

Does family size hinder family living standards? Evidence from a quasi-experiment in Madagascar

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Key Findings

- An exogenous increase in fertility statistically reduces total consumption per capita
- All consumption items (food, human capital, housing and durable goods) are affected by the impact of the fertility burden
- The detrimental effects occur at any quantile of living standard distribution

Introduction

Madagascar is characterized by a total fertility rate of 5 children per woman and the population growth rate is 2.7% per year, resulting in a population doubling in 26 years. So, precisely assessing the influence of this high fertility on socioeconomic outcomes is of first importance. In this study, our objective is to measure the impact of fertility on household living conditions in Madagascar. In the literature, the nature of the relation between the two phenomena is controversial (Blanchet 2001). While some studies have concluded that there is a negative relationship between fertility level and living standard, others have found no clear evidence. Nonetheless, it is important to acknowledge that clearly identifying the causal impact of fertility on living conditions is a challenging issue because of endogeneity due to reverse causality or non-observable heterogeneity. In this paper, we try to identify the causal impact of fertility on household welfare in Madagascar using innovative data and methods.

Methods

Data

The data used in this study come from a Malagasy National Survey conducted in 2012/2013 aimed at monitoring the MDGs. Given the large scope of the MDGs, the survey covered a wide range of topics: poverty, employment, education, fertility, etc. The sample size totaled 16900 households and was representative of each of the 22 regions of Madagascar and of rural and urban areas. Given its scope, this database is unique for Madagascar because it is the first time that both household economic and demographic detailed characteristics have been collected within a single survey.

Econometric method

In this study, our main econometric method is a quantile-IV regression. This method allows for taking into account the heterogeneity of the effects of the independent variable (here, fertility) along the entire distribution profile of the dependent variable (here, the living standard), and not just at a central point (the mean) as is the case in the classical regression method. But even if the effect of the fertility were constant across the living standard distribution, resorting to the quantile regression would remain preferable since it is less sensitive to extreme values than mean-based regression. In this study, IV are the gender composition of the two first-born children, since in Madagascar, there is a preference for boys which leads to an exogenous increase in fertility.

Results

Table 2 Average number of children per consumption quintile

Consumption quintile	Average number of children
1st quintile	5.3
2nd quintile	4.6
3rd quintile	4.1
4th quintile	3.7
5th quintile	3.2

Table 7. Quantile (at q25, q50, q75 and q90) instrumental variable regressions of the log per capita expenditure or consumption of durable goods/housing, food, and human capital (education and health expenditures) on the number of children and other control variables in Madagascar

	q(25)	q(50)	q(75)	q(90)
Total consumption per capita				
Coefficient	-0.0333	-0.0342	-0.0320	-0.0337
Lower	-0.0754	-0.0695	-0.0631	-0.0685
Upper	-0.0080	-0.0196	-0.0038	-0.0077
Durable goods/housing expenditure per capita				
Coefficient	-0.0400	-0.0392	-0.0418	-0.0799
Lower	-0.0781	-0.0733	-0.0750	-0.1079
Upper	-0.0164	-0.0225	-0.0177	-0.0682
Food expenditure per capita				
Coefficient	-0.0264	-0.0414	-0.0366	-0.0437
Lower	-0.0704	-0.0604	-0.0624	-0.0654
Upper	0.0011	-0.0185	-0.0213	-0.0084
Human capital expenditures (education and health) per capita				
Coefficient	-0.0841	-0.0436	-0.0315	-0.0633
Lower	-0.2169	-0.0872	-0.0918	-0.1416
Upper	0.1292	0.0735	0.0065	0.0472

Conclusions

This study adds to the literature on the social capillarity theory, which posits that the smaller the family, the more likely it is to climb the social ladder and that, conversely, a high number of offspring hampers the chances of social mobility and can therefore impoverish families. In the case of Madagascar, using rigorous econometric methods and original data, we empirically validate this theory.

The political recommendation of this study is straightforward: Madagascar, like most African countries, is trying through different socioeconomic programs to offer better living conditions to its population. Our study shows that accelerating fertility transition may be part of the solution.

Bibliography

KUEPIE M. (2018), "Does family size hinder family living standards? Evidence from a quasi-experiment in Madagascar", AFD Research Papers Series, No. 2018-85, December (<https://www.afd.fr/en/ressources/does-family-size-hinder-family-living-standards-evidence-quasi-experiment-Madagascar>).