, educational capital, etc. (Edwards, 1969; Becker, 1987; Schoen, Wooldredge, & Thomas, 1989). In the latter case, that is, from a viewpoint closer to the structural dynamics of marriage markets, emphasis is placed on the limits imposed by population structure on the possibilities of contact and interaction between the people within those markets (Blau, Blum, & Schwartz, 1982; Lichter, Anderson, & Hayward, 1995). In reality, these approaches do not represent opposing tendencies, but are rather complementary. Kalmijn (1998) suggests that a proper approach to the subject should consider three closely related factors: 1) individual preferences, 2) the influence of the social groups to which the members of the couple belong and 3) the constraints of the marriage market in which these people interact.

The majority of such studies conclude that the current predominant modus of homogamy is conditioned by several socially significant variables. One of the variables employed with greater frequency in this regard is that of education. According to Blossfeld and Timm

¹Measured in terms of some socially significant variable of hierarchical nature, as for example: education, occupation, income, etc.

(2003), the importance of education as an explanatory variable of homogamy patterns is based on two facts: 1) Education is the most important determinant of varying degrees of success in the occupational structures of industrialized societies, and 2) it reflects the influence leveraged by cultural resources in partner selection. In this sense, educational homogamy implies that the levels of social inequality at any given moment are perpetuated through marriage, based on both individuals' accumulation (positive or negative) of economic and cultural resources. Theoretically, the chances of such pairing behavior are greater in societies that have experienced strong processes of educational expansion, a context in which the likelihood of knowing someone at the same level rises. A significant amount of empirical evidence from various social contexts seems to sustain this hypothesis (Mare, 1991; Smits, Ultee, & Lammers, 1998; Blossfeld & Timm, 2003; Schwartz & Mare, 2005; Esteve & McCaa, 2007).

Most researchers relate changes in educational homogamy to transformations associated with the processes of modernization that act in multiple dimensions (economic, political, cultural, etc.) and on different levels (individual, family, regional, global). Among these changes, the incorporation of women in various areas of public life, such as labor markets and the formal education system, assumes a salient role (Oppenheimer, 1988). Modernization processes also involve the strengthening of more individualistic attitudes, extending the ability of individuals to make decisions in a wide range of situations, and promoting the role exercised by market mechanisms in the partner search. In other words: "The links once joining biography to family are slackening" (Beck & Beck-Gernsheim, 1995, p. 33).

It should be clarified that market mechanisms associated with marital selection tend to operate in variety of ways. This diversity is generated from the political, economic, social, demographic and cultural circumstances of each particular context (Flaquer, 1999). According to Goode, "All courtship systems are market or exchange systems. They differ from one another with respect to who does the buying and selling, which characteristics are more or less valuable in that market, and how open or explicit the bargaining is" (Goode, 1963, p. 8); hence the importance of comparative research, which allows us to appraise the regularities underlying different structures and social contexts.

Among the most significant efforts to conduct comparative studies on an international scale, the work of Smits and colleagues is of particular merit (Smits et al., 1998; Smits, Ultee, & Lammers, 2000; Smits, 2003). The notoriety of this body of research lies not only in the breadth of population under study (representative samples varying between 55 and 65 countries), but in its inclusion of both developed and developing countries. Among its most important findings is the existence of a non-linear relationship between a country's degree of economic development and its levels of educational homogamy (Smits et al., 1998). Specifically, under increasing levels of economic development, levels of homogamy first intensify, then climax, and finally decrease, outlining the shape of an inverted "U". Also, by including indicators on the size of groups with higher levels of education, Smits (2003) demonstrates that homogamy levels are lower in countries where the availability of people with higher education is greater.

Homogamous couples are characterized by less pronounced gender differences than heterogamous couples. Historically, among heterogamous couples hypergamy (women marrying higher positioned men) prevailed over hypogamy (women marrying lower positioned men). This was both the result of gender differences in educational attainment and preferences for this type of arrangement. The rationale behind this later is best understood as a function of the traits and qualities that an individual must possess to be a good candidate in the marriage market. Desirable traits and qualities are determined by the

way public and private roles are established in the society. Among young cohorts, women's increasing educational attainment and massive entrance into the workforce have reduced female hypergamy to non significant levels as demonstrated in several studies (Qian, 1998; Esteve & Cortina, 2006), including in Latin America (Esteve & McCaa, 2007).

In light of these ideas, we propose three hypotheses. First, it is expected that higher levels of educational homogamy correspond to groups located at the extremes of the educational hierarchy. This is obviously the result of the fact that these groups can marry heterogamously in only one direction. Thus, we are more interested in examining whether these six Latin American countries conform to this common pattern. This pattern would adjust to contexts marked by strong processes of modernization, where education's value as an element of social differentiation acquires precedence over other traditional criteria of an ascriptive nature, and where universities become powerful marriage markets. In Latin America, the intense processes of educational expansion together with the massive participation of women in various areas of public life lead us to suppose this pattern. Again, we do not contend to establish causality; rather, we will identify the differences between countries on a rigorous and comparable set of models to develop comparable measures across countries.

The effects of these modernizing dynamics do not extend equally to all population groups. In Latin America inequalities still persist regarding access to various goods and public services, among them education. These inequalities are strongly associated with various factors such as race, ethnicity, gender or place of birth. In Blau's sociological terms, if differences in race and education are correlated, group boundaries and status distinctions are consolidated and barriers to social intercourse are strengthened (Blau, 1994 p. 14). The six Latin American countries that we investigate show different degrees of differentiation based on the ethnic, racial and origin affiliations of their populations. Thus, they are socially heterogeneous. To the extent that social heterogeneity is correlated with social inequality in educational attainment, we expect that high *social heterogeneity will decrease educational homogamy* as there are still strong inequalities in access to education based on belonging to one or another of these groups. Likewise, educational homogamy will increase in those contexts characterized by lower ethnic, racial or birthplace heterogeneity.

Nonetheless, we expect that the effect of social heterogeneity on educational homogamy will be different for each educational group and will depend as well on the degree of social homogeneity of educational peers. This hypothesis is based on the fact that social heterogeneity varies by educational group. Otherwise there would be no 'consolidation' in Blau's terms, i.e. no difference in access to education based on the racial, ethnic and origin affiliation of individuals. This implies that, for instance, if minority groups have less access to higher education than majority groups, then social heterogeneity among higher educated will be lower than in other educational groups. All in all, this hypothesis investigates the sensitivity of educational attainment to social heterogeneity. Will the effect of social heterogeneity among educational peers be stronger in higher educated groups than in lower educated ones? Our initial expectations are that education acts as a social equalizer, and the predicted effect of social heterogeneity will be lower as education increases.

Data and Methods

The data used in this study are from harmonized samples of census microdata made available by the Integrated Public Use of Microdata Series (IPUMS) project, based at the Population Center at the University of Minnesota. Specifically, we use household samples for the cases of Argentina 2001 (10%), Brazil 2000 (6%), Chile 2002 (10%), Costa Rica 2000 (10%), Ecuador 2001 (10%) and Mexico 2000 (10.6%). With the exception of Mexico,

the household samples have been selected systematically from the original file: one in ten households, and in the case of Brazil, one in two households that responded to the extensive questionnaire. For Mexico 2000, household selection was conducted according to a stratified sampling method, which requires the use of expansion factors. Moreover, with the goal of having a common time reference based on the latest census round, we have discarded data from Colombia and Venezuela, whose latest available data at the time that this research concluded are for 1993 and 1991 respectively.

From these samples, we select those couples whose members resided in the same household at the time of the census, irrespective of the type of union (marriage or consensual union). We do not distinguish between cases coded as marriages and those coded as consensual unions. This decision is based on the results found in a previous study comparing educational assortative mating patterns in Mexico and Brazil (Esteve & McCaa, 2007). In this study, the differences between marriages and consensual unions found at the descriptive level disappeared when controlling for the educational attainment of the spouses. In both countries, individuals in consensual unions had lower levels of educational attainment than married people, which explained most of the differences with respect to marriages.

All individuals in couples but not living with their spouse at the time of the census have been discarded, as we have no way of knowing the characteristics of the other spouse. In the cases of Argentina and Chile, this affects 2.4% of the total; in Brazil 2.2%; in Costa Rica 2.6%; in Ecuador 1.8% and in Mexico 1.7%. The representivity of the observed couples is neither clear nor is there literature on its possible impacts. To ensure the comparability of data between countries and reduce the effect that the dissolution of unions may have on the results, we limit the analysis to those couples in which both spouses are between 30 and 39 years old. Placing age limits for couples is a common practice in this type of research, especially when working with prevalence rather than incidence data, such as population censuses. Even in Latin America, where the mean age at marriage is younger than in western societies, the proportion of individuals in union at age 20-29 is significantly lower than at 30-39 and varies by educational attainment. For all countries together, this proportion ranges from 39% for women aged 20 to 29 to 75% for women aged 30 to 39. This difference is even higher among university women. For instance, in our sample, 62% of women aged 20 to 29 with less than primary education were in union and 75% at ages 30 to 39. However, only 34% of university women were in union at ages 20 to 29 and 64% at ages 30 to 39. From this point of view, it is clear that by taking younger ages we are under representing highly educated couples in our sample. On the other hand, the upper age limit is used to reduce the bias that can be introduced by the differential dissolution of unions, i.e. the fact that unions tend to dissolve more or less as a function of spousal characteristics (selection effects). Although evidence on these issues for the countries examined still lacks, we have applied this restriction based on findings from other contexts (F. L. Jones, 1996; Kalmijn, de Graaf, & Janssen, 2005). This is a precautionary measure not rooted in any empirical evidence about selection in union dissolution patterns in Latin America. If the likelihood of union dissolution is independent of the educational attainment of spouses, then there is no reason for an upper age limit because it would not affect the representativity of those less educated couples that were formed at younger ages and still remained at the time of the census. Since we do not know whether this is true or not, we have decided to limit our analysis to ages 30-39 in line with other works that faced similar concerns. Note that this problematic exists regardless of the analytical strategy we use (logit vs loglinear) since it is due to the nature of the data. For exploratory purposes, we have run similar models using different age brackets and we did not find major differences in the results except for among the higher educated, but some of these differences could also be due to changes across cohorts.

From the couples selected, we are interested in knowing relative levels of educational homogamy in relation to structural and individual variables. We use logistic regression with a dichotomous dependent variable that characterizes individuals based on whether they are in union or married with someone of the same educational group (1) or not (0). Although the use of log-linear models tends to prevail in this type of research (F. L. Jones, 1991; Kalmijn, 1991; Mare, 1991; Qian, 1997), various considerations persuaded us to use logistic regression analysis and to run country-specific models.

Several aspects were taken into consideration in the decision of using logistic regression over log-linear models. Log-linear models are known for their ability to extract information from interactions in a contingency table, controlling for the effect that the table's marginals exert on these interactions. When working with a large number of variables, log-linear models become excessively complicated. First, work with multiple variables involves a large number of cells whose frequency is zero. Second, this becomes worse if we take a regional approach within countries results. Third, log-linear analysis is restricted to categorical variables. As presented later, we use a numerical variable as an indicator of social heterogeneity that could not be used in a log-linear framework. In logit models, explanatory variables can be of any type.

There were also several reasons that prevent us from combining all countries into a single model. The first and most important was to maximize the legibility of the results avoiding extremely complex models with multiple two-level interactions and some three level interactions. The effects of our predictors on educational homogamy differ quite differently across countries. This means that in an integrated approach most of the interactions between country and the other variables would be statistically significant (as we have tested). The other reason for carrying out country-specific models is because that the variable for ascribed social groups is not the same in each country. We use place of birth in Argentina and Costa Rica, race in Brazil and Ecuador, ethnicity in Chile, and a indigenous affiliation and language in Mexico.

For all these reasons, we prefer logistic regression models. The use of structural variables replaces what the log-linear models do by default when controlling for marginal distributions. Thus, the variables introduced in the model are divided into two groups depending on whether they are of structural or individual type. For reasons of argument, we first present the individual variables: sex, level of education and those related to membership in ethnic, racial and birthplace groups.

The level of education taken as reference is that stated at the time of the census, and therefore does not necessarily match the level that the spouses had at the time of marriage or union. The challenge of this research lies in creating a system of classification by level of education that is thus comparable between countries. To begin with, the countries studied do not organize their educational timelines in the same way. In the Argentinean system, the main divisions are established at 7 years of schooling (primary) to 13 (secondary) and 17 years or more (higher education). In Brazil there are divisions at 4 years of schooling (primary), 8 (basic secondary) to 11 (upper secondary) and 15 or more (higher education). In Chile, the divisions are at 8 years (primary), 12 years (secondary) and 17 or more (higher education). In Costa Rica they are at 6 years (primary), 11 years (secondary) and 16 or more (higher education). In Ecuador at 6 years (primary), 9 years (secondary elementary), 12 years (secondary) and 16 or more (higher education). Mexico sets its main divisions at 6 years of schooling (primary) to 9 (secondary elementary) to 12 (secondary) and 16 or more (higher education). Finally we opted for a classification into four categories elaborated on the basis of the variable EDATTAN built by IPUMS: 'less than primary', 'elementary complete', 'secondary complete' and 'tertiary complete'. EDATTAN registers the maximum

level of educational attainment or that for which a diploma has been earned, and uses the international classification of the United Nations that sets primary school at 6 years, basic secondary at primary plus 3 and higher secondary at basic secondary plus 3. The levels of instruction in each country have been adapted to this classification. Details on the codification of this variable are available on the project website, and we have not seen fit to reproduce them word for word in this section.

To analyze the heterogeneity of the population structure in each country, we classify individuals as belonging to one group or another, depending on certain variables traditionally associated with high levels of social inequality in the region (Portes & Hoffman, 2003). However, both the specific characteristics of each country and the availability of information contained in the census sources oblige the use of distinct criteria. In the case of Argentina and Costa Rica we use birthplace to identify those born in the country and those born abroad. This is done with the objective of approximating the element of migration, of recognized historic importance in both countries (Martínez Pizarro, 2003; Pellegrino, 2003). However, in Brazil and Ecuador we use race. Finally, in Chile and Mexico people are classified according to whether or not they belong to an indigenous group. Several studies indicate that the ethno-racial variable in these latter four countries is strongly associated with the levels of social inequality and, accordingly, with access to education (CELADE -Centro Latinoamericano de Demografía-, 2006; Hopenhayn, Bello, & Miranda, 2006). By introducing the variables of ethnicity, race and country of origin ('birthplace') in the analysis, we control for the effects of inequalities in access to education on the educational homogamy levels observed among different groups.

We use three structural variables: a) the availability of members of the opposite sex in the same educational group and region of residence as the reference individual ('sexratio'), b) the size of the educational group ('groupsize') and c) the degree of ethnic, racial or immigrant concentration within the educational group and region of residence ('ethn / race / inmigra similarity'). These three variables have been calculated for all the regional breakdowns encompassed by our set of countries: In Argentina we work with a total of 23 provinces, with 27 states in Brazil, 13 regions in Chile, 7 provinces in Costa Rica, 23 provinces in Ecuador and 32 states for Mexico. The regional subdivision of structural indicators takes this study one measure closer to the structure and characteristics of marriage markets at the local scale. The countries examined have significant internal differences in population composition by educational, ethnic, racial and immigration levels.

There are theoretical and technical reasons to defend the regional perspective in our approach. First, neither education nor race and ethnicity are equally distributed in space. Local markets differ significantly in their marriage pool compositions and, thus, aggregated or "national" views of the marriage market may be misleading (Harris & Ono, 2004). This observation is reinforced by the fact that individuals tend to choose mates within their local geographical space (McPherson et al., 2001). In the six Latin American countries that we are investigating, we observe significant variability across regions (results available from the authors). On the technical side, using regions is advantageous because it induces more variability into the independent variables.

Structural variables include a measure of sex ratio, group size and heterogeneity. The sex ratio corresponds to the log transformation of the number of educational group members of the opposite sex of the reference person divided by the number of group members of the same sex by region of residence. With the logarithmic transformation of the sex ratio, we obtain a symmetrical distribution of the indicator around the value 0, indicating the theoretical existence of equal numbers of men and women within the educational group. The sex ratio is calculated according to the sex of the individual taken as reference.

The group size refers to the relative weight of each educational group in the reference region. To introduce these into the model, the relative weight of each group is adjusted logarithmically. Individuals are assigned the relative weight of the group to which they belong.

Finally, as a measure of social heterogeneity we have calculated the proportion within the educational category having the same race, ethnicity or birth place (depending on the country) affiliation as the reference person. This is a measure of social homogeneity. A value of 1 indicates that all other people in the same educational group as the reference individual have the same racial/ethnic/birthplace affiliation as the reference individual. This can also be thought of as a measure of social similarity among educational peers. The indicator is assigned different values depending on the group affiliation of the reference person. If the person belongs to the majority group, he/she will get a value closer to 1. If the person belongs to the minority group, the value will be closer to zero.

Descriptive Findings

Figure 1 graphically represents the breakdown by level of education of men and women that are married or in union and between 30 and 39 years of age for the six countries analyzed. To illustrate the differences between countries, we concentrate on the weight of the 'primary incomplete' category. Brazil presents the highest proportions of individuals not having completed primary school, above 40% for both men and women. This elevated figure owes partly to the fact that people with only 4 years of formal schooling, having completed the first round of formal education in Brazil, have been grouped under the category 'primary incomplete'. Although the data are not displayed, if we had considered those with 4 years of schooling as having completed primary school, the proportions of 'Primary Incomplete' would decrease to 23.4% for men and to 20.2% for women. After Brazil follows Ecuador, where the proportion of men and women with primary incomplete is slightly above 20%. This is followed by Mexico, which also displays a proportion of around 20%, although in this case the percentage of women with incomplete primary (23.9%) is noticeably higher than that of men (18.5%). Argentina, Chile and Costa Rica, respectively, have the lowest proportions of individuals in the category 'primary incomplete'.

There is no correlation between the observed share of the least-schooled population and the share of the university-educated population across the six studied countries. This reveals structural differences between countries in terms of access to education. Of the university-educated population, the absolute differences between countries are not as marked, owing to the fact that observed proportions rarely exceed 10%. Mexican men represent the highest proportion of university-educated population, at 13%, while Chilean women, with just under 5% of cases, have the lowest proportion observed. While differences between men and women do not permit a country ranking valid for both sexes, such a ranking based on total proportions of university-educated population would be, in descending order: Mexico, Costa Rica, Argentina, Ecuador, Brazil and Chile.

In a general sense, there are no major differences between men and women in any country with respect to education outcomes. However, in all countries except Brazil the proportion of university-educated men is higher than the proportion of university-educated women. Mexico presents the greatest inequalities between men and women, both at the lower and higher levels. Conversely, in Brazil women display higher levels of educational attainment than men.

Figure 2 displays differences in educational level according to ethnicity, race or birthplace for each country. No distinction is made by sex, as the educational gaps between men and women within each group are not so large as to alter the broad differences between the

various groups. The vertical axis displays the specific share of each group. Each country displays important differences between its respective groups. Argentina is the country where distinction by birthplace makes the least sense, since the great majority of its population is not foreign-born and has educational patterns resembling those of individuals born elsewhere in Latin America (the second largest immigrant group). Only people of North American and European origin, as well as those born in other countries, have an educational profile clearly superior to the Argentineans, but these make up a mere 0.2% of cases.

In Brazil, differences between groups are more pronounced, especially between those identifying themselves as white and those from other groups. Asians in this case are the exception, possessing the highest levels of education: 32.1% have completed university education. The proportion of people who have not completed primary education among the black and mestizo populations (the second and third largest racial groups respectively) is 20 percentage points higher than the white population.

In Costa Rica, 90.4% of the observed population was born in Costa Rica and another 7.5% comes from Nicaragua. All other immigrant groups present higher levels of educational attainment than that of the Costa Rican population, while Nicaraguans have a clearly lower educational profile.

In Chile, the gap between indigenous and non-indigenous population is relatively small compared to that of Mexico, which has a similar proportion of indigenous people.

In Ecuador, the mestizo population (representing 81% of the total), displays higher levels of education than all other groups except those identifying themselves as “white”, who account for 10.5% of the total. The black, and especially indigenous, populations possess much lower levels of educational attainment than that of the mestizo population.

Finally, Mexico presents the most notable contrast between the majority non-indigenous group and the indigenous population. The proportion of individuals not having completed primary education is over 90% among the non-Spanish-speaking indigenous population. In Figures 1 and 2 we have illustrated the differences by sex and racial /ethnic /birthplace group in educational attainment levels for the observed populations. These figures have also served to illustrate the differences between countries, and have been introduced explicitly in the models that we present in following.

Logistic Regression

Table 1 shows the results of the logistic regression models. The summary of sample variables and characteristics is listed in Appendix 1. Given that ethnic, racial and birthplace groups are different for each country, we have analyzed the countries separately, and have applied two models to each country. The first model does not include interactions, while the second includes two interactions. In both cases, beta coefficients of the different population groups do not appear in the table, although this variable is included in the model (see Appendix 2). To be able to compare results, we use the same variables for each country, even though a few would be discarded if we were working with just one country. In building the model we follow the classic methodology. First, we examine the bivariate relationships between the dependent variable (where category 1 = belongs to homogamous relationship and 0 = does not belong) and each of the independent variable. The results of this exercise are not shown here. Second, we introduce all variables simultaneously. The coefficients obtained correspond to Model 1. Subsequently, we include the 10 possible interactions one by one in the model. Finally, we discard all insignificant interactions as well as those that, although significant, introduce nuances of little scientific relevance. We thus obtain Model

2, which includes two interactions: 1) Sex-ratio with educational level and 2) ethnic, racial and birthplace similarity with educational level.

From model 1 we highlight the following results. In all countries the structural variables behave in the same way. Sex ratio has a negative effect on homogamy; the greater the gender imbalance within an educational group, the lower the homogamy of the less-represented sex. The size of the educational group has a positive impact on homogamy: the greater the specific share of a group, the greater the likelihood that an individual from that group pairs with someone of the same educational level. Finally, ethnic, racial and birthplace similarity within education groups is associated with higher levels of educational homogamy. This indicates that an individual belonging to a racial minority within his or her educational group will be less likely to constitute a union with someone of their same level of education than an individual belonging to the ethno-racial majority in same educational group. Thus, minorities are less likely to marry within their educational group than majority groups. If social heterogeneity within the educational level were not significant in any country, it would demonstrate that the ethnic, racial or origin affiliations are not a structuring factor of the composition of couples. However, the model results indicate quite the opposite.

Model 1 produces homogamy parameters for each educational level considered. Controlling for group size, sex imbalances within the educational level and all other variables, the coefficients obtained indicate that the relative risk of being in a homogamous union varies based on educational level, with the highest levels of homogamy usually being located at the extremes (primary incomplete and university education). The graphic representation of these values provides a better display of the differences between educational levels (see Figure 3). Brazil, Mexico and Ecuador show the classic U-form, in which educational levels at the extremes have higher coefficients. Argentina and Costa Rica show a similar pattern, in which the two lower levels (primary incomplete and primary complete) adopt similar values. Finally, in Chile the likelihood of pairing with someone from the same educational level is similar among the three lower groups and substantially higher among the university-educated population. Differences between countries in the lower education strata may be in part due to differences in the classification system of the education variable. The most important factor, however, is the homogamy of the university-educated population. In all countries, without exception, the university-educated population is the most homogamous of all educational levels. Countries where university homogamy especially stands out are Brazil, Chile and Mexico, while differences in Argentina, Ecuador and Costa Rica are less notable.

In Model 2, we introduce the two most statistically and analytically significant interactions for most countries. The reading of parameters for some of the structural and individual variables that are now interacting with other variables can no longer be done individually, and therefore they are not strictly comparable with the Model 1 parameters. First, the presence of interaction between sex ratio and educational attainment indicates that the effect of sex ratio on the likelihood of being with someone from the same educational level varies depending on the level of education. However, our main interest focuses on the interaction of ethnic, racial or birthplace similarity within educational levels. This interaction indicates that the effect of ethnic and racial similarity on the likelihood of being in a homogamous union is not the same for every educational level. Recall that the greater the social similarity among educational peers, the greater the likelihood of being in union with someone from the same educational group. The opposite occurs when the majority of educational peers belong to a different social group. These results confirm that the ethno-racial variable has explanatory merit, while an analysis of the interaction parameters allows us to break down its importance by educational group.

Figure 4 shows the odds ratio of being in a homogamous union in terms of educational level and degree of ethnic, racial or birthplace similarity. The results shown come from the parameters estimated in model 2. Note that the graphic scale is not the same, as the objective here is not to compare homogamy levels between countries, but how the degree of social heterogeneity/homogeneity affects the tendency to form homogamous unions in each educational group. If this relation were the same for all educational groups, the represented curves would be parallel with each other. The difference in level between the curves is explained by variations in homogamy by educational level, already commented in Figure 3. The fact that they are not parallel, i.e. that they do not have the same slope, effectively indicates that the effects of ethnic, racial or birthplace similarity vary by educational level. When the slope of the curve is positive and more pronounced, it means that the effect of these similarities is greater.

In the joint observation of the six countries we highlight the following results. First, the university-educated population that presents the highest levels of homogamy is also the most sensitive to the social heterogeneity variable. This means that individuals of the university-educated population belonging to the majority group have a much higher risk of forming unions with others of the same educational level than the university-educated population belonging to the other groups. In contrast, differences between the ethnic, racial or birthplace majority and minority groups are not as important in the other educational groups. In fact, among the least educated (having not completed primary), the effect of group similarity runs in the opposite direction in countries like Argentina, Brazil, Chile and Mexico. Among the least educated, the fact of belonging to the majority group reduces the likelihood of forming an educationally homogamous union in comparison with the probability that minorities have, perhaps because most members of the same group have higher levels of educational attainment.

Summary and Conclusions

In this research we have conducted a comparative analysis of the levels of educational homogamy in six Latin American countries: Argentina, Brazil, Chile, Costa Rica, Ecuador and Mexico. Specifically, we have inquired as to: 1) the existence of a pattern of homogamous behavior shared by these countries and, 2) the presence of interactions between this pattern and some variables traditionally associated with high levels of social inequality in the region: race in the case of Brazil and Ecuador; ethnicity for Chile and Mexico, and country of birth for Argentina and Costa Rica.

The first of the tested hypotheses postulates the existence of higher levels of educational homogamy among groups located at the extremes of the educational hierarchy, i.e. individuals belonging to the “primary incomplete” and “university completed” categories. The model’s results show this hypothesis to be valid. In keeping with the existing literature, individuals with a university education have a greater propensity to establish marital ties among themselves. In Latin America, as is the case elsewhere, high levels of university education are largely associated with the control of resources that confer power in contemporary capitalist societies. The group of individuals meeting these characteristics is quite small in the region. According to some authors (Portes & Hoffman, 2003, p. 14), the group formed by large and medium-sized employers, high executives and university-educated professionals, represents about 10% of the economically active population in Latin America. In short, in a context characterized by high levels of social inequality, possessing a valuable resource (college education), in conjunction with the small size of the group possessing it, goes hand in hand with the tendency of university graduates to form unions with one another.

The second hypothesis tested for a positive relationship between the degree of ethnic, racial or birthplace homogeneity that characterizes marriage markets and levels of educational homogamy. Again, the model's results confirm this hypothesis. Although to a certain extent these effects are visible in the 'sexratio' and 'groupsize' variables, the determinant variable is the degree of ethno, racial or birthplace homogeneity within the educational group. The educational differences between the various groups of affiliation explain the greater or lesser tendency of individuals to form couples with people of their own educational level, irrespective of ethnicity or race. In the Latin American context, characterized by a wide ethno-racial heterogeneity, educational opportunities vary according the group one belongs to, adversely affecting the most vulnerable, as is the case for indigenous people and Afro-Latin Americans (Winkler & Cueto, 2004; Hopenhayn et al., 2006). The results clearly indicate that to belong to an ethnic, racial or origin minority group does not favor educational homogamy.

Finally, in the third hypothesis we posit the existence of an interaction effect between educational level and the degree of ethnic, racial or birthplace heterogeneity within the educational group. We argue that the phenomenon that the second hypothesis refers to does not apply equally to every educational level, but rather varies depending on level. Results from the regression models point in this direction, upholding the validity of this assumption for most educational levels. The most visible pattern shared across different countries arises from the university-educated population. Homogamous behavior among those possessing a university education tends to intensify as the availability of potential candidates also sharing their ethno-racial condition increases. As this availability diminishes, levels of educational homogamy also decrease, which suggests that these individuals most probably form couples from different educational levels that most probably share the same racial or ethnic condition. The findings suggest that differences between majorities and minorities are more pronounced at the high levels of the educational system. This does not, however, mean that those with a university education, independent of their racial-ethnic affiliation, are not still the most educationally homogamous.

In some measure, this result does not correspond to the role usually conferred to education as a factor of social cohesion and it goes against our initial expectations. In the classic formulation of assimilation theories (Gordon, 1964), education plays a key role by promoting the dissemination of democratic norms and values of a universal character. Hence, one would expect a greater tendency for interracial or interethnic marriages under increasing levels of education. Rather, the situation evidenced by the regression models seems to fit better to the set of theoretical perspectives emphasizing dimensions related to conflict, power and competition in the explanation of interracial or interethnic relations (Feagin & Feagin, 2003). This is certainly a subject deserving of more attention in future research. From our analysis, we can say that university graduates from the minority group have lower odds of being married to a person with university degree than an university graduate of the majority group. Without denying the fact that most intermarriage occurs among university graduates, it may not necessarily involve two persons of the same educational group. It may be social exchange? Or that the equalizing effect of education is not that strong as we suppose? It will be very interesting to replicate these finding in more developed societies as well as to explore ethnic and racial intermarriage patterns in Latin American countries in detail.

The arguments used to verify the assumptions are related to the modernization processes brought about in the region during recent decades. Particularly, we refer to the expansion of the education system and the massive incorporation of women in various areas of public life. In most cases, these modernization processes are complemented by the implementation of liberal economic models, which increase levels of social inequality among different

population groups. All this affects the structure of opportunity imposed by marriage markets in each country (availability of potential candidates) and the way in which partner-selection mechanisms in those markets behave. In the latter case, we refer to both the characteristics tending to be more or less valued by men and women, as well as the degree of liberty to carry out their transactions. In this paper we have not addressed any of these issues to examine causality and to explain the differences between countries. This, of course, is a task for the future.

In summary, this article constitutes an effort to extend a line of research still little-explored in so-called “developing” countries. In the particular case of Latin America, the wide cultural diversity, intensification of modernization processes in different areas of society, and high levels of social inequality provide a complex panorama for analysis. For this reason, it can be argued that the major challenge at this early stage is to develop theoretically relevant questions and hypotheses, and at the same time to consider the particularities of the region.

Appendix 1

Descriptives statistics of dependent and independent variables: Argentina 2001, Brazil 2000, Chile 2000, Costa Rica 2000, Ecuador 2001, and Mexico 2000.

	Argentina	Brasil	Chile	Costa Rica	Ecuador	Mexico
Variables	Mean	Mean	Mean	Mean	Mean	Mean
Dependent Variable						
Educational Homogamy	0.59	0.69	0.73	0.62	0.64	0.67
Independent Variables						
<i>Contextual effects</i>						
Relative educational group size, age group $\times$ region (log)	-1.15	-0.89	-0.78	-1.05	-1.09	-0.94
Sex ratio within educational group, age group $\times$ region (log)	0.06	0.06	0.05	0.06	0.07	0.08
Social homogeneity within educational group, age group $\times$ region	0.90	0.54	0.92	0.82	0.68	0.88
<i>Individual effects</i>						
Sex						
Male	0.50	0.50	0.50	0.50	0.50	0.50
Female	0.50	0.50	0.50	0.50	0.50	0.50
Educational Attainment (edattan)						
Less than Primary (ref.)	0.42	0.45	0.10	0.54	0.52	0.49
Primary completed	0.37	0.47	0.74	0.31	0.29	0.39
Secondary completed	0.13	0.07	0.14	0.08	0.09	0.11
Tertirary completed	0.07	0.01	0.02	0.07	0.10	0.01
<i>Social group</i>						
Argentina	0.95					
Argentinian (ref.)	0.04					
Other Latin American	0.01					
North American & European	0.00					
Others						

	Argentina	Brasil	Chile	Costa Rica	Ecuador	Mexico
Variables	Mean	Mean	Mean	Mean	Mean	Mean
Brazil						
White (ref.)		0.57				
Mestizo/Mulato		0.36				
Black		0.06				
Indigenous		0.00				
Asian		0.00				
Chile						
No Indigenous (ref.)			0.96			
Mapuche			0.04			
Others			0.01			
Costa Rica						
Costa Rican (ref.)				0.90		
Nicaraguan				0.07		
Other Latin American				0.02		
North American & European				0.01		
Others				0.00		
Ecuador						
Mulato/Mestizo (ref.)					0.81	
Black					0.02	
Indigenous					0.07	
White					0.10	
Other					0.00	
México						
Indigenous Spanish Speaker (ref.)						0.07
Indigenous No-Spanish Speaker						0.01
No Indigenous						0.92
Number of Persons (n)	715576	2804314	395088	110802	291974	2578302

Appendix 2

Logistic regression coefficients for the analysis of educational homogeneity. Ethnic, race and immigrant groups: Argentina 2001, Brazil 2000, Chile 2000, Costa Rica 2000, Ecuador 2001, and Mexico 2000.

Variables	Argentina		Brazil		Chile		Costa Rica		Ecuador		Mexico	
	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β
<i>Social group</i>												
Argentina												
Argentinian (ref.)												
Other Latin American	0.54**	0.41**										
North American & European	0.78**	0.76**										
Others	0.79**	0.74**										
Brazil												
White (ref.)												
Mestizo/Mulato	0.12**		0.15**									
Black	0.21**		0.18**									
Indigenous	0.27**		0.21**									
Asian	0.26**		0.43**									
Chile												
No Indigenous (ref.)												
Mapuche					.19 $\ddagger$	0.07						
Others					-0.13	-0.17						
Costa Rica												
Costa Rican (ref.)												
Nicaraguan	1.77**						1.13**					
Other Latin American	2.04**						1.27**					
North American & European	2.40**						1.55**					
Others	2.46**						1.67**					
Ecuador												
Mulato/Mestizo (ref.)												
Black									0.24**	0.26**		
Indigenous									0.52**	0.52**		
White									0.44**	0.45**		

Variables	Argentina		Brazil		Chile		Costa Rica		Ecuador		Mexico	
	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β
Other									-0.05	-0.05		
México												
Indigenous Spanish Speaker (ref.)												
Indigenous No-Spanish Speaker											1.03**	0.57**
No Indigenous											-0.22**	-0.21**

†

p < .10;

* p < .05;

** p < .01

References

- Ariza M, De Oliveira O. Familias en Transición y Marcos Conceptuales en Redefinición. *Papeles de Población*. 2001; 28:9–39.
- Arriagada I. Cambios y Desigualdad en las Familias Latinoamericanas. *Revista de la CEPAL*. 2002; 77:143–161.
- Beck, U.; Beck-Gernsheim, E. *The Normal Chaos of Love*. Cambridge, Massachusetts: Blackwell Publishers Ltd; 1995.
- Becker, GS. *Tratado sobre la Familia*. Madrid: Alianza Editorial; 1987.
- Blau PM, Blum TC, Schwartz JE. Heterogeneity and Inter marriage. *American Sociological Review*. 1982; 47(1):45–62.
- Blau, PM. *Structural Contexts of Opportunities*. Chicago: The University of Chicago Press; 1994.
- Blossfeld, H-P.; Timm, A. *Who Marries Whom? : Educational Systems as Marriage Markets in Modern Societies*. Vol. 12. Dordrecht: Kluwer Academic; 2003.
- Bourdieu, P. *El Baile de los Solteros*. Barcelona: Anagrama; 2004.
- Bourdieu, P. *La Distinción : Criterio y Bases Sociales del Gusto*. 3. Madrid: Taurus; 2006.
- Bozon M. Women and the Age Gap Between Spouses: An Accepted Domination? *Population: An English Selection*. 1991; 3:113–148.
- Burgess EW, Wallin P. Homogamy in Social Characteristics. *The American Journal of Sociology*. 1943; 49(2):109–124.
- Cabré, A. Volverán Tórtolos y Cigüeñas. In: Garrido, L.; Gil, E., editors. *Estrategias Matrimoniales*. 1. Madrid: Alianza Universidad; 1993. p. 113–131.
- CELADE -Centro Latinoamericano de Demografía-. CEPAL; 2006. *Pueblos indígenas y afrodescendientes de América Latina y el Caribe: Información Sociodemográfica para Políticas y Programas*. Available from <http://www.eclac.cl/cgi-bin/getProd.asp?xml=/publicaciones/xml/0/25730/P25730.xml&xsl=/tpl/p9f.xsl&base=/tpl/top-bottom.xsl>
- CEPA - Comisión Económica para América Latina y el Caribe. CEPALSTAT: Estadísticas de América Latina y el Caribe. 2009. <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>
- Coombs RH. A Value Theory of Mate Selection. *The Family Life Coordinator*. 1961; 10(3):51–54.
- Davis K. Inter marriage in Caste Societies. *American Anthropologist*. 1941; 43(3):376–395.
- Edwards JN. Familial Behavior as Social Exchange. *Journal of Marriage and the Family*. 1969; 31(3): 518–526.
- Esteve A, Cortina C. Changes in Educational Assortative Mating in Contemporary Spain. *Demographic Research*. 2006; 14(17):405–428.
- Esteve A, McCaa R. Homogamia Educativa en México y Brasil, 1970–2000: Pautas y Tendencias. *Latin American Research Review*. 2007; 42(3):56–85.
- Feagin, JR.; Feagin, C. *Racial and Ethnic Relations*. 7. New Jersey: Prentice Hall; 2003.
- Flaquer, L. *La Estrella Menguante del Padre*. Barcelona: Ariel; 1999.
- Goldman N, Westoff CF, Hammerslough C. Demography of the Marriage Market in the United States. *Population Index*. 1984; 50(1):5–25. [PubMed: 12266498]
- Goode, WJ. *World revolution and family patterns*. New York: The Free Press of Glencoe; 1963.
- Gordon, M. *Assimilation in American Life*. New York: Oxford University Press; 1964.
- Gray A. Inter marriage: Opportunity and Preference. *Population Studies*. 1987; 41(3):365–379.
- Harris JA. Assortative Mating in Man. *Popular Science Monthly*. 1912; 80:476–492.
- Harris DR, Ono H. How many interracial marriages would be if all groups were of equal size in all places? A new look at national estimates of interracial marriages. *Social Science Research*. 2004; 34:23–251.
- Hollingshead AB. Cultural Factors in the Selection of Marriage Mates. *American Sociological Review*. 1950; 15(5):619–627.
- Hopenhayn, M.; Bello, A.; Miranda, F. *Los Pueblos Indígenas y Afrodescendientes ante el Nuevo Milenio*. Santiago de Chile: Comisión Económica para América Latina y el Caribe (CEPAL); 2006.

- Hout M. The Association between Husbands' and Wives' Occupations in Two-Earner Families. *The American Journal of Sociology*. 1982; 88(2):397–409.
- Jones FL. Ethnic Intermarriage in Australia, 1950–52 to 1980–82: Models or Indices? *Population Studies*. 1991; 45(1):27–42.
- Jones FL. Convergence and Divergence in Ethnic Divorce Patterns: A Research Note. *Journal of Marriage and the Family*. 1996; 58(1):213–218.
- Jones HE. Homogamy in Intellectual Abilities. *The American Journal of Sociology*. 1929; 35(3):369–382.
- Kalmijn M. Shifting Boundaries: Trends in Religious and Educational Homogamy. *American Sociological Review*. 1991; 56(6):786–800.
- Kalmijn M. Intermarriage and Homogamy: Causes, Patterns, Trends. *Annual Review of Sociology*. 1998; 24:395–421.
- Kalmijn M, de Graaf PM, Janssen JPG. Intermarriage and the risk of divorce in the Netherlands: The effects of differences in religion and in nationality, 1974–94. *Population Studies*. 2005; 59(1):71–85. [PubMed: 15764135]
- Katz AM, Hill R. Residential Propinquity and Marital Selection: A Review of Theory, Method, and Fact. *Marriage and Family Living*. 1958; 20(1):27–35.
- Kerckhoff AC. Patterns of Homogamy and the Field of Eligibles. *Social Forces*. 1964; 42(3):289–297.
- Lévi Strauss, C. *Las Estructuras Elementales del Parentesco*. 2. Barcelona: Paidós; 1969.
- Lichter DT, Anderson RN, Hayward MD. Marriage Markets and Marital Choice. *Journal of Family Issues*. 1995; 16(4):412–431.
- Mare RD. Five Decades of Educational Assortative Mating. *American Sociological Review*. 1991; 56(1):15–32.
- Martínez Pizarro, J. *El Mapa Migratorio de América Latina y el Caribe, las Mujeres y el Género*. Santiago de Chile: Centro Latinoamericano de Demografía (CELADE); 2003.
- McCaa R. Ethnic Intermarriage and Gender in New York City. *Journal of Interdisciplinary History*. 1993; 24(2):207–231.
- McPherson A, Smith-Lovin K, Cook JM. Birds of feather: Homophily in social networks. *Annual Review of Sociology*. 2001; 27:415–444.
- Merton RK. Intermarriage and the Social Structure: Fact and Theory. *Psychiatry*. 1941; 4:361–374.
- Minnesota Population Center. Integrated Public Use Microdata Series -International: Version 4.0. Publication., from University of Minnesota; 2008. <https://international.ipums.org/international/index.html>
- Murstein BI. Empirical Tests of Role, Complementary Needs, and Homogamy Theories of Marital Choice. *Journal of Marriage and the Family*. 1967; 29(4):689–696.
- Oppenheimer VK. A Theory of Marriage Timing. *The American Journal of Sociology*. 1988; 94(3):563–591.
- Pellegrino, A. *La Migración Internacional en América Latina y el Caribe: Tendencias y Perfiles de los Migrantes*. Santiago de Chile: Centro Latinoamericano y Caribeño de Demografía (CELADE); 2003.
- Portes, A.; Hoffman, K. *Las Estructuras de Clase en América Latina: Composición y Cambios durante la Época Neoliberal*. Santiago de Chile: Comisión Económica para América Latina (CEPAL); 2003.
- Pullum TW, Peri A. A Multivariate Analysis of Homogamy in Montevideo, Uruguay. *Population Studies*. 1999; 53(3):361–377.
- Qian Z. Breaking the Racial Barriers: Variations in Interracial Marriage Between 1980 and 1990. *Demography*. 1997; 34(2):263–276. [PubMed: 9169282]
- Qian Z. Changes in Assortative Mating. The Impact of Age and Education, 1970, 1990. *Demography*. 1998; 35(3):279–292. [PubMed: 9749320]
- Richardson HM. Studies on Mental Resemblance between Husbands and Wives and between Friends. *Psychological Bulletin*. 1939; 36:104–120.
- Schoen R. A Methodological Analysis of Intergroup Marriage. *Sociological Methodology*. 1986; 16:49–78.

- Schoen R, Wooldredge J, Thomas B. Ethnic and Educational Effects on Marriage Choice. *Social Science Quarterly*. 1989; 70(3):617–630.
- Schwartz CR, Mare RD. Trends in Educational Assortative Marriage from 1940 to 2003. *Demography*. 2005; 42(4):621–646. [PubMed: 16463914]
- Simmel, G. *Sociología: Estudios sobre las formas de socialización*. Vol. 1. Madrid: Alianza Editorial; [1917] 1986.
- Smits J. Social closure among the higher educated: trends in educational homogamy in 55 countries. *Social Science Research*. 2003; 32(2):251–277.
- Smits J, Ultee W, Lammers J. Educational Homogamy in 65 Countries: An Explanation of Differences in Openness Using Country-Level Explanatory Variables. *American Sociological Review*. 1998; 63(2):264–285.
- Smits J, Ultee W, Lammers J. More or Less Educational Homogamy? A Test of Different Versions of Modernization Theory Using Cross-Temporal Evidence for 60 Countries. *American Sociological Review*. 2000; 65(5):781–788.
- South SJ. Sociodemographic Differentials in Mate Selection Preferences. *Journal of Marriage and the Family*. 1991; 53(4):928–940.
- Surra CA. Research and Theory on Mate Selection and Premarital Relationships in the 1980s. *Journal of Marriage and the Family*. 1990; 52(4):844–865.
- Trost J. Mate Selection, Marital Adjustment, and Symbolic Environment. *Acta Sociologica*. 1965; 8(1-2):27–35.
- Ultee WC, Luijkx R. Educational Heterogamy and Father-to-Son Occupational Mobility in 23 Industrial Nations: General Societal Openness or Compensatory Strategies of Reproduction? *European Sociological Review*. 1990; 6(2):125–149.
- Winch RF, Ktsanes T, Ktsanes V. The Theory of Complementary Needs in Mate Selection: An Analytic and Descriptive Study. *American Sociological Review*. 1954; 19(3):241–249.
- Winkler, DR.; Cueto, S., editors. *Etnicidad, Raza, Género y Educación en América Latina*. Santiago de Chile: Programa de Promoción de la Reforma Educativa en América Latina y el Caribe (PREAL); 2004.

Figure 1.
Educational attainment by sex. Argentina 2001, Brasil 2000, Chile 2000, Costa Rica 2000, Ecuador 2001, México 2000. Percentage.
Source: Ipums International.

Figure 2. Educational attainment by ethnic/race/birthplace group. Argentina 2001, Brasil 2000, Chile 2000, Costa Rica 2000, Ecuador 2001, México 2000. Percentage. Source: IPUMS International.

Figure 3. Educational homogamy by level of educational attainment (estimated logistic regression coefficients, odds ratios).
Source: IPUMS International.

Figure 4. Educational homogamy by level of educational attainment and ethnic / race / birthplace homogeneity (estimated logistic regression coefficients, odds ratio). Source: IPUMS International.

Table 1

Logistic regression coefficients for the analysis of educational homogeneity: Argentina 2001, Brazil 2000, Chile 2000, Costa Rica 2000, Ecuador 2001, and Mexico 2000.

Variables	Argentina		Brazil		Chile		Costa Rica		Ecuador		Mexico	
	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β	Model 1 β	Model 2 β
<i>Contextual effects</i>												
SEX RATIO	-1.47**	-0.26**	-0.96**	-1.33**	-0.72**	-0.19*	-0.80**	-1.50**	-0.86**	-0.73**	-0.70**	-0.04*
GROUP SIZE	0.49**	0.52**	0.97**	0.93**	0.59**	0.57**	0.59**	0.57**	0.71**	0.71**	0.80**	0.72**
SOCIAL HOMOGENEITY	0.55**	-0.26*	0.23**	-0.14**	0.24*	-0.28*	2.09**	0.54 [†]	0.59**	0.46**	0.20**	-0.49**
<i>Individual effects</i>												
Sex												
Male (ref.)												
Female	0.33**	0.34**	0.11**	0.13**	0.08**	0.09**	0.03	0.01	0.03*	0.03	0.04**	-0.10**
Educational Attainment (edattan)												
Less than Primary (ref.)												
Primary completed	0.23**	-0.36**	-0.83**	-1.05**	0.19**	0.03	-0.01	-0.69**	-0.30**	-0.50**	-0.26**	-1.06**
Secondary completed	-0.08*	-0.80**	-0.37**	-0.74**	0.23**	-0.44**	-0.46**	-0.92**	-0.40**	-0.43**	-0.59**	-1.18**
Tertiary completed	0.18**	-0.50**	0.78**	0.19**	0.88**	0.18	0.31**	0.15	0.10*	0.07	0.37**	-0.37**
<i>Interactions</i>												
SEX RATIO * edattan												
SEX RATIO by edattan(1)		-0.97**		1.35**		-0.42*		0.68		0.29 [†]		-1.20**
SEX RATIO by edattan(2)		-1.37**		0.09		-1.17**		0.99 [†]		-0.25 [†]		-0.58**
SEX RATIO by edattan(3)		-0.72**		0.85**		-0.77**		0.48		-0.45**		-1.48**
SOCIAL HOMOGENEITY * edattan												
SOCIAL HOMOGENEITY by edattan(1)		0.69**		0.39**		0.26**		1.06**		0.30**		1.09**
SOCIAL HOMOGENEITY by edattan(2)		0.85**		0.65**		0.81**		0.77**		0.05		0.74**
SOCIAL HOMOGENEITY by edattan(3)		0.83**		0.83**		0.80**		0.38*		0.08		0.90**
Constant	-0.11	0.61**	1.40**	1.52**	0.45**	0.82**	-0.89**	0.29	0.91**	1.01**	1.46**	2.05**

[†] $p < .10$;
* $p < .05$;
** $p < .01$

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