

The increase in the contribution of women in consensual union to fertility in Brazil: an analysis of decomposition.

Introduction

In Brazil, the contribution of the births of women in a consensual union at reproductive age in the total fertility increased from 13.2% in 1980 to 44.9% in 2010 (VIEIRA, VERONA and MARTINS, 2018). In this context, it was found that, in Brazil, the percentage of births that occurred one year before the reference date of each Brazilian Census of 1980 and 2010, among women in consensual union, increased in all subgroups of reproductive age, level educational background, race/color, religion, region and residential sector in the period. That said, the increase in the proportion of births within the consensual union for the calculation of total fertility in Brazil occurred together with compositional and behavioral changes in relation to these sociodemographic characteristics, which affect reproductive behavior by type of union.

Given this context, the objective of this paper is to analyze what are the changes that most contributed to the growing trend in the proportion of births within the consensual union in Brazil. Considering both the association of the control variables with the chance of having a child within this type of union, and the changes in the composition of these variables between 1980 and 2010. It is intended to decompose the effect of these two components (composition and coefficient) in explaining the increase the contribution of consensual unions to total fertility in Brazil. The analysis is made using data from women of reproductive age between 20 and 29 years, in consensual union, who declare having had a child in the last 12 months at the reference date of the Brazilian Censuses of 1980 and 2010.

To achieve the presented objective, the multivariate decomposition technique of logistic regression is used, in which the response variable is having a child in the last 12 months at the reference date of the census, between two periods, 1980 and 2010. In order to measure the relative contribution referring to each component (composition and coefficient) between the periods analyzed (POWERS and PULLUM, 2006). This method allows measuring which of the changes most explains the growing proportion of births attributed to consensual union in total fertility.

Data and Methods

The data used in this study come from the Demographic Census of Brazil in the 1980s and 2010s, which were carried out by the Brazilian Institute of Geography and Statistics (IBGE). Available from IPUMS - International, the variables are harmonized so that they are compatible over time and between the Census.

Logistic regression is used to perform the multivariate decomposition of non-linear models, which seeks to investigate the compositional components and the components of the odds ratios in the birth differential within the consensual union between 1980 and 2010.

The main focus of this study refers to women aged between 20 and 29 years old, separated by five-year group (20 to 24 years old and 25 to 29 years old) in consensual union. The response variable that represents current fertility is whether or not you had a child in the last 12 months at the reference date of the Census of Brazil in 1980 and 2010. The independent variables (age, race/color, educational level, religion, region and sector residential) were used to identify how such demographic and socioeconomic characteristics are associated with births within the consensual union.

Results

In 1980, there were 913,008 women between 20 and 29 years of age in consensual union, with 276,552 declaring having had a child in the last 12 months at the 1980 Census reference date, ie approximately 30.3%. In 2010, there were 5,350,360 women between 20 and 29 years of age in consensual union, and 742,120 said they had had a child in the last 12 months at the 2010 Census reference date, that is, around 13.9%. Even with the increase in the number of births within the consensual union, there was a drop in the proportion of approximately 16 percentage points, this reduction is due to the fall in fertility in the period.

The logistic models estimated separately for the years 1980 and 2010, using the variables, age group, race/color, education, religion, large region and residential sector, generated this difference of 16 percentage points in the average births that occurred within the union consensual for women between 20 and 29 years old. This is the amount that is subject to decomposition into components attributable to changes in the distribution of sociodemographic characteristics included in the model and changes in the coefficients (odds ratios) associated with these variables.

The analysis starts with the “Total Change”, that is, how much of the total differential of births within the consensual union is due to the effect of composition and how much is due to the effect of the coefficients. It is noted that both components contribute positively to the reduction of births within the consensual union, however, changes in the effects of the coefficients (odds ratio) are responsible for a very significant change in the proportion of births within the consensual union (83,71% of the total).

Changes in the birth differential between 1980 and 2010 that are not attributable to the model variables, that is, the total change of 74% is referred to the intercept. This type of structural change can be seen as a secular transition experienced by the entire population. That is, the difference in births within the consensual union between 1980 and 2010 for women between 20 and 29 years of age, which presented a decline, a result that is corroborated by the fall in fertility in Brazil within this period, occurred by general changes and not by behaviors of specific population groups.

Even so, the changes in the sociodemographic variables explain a substantial proportion of the change, that is, the drop in births in the analyzed period: 26% of the drop can be attributed to the change in the composition or to the change in the coefficients of the measures included in the analysis. Of the proportion of 26% attributed to the variables included in the models, 16.29% is a composition effect and 9.71% is a coefficient effect.

When verifying the contributions of each of the categories of variables in relation to changes in composition, it appears that the reduction in the proportion of births within the consensual union is mainly attributable to the change in the composition of women with complete high school, being 10.41 % of the total. It can be said, therefore, that in the absence of an increase in the composition of women with complete secondary education, that is, if these women remained in the group with complete primary education, the reduction in the proportion of births within the consensual union would be considerably less. However, the change in the effects of the variables, that is, the odds ratio, contributed negatively to the reduction of births within the consensual union, -4.6% of the total. The strength of the association between having a child and consensual union for more educated women has grown, even though this relationship remains less than that of less educated women.

This context may indicate, according to Vieira (2016), that both the demographic transition and the educational transition in Brazil, made the group of women more educated heterogeneous.

Even with the strong correlation between income and education in the country, many university students are now the first generation of their families to reach this educational level. Thus, the discussion about the formation of consensual unions, being a modern behavior, due to the valuation changes, or traditional reflecting the behavior of their families of origin, becomes a paradox in this scenario. It is verified, from the result of the decomposition related to the negative contribution of the coefficients of the groups of women with more schooling to the reduction in the proportion of births within the consensual union, suggesting that the heterogeneity of the group of women with more schooling reinforced the increase in the ratio of chance of having a child within the consensual union between 1980 and 2010.

It is concluded that, in an aggregate way, the changes in the brown, evangelical and complete elementary education categories contributed to a tendency of growth of the participation of births within the consensual union in the total fertility in Brazil. When analyzing the components separately, in relation to changes in composition, the categories that contributed to this upward trend were: browns, evangelicals, residents in the Midwest, Northeast and North. Regarding the changes in the coefficients, the categories that contributed to the growth trend in the proportion of births within the consensual union in the calculation of total fertility in Brazil, between 1980 and 2010, were: browns, other races, without religion, other religions and all educational levels. In aggregate, the changes in the coefficient component, referring to the reproductive behavior of the education variable, was the one that most contributed to this growth trend. Regarding the category, the one that most collaborated from the changes in the coefficient effect, was complete high school.

References

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