EDUCATIONAL MOBILITY AND FERTILITY: THE ROLE OF EDUCATION EXPANSION FOR BEHAVIOR CHANGE

In Latin America, women who completed university are more likely to engage in marital unions and tend to engage at a later age in both types of union, formal marriage and consensual unions (Esteve et al, 2012; Esteve et al, 2013). In addition, these women tend to postpone their fertility and to have fewer children compared to other groups (Rosero-Bixby et al, 2009). Recently in Brazil, there is a convergence trend in fertility levels by educational groups (Berquó & Cavenaghi, 2014). In this regard, Berquó & Cavenaghi (2016) attribute the reduction in fertility in the last decade mainly to the decline in the average number of children among women with lower levels of education and socioeconomic status, which has led to a reduction in the gap in TFR between womenfrom different socioeconomic groups.

Concomitant to the process of convergence in fertility rates, there has been a widespread educational expansion in Latin America since the last decades of the 20th century (Maciel et. Al, 2017; Corbucci et al, 2016; Mancebo & Martins, 2015; Frankema, 2009). In Brazil, although regional disparities persist, between 2003 and 2014, on campus undergraduate enrollment increased 54.7% while distance learning enrollment increased 50 times (Censo da Educação Superior, 2014). Institutional programs asstudent funding and affirmative actions such as quota policies aimed at the inclusion of minorities in the universities.

As a result of the implementation of these policies, recent studies point to a weakening relationship between race (Marteleto et al., 2016), parental education or parental current job and the likelihood of entering university (Mont'Alvão Neto, 2014).

The literature also points to the occurrence of a horizontal stratification of the college level, marked by a greater propensity for individuals of low socioeconomic status to access institutions and courses of low prestige and financial return (Carvalhães, 2019; Gerber, 2008). Besides, previous studies present strong evidence that family patterns, such as fertility behavior, family structure and age at first marriage are transmitted intergenerationally (Dahlberg & Kolk, 2018). There is also a correlation between the socioeconomic status of the family of origin and the education level achieved by an

individual in his adult life (Raftery and Hout, 1993), as well as the professional outcomes obtained during and after the conclusion of this level of education (Torche, 2011).

From this, questions arise about the relationship between social and educational mobility and intergenerational transmission of socioeconomic status. In other words, it is questioned to what extent individuals who are the first of their generation to attend college education have experienced a real social mobility in terms of occupation and income. From a demographic point of view, it is important to explore issues related to the transformation or maintenance of reproductive intentions and reproductive behavior by women who have experienced upward educational mobility. Other questions refer to the existence of a composition effect of fertility due to socioeconomic background internal to each of the educational groups. Considering the transformations in the socioeconomic composition of these groups in the last decades, in which directionwould this distinction act in the fertility convergence trend (softening or accentuating thispattern)?

Previous studies suggest the existence of differences in the effects of increasing education level on fertility in different social groups (Goldscheider & Uhlenberg, 1969; Johnson, 1979, Musick et al, 2009). Analyzing the American context, Brand & Davis (2011) focused on these effects evaluating whether a woman's propensity to finish college education affects fertility. Using Poisson's multilevel regressions, the authors corroborate their hypothesis and suggest that this relationship would occur because women with a low propensity to complete college education wouldhave limited resources and would be deeply interested in an economic reward from education. Eventually, this would cause the postponement of births and the decrease in the number of children. Their peers, who did not enter college education, in turn, would have low expectations regarding the allocation in the labor market, obtaining lower costsfor childbearing. These effects were mitigated when analyzing women whosesocioeconomic background constituted more predictive characteristics of attending university.

Analyzing fertility in college education level by socioeconomic group of origin allows the identification of possible patterns of family formation between generations even when there are signs of social mobility, like in a family where children are the first generation to attend college education. In this sense, the objective of this study is to analyze the extent to which the fertility of women aged 25 to 29 years who completed college education of different propensities to complete this education level

differs from their peers without college education. We use data from 2014 Brazilian National Household Sample (Pesquisa Nacional por Amostras de Domicílios, PNAD). Our hypothesis are: i) as a result of a stratification within college level, differences in fertility by parental occupation and education persist even when controlled for women's own education and ii) The magnitude of the correlation between fertility and college is smaller for women less likely to complete this level of education.

We chose to analyze the level of college education because, from the perspective of stratification, college education plays a central role in the process of socialmobility, since university graduates are more likely to obtain the best occupations in termsof income and working conditions (Carvalhães & Ribeiro, 2019). From the point of viewof fertility, moreover, the focus on college education was due to the pronounced difference in fertility levels in Brazil between women who attended and did not attend this level of education.

We choose 2014 surveys because of the unique possibility of capturing the relationship between educational mobility and fertility in the period after the institutional policies to expand access to college education in the 2000s. In addition, this period was chosen to minimize the effects of the national economic recession, formally recognized by the Economic Cycle Dating Committee (Codace) of Fundação Getúlio Vargas as of the second quarter of 2014.

To answer our goals, we first conducted regular poisson regressions (under homogeneous effects assumption). Later, we conduced a multilevel poisson regression in a procedure developed by Brand and Davis (2011): by using background variables like parent's occupation and education, a propensity score to complete college education will be calculated based on a logit. Then, the individuals will be segregated in quantiles of propensity score. Comparative analysis of parity (number of children ever had) between groups that have completed or not completed college education will be carried out internally at each of the quantiles. By using this procedure, we expect to find a more pronounced distinction in fertility between individuals with less propensity to finish college.

Respondents will be grouped into propensity score strata in a way that the average score values and values of each covariate between women with high school and complete college education are not significantly different ($p < 0.001$). The number of strata adopted will be defined in order to satisfy this condition. Subsequently, the effectsof college education specific to each stage of the propensity score will be estimated usingthe Poisson model.

Regular poisson regressions results (Table 1) showed that completed college had 0,35 of the chance to have an additional child when compared with women who did

not. Results also pointed to a non-significant effect of parental education and occupation when controlled by women own educational level.

Table 1 – Regular Poisson regression to predict number of children ever born

N=896

Dependent variable = Children ever born	**Exp(Coef)**	**P>z**
Woman college completion (Reference= Did not complete college)	0,35	0.000
Parent's education (Reference= Less than primary completed)		
Primary completed/Secondary incompleted	0,99	0.948
Secondary completed	0,97	0.809
College completed	0,76	0.206
Father's Socio-occupational status when the woman was 15 years old (Reference=Hight)		
Medium	0,83	0.457
Low	0,93	0.710
Did not work	1,22	0.422

Source: National Household Sample Survey

Regarding heterogeneous effects (Table 2), the association between higher education and fertility is significant in all strata (left side). We also have a significative linear slope (0.051) which means that there is a crescent and linear pattern between the strata. So, the more propense to complete college a woman is, the more pronounced will be the negative association between college and fertility. Nonetheless, when we control these results for current socioeconomic status variables (right side), we lost significance and magnitude of the correlation within the strata. We also lost significance in linear trend.

Table 2 - Multilevel Poisson Regression Models of Number of Children

N= 896

Without current socioeconomic status controls				**Controlling for current per capta household income and current womens occupation**			
TE by strata by strata (Level 1)	**Coef.**	**Std. Err.**	**P>z**	**TE by strata by strata (Level 1)**	**Coef.**	**Std. Err.**	**P>z**
1	-.79	.370	0.031	1	-.65	.362	0.070
2	-.79	.245	0.001	2	-.44	.293	0.127
3	-1.13	.326	0.000	3	-.89	.341	0.009
4	-1.41	.334	0.000	4	-.91	.435	0.037
5	-1.57	.444	0.000	5	-1.3	.449	0.002
Linear trend (Level 2)				**Linear trend (Level 2)**			
Slope	-.230	.118	0.051	Slope	-.193	.125	0.123
Constant	-.432	.355	0.223	Constant	-.254	.374	0.497

Source: National Household Sample Survey

DISCUSSION

Contrary to what we expected, considering parental education and occupation, results suggest that college have an equalizing power in fertility. Nonetheless, corroborating educational stratification literature, logit regression shows that these

variables are very important to predict college completion, which suggests the occurrence of a strong selection process based on these characteristics. These results suggests that although women are still heavily selected by family background characteristics to complete college, when a woman with a low propensity does it, her fertility converges with the current educational group.

Unlike preliminary results (Brand & Davis,2011) and corroborating the second hypothesis of this study, we find a statistically significant increase in the fertility-decreasing effect of college completion as women's propensity for college increases. Results suggest that current socioeconomic status explains part of this pattern which corroborates theories of a not perfect equalizing power theories that propose a comparative advantage for women with higher socioeconomic background in college completion.

Regarding the limitations of this study, we recognize that the quantitative approach used does not provide subsidies to establish a causal relationship of the analyzed phenomenon. Distinctions in fertility by socioeconomic background internal to each of educational groups can therefore be associated both with characteristics prior to entering university (such as the number of children born, reproductive intentions and other unobserved characteristics), as well as with a transforming effect of this level of education in women's intentions and reproductive behavior. Nevertheless, it will shed light on the mechanisms of the fertility transition in Brazil.

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