Towards a Geography of Unmarried Cohabitation in the Americas[1]

Albert Esteve*, Antonio López-Gay*, Sheela Kennedy**, Ron Lesthaeghe***, Benoît Laplante****, Julian López-Colás*, Iñaki Permanyer*, Anna Turu*.

* Centre d'Estudis Demogràfics, Barcelona

** University of Minnesota

*** Free University of Brussels

**** Institut national de la recherche scientifique, Montreal

ABSTRACT

BACKGROUND

In the context of increasing cohabitation and growing demand for understanding the driving forces behind the cohabitation boom, most analyses have been carried out at a national level, not accounting for regional heterogeneity within countries.

OBJECTIVE

This paper presents the geography of unmarried cohabitation in the Americas. We offer a large-scale, cross-national perspective together with small-area estimates of cohabitation. We decided to produce this map because: (i) geography unveils spatial heterogeneity and challenges explanatory frameworks that may work at the inter-national level but have low explanatory power in regard to intra-national variation. (ii) we argue that historical pockets of cohabitation can still be identified by examining the current geography of cohabitation. (iii) our map is a first step toward understanding whether the recent increase in cohabitation is an intensification of pre-existing traditions or whether it has different roots that also imply a new geography.

METHODS

Census microdata from 39 countries and 19,000 local units have been pulled together to map the prevalence of cohabitation among women.

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RESULTS

The results show- inter and intra-national regional contrasts. The highest rates of cohabitation are found in areas of Central America, the Caribbean, Colombia and Peru. The lowest rates are mainly found in the United States and Mexico. In all countries the spatial autocorrelation statistics indicates substantial spatial heterogeneity.

CONCLUSIONS

Our results raise the question as to which forces have shaped these patterns and remind us that such forces need to be taken into account to understand recent patterns, particularly increases, in cohabitation.

Introduction

In this paper, we present a geographical perspective on unmarried cohabitation in the Americas. To this end, we have produced a map of 39 countries, from Canada to Argentina, and more than 19,000 spatial units in which the percentage of cohabiting women among all women aged 25-29 who are in union is represented. Data came from the population censuses of the 2000 round. In addition, we briefly document the process of assembling the data, creating boundary files, and, when necessary, smoothing the observed local rates of cohabitation.

The reasons that we decided to produce this map are threefold, and all of them need to be understood in the context of increasing cohabitation and a growing demand for understanding the driving forces behind the cohabitation boom. The first reason is geographic. Geography unveils spatial heterogeneity and challenges explanatory frameworks that may work at the inter-national level but have low explanatory power in regard to intra-national variation. Nonetheless, most analyses have been carried out at a national level, thus not accounting for regional heterogeneity within countries. The Second Demographic Transition (SDT) framework emphasizes individualism and ideational and cultural change as the main causes behind the increase of cohabitation (Lesthaeghe and van de Kaa 1986, van de Kaa 1987). In contrast, the Pattern of Disadvantage framework argues that cohabitation is a response to economic constraints and insecurity (Perelli-Harris et al. 2010, Kenney and Goldstein 2012). Both frameworks look at the socio-economic profiles of cohabitants across countries to find support for their claims. The SDT framework expects a positive relationship between socio-economic status and cohabitation, while the Pattern of Disadvantage framework expects a negative one. Cross-national examinations of socio-economic gradients in cohabitation have served to classify countries under one framework or another.

A recent exception to the lack of geographic awareness in cohabitation and family research is the work of Klusener and colleagues (2012), who published a series of maps of non-marital fertility in 497 regions Europe that showed substantial regional variations within countries. In the authors' words, some regions have 'pockets of historically high levels of non-marital fertility'. As the Princeton Project did in the past (Coale and

Watkins 1986), the work of Klusener and colleagues challenges national perspectives and emphasizes the power of regions.

The geographic reason leads to the historical reason for producing a map: geography opens the doors to history. Unmarried cohabitation in Latin America has coexisted with marriage since colonial times and continues today as one of the most prevalent ways of entering into a relationship (Castro-Martín 2002). In this respect, the history of unmarried cohabitation in Latin America differs from the one in the United States and Canada, where marriage was almost universal until at least the second half of the XXth century (Cherlin 2004, Le Bourdais and Lapierre-Adamcyk 2004). Cohabitation in Latin America was a social class marker that operated both at the individual and the regional level. Social class in Latin America was determined according to a complex interaction between whiteness (race), wealth and reputation (class) and Christianization (religion) (Williamson 1992). Whereas white populations from wealthy and Catholic families were very unlikely to cohabit in colonial Latin America, cohabitation was almost universal among black or indigenous, poor and non-Catholic populations. Whereas all these factors operated at the individual level, they also had an independent effect at the regional level. Recent research from Brazil shows that regional differences in cohabitation do not disappear after controlling for individual variables such as race, education or religion (Covre-Sussai 2013, Esteve et al. 2013). Moreover, as shown by the series of non-marital fertility maps produced for Europe (Klusener et al 2012), there are strong spatial continuities over time. Esteve and colleagues have shown that Latin American regions that had high levels of cohabitation in the 1970s are the ones that continue to have the highest levels currently (Esteve et al. 2012) despite that some regions have advanced faster than others. Hence, we argue that historical pockets of cohabitation can still be identified by examining the current geography of cohabitation[2].

Finally, the historical reason for making a map of cohabitation leads to a sociological one: the need to understand the whole process of cohabitation expansion in the Americas. The proper way of inferring anything about current trends in cohabitation is to study the historical social and regional baseline and to examine what regions departed first and the most from this baseline. The Americas offer a wide range of variability and

[2] We have used local spatial autocorrelation statistics to examine the map of cohabitation in Brazil for 1980, 1990, 2000 and 2010. The spatial clustering of cohabitation is very similar across years despite the overall increase in cohabitation. Results are available from the authors.

include regions with pre-existing traditions of cohabitation that have survived to the present day[3] as well as regions where marriage was technically universal five decades ago. Our map is a first step toward understanding whether the recent increase in cohabitation is basically an intensification of pre-existing traditions and, therefore, history's 'revenge' or whether it has different roots that also imply a new geography. In either case, to answer this question, a time-based perspective is necessary. Our map basically documents the dominant picture of cohabitation in the year 2000 but not the degree to which this picture has changed over time.

This paper continues as follows. First, we document the process of creating the map, which includes assembling the data, creating boundary files and smoothing the rates for local units with few cases. Second, we present and analyze the map of cohabitation and underline its exceptionality in combining continental and local perspectives. We then examine cross-country and within-country heterogeneity in cohabitation. The paper concludes with a summary of the main findings and a discussion of our ongoing research.

Methodology

Assembling data

The results presented in this paper have been obtained using census data from 2000 census round.. Assembling these data involved working with more than 20 million individual records of women 25-29 years old from 39 countries and 19,191 administrative units. For each unit, we have computed the percentage of cohabiting women among 25-29-year-old women in union[4]. As shown in Table 1, the censuses used in this paper have been accessed through different institutions, among which the Latin American & Caribbean Demographic Center (CELADE) has provided access to

[3] In the USA, stable, unmarried cohabitation has been instrumental in the Conquest of the West: people settled faster than the administration did, and in many jurisdictions, solemnization and registration did not keep pace. In Ontario, the Canadian province with the largest population, stable, unmarried cohabitation was common among Protestants at least until 1867 because of the lack of Anglican clergymen and because dissident Protestants rejected being married by Anglican clergymen. However, it is unlikely that such historical forms of cohabitation have survived in the USA or in Ontario until today. In Quebec, the second largest Canadian province, cohabitation is quite widespread nowadays, but its historical roots are faint: Quebec's French-speaking society was deeply Catholic, and unmarried cohabitation was quickly ended or turned into marriage.

[4] Levels of cohabitation vary between men and women, but the geography of cohabitation is essentially the same regardless of which sex is taken as a reference. Concentrating on the 25-29 age group permits the comparison of successive cohorts at an age at which education is already completed and patterns of family formation become clear.

100% of the microdata for 19 countries. Additionally, the Caribbean Community organization (CARICOM) has provided access to 100% of the aggregated microdata for 14 countries, including most of the Caribbean countries and Belize. The French National Statistical Institute (INSEE) provided data for Guadalupe, Martinique and French Guiana. The Cuban data were obtained from the Integrated Public Use of Microdata Series – International (Minnesota Population Center 2011). Finally, data for Canada, the United States and Colombia were directly obtained through their respective statistical offices. In the case of Canada, we used the 20% of the census microdata file that contained information from individuals that responded to the long census questionnaire. The data were made available by the Research Data Center of the University of Quebec.

For all countries, we could distinguish between cohabiting and married couples, and the method for making such a distinction was similar across all countries except for the United States. In all Latin American countries and in Canada as well, the census includes an explicit category on cohabitation within the marital or relationship status questions. For the United States, cohabiting couples had to be identified based on their relationship to the head of household and marital status: the unmarried partner of an unmarried head of household is considered to be in a cohabiting union.[5]

[[[Table 1 about here]]]

Creating boundary files

To map the prevalence of cohabitation in the Americas, it was necessary to construct boundary files, a long and arduous task consisting of two steps. Initially, we collected the cartography of each country separately. Afterwards, we checked whether the administrative units used in the estimation of our cohabitation indicators matched the cartography for each specific country.

[5] Recent research has shown that this approach underestimates US cohabitation levels by 20% compared to direct methods (Kennedy and Fitch 2012). Consequently, we adjusted our estimates to reflect this under-reporting. Our adjusted estimates of the percentage of women who were cohabiting in 2000 exactly match the cohabitation estimates produced for 2002 using a direct cohabitation question (Kennedy and Bumpass 2008).

In a few cases, it was necessary to sacrifice some detailed information on cohabitation to match the digital boundary files that were available. In all countries except Bolivia, Chile, El Salvador and Honduras, we used the lowest geographical level at which we could compute the prevalence of cohabitation among 25-29-year-old women in relationships. In Bolivia, for instance, we used the 314 *secciones* instead the 1384 *cantones*; in Chile, we used 314 *municipios* instead of 2,881 *distritos*; in El Salvador, 261 *municipios* in place of 2,270 cantones; and in Honduras, we used 298 *municipios* instead of 3,727 *aldeas*.

Thus, the geographic level adopted was not comparable across countries, neither in population size nor in landmass. Nevertheless, we argue that both intra- and international variations in cohabitation can be successfully observed in the final map.

Smoothing

Socio-demographic estimates for highly disaggregated geographical units are prone to a large degree of sampling variation, especially for areas with small populations. Because of the geographic richness of the data from Central and South America, we found municipalities or local units with very few cases of women aged 25-29 in relationships, and from these data, we calculated highly random and instable rates of cohabitation. Five percent of the units had fewer than 25 women in the denominator. Among these units, 25% had values of cohabitation below 10% or above 90%.

To avoid this problem, we made use of Spatial Empirical Bayes (SEB) techniques. Essentially, SEB is based on the assumption that estimations based on larger sample sizes are more reliable. More specifically, SEB suggests that the estimated proportions of cohabiting women in a given administrative unit should be the average between the observed value in that specific unit and the weighted average of the proportion of cohabiting women in the neighboring administrative units. Let us use '*m*' to denote the administrative unit we are dealing with, p_m the proportion of cohabiting women aged 25-29 we want to estimate and $\hat{p}_m$ the observed sample proportion that is affected by sampling instability problems. SEB techniques suggest generating the following estimators:

$$\tilde{p}_m = (1 - S_m)\hat{p}_m + S_m E(\hat{p}_{N(m)})$$

where S_m is a 'shrinkage factor' (see Assunçao *et. al.* 2005) whose values range between 0 and 1, and $E(\hat{p}_{N(m)})$ is the expected value of the sample proportion when it is calculated for the neighbors of *m* (denoted as *N*(*m*)). The factor S_m approaches 0 when the sample size of *m* becomes larger, and it approaches 1 when the sample size of *m* becomes smaller. To avoid the unnecessary duplication of results, we are not showing the map with the unsmoothed rates because it does not differ significantly from the smoothed one.

Empirical Results

The spatial distribution of cohabitation in the Americas (as measured with the smoothed estimator $\widetilde{p}_m$) is shown in Map 1. Around the year 2000, approximately 35% of 25-29-year-old women in a relationship in the Americas were cohabiting. The highest rates of cohabitation were found in Central America, the Caribbean, Colombia and Peru. In Panama, for example, 85% of the 25-29-year-old women in union reside in areas where cohabitation was above 50%. In the Dominican Republic, there is only 1 municipality out of 225 where marriage is more common than cohabitation. On the contrary, the lowest cohabitation rates are mainly found in the United States and Mexico. The case of Mexico contrasts dramatically with the previously mentioned countries: only 2% of the 25- to 29-year-old women in union live in administrative units where the levels of cohabitation are higher than marriage. Canada, Brazil, Bolivia, Paraguay, Argentina, Uruguay and Chile occupied intermediate positions in 2000.

[[[Map 1: Cohabitation in the Americas]]]

As shown in Map 1, there are huge variations both across and within countries, as illustrated by the boxplots in Figure 1. As shown, the levels of cohabitation vary between the low values observed in the US and the high values in Panama, Peru and the Dominican Republic. Boxplots graphically depict the lower, the median and the upper quartiles for each country. Countries have been ordered on the basis of their median values. Most of the Caribbean countries are not represented here because we only had one observation. The median values range from the 11.5% in the United States to 78.9% in the Dominican Republic. The United States is the only country where the median is below 20%. In the 20 to 40% range, we observe a very diverse set of countries,

including Mexico, Canada, Brazil, Uruguay, Argentina, Bolivia, Paraguay, Costa Rica and Trinidad and Tobago. In the 40 to 60%, there are three Central American countries (El Salvador, Nicaragua and Honduras) as well as Venezuela and Barbados. Above the 60% median level, there are five countries: Colombia, Cuba, Panama, Peru and the Dominican Republic.

The boxplots also offer information on regional heterogeneity within countries. The greater the distance between the median and the lower or upper quartiles, the more heterogeneity there is across local units. The levels of regional heterogeneity within countries are not strictly comparable because the units have not been standardized by population or land mass criteria and the number of units varies across countries. Nevertheless, countries with very few observations may show high regional heterogeneity, while regional heterogeneity may be low in countries with many observations. In the United States, there are more than 2,000 units but there is an interquartile range (IQR) of 5.7. Mexico also has more than 2,000 units but the IQR is 21.8. Ecuador is the country that has the highest IQR, with a value above 40. After Ecuador, Canada has an IQR of 38, which also indicates a substantial amount of regional heterogeneity. Bolivia, Costa Rica, Colombia, Brazil, Panama, Venezuela and Mexico have IQRs ranging between 20 and 30. IQRs below 15 are found in Paraguay, Nicaragua, the Dominican Republic, Chile, Barbados, El Salvador, the United States and Uruguay.

[[[Figure 1: Boxplot]]]

The dispersion results shown in Figure 1 are not informative regarding the spatial distribution of cohabitation. A country with high internal heterogeneity could a priori have all of its administrative units with similar cohabitation levels concentrated in a specific region of the country or, alternatively, dispersed throughout the country. The degree of spatial autocorrelation may not necessarily be correlated to the IQR. A country may be very heterogeneous in terms of the prevalence of cohabitation across local units but, in theory, it may not show signs of spatial clustering. To explore the extent to which administrative units with a given level of cohabitation are surrounded by other administrative units with similar cohabitation levels, we made use of spatial autocorrelation indicators. More specifically, in Table 2, we report the values of Global

Moran's *I* index[6] for the largest countries of the Americas (the index cannot be computed for many Caribbean countries with a single administrative unit, as its computation requires comparison of the levels of cohabitation between different administrative units within each country). As shown in Table 2, most countries have moderately high levels of spatial autocorrelation; that is, administrative units with a certain level of cohabitation tend to be surrounded by other administrative units with similar levels of cohabitation. This is particularly true in Ecuador, Colombia, Chile, Bolivia, Argentina, Cuba, Panama, Costa Rica and Canada, in which Moran's *I* index is above 0.8. A Global Moran value above 0.8 indicates that there is strong spatial autocorrelation in these countries. As we see in Map 1, the *parroquias* in the Andean region of Ecuador have extremely low levels of cohabitation, whereas the *parroquias* in the Amazonian and Coastal regions have very high levels of cohabitation. Canada has a level of clustering similar to Ecuador. The highest rates of cohabitation are clearly clustered in the province of Quebec. At the other end, the countries with the lowest values of the Global Moran index (Mexico and the United States) show the lowest levels of cohabitation. The low values observed in Uruguay (0.227) might have been influenced by the low geographical detail in that country.

[[[Table 2: Moran's I at the country level]]]

It should be borne in mind that the calculation of Global Moran's *I* index involves all of the administrative units of a given country at the same time. As such, the index values are interpreted at the national level. Because it is an average value at such a high level of aggregation, Global Moran's *I* index has been criticized for its inability to capture local autocorrelation phenomena. To overcome this problem, Anselin (1995) introduced the Local Indicators of Spatial Autocorrelation (LISA) I_m for each administrative unit *m*. Essentially, I_m is similar to Global Moran's *I*, but its calculation only involves the use of cohabitation levels in administrative unit *m* and its neighbors. Local methods of analysis allow us to go beyond the question of *whether* cohabitation is concentrated and ask, precisely, *where* and *how* it is concentrated. The local approach generates the

[6]The Global Moran's *I* index is defined as $I = \left(n / \sum_i \sum_j w_{ij}\right) \sum_i \sum_j w_{ij} z_i z_j \Big/ \sum_i z_i^2$ where the observations z_i,z_j are in units of deviation from the mean, and the weights w_{ij} take a value of 1 whenever '*i*' and '*j*' are neighbors and 0 otherwise. By definition, the values of *I* are bounded between -1 and 1. A value close to 1 is attained whenever most administrative units are surrounded by other administrative units with similar cohabitation levels. When the levels of cohabitation in most administrative units differ greatly with respect to their neighbors, Global Moran's *I* takes a value close to -1.

categorization of all the administrative units in our dataset according to the extent to which they are surrounded by statistically similar or dissimilar administrative units. More specifically, the following categories have been identified.

High-High. The administrative units in this category have high levels of cohabitation *and* are surrounded by other administrative units with high levels of cohabitation as well. As shown in Map 2, many areas of the Americas belong to this group. A large high-high area involving different countries includes Venezuela, Colombia, Ecuador, Peru and large areas of Amazonian Brazil. In addition, high-high units are found in the Brazilian state of Pará as well as in certain areas of Brazil's eastern coast between the municipalities of Recife and Salvador. The northern part of Argentina and the northwestern area of Bolivia also belong to this group.

In Central America, there is a large area that falls into this category spanning from Panama to El Salvador but excluding Costa Rica. In the Caribbean, we find that the eastern part of Cuba as well as most of the municipalities in the Dominican Republic fall into the high-high category. Finally, in Northern America, we only find isolated high-high regions in the Mexican states of Veracruz and Chiapas and virtually the entire province of Quebec.

Low-Low. This type of administrative unit has low levels of cohabitation *and* is surrounded by other administrative units with low levels of cohabitation as well. In South America, low-low units are mainly located around the metropolitan area of Santiago de Chile, in western regions of Bolivia, in Uruguay and in Southern and Eastern Brazil (with the exception of Brazil's Atlantic coast). In Central America, we only find this type of administrative unit in the Ecuadorian Andes and in the Pacific coast of Costa Rica. Interestingly, most areas of Mexico and virtually all areas in the United States belong to the low-low category. In Canada, we only find some low-low areas in the south-central part of the country, near the US border.

Low-High. These administrative units have low levels of cohabitation *and* are surrounded by other administrative units with high levels of cohabitation. This category does not appear very often in the administrative units we have been working with. Low-high units can be identified in some inner areas of Colombia near Medellín, near the border between Colombia and Brazil and in the Huancavelica area of inner Perú.

High-Low. These administrative units have low levels of cohabitation *and* are surrounded by other administrative units with high levels of cohabitation. Instances of the high-low category are even scarcer than instances of the low-high category. We have only identified small high-low areas in southeastern Brazil and within the Brazilian state of Bahía.

Not Significant. Finally, there are many areas in the Americas that do not fall into any of the previous categories. This is the case for virtually all of Argentina, Paraguay, Chile (except for the metropolitan area of Santiago) and Canada. The same can be said about the eastern region of Bolivia and the southwestern region of Brazil.

[[[Map 2: Local indicators of spatial autocorrelation (LISA) of the share of consensual unions in the Americas]]]

As seen in Map 2, the spatial distribution of cohabitation does not necessarily respect boundaries between countries. In some cases, cultural and behavioral traits transcend those boundaries and can be found across several countries. This is the case for the consistently high levels of cohabitation found in Central America and the consistently low levels found in Mexico and the US. In other cases, national boundaries seem to effectively delimit differential cohabiting patterns, as is the case with the boundaries between Chile and Perú and between Canada and the United States.

Conclusions

This paper has explored the distribution of cohabitation in the Americas with unprecedented geographical coverage and detail. Using complete census microdata from virtually all countries in the region, we present a highly detailed map of cohabitation that includes more than 19,000 administrative units. Our results indicate that the levels of cohabitation in the Americas are very heterogeneous. We have reported large variations within countries that are unobserved in classical, national-level data, which highlights the limitations of working with national averages only and the risk of falling into the ecological fallacy.

This paper emphasizes the power of geography to unveil substantial regional heterogeneity across and within countries. We have shown that the prevalence of

cohabitation varies dramatically across the Americas, from the low levels of cohabitation in the United States and Mexico to the high levels of Central America, the Caribbean and the Amazonian and tropical areas. The Americas comprise quite a diverse set of countries in terms of the prevalence of cohabitation. The macro-regional patterning of cohabitation has to be re-examined in light of the substantial heterogeneity within countries. Global indicators of spatial autocorrelation have shown significant levels of spatial clustering. The best example is Ecuador. The *parroquias* in the Andean region of Ecuador have very low levels of cohabitation. As we move away from the Andes, cohabitation becomes more prevalent than marriage, with levels reaching 80%. As in Ecuador, the Andean regions of Colombia, Peru and Bolivia have relatively low levels of cohabitation compared to the rest of the countries. Brazil and Canada are two other examples of internal heterogeneity. In Brazil, we find several clusters of high-cohabitation units in the Amazonian and northeastern coastal regions. In Canada, the province of Quebec shows higher levels of cohabitation than the central and Pacific regions. If we use a continental scale, the US appears to be one of the most homogeneous countries in the Americas.

We must dig into history to understand the regional patterning of cohabitation in the Americas. We must dig into the history of colonization and the subsequent development in American societies of Christianization, ethnic mixing, and social and political structures. All of these factors and their complex interactions need to be incorporated into an explanatory framework for the historical patterning of cohabitation. Substantial efforts are now being devoted to the construction of a comparable set of independent variables across countries that can measure at the individual and the contextual levels dimensions such as religion, race and social stratification in American societies.

Only with a clear picture of the underlying causes of historical cohabitation will we understand the recent boom in cohabitation and its future growth. As we write this paper, we are in the process of building similar maps for both earlier years and for the 2010 census. Introducing the time dimension will be critical in examining where cohabitation is growing faster and where it is not. It will also be important to see whether the factors that explain the dominant patterns of cohabitation also explain changes over time.

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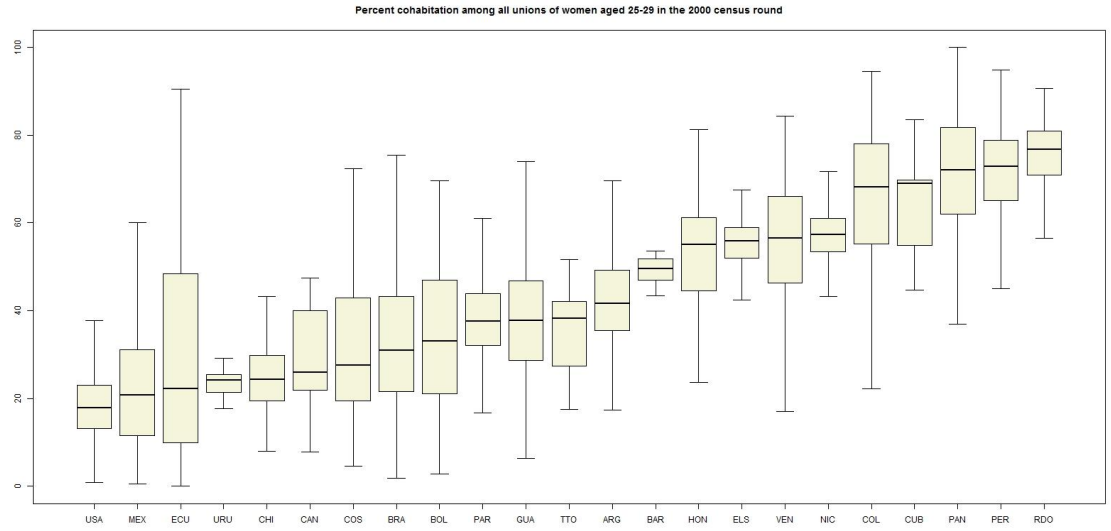
Table 1. Summary of the census data, boundary files and geographic details used to analyze the prevalence of consensual unions in the Americas in the 2000 census round.

Country	Census Year	Census data provider*	Census sample	Denomination	Adm. level	Number of units	Average pop. per unit	Average surface area (km^2)
North America								
Canada	2001	STATCAN	20%	Census division	2	288	104.191	34.669
Mexico	2000	CELADE	100%	Municipality	2	2443	39.711	803
United States	2000	IPUMS	5%	PUMA	3	2071	135.887	4.744
Central America								
Belize	2000	CARICOM	100%*	Single division	0	1	232.111	21.989
Costa Rica	2000	CELADE	100%	District	3	459	8.301	112
El Salvador	2007	CELADE	100%	Municipality	2	262	21.924	77
Guatemala	2002	CELADE	100%	Municipality	3	331	33.949	327
Honduras	2001	CELADE	100%	Municipality	2	298	20.392	377
Nicaragua	2005	CELADE	100%	Municipality	2	153	33.609	787
Panama	2000	CELADE	100%	*Corregimiento*	3	592	4.793	126
South America								
Argentina	2000	CELADE	100%	Department	2	532	68.158	5.223
Bolivia	2001	CELADE	100%	Section	3	314	26.351	3.442
Brazil	2000	CELADE	100%	Municipality	3	5507	30.847	1.543
Chile	2002	CELADE	100%	Commune	3	342	44.200	2.220
Colombia	2005	DANE	100%	Municipality	2	1113	36.995	994
Ecuador	2001	CELADE	100%	Parish	3	995	12.218	255
French Guyana	2008	INSEE (FR)	100%*	Single division	0	1	219.266	83.299
Paraguay	2002	CELADE	100%	Census District	2	241	21.424	1.655
Peru	2007	CELADE	100%	District	3	1833	14.955	702
Rep. of Guyana	2002	CARICOM	100%*	Single division	0	1	751.230	209.739
Uruguay	1996	CELADE	100%	Department	1	19	166.514	9.340
Venezuela	2001	CELADE	100%	Parish	3	1116	20.658	830
Caribbean								
Anguilla	2001	CARICOM	100%*	Single division	0	1	11.430	83
Antigua and Barbuda	2001	CARICOM	100%*	Single division	0	1	63.863	436
Bahamas	2000	CARICOM	100%*	Single division	0	1	303.611	13.388
Barbados	2000	CELADE	100%	Parish	1	11	22.728	74
Cuba	2002	IPUMS	10%	Parish	1	15	745.845	7.382
Dominica	2001	CARICOM	100%*	Single division	0	1	69.775	754
Dominican Republic	2002	CELADE	100%*	Municipality	3	225	38.056	212
Grenada	2001	CARICOM	100%*	Single division	0	1	103.137	360
Guadeloupe	2008	INSEE (FR)	100%*	Single division	0	1	401.784	1.731
British Virgin Islands	2001	CARICOM	100%*	Single division	0	1	23.161	169
Jamaica	2001	CARICOM	100%*	Single division	0	1	2.607.635	11.000
Martinique	2008	INSEE (FR)	100%*	Single division	0	1	397.693	1.118
Montserrat	2001	CARICOM	100%*	Single division	0	1	4.303	101
Saint Kitts and Nevis	2001	CARICOM	100%*	Single division	0	1	46.325	267
Saint Vincent and the Grenadines	2001	CARICOM	100%*	Single division	0	1	106.253	398
Saint Lucia	2001	CARICOM	100%*	Single division	0	1	156.741	614
Trinidad and Tobago	2000	CELADE	100%	Parish	1	15	74.318	344

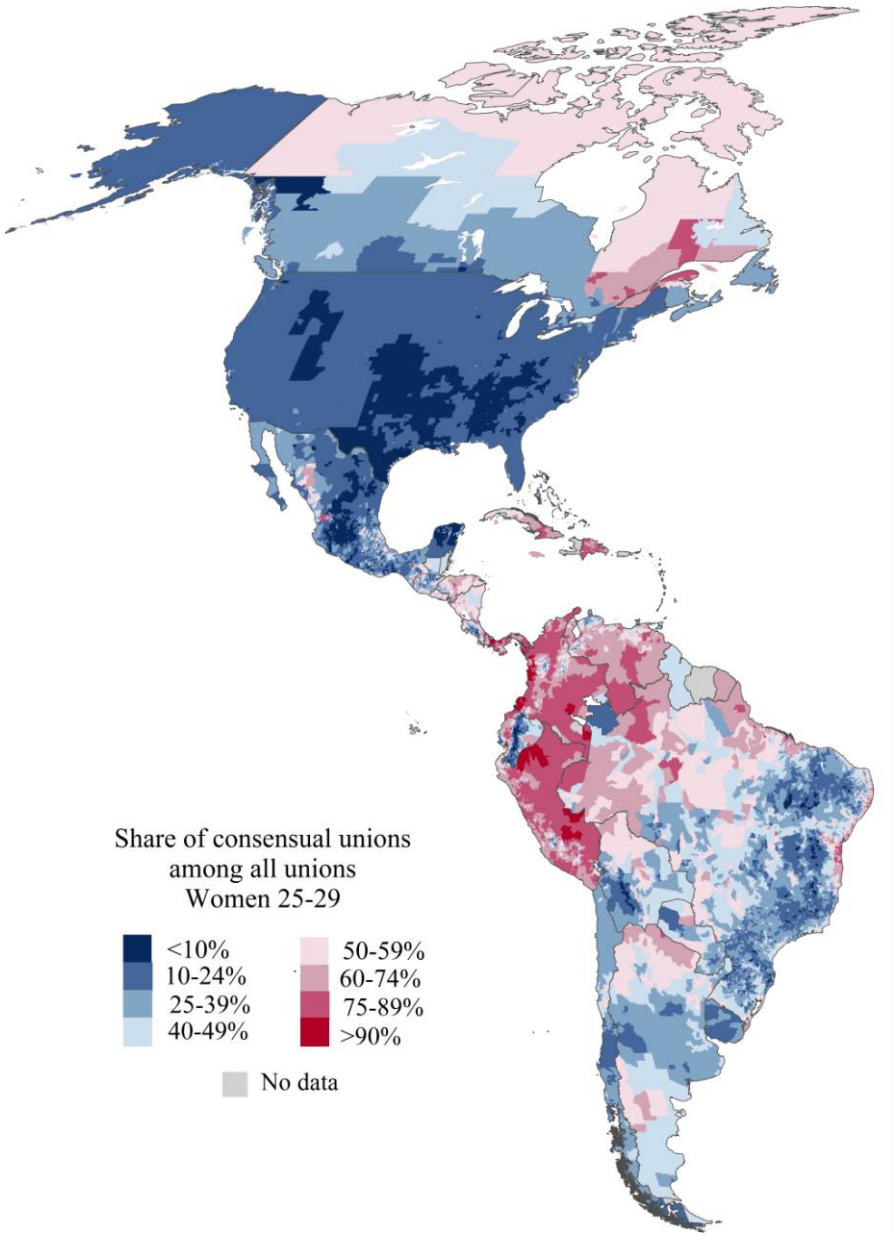
Source: Own work. *Aggregate data in the Census Samples

Figure 1. Regional distributions of the proportions of consensual unions among all 25-29-year old women in union by country based on census data from the 2000 census round.



Source: Authors' own work based on census microdata from the represented countries (see Table 1 for the exact sources).

Map 1. Share of consensual unions among all 25- to 29-year old women in union based on census data from the 2000 census round.



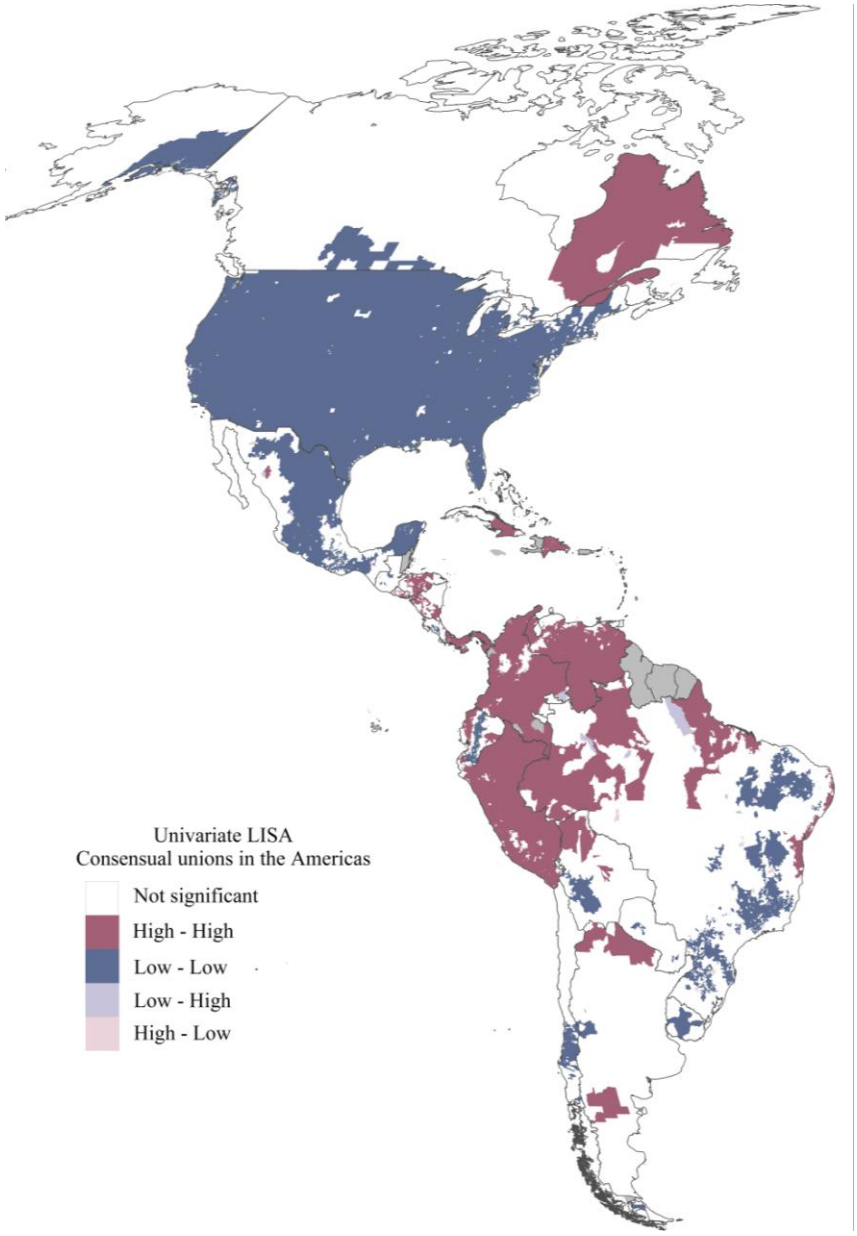
Source: Authors' own work based on census microdata from the represented countries (see Table 1 for the exact sources).

Table 2. Global Moran's I based on census data from the 2000 census round.

Country	Global Moran's I	Country	Global Moran's I
North America		**Caribbean**	
Canada	0.8393	Cuba	0.8206
Mexico	0.4160	Dominican Republic	0.6842
United States	0.4465	**South America**	
Central America		Argentina	0.8309
Costa Rica	0.8197	Bolivia	0.8153
El Salvador	0.4160	Brazil	0.7794
Guatemala	0.4805	Chile	0.8123
Honduras	0.7535	Colombia	0.8175
Mexico	0.6504	Ecuador	0.9228
Nicaragua	0.6102	Paraguay	0.6506
Panama	0.8319	Peru	0.7611
		Uruguay	0.2270
		Venezuela	0.7509

Source: Authors' own work based on census microdata from the represented countries (see Table 1 for the exact sources).

Map 2. Local indicators of spatial autocorrelation (LISA) of the share of consensual unions based on census data from the 2000 census round.



Source: Author's own work based on census microdata from the represented countries (see Table 1 for the exact sources).