Research And Development Solutions

Do Social Preferences for Children Influence the Fertility Choices of Families: Evidence from Pakistan

Introduction

Developing countries have been experiencing a decline in fertility rates, bringing them closer to Europe and North America. Historically, affluence was associated with larger families, a necessity in times of high child mortality. This trend reversed in developed countries around the 1830s, with a shift from having many children to prioritizing the upbringing and welfare of fewer children. Currently, in developing countries, a similar shift is occurring driven by increased investment in each child, rising household income, and changing social mores. It is possible that Pakistan, an outlier, faces challenges in promoting family planning but a quantity-quality transition may be underway, with higher child investment potentially linked to family planning use.

Methodology

Using the Pakistan Social and Living Standards Measurement (PSLM) Survey 2018-19 we have estimated family expenditure on education per child which has been used as a surrogate for investment in children. We are using controls for mother-level factors, child-level factors, and household-level factors.

Findings

As families transition from poor to middle socio-economic levels, the marginal education spending increases by 69% and then increases further by 143% whilst transitioning from the upper middle to the rich quintile. As we move across the wealth quintiles, the average number of children decreases, while the proportion of income allocated to education expenditure rises. While there are relatively few families that do not spend on education, those who do spend have nearly double the rate of family planning compared to non-spenders.

As the number of children increases, education spending plateaus, indicating that **families with more than four children typically allocate their education spending to a maximum of four children**. Hence, beyond the fourth child, there is a 50% probability that an additional child will not be enrolled in school, leading to reduced education spending.

Key Points

As families become wealthier, they prefer to have fewer children but invest more in their education and well-being, reflected by higher education spending and the use of contraception.

The opportunity cost in the wealthiest social class is not much, compared to the upper middle class, therefore they spend more on education irrespective of their fertility preference.

The wealthiest and most educated women are less likely to work. Among the 57% of urban women who don't use contraception, 93% are not employed.

Moreover, **55% of the children enrolled in higher education belong to the rich quintile which justifies the proportional difference in education expenditure and income**.

The **likelihood of contraceptive use increases as education expenditure increases** except in rural areas where education spending exceeds PKR 13,000, the contraceptive use is relatively lower compared to spending levels ranging from PKR 6,500 to 13,000. The probability of contraceptive uptake increases with an increase in education expenditure, plateauing after reaching PKR 3,600 in the overall setting (Figure I). The disaggregation in urban and rural areas shows that **the contraceptive uptake in rural areas is lower in the richest quintile but education expenditure rises.** Moreover, out of 57% contraceptive non-users belonging to the urban areas, 93% of the women are not in the labor force and only 7% are employed.

Table 1: Marginal Change in Annual Income and Education

Wealth Quintiles	Number of Children (Mean)	Average Household Income (PKR)	Marginal Change (%) in (2)	Proportion of Income to Education Expenditure (%)	Average Household Education Expenditure (PKR)	Average Education Expenditure Per Child (PKR)	Marginal Change (%) in (6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Poor	4.5	251,602	-	3.3	8,268	1,808	-
Lower-Middle	4.4	293,861	42,259 (16.7)	4.9	14,405	3,053	1,245 (68.1)
Middle	4.2	362,941	69,080 (23.5)	6.8	24,714	5,165	2,111 (69.1)
Upper-Middle	4.0	452,500	89,558 (24.7)	9.0	40,821	8,739	3,573 (69.2)
Rich	3.6	702,272	249,772 (55.1)	13.3	93,476	21,261	12,522 (143.3)

Table 2: Effect of Education Expenditure on Contraceptive Use and Non-Use Using Logistic Regression

Dependent Variable: Contraceptive use	(I) National	(II) Urban	(III) Rural
Education Expenditure [Base: 0]			
1-2000	**1.17*** [1.02,1.33]	1.18 [0.90,1.56]	1.15 [0.98,1.33]
2000-3600	**1.43*** [1.26,1.62]	**1.31*** [1.03,1.65]	**1.41*** [1.22,1.65]
3600-6500	**1.27*** [1.13,1.44]	**1.26*** [1.01,1.58]	**1.25*** [1.07,1.45]
6500-13000	**1.45*** [1.28,1.64]	**1.29*** [1.06,1.58]	**1.51*** [1.29,1.77]
>13000	**1.49***	**1.58***	**1.35***
Number of Children [Base: 0]			
1-2	**1.49*** [1.30,1.70]	**1.52*** [1.23,1.88]	**1.50*** [1.26,1.78]
3-5	**3.65*** [3.14,4.25]	**3.67*** [2.88,4.68]	**3.82*** [3.13,4.64]
>5	**4.37*** [3.64,5.26]	**4.45*** [3.25,6.05]	**4.48*** [3.55,5.66]
Wealth Quintiles [Base: Poor]			
Lower Middle	**1.29*** [1.16,1.44]	1.12 [0.95,1.32]	**1.18*** [1.02,1.36]
Middle	**1.54*** [1.37,1.72]	**1.25*** [1.05,1.48]	**1.48*** [1.28,1.71]
Upper Middle	**1.55*** [1.37,1.76]	**1.26*** [1.06,1.50]	**1.67*** [1.43,1.94]
Rich	**1.56*** [1.34,1.82]	1.17 [0.94,1.44]	**1.60*** [1.35,1.89]
Observations	20,035	7,029	13,006

*Note: * represent significance at 5% level. Confidence intervals are reported in the square brackets. Additionally, each model has controlled for MWRA's age, awareness of contraceptive methods, and province, not shown in the table.*

At the rural level, there is fluctuation in the trend and the probability of contraceptive use is lower compared to the urban areas. The margin plots for the number of children (Figure II) show that a **greater number of children increases the probability of contraceptive uptake at the national level as well as in the rural and urban settings**. However, the probability of contraceptive use is overall lower in rural compared to urban areas.

Figure I: Predictive Margins of Education Expenditure and Contraceptive Use by Wealth Quintiles
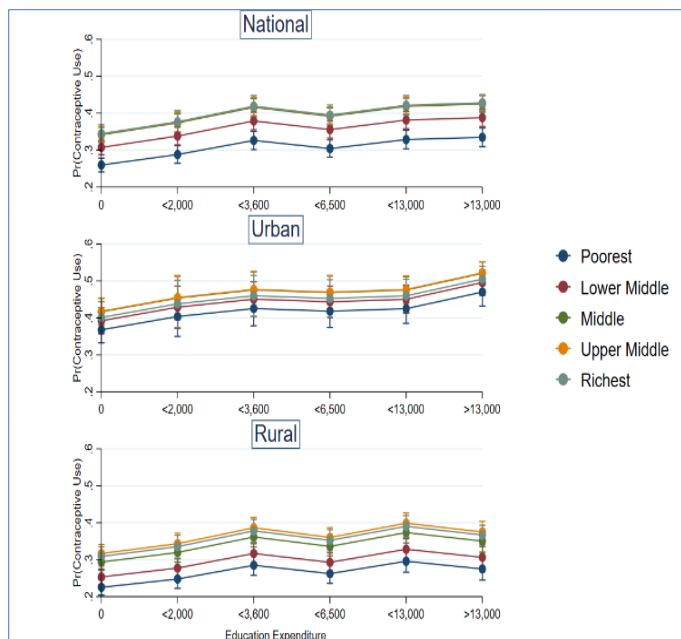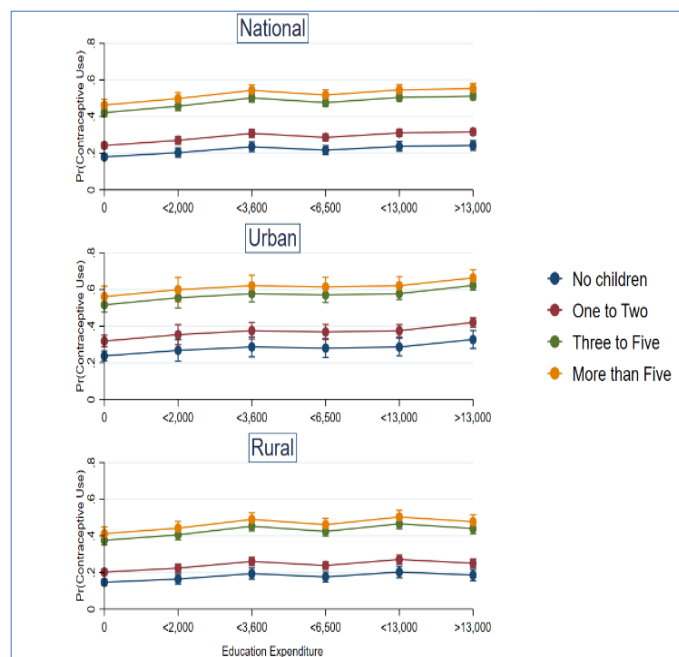

Figure II: Predictive Margins of Education Expenditure and Contraceptive Use by Number of Children

Interpretation

The analysis supports the idea of a higher likelihood of using contraceptives if a couple has a preference for investment in children's education. The results indicate slightly lower consumption of contraceptives among the wealthiest group both in urban and rural settings compared to the upper-middle group. This points out that **the opportunity cost in the highest class is not much in the case of Pakistan** therefore they spend more on education irrespective of their fertility preferences.

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