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**Parity Progression Ratios and birth intervals in Mozambique 1987-2007**

Mozambique is one of the countries with a high fertility rate of 5.5 children per woman for the period 2010-2015 (UN / DESA, 2017), and at an early stage of the transition to fertility (INE, 1999 and 2009). This contributes to rapid population growth and a youth population structure. According to Bongaarts (2017) high fertility in sub-Saharan Africa is due to poor development, and women's desire to have a high number of children.

Understanding the evolution of fertility plays an important role in demographic dynamics. Fertility changes have a direct impact on population growth, especially for countries with high growth rates. However, data quality is important, especially for developing countries, as is the case in Mozambique, where civil registry information is poor and censuses and household surveys are the main source of information. This work aims to contribute to a better perception of the most recent level of fertility, to analyze the evolution of fertility in Mozambique from 1987 to 2007. Data from the 1997 and 2007 Demographic Census provided by IPUMS and the birth histories reconstructed from the two editions of the census. The reconstruction of the birth stories was done from the data of residents in the home and a pairing methodology that imputes of the missing data. The results are presented in four population clusters: Mozambique (total population), Metropolitan Maputo, Urban Rest and Rural.

Methods

The ratios parity progression (PPR) were originally analyzed by Louis Henry in the early 1950s, used by Brass (1985) and rediscovered by Feeney and Yu (1987) and Ni Bhrolcháin (1987). The general idea was to know the proportion of women who progress from one parity to another, that is, PPRs measure the proportion of women with children who have progressed to i + 1 children, including parity 0, that is, of all the proportion of women who had the second child, of those who had the second child, the proportion that progressed to the third, and so on (Feeney and Yu, 1987).

The PPRs, as well as other fertility measures, can be calculated on the basis of the period or cohort. For the calculation, it is necessary data in which there is possibility of identification of the moment in the reproductive life of the woman, and order of the birth of the children. Birth order information can be obtained from two basic questions of the census: on the completed parity of women (total number of children born alive) and births in the last year. Using the question about number of live births, one can disaggregate previous births by their birth order (Moultrie et al., 20013).

Some disadvantages of calculating PPR from true parity cohort procedure is the chance of data censorship. This is greater in the years closest to the censuses, since the year of the birth of the child of order i + 1, is not fixed; most of the births included in the calculations occurred a few years before the census, which makes the results little outdated (Miranda-Ribeiro, 2007); PPRs as cohort measures require data from women who have completed (or almost completed) their fertility, so they do not represent the fecundity of younger women. (Moultrie et al., 2013).

The PPR of parity i for parity i + 1 is the proportion of cohort that had at least i live births and had at least one or more live births (Preston et al., 2001). And it is calculated as follows:

$$RPP_{(i,\,i+1)} = \frac{P_{i+1}}{P_i}$$

Where Pi = number of women of parturition (i)


Results

The results point to a slight decline in fertility in the country from 1997 to 2007. However, women in metropolitan Maputo have recorded a more pronounced fall in fertility. The decline observed in this region had its beginning in the 1980s. Using the PPR the results suggest a decline in higher order parturitions in the older cohorts. Birth intervals are longer among women living in Metropolitan Maputo and in the Urban Rest. The decline in fertility in these two regions can boost fertility decline in Mozambique.

**Parity Progression Ratios, Mozambique, 1987-2007**



PPR 45-49 years, Mozambique
Legend: 1996, 1997, 2006, 2007

PPR 45-49 years, Rural
Legend: 1996, 1997, 2006, 2007

PPR 45-49 years, Rest Urban,
Legend: 1996, 1997, 2006, 2007

PPR dos 45-49 years, Metroplolitan Maputo,
Legend: 1996, 1997, 2006, 2007

PPR 25-29 years, Mozambique
Legend: 1987, 1992, 1997, 2002, 2007

PPR 25-29 years, Rural
Legend: 1987, 1992, 1997, 2002, 2007

PPR 25-29 years, Rest Urban,
Legend: 1987, 1992, 1997, 2002, 2007

PPR 25-29 years, Metropolitan Maputo,
Legend: 1987, 1992, 1997, 2002, 2007

**Birth intervals for women for 6 to 7 births, by regions (10 years before the census)**



Mozambique — % of Women vs years. Series: 35-39 (1987), 35-39 (1997). did not have children: 39,1 / 36,8

Rural — % of Women vs years. Series: 35-39 (1987), 35-39 (1997). did not have children: 37,0 / 34,3

Rest Urban — %o f Women vs years. Series: 35-39 (1987), 35-39 (1997). did not have children: 40,9 / 38,2

Metropolitan Maputo — % of Women vs years. Series: 35-39 (1987), 35-39 (1997). did not have children: 75,6 / 31,6