Fertility, household size and poverty in Nepal

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ABSTRACT

Population control policies keep attracting attention: by increasing the household size, having more children would directly contribute to a household's poverty. Using nationally representative household level data from Nepal, we investigate the links between a household's fertility decisions and variations in their size and composition. We show that the relationship between number of births and household size is positive when the mothers are young, but becomes negative as the mothers grow older. Elderly couples who had fewer children host, on average, more relatives who are outside the immediate family unit. This result sheds light on the heterogeneous relation between the number of children and household size over the life cycle. It also implies that reductions in a household's fertility may have an ambiguous impact on its per capita consumption, which depends on how the household's composition responds to new births and changes over time: in this sample, an old household's per capita consumption is not affected by the number of births. We use the gender of the first-born child to instrument the total number of consecutive children.

1. Introduction

Fig. 1, a poster of the India Ministry of Health and Family Welfare, is a good representation of low-fertility campaigns. Similar posters can be found in other countries or at other times. Shown on the left side is a family that has many children: that family is poor, badly dressed, living in a house that is in a very poor condition and with nothing growing on the surrounding land. On the right side is a family with only two children; this family looks much richer and happier. Poor and large families would not have the means to invest in the education of their children, or in the activities that generate their incomes. To get out of poverty, the poor should have fewer children. In many developing countries, a first glance at gross correlations confirms this link. In Nepal, we also observe a positive correlation between the number of children and household size as well as a negative correlation between these two variables and household income per capita.

Before spending resources on this kind of campaign or on more aggressive policies, as has been done in India and China, policymakers ought to know exactly the channels through which reduced fertility might affect income per capita and, in terms of increased incomes and poverty alleviation, what benefits to expect. It is hard to understand why parents do not realize that having more children increases, in the short term, the size of their households as well as the number of unproductive mouths to feed and therefore reduces income per capita. Nevertheless, they do have children. One important motive behind fertility, especially in developing countries, is the role played by children in helping to support the elderly. Children can be an investment strategy whose cost is supported in the short run, expecting long term benefits (Samuelson, 1958). Households might just want to increase quantity to maximize chances of being supported later on.

The quality-quantity trade-off is theoretically well understood (Becker, Duesenberry, & Okun, 1960). Empirically, the effects of changes in fertility on various outcomes linked to a household's welfare remain unclear: few studies have been conducted, and there is evidence in favour of (Joshi & Schultz, 2013) as well as against (Angrist, Lavy, & Schlosser, 2010; Black, Devereux, & Salvanes, 2005) the quality-quantity trade-off. As explained by Schultz and Strauss (2007), a first order difficulty is that population
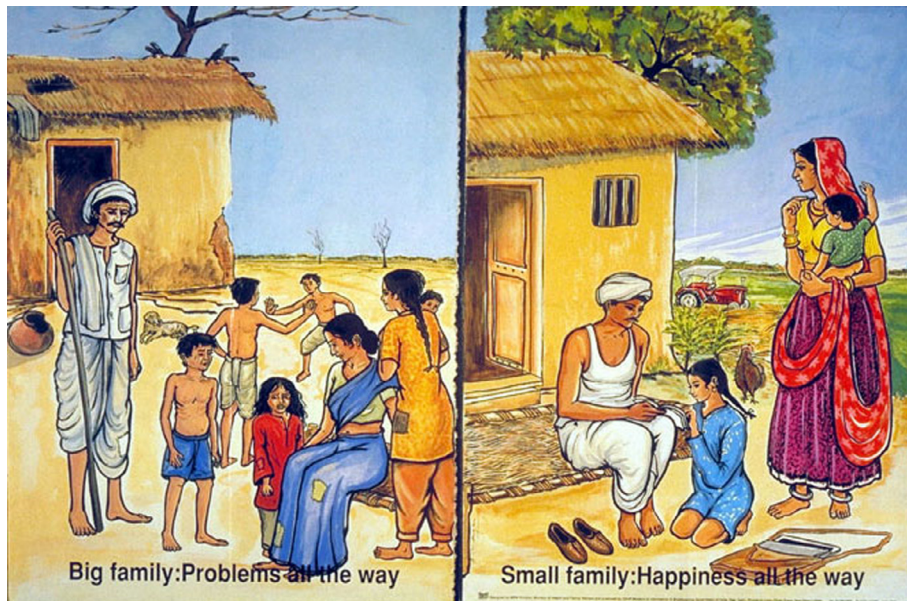
Fig. 1. A 1992 poster from the India Ministry of Health and Family Welfare. credit: courtesy of the Media/Materials Clearinghouse at the Johns Hopkins University, Bloomberg School of Public Health, Center for Communication Programs.

policies tend to be national in scope and implemented in a non-random way, which complicates the finding of an adequate counter-factual. As these authors conclude from their review of the empirical literature, *"Policies that help individuals reduce unwanted fertility are expected to improve the well-being of their families and society. But there is relatively little empirical evidence of these connections from fertility to family well-being and to intergenerational welfare gains, traced out by distinct policy interventions."* They further stress that some outcomes of population policies *"are likely to have a bearing on the way in which individuals form families and combine themselves into households. (..) Dealing appropriately with these complex behavioural issues opens an extensive agenda for microeconomic research"* (Schultz & Strauss, 2007, p.3294–3297). One important limitation of existing studies is that they assume households are made of nuclear families, and they do not take into account that changes in fertility can have direct effects on the households' size and composition. Those effects are, however, crucial to understand, as they will have an impact on the final outcomes (for instance, the household per capita consumption).

We therefore focus on the influence of fertility on the size and demographic composition of households, and we show that births trigger important changes in the households' size and composition in Nepal. Among mothers aged 40–50, who thus have completed childbearing and represent roughly 18% of Nepali households, we find that those who have had more children live in smaller households. The data from the Nepal Living Standards Surveys show that couples who had fewer children tend to host more grand-children and in-laws than couples with more of their own children. Because households are parts of extended family networks, those who have fewer children simply host more other relatives. This finding concurs with the arguments of Cox, Fafchamps, Schultz, and Strauss (2007), who emphasized the importance of kinship networks in redistributing resources. In our case, people, rather than goods or money, move between households.

The raw correlation between the number of children and the household size could suffer from endogeneity biases for various reasons. In particular, if some parents have a preference for larger households, they will have more children and welcome additional external members into their household. An even more serious concern arises when the opportunity cost of raising a child decreases with the household size. This would typically be the case if parents of the head live in the household and help in day care. Both examples would imply upward biased estimates of the coefficient of interest. We therefore need an exogenous source of variation in fertility to identify the causal effect of the number of children on the household's size and composition. To this end, we use the gender of the first-born as an instrumental variable, and we discuss its validity in Section 3.

Our findings reveal new complexities in the relationship between changes in fertility and poverty. The immediate effect of having more children is to increase the household size. However, households may also include various people such as grand-parents, uncles and aunts, cousins, grand-children, even people who are not blood-relatives. When a family has an additional child, some of the other people may move away (or may not come in). If a couple has few children at home they are likely to host more non-immediate family members or acquaintances.[2]

When the arrival of an additional child provokes the departure of another household member, or prevents hosting other relatives, it is not obvious anymore that the household will have fewer resources per person. This will depend on the relative consumption and generation of income of the child versus the member who left or did not join. We find that having an additional child increases the size of young households and is negatively associated with their per capita consumption. However, when mothers get older, there is no longer a relation between their number of children and per capita consumption.

Fertility decisions and the way a household composition and incomes vary with new births are context-dependent, and most likely, different families will adopt different behaviours. Childs (2001), for instance, describes how two geographically close

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[2] This argument is related to what anthropologists and biologists have called "cooperative breeding", see Kramer (2010). In economics, it is closely related to the argument of Cox et al. (2007) on the role played by kinship networks in the redistribution of resources.