# Expansion of Higher Education and Fertility: Specificities of the First and Second Family Generations that Completed University Studies in Brazil

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**Short Abstract:** It is widely accepted that investing one's youth in schooling, professional qualifications, and career building usually requires postponing fertility. It is plausible to assume that high expectations of social mobility in some cases, or the impossibility of maintaining specific consumption patterns in others, lead to a constant postponement of the project of forming a family, under the risk that in extreme cases in which expectations are not met, the family project will be aborted. With the expansion of the Brazilian university system, stories of students who are the first in their families to go to university are frequent. However, what happens to the fertility pattern of these people? Did they quickly fit into their new social group? Do they maintain characteristics characteristic of their social group of origin? Do they develop unique demographic behaviors? Using data from the social mobility module of the National Household Sample Survey of 1996 and 2014, this study aims to answer these questions by constructing classic measures of demographic analysis such as the total fertility rate, period parity progression ratios, mean age of women at childbirth, and the proportion of nulliparous women at the end of the reproductive period.

## Introduction

Over the past three decades, Brazil has undergone significant social transformations. Economic stabilization – combined with social programs to eradicate hunger and reduce extreme poverty – was accompanied by policies to universalize access to education and expand the university system (Amaral e Monteiro, 2013; Krawczyk, 2013; Carnoy et al., 2013). New generations have directly benefited from these changes, either because the conditions of social programs required children and adolescents to remain in the school system in exchange for their education or because the economic boom and more stable job offers during the final years of the 20th century and the first decade of the 21st century allowed families to invest in their children's education. This favorable scenario shaped experiences that facilitated the emergence of new aspirations, values, and expectations for the future. The expansion of the Brazilian university system has not only increased access to higher education but also shaped new aspirations, values, and expectations for the future.

Although differences in fertility behavior according to the educational level achieved by individuals are well documented in Brazil (Longo & Miranda-Ribeiro, 2012; Berquó & Cavenaghi, 2014; Cavenaghi & Berquó, 2014; Vieira, 2016), it remains unknown whether those who are the first generation in their families to earn a university degree quickly adapt to the typical fertility patterns of the social group they are entering; or whether, on the contrary, they maintain characteristic traits of their social group of origin; or even whether mobility implies the development of unique fertility patterns. Following this line of reasoning, it would be worth asking: Are there specificities in the group of those who are the first in their families to complete higher education? Would they be more likely to

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be childless than others? These are some questions that remain unanswered for the Brazilian case.

According to the international literature, groups that experienced educational mobility present few differences considering the total fertility rate, but timing fertility differentials are persistent (Ermish, 2023). In the absence of previous studies for Brazil, this study assumes as a hypothesis that the country will follow the trend observed in developed regions, with more significant differences in terms of timing of fertility than quantum when the first and second family generations that completed higher education are compared.

## Methods

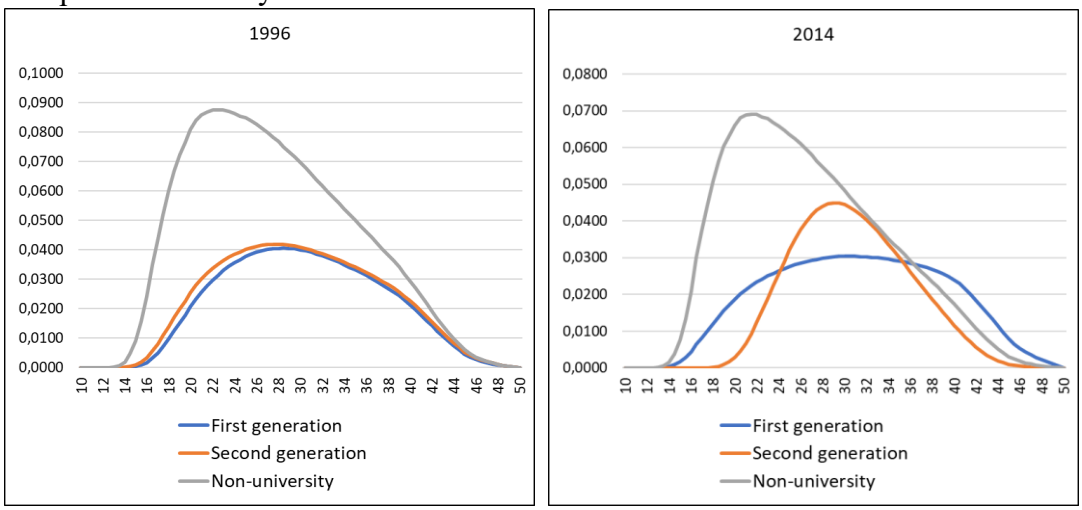
This study uses the microdata of the Social Mobility Module, which was included in the National Household Sample Survey for 1996 and 2014, realized by the Brazilian Institute of Geography and Statistics. Generally, social mobility is a topic considered once by the decade in this survey.

It should be acknowledged that there is a considerable number of missing data regarding the father's level of education. This led me to classify women as the first or second generation of their families to attend university, using only the mother's level of education as a proxy. When the women selected to answer the social mobility module had participated in higher education institutions and stated that their mothers had completed higher education too, they were classified as members of the second generation of their families to attend university. When they responded that they had participated in higher education, but their mothers had not had the same experience, they were classified as members of the first generation of their families to attend university.

Regarding the fertility calculation method, I followed the recommendations of the most recent revision of Manual X (Moultrie et al., 2013), which suggests the application of the Gompertz relational method. It can be defined as an update of the Brass P/F ratio method. The main advantage of the method advocated by Moultrie et al. (2013) is that it makes some of Brass's assumptions more flexible, such as the need to assume constant fertility in recent years. Since no previous studies have worked with the same disaggregation proposed here – 1st and 2nd-generation university students – this flexibility seems entirely appropriate. However, Berquó and Cavenaghi (2014) point out that the Brass P/F ratio method remains the best for the Brazilian context and emphasize that the Gompertz relational method is not ideal for low fertility regimes. In the present study, I tested it by applying the direct method, Brass, and relational Gompertz. In terms of the level of the total fertility rate, the differences were minimal. Relational Gompertz rejuvenated the curve of specific fertility rates very slightly in our specific case. I chose to use it mainly because of its smoothing and the possibility of presenting results by simple age. Other classic measures of demographic analysis, such as period parity progression ratios and mean age of women at childbirth, follow procedures Hinde (1998) described.

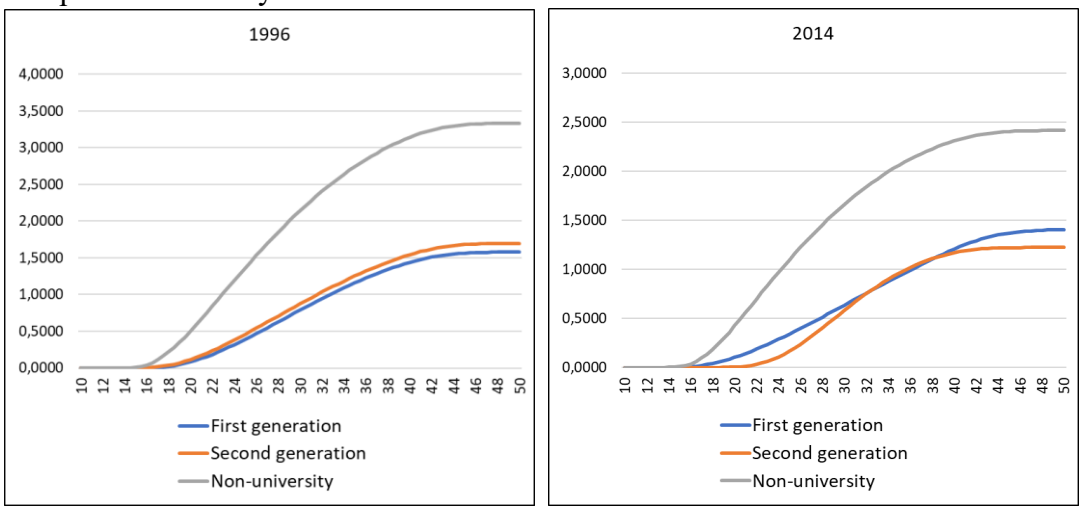
## Preliminary results

Figure 1 – Brazil, 1996 and 2014: Age-specific fertility rates by family generation that completed university studies




Source: Brazilian Institute of Geography and Statistics. National Household Sample Survey 1996 and 2014/Social Mobility Module.

Figure 2 – Brazil, 1996 and 2014: Cumulative fertility by family generation that completed university studies




Source: Brazilian Institute of Geography and Statistics. National Household Sample Survey 1996 and 2014/Social Mobility Module.

Table 1 – Brazil, 1996 and 2014: Total fertility rate by family generation that completed university studies (children by woman)

| Group | 1996 | 2014 |
|---|---|---|
| The first generation of the family to complete higher education | 1,6 | 1,4 |
| The second generation of the family to complete higher education | 1,7 | 1,2 |
| Non-higher education | 3,3 | 2,4 |

Source: Brazilian Institute of Geography and Statistics. National Household Sample Survey 1996 and 2014/Social Mobility Module.

Table 2 – Brazil, 1996 and 2014: Mean age of fertility by family generation by family generation that completed university studies (years old)

| Group | 1996 | 2014 |
|---|---|---|
| The first generation of the family to complete higher education | 30,6 | 31,0 |
| The second generation of the family to complete higher education | 31,1 | 33,8 |
| Non-higher education | 27,7 | 27,4 |

Source: Brazilian Institute of Geography and Statistics. National Household Sample Survey 1996 and 2014/Social Mobility Module.

Table 3 – Brazil, 1996 and 2014: Proportion of nulliparous women at the end of the reproductive period (45-49 years old) by family generation that completed university studies

| Group | 1996 | 2014 |
|---|---|---|
| The first generation of the family to complete higher education | 21,8 | 21,5 |
| The second generation of the family to complete higher education | 14,0 | 27,0 |
| Non-higher education | 5,9 | 11,3 |

Source: Brazilian Institute of Geography and Statistics. National Household Sample Survey 1996 and 2014/Social Mobility Module.

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