

Researcher

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A Dynamic Structural Model of Contraceptive Use and Employment Sector Choice for Women in Indonesia

In the 1960s, the average Indonesian woman had between five and six children. By the mid-1990s, the average number of children had declined to close to three per woman. A large part of this reduction in fertility has been attributed to the extensive family planning program that was initiated in the late 1960s under the regime of President Suharto. Contraceptive use among married women increased from 5 percent in the late 1960s to approximately 55 percent in the mid-1990s. While there is an extensive literature on the impact of the Family Planning Program on fertility rates and contraceptive use, there has been very little investigation of the program's impact on other aspects of a woman's life, such as labor force participation. This research investigates the impact of the Indonesian Family Planning Program on the labor force participation decisions and contraceptive choices of women.

I develop a discrete choice dynamic structural model, where each married woman in every period makes joint choices regarding the method of contraceptive used and the sector of employment. Each woman obtains utility from pecuniary sources, nonpecuniary sources, and choice-specific time shocks. In addition to the random shocks, there is uncertainty in the model, as a woman can only imperfectly control her fertility. Several forms of state and duration dependence capture dynamics in the model. Women in this model make different choices due to different preferences, differences in observable characteristics, and realization of uncertainties. The choices made by a woman depend on the compatibility between raising children and the sector of employment (including wages). While making decisions regarding contraceptive use, a woman considers the trade-off between the costs (monetary and nonmonetary) and benefits of having a child.

Country where the research will take place

Indonesia

How does the research describe the impact of population/reproductive health on poverty reduction/economic growth?

This research looks at how investments in family planning services affect the well-being of women by impacting their employment choices and childbearing decisions, while at the same time recognizing the interdependency of these interrelated life choices. This research can provide a greater understanding to policymakers who are interested in the relationship between investments in family planning programs and its impact on economy level variables. Although

the outcomes observed are at the individual level, it can be aggregated to get a measure at the macrolevel. For instance, one of the outcomes of interest is the labor force participation of women. This at a household level increases the income per capita; at a macrolevel this translates into economic growth.

How will the research address a policy need, and what kind of policy lesson is expected?

The structural nature of my model allows me to conduct policy experiments. I can also study the impact of altering specific parameter values on the decision path that individuals take. Some of the experiments that I propose to conduct are described below. The first experiment involves decreasing the cost of using contraceptives for all married women. This policy experiment can be used to simulate an improvement in quality of family planning services (including quality of treatment at clinic and wait times at the clinics), reduction in distance to the clinic, or a reduction in the price of contraceptives. I can then look at how this affects the employment and contraceptive choices of women. The second experiment involves an increase in the utility experienced by all working mothers. This can be done separately for each of the sectors. This policy simulation is equivalent to a reduction in the cost of child care for working mothers. The third policy experiment involves simulating wage subsidies for all women by exogenously imposing a sector-specific wage increase. In addition, each of the above experiments can be done for different groups of women to see whether the different types (may be based on religion, location, age) respond differently to the different policy changes.

Methods used

Using the first wave of Indonesia Family Life Survey, I develop a finite-horizon discrete choice dynamic structural model to investigate how access to family planning services in Indonesia affects the well-being of women by impacting their employment and contraception decisions. The model is estimated using techniques of simulated maximum likelihood. In addition, I estimate two separate multinomial probit models to study the impact of observables on the probability of choosing an employment sector and contraceptive method. I estimate these models on a panel of all women in my sample.

Data used

The primary source of data for this study is the first wave of the Indonesia Family Life Survey (IFLS 1), a retrospective panel. This survey contains data at both individual and family level on contraception, fertility, health, education, and labor force activities. In addition to the household surveys, IFLS 1 includes community surveys that can be linked to all households. This availability of community-level data allows me to know when the community-level programs (in particular family planning programs) were introduced, and thereby enables me to study the impact on the choices made by women. I use the geographic expansion and the changing nature of the family planning program as sources of exogenous variation to identify the parameters of the structural model.