

FAMILY PLANNING IMPLICATIONS OF CONSIDERING CHILDREN A LUXURY GOOD

INTRODUCTION

The inverse relationship between economic status and fertility is well documented for developed countries. This paper explores income fertility relationship in a developing country, Pakistan, within a framework that identifies behavioural differences among the households who invests in their children and those who do not.

Pakistan started family planning (FP) programming in 1954 and made it part of the state policy in 1966^{1,2}. However, despite this early start Pakistan now lags its regional neighbours in uptake of FP despite having tried many different strategies and types of interventions over the years¹⁻³.

Two main inferences stand out from a review of FP programming in Pakistan⁴. One, is that for most part much of the programming has been driven by the public sector until recently and has been centred on poorly implemented supply side approaches¹. However, when these same supply side approaches were implemented well – mostly by NGO - they resulted in considerable increases in contraceptive prevalence rates (CPR) in very short times^{5,6}, suggesting that there was considerable “unmet need” for family planning in communities^{4,7-9}.

The other inference was that although there is unmet need in the communities, nearly half of the eligible population in Pakistan has no immediate intention to use family planning and that these are distributed across socio-demographic categories including urban-rural, education and wealth quintiles^{8,9}. Thus, to promote quality FP programmes and services, it is important to understand which households are currently using family planning, those which will use it if it is accessible and which ones would pay for it (need plus willingness to pay); along with an understanding of what would motivate them to do so; vs. those that are simply not interested for any reason.

One would expect that since children are considered an asset and as there are costs to raising them, couples would have more children as they grow more affluent. In fact this was true for all societies previously¹⁰. However, in his seminal paper, Nobel laureate Gary Becker observed that in the 20th century, increasing household incomes

were associated with smaller and not larger families. He ascribed this change from traditions to data quality issues and asymmetry of information about contraceptive methods¹¹ but also considered the quality of time spent by the parents with their children as a factor¹². However, this inverse relationship between income and fertility has held up consistently in developed societies^{10,13}. Scientists have used described a number of theories to describe this relationship including a trade-off between number of children and amount of resources spent on education, quality and quantity of time and goods invested into bringing up the children, perceived quality of children, wage differences between husbands wives and child preference – linking the relationship more to the mothers’ but not the fathers’ incomes¹¹⁻¹⁸. These found that the competing idea of long term economic benefits of children that parents hope to receive when their children grow up - e.g. retirement security – did not influence fertility decisions.

SALIENT POINTS AND RECOMMENDATION

- Any investment in children’s education doubles the likely hood that a couple will use family planning
- This effect is independent of wealth of families
- 63% of households spend at least PKR 1 on their child’s education
- Spending on children’s education increases with rising income; and the rate of rise in education spending is higher than the rate of rise in income. Thus spending on children’s education is as for a luxury good.

However, these observations are from more developed societies. We explored if a similar relationship holds in a developing country such as Pakistan. The purpose is to inform upcoming family planning policies, interventions and programmes about how differences in their approaches to

children directly impact how households seek (or avoid) family planning. Such information would allow interventionists to tailor their messages and approach to different families within the same community - that want more children vs. those who don't.

METHODOLOGY

We conducted secondary analysis on Pakistan Social Living and Measurements Survey (PSLM) and the Household Integrated Economic Survey (HIES) databases of the year 2007-08, the last year where all required variables are available in public domain.

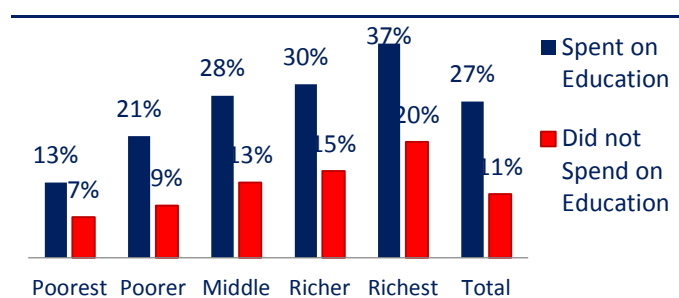
Education spending is taken as a surrogate on investment into or spending on children since in these databases, education is the only expense that is nearly exclusively for children.

Based on education spending, households were divided into two categories i.e. those that spend at least PKR 1 on education and those that don't spend anything at all. The remaining seven major expenditures including medical, housing, tobacco, recreation, food, clothing and telephone were described across households for each of the wealth quintiles (Table 2). We also used linear regression models to measure the relationship between education or CPR with demographic variables such as both parents' age, total boys, total girls, rural and urban region, household size, years of education of either parents, income and expenditures on medical, housing, tobacco, recreation, food, clothing and telephone.

RESULTS

We demonstrate that CPR increases with rising income, even when controlled for wealth quintiles, in that CPR is nearly twice as high among households that invest in their children's education than those who don't. The rise in education – and therefore on children - spending outpaces the rise in income, suggesting that it is considered a luxury expenditure, along with housing and telephones. Thus children – and expenditures on them – are considered as a luxury rather than an inferior good by at least some households.

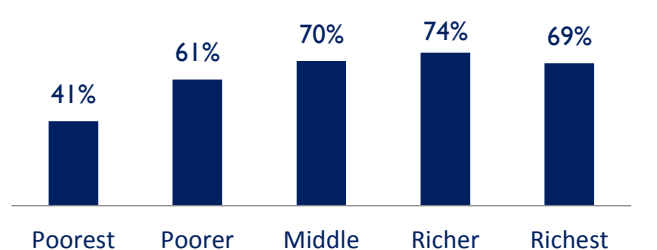
Figure 1: CPR by Education Spending



Income and Expenditures on Education

In 2007, 63% of the households spent at least one rupee (PKR) on their children's education; and the rate in rise in education expenditures outpaces the rising household income, relative to wealth quintiles, suggesting that education of children is being purchased as luxury good (Table 2). This rise in education spending is consistent with – although at an even higher rate – with other luxury spending such as housing/ rent, and telephone and seems to come at the expense of food and tobacco; a phenomenon that is more pronounced for richer than for poorer households.

Figure 2. Percentage of Households that Spend on Education



These relationships also hold in our multiple regression model ($R^2: 0.817$, Table 3) which shows that expenditures on telephone, housing and rent and clothing are associated with increased education spending, while spending on food, healthcare and tobacco decrease with a rise in education spending. (Table 1).

Table 1: Predictors of Education Spending

Predictors	AOR	Lower Limit	Upper Limit
Female age	0.999	0.999	1.001
Male age	1.001	0.998	1.002
Total Boys	1.011	0.998	1.012
Total Girls	1.013	1.000	1.015
rural	0.993	0.978	1.004
Household size	1.011	1.000	1.004
Years of Education	1.004	0.999	1.003
Expenditures			
Medical	0.749	0.677	0.705
Telephone	1.189	1.186	1.291
Food	0.493	0.844	0.865
Tobacco	0.796	0.164	0.197
Housing	1.121	1.040	1.078
Recreation	1.000	0.918	1.093
Clothing	1.565	1.913	2.148
Total Expenditure	3.013	1.106	1.121
Total income	1.003	1.000	1.000

Reproductive Health Outcomes and their Correlation with Education Spending

Among the 63% of the households that spend on education, the rates of contraceptive use are double that of those household that did not spend anything on education within each wealth quintile.

Table 2. Distribution of Income and Expenditures across Wealth Quintiles

Wealth Quintiles	Education Spending	Total Income	Total Expense	Medical Expense		Food Expense		Telephone Expense		Tobacco Expense		Housing Expense		Recreation Expense		Education Expense		Clothing Expense	
		PKR	PKR	PKR	% of income	PKR	% of income	PKR	% of income	PKR	% of income	PKR	% of income	PKR	% of income	PKR	% of income	PKR	% of income
Poorest	No	60,000	61,965	2,500	4%	40,677	68%	0	0%	840	1%	6,000	10%	0	0%	0	0%	3,400	6%
	Yes	80,000	82,744	3,500	4%	51,028	64%	0	0%	840	1%	7,500	9%	0	0%	1,000	1%	4,800	6%
	Total	68,900	70,124	3,000	4%	44,956	65%	0	0%	840	1%	6,550	10%	0	0%	0	0%	4,000	6%
Poorer	No	72,000	74,684	3,000	4%	43,972	61%	0	0%	1,080	2%	8,550	12%	35	0%	0	0%	4,250	6%
	Yes	96,000	102,384	3,500	4%	56,903	59%	510	1%	720	1%	10,800	11%	300	0%	1,600	2%	5,695	6%
	Total	86,400	91,958	3,400	4%	52,132	60%	0	0%	900	1%	9,600	11%	250	0%	680	1%	5,100	6%
Middle	No	92,400	95,414	3,500	4%	52,262	57%	1,200	1%	840	1%	12,960	14%	300	0%	0	0%	5,020	5%
	Yes	116,100	125,825	4,500	4%	64,784	56%	2,400	2%	480	0%	15,600	13%	350	0%	3,200	3%	6,700	6%
	Total	108,000	117,498	4,000	4%	61,993	57%	2,400	2%	672	1%	14,400	13%	300	0%	1,550	1%	6,150	6%
Richer	No	108,000	98,187	3,000	3%	50,238	47%	2,220	2%	600	1%	13,000	12%	500	0%	0	0%	5,700	5%
	Yes	120,000	128,308	4,000	3%	65,862	55%	2,400	2%	540	0%	18,000	15%	550	0%	4,300	4%	7,600	6%
	Total	120,000	121,334	3,700	3%	62,529	52%	2,400	2%	540	0%	18,000	15%	533	0%	2,625	2%	7,125	6%
Richest	No	113,400	110,736	2,500	2%	57,080	50%	3,000	3%	0	0%	25,620	23%	1,500	1%	0	0%	5,200	5%
	Yes	150,000	157,406	3,500	2%	74,464	50%	4,560	3%	0	0%	36,000	24%	2,100	1%	7,000	5%	7,600	5%
	Total	144,000	144,621	3,200	2%	69,512	48%	3,600	3%	0	0%	36,000	25%	1,855	1%	4,120	3%	7,000	5%
Total	No	78,000	79,102	3,000	4%	46,901	60%	0	0%	720	1%	10,000	13%	300	0%	0	0%	4,300	6%
	Yes	112,700	119,444	4,000	4%	62,894	56%	2,400	2%	600	1%	14,602	13%	400	0%	3,000	3%	6,500	6%
	Total	99,200	105,058	3,500	4%	57,204	58%	1,200	1%	612	1%	12,135	12%	300	0%	1,100	1%	5,700	6%

A multiple regression analysis suggests that in addition to demographic factors such as the age and education of the mother, total number of children already present in the household, luxury expenditures such as telephone, recreation and – in this case - education are associated with increased use of family planning (Table 4).

Table 3: Contraceptive Prevalence Rates and Spending on Education

	Spent on Education	Did not Spend on Education	Total
Poorest	13%	7%	10%
Poorer	21%	9%	17%
Middle	28%	13%	24%
Richer	30%	15%	26%
Richest	37%	20%	33%
Total	27%	11%	22%

Table 4: Predictors of Contraceptive Prevalence Rate

Predictors	AOR	95% C.I. for EXP(B)	
		Lower	Upper
Age of mother	1.017	1.011	1.024
Years of Mother education	1.078	1.067	1.089
Total number of children	1.287	1.259	1.315
Total Expenditure	1.000	1.000	1.000
Specific Expenditure Type			
Medical	.582	.334	1.014
Education	1.536	1.383	1.707
Telephone	1.219	1.111	1.338
Food	1.929	.219	17.004
Tobacco	.941	.867	1.023
Housing	1.094	.101	11.891
Recreation	1.407	1.270	1.558
Clothing	.933	.182	4.792
Income	1.000	1.000	1.000
Wealth Quintile (Poorest as reference)			
Poorer (1)	1.533	1.307	1.798
Middle(2)	2.170	1.857	2.535
Richer(3)	2.256	1.926	2.643
Richest(4)	2.827	2.399	3.330
Constant	.013		

DISCUSSION

Our analysis shows that households that invest in children – as exemplified by spending on education - are different from those who don't invest on children in that they use family planning twice as often as their wealth quintile match counterparts who don't invest in their children's education; and that this spending on education increases disproportionately as income rises and comes at the expense of food, tobacco and healthcare. In

addition, while increasing income is likely to lead to fewer children (due to higher CPR), these households are not considering children as an inferior good¹⁹, but rather as a luxury good, in whom they investments more with rising income.

An inferior good is one which is procured less as income increases; while spending on luxury goods rises more than the rise in income. In Pakistani households that spend at least PKR 1 on children's education, this investment outpaces the rise in income. Therefore, investments on children's education (and presumably children themselves) are considered a luxury good. Furthermore, since we measured the overall spending on education per household, fewer children would mean that these households will spend even more on each child.

What is more important is that households that invest in their children also approach their reproductive health differently; they use contraception twice as often than those who don't invest in their children. In fact, CPR increases with income far more among these parents. These findings clearly show an inverse relation between the number of children and affluence in Pakistan; something that had previously only been document for developed societies¹⁰. A likely explanation is in the "quality of children" paradigm¹¹⁻¹³.

Finally, although this is a powerful finding, only 37% of all households – including those from among the richest - invest nothing at all in their children's education – and use FP far less often.

We show that an important relationship between reproductive behaviours and income that has been noted for developed countries also holds true for Pakistan. Very likely, the magnitude of this effect will expand as more women become formally employed in wage earning activities¹³ as has been described in the neighbouring India²⁰.

The finding has profound implications for health campaigns, public advocacy, and family planning and education sectors. Typically, community messages for family planning are disseminated broadly, often using mass media approaches. Even when they are communicated one on one during health outreach (i.e. the Government's Lady Health Workers or other outreach workers by NGOs), the content of the message is the same for the entire community with little distinction for individualised needs of message recipients and their outlook. Since demand for family planning is a major determinant for uptake of family planning services (or other preventive health services such as childhood vaccination), considering and tailoring messages to specific needs of households would help improve targeting of messages. Simply asking if the

household has invested anything on the education of an older child sets them apart from those who don't; allowing these households to receive different messages and programming than other households that consider their children differently.

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