

Kofi D. Benefo and T. Paul Shultz (1994) *Determinants of Fertility and Child Mortality in Côte d'Ivoire and Ghana* (LSMS Working Paper No.103), The World Bank, Washington, DC, 88pp.

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For a monograph co-written by T. Paul Shultz, one of the World's leading economic demographers, one expected a study of high technical quality and few readers would be disappointed with this study on this count. Using data from the World Bank-assisted Living Standards Measurement Surveys (LSMS) in Côte d'Ivoire (first three rounds— 1985, 1986, 1987) and Ghana (two rounds — 1987-88 and 1988-89), the study sought to show, more carefully and clearly than previous studies, the economic determinants of fertility and the effect of child mortality on fertility in West Africa.

Given the scope and variety of the data elicited on household economic behaviour, prices and socio-economic conditions in the community of the respondents (women aged 15-65), the study was destined to be more successful in achieving the first of its two broad objectives. Even with the richness of the datasets analysed, the magnitude of the conceptual and measurement problems inherent in any investigation of the impact of child mortality on fertility means that a reader conversant with this aspect of the demographic literature is most likely to judge this relatively short monograph on the extent to which it convincingly demonstrates how the child mortality experience(s) of women affects their subsequent fertility performance.

In order to avoid obtaining biased estimates from the applied structural regression model, the analysis is guided by a conceptual framework that classifies the determinants of fertility into exogenous and endogenous variables. The former are characteristics of the woman, her household and community setting; the latter are variables related to the woman's behaviour and decisions. This distinction is of course premised on the applicability of the demand and supply theory to reproductive behaviour. While this approach enhances the parsimony of the analysis, too much is sacrificed in terms of insights into the underlying factors in the observed patterns in reproductive behaviour in the study settings where, as with most of Sub-Saharan Africa, fertility outcomes are often more a product of cultural and 'non-rational' motivations than 'balance sheet' considerations of the costs and benefits of having a particular number of surviving children.

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Another aspect of the adopted regression model which some social scientists might find problematic is the assumption that such community variables like distance to public health clinics, water and sanitation facilities and disease prevalence influence child mortality but do not otherwise shape fertility outcomes. The aim of course was to eliminate some of the confusion introduced by the symmetricalness of the relationship between child mortality and fertility and some of the 'noise' due to poorly measured factors. But it is hard to imagine how in most African settings women's experience or perception of their community's disease load and the preventative/curative options available to them and their children do not form significant components of the motivational context within which decisions or non-decisions about reproduction are made. This is worthy of note despite the fact that the study provides very weak statistical support for treating child mortality at the level of the household as endogenous to the fertility determination process.

On the plus side, however, the analysis takes considerable account of gender variables such mother's education versus father's education and the woman's marital situation (including the presence or absence of the husband in the household) whose significance in the understanding of reproductive behaviour cannot be over-emphasised. More generally, the elegance of the analysis is enhanced by the multi-level (individual, household, and community) consideration of the determinants of fertility and the impact of child mortality on fertility. Other scholars researching on issues of this kind should read this monograph to see how such multi-level analysis can be efficiently handled and the analytical benefits from doing so. Many of the Demographic and Health Surveys already executed or currently being undertaken in many countries in Africa through their service availability modules provide, contrary to the monograph's claim (on p.1), ample opportunities for a fruitful near-replication of this approach in other settings.

Some of the interesting findings that emerge from this study include the fact that in spite of having achieved higher rates of economic growth since independence, Côte d'Ivoire displays higher fertility and child mortality levels than Ghana, with the latter being more advanced in transiting lower fertility levels. Further, additional evidence is provided that Ghana's child survival situation stagnated during the early-to-mid 1980s at the height of her economic crisis. In terms of the role of women's socio-economic and community characteristics in shaping the levels of fertility and child mortality, and the role of the latter in inducing high fertility, the situation in Côte d'Ivoire is shown to contrast with that of Ghana in a number of significant aspects.

First, although in both countries fertility and child mortality are high and maternal education is a main determinant of lower fertility and child mortality, female education has a smaller effect on child mortality in Côte

d'Ivoire where female education, going by the surveys, is not as widespread as in Ghana. Moreover, in Côte d'Ivoire household income, assets and women's physical health status turn out to be positively associated with fertility whereas in Ghana the reverse is the case.

Secondly, community characteristics, as with findings from other studies in different parts of the developing world, show only small effects on household child mortality in both countries. However, in treating child mortality as an exogenous variable, the study estimates notable reductions in fertility to be associated with significant lowering in child mortality. But it is clear from this study that to adequately measure and assess the impact of community infrastructure on child health outcomes in African settings, information needs to be collected on their nature and the quality of the services they provide; and not just on their number and spatial density.

Another utility of this study lies perhaps in pointing to further data needs in seeking full understanding of the determinants of reproductive behaviour in West Africa and the role public policy may play in facilitating the transition to lower fertility. Although it provides additional evidence on the primacy of maternal education as a determinant of reproductive and child health outcomes, the monograph does not yield significantly new insights into its causal mechanisms. The general lesson here is that increased richness of demographic and health data and greater refinement in statistical procedures are no guarantee of improved understanding of such complex phenomena as the determinants of reproductive outcomes.