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**Children and Economic Development: Family Size,
Gender Preferences and Human Capital Formation
- Theory And Indian Cases ***

by

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**CHILDREN AND ECONOMIC DEVELOPMENT: FAMILY SIZE, GENDER
PREFERENCES AND HUMAN CAPITAL FORMATION
– THEORY AND INDIAN CASES**

Abstract

In the light of Gary Becker's economic theory of the family, considers how economic cost and benefit factors can influence the size of families that parents decide to have. Some support for the importance of such factors is found from results of structured interviews with wives in Kondh-dominated villages in western Orissa. These results are at variance with the hypothesis of Malthus about population growth. Factors that may alter the optimal family-size as development proceeds are discussed. It is found in our sampling that, on the whole, there is a preference for daughters rather than sons although this is not as strong in the Kondh-dominated villages as in poor villages in the Santal tribal belt of West Bengal. While in the Kondh-dominated villages some discrimination in access to education in favour of boys compared to girls is present, little such or no such discrimination occurs in relation to access to food and medical attention. In the villages surveyed in the West Bengal Santal tribal belt, discrimination in favour of boys is more pronounced than in the Kondh-dominated area in Orissa. While economic considerations help to explain gender discrimination between boys and girls, we find that social and cultural factors also play a major role. Parents in a similar economic situation seem to display substantially different patterns of gender discrimination between children depending on their social and cultural content. It seems that the extent to which economic theories of the family explain family preferences and behaviour depend significantly on the social and cultural context in which they are to be applied.

CHILDREN AND ECONOMIC DEVELOPMENT: FAMILY SIZE, GENDER PREFERENCES AND HUMAN CAPITAL FORMATION

– THEORY AND INDIAN CASES

1. Introduction and Background

To a large extent, children are the beneficiaries of economic development and the means for future economic development. Their future productivity is significantly influenced by the human capital invested in them. Such investment may be in terms of education provided to them and via adequate health care and nutrition designed to improve their physique and health (Tisdell, 2000a, b). Furthermore, the size of the family has implications for the level of income available to its members and for the level of savings of the family and its scope for capital formation.

In addition, the composition of a family is of economic importance. A family with many dependents or relatively dependent members is likely to have a lower per capita income than families of the same size with fewer dependents. In some societies, gender composition of children is also of concern to parents. In patriarchal societies, as mostly occur in India, boys are usually preferred to girls but in matriarchal societies, some of which also occur in India as amongst the Kassis, girls may be preferred to boys. Such factors can influence female-male ratios and the relative access of boys and girls to human capital. When the latter type of gender-bias is present, it has implications for future economic development.

The purpose of this article is to outline and apply economic theories of the family that may influence family decisions about the size of the family, its gender composition and investment in the human capital of children, particularly of boys compared to girls. The analysis draws mainly on the theory of Becker (1981) and on human capital theory (Mincer and Polachek, 1974). But it is also contended that economic theories are mediated by cultural factors. Furthermore, whole-of-life factors and whole-of-life entitlements of children and parents must be taken into account and these are usually significantly influenced by culturally determined factors. Field observations from a survey of Kondh tribal-dominated villages in western Orissa provide a basis for empirical discussion of the analysis (Tisdell et al., 2002) along with some observation from a field study of rural villages in the west of the Midnapore district of West Bengal.

2. Decisions about Family Size and Gender Composition of Children

Becker (1981) assumes that parents will make decisions about their family size designed to maximize a specifiable single utility function that reflects the preferences of parents. His theory has been described as the unitary theory of the family (Alderman et al., 1995) in contrast to bargaining theories of the family based on game theory (Alderman et al., 1995; Haddad et al., 1997; Schultz, 1990). The latter theories explain family decisions in terms of power play between family members based on a combination of mutual and conflicting interests mediated by threat possibilities. These theories are as a rule based on types of rational behaviour assumed in game theory.

However, they may not be as relevant to family decisions about children as unitary theories (Tisdell et al., 1999). The latter theories may be more applicable to explaining the socioeconomic status of wives within families but even then, they are subject to considerable qualification because of the strong influences of cultural and institutional factors (Tisdell et al., 2001).

Application of the unitary theory does not strictly require that parents have the same shared utility function. It would still apply if one parent dictatorially imposed his or her utility function on the other. Strictly also a pure unitary theory is not required to underpin a cost and demand approach to family size and its gender composition.

In its simplest form, the demand and cost approach to family size and its gender composition suggests that the size of the family is largely determined by parents weighing up the economic benefits to be obtained by them from children against their cost. Assuming that the benefits of parents from having some children exceeds the cost involved, the rationally determined size of the family in terms of the number of children is that for which the additional economic benefit of a child equals its extra cost.

This is illustrated in Figure 1. There, line dd' represents the extra economic benefit to parents of additional children and cc' represents their additional cost. The ideal family size for these parents is three. In practice, the number of children is discrete so an integer problem will need to be solved. If, for example, the continuous demand curve and marginal cost curve fitted to the discrete values is between 2 and 3 children, either 2 or 3 children will be optimal. The best choice will be found by comparing the net benefit of two children with that for three

children, and selecting which of the alternatives gives the higher net benefit. The general approach is not invalidated. The solution is just a little more complicated. Note that factors that cause the marginal benefit curve for children to shift downward or the marginal cost curve to shift upward will reduce the optimal family size. As discussed later, economic developments may cause systematic changes to occur in these curves.

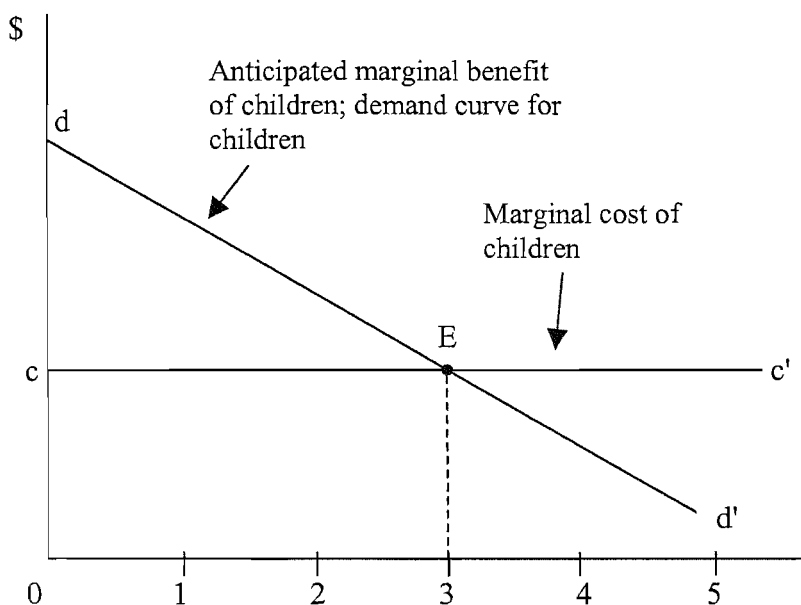


Figure 1 Marginal benefits and costs of children as determinants of the size of the family

Given the economic benefit-cost approach to determining the number of children that parents will typically decide to have in their family, a most important consideration is what determines the relationships shown in Figure 1 and how the position of the curves shown there may be altered.

The demand curve for children might be influenced by several factors. These include the anticipated pleasure of having some children, the biological desire to leave descendants, the desire for social approval from having children, the economic value of the product which offspring may produce or help to produce, and the possibility that offspring may support their parents in their old age or if they become infirm. The costs of having children include the costs of providing them with the necessities of life and investing in their education, health and welfare generally. Note that the theory also supposes that parents have the ability to control their number of children (for example by contraception or other means) and that the economic costs of control are not large.

Becker's theory contrasts with that of Malthus (1798). T. R. Malthus assumed that families and population would expand in size until they were limited by the means of subsistence. This is, however, not true of most families in modern times. Even the relatively poor in India (see below) rationally limit the sizes of their families. Becker's theory assumes that the number of children a couple has is basically a rational economic choice.

Apart from the fact that contraception methods are now more widely available and cheaper than in the past, with economic development, the net benefit to parents of large-sized families appears to have declined significantly. Education has increasingly become compulsory and basic education is mostly free or heavily subsidised. In rural areas, this means that children are less available to assist their parents with work tasks and so the value to parents of their direct productivity has declined. While basic education is 'free' or heavily subsidised, there are still extra costs to be borne by parents such as extra clothing costs, school transport cost in some cases, and in many cases purchase of books. This tends to increase the cost of children. Medical and health services are also more widely available and parents may be under greater social pressure than previously to provide these to their children in times of sickness. In the urban setting, the cost of housing children may also be much higher than in the countryside and children may have fewer opportunities to contribute to family income than in rural ones. Thus with development, one would expect smaller families in the countryside and even smaller ones in urban settings.

Furthermore, in many countries, including India, life expectancies have risen with economic development. This means that fewer children are required by parents to ensure themselves of support in old age or if they become infirm. Actually with considerable economic development the dependence of parents on their children declines markedly, as in OECD countries. Either welfare systems are widely available to help support the elderly or infirm or parents are in a position to provide of their own welfare by insurance and superannuation schemes; mechanisms that tend to develop with the market economy. In fact, in such economies, the institution of the family as a cohesive unit tends to be eroded. This is mainly because family members tend to become geographically mobile in seeking jobs or job opportunities. Consequently, children and their parents often become scattered geographically. In developing countries, especially rural areas, such features are as yet less pronounced.

In interviews with 106 wives in three Kondh tribal-dominated villages in the west of Orissa undertaken in 2000, 101 wives responded to a question asking them the ideal number of children and 5 did not answer [for details about the survey see Tisdell et al., 2002]. Most (46%) said that 2 was the ideal number and 8% said 3, with 34 % saying 2 or 3 children. Consequently, 93% of those answering said that 3 or less children is ideal. The main reason given was that a small family is easily manageable in terms of care, education, food and clothing. This is consistent with a benefit-cost approach.

The most frequent number of children of the wives interviewed was two and their average number was a little less than two. Even though these villagers are very poor by Indian standards, it seems clear that they engaged in careful family planning. A similar situation was found in four rural villages in the west of the Midnapore District (cf. Tisdell and Roy, 2000). The family sizes in the Kondh-dominated villages suggests that if anything, slightly negative population growth is voluntarily occurring, and it is occurring in a situation of considerable poverty.

Wives in these villages were also asked whether they preferred more sons than daughters, more daughters than sons or an equal number of sons and daughter. Five did not answer. Most (62%) preferred an equal number of sons and daughters, 36% preferred more sons than daughters whereas only one percent preferred more daughters than sons. There is clearly a bias in favour of sons. The Kondhs and the scheduled-caste Hindus, called Dombs, who live in some of the Kondh villages, belong to patriarchal societies. The Dombs are generally servants to the Kondhs and cultural convergence seems to have occurred. Those respondents who said they prefer more sons than daughters explained that daughters will eventually get married and go away. In fact, a daughter will go to another village and another family and will not be able to provide long-term support to her natural parents. So a daughter is likely to give less economic benefit to her parents, and parents will have to pay a dowry to her parents-in-law whereas one will be received by them when their son is married. Cost-benefit analysis is, therefore, capable of explaining some of the bias in favour of sons.

In India, as a whole, there is a strong preferences for boys rather than girls in families and this is most marked in the north of India (Dyson and Moore, 1983). It is less marked amongst tribals than non-tribals taken as a whole. Although the Indian female-male ratio fell in the

20th century according to Indian Census data, it displayed some increase in 2000 according to the Census. However, this improvement may be largely attributed to increasing life expectancy. This tends to favour females relative to males. Nevertheless, the female-male ratio for children under six years continues to decline in India (Konar, 2001). This may be a result partly of selective abortions and infanticide as well as relative deprivation of female children.

An interesting variation to the economic theory of family size as illustrated by Figure 1 is suggested by observations of Bledsoe (1994) for Africa. She found, on the basis of experience in Sierra Leone, Gambia and Liberia, that there is a strong social demand for large families in the coastal belt of sub-Saharan Africa, and families remain large. One reason is that if a child in adulthood does well, economic gains are made by the whole village. But also the rearing of children is a shared village activity so children are more like common property than private property of their parents. This means that the cost of rearing individual children tends to be shared in the village. Therefore the costs falling on the parents may be a fraction of the total cost of child rearing. Thus in Figure 1 if 'cc' represents the actual per unit cost of rearing children, the per-unit cost to parents in West African coastal communities is below this. Thus parents have an economic incentive to have a greater number of children. In this case, institutional or cultural factors have a significant influence on the way in which the economic theory of the family operates.

3. Investment in the Human Capital of Children

Although parents may have preferences for the gender composition of their children, this need not result in gender discrimination when a child of a particular less preferred sex is born. Nevertheless, in some cases, it does result in discrimination according to gender. For example, sons may be given preference to daughters in education, in access to health care and in access to food when food is in short supply. This all results in gender differences in investment in human capital formation in children which in turn affects their future earning capacity and possibilities for personal independence.

Most rural dwellers seem to be aware of the importance of human capital formation for the future welfare of their children. In the Kondh-dominated villages surveyed in Orissa, all the wives (94%) who responded to this question regarded education for their children as very

The relative lack of discrimination against daughters in the Kondh-dominated villages contrasts with findings from a similar survey in four rural villages in the west Midnapore District near Chandrakona Road (Tisdell, 2000a). Some of these villages consisted of Santal tribals, some of Santals and Hindu Bengalees and still another contained only Hindu Bengalees. In these villages, there is marked food discrimination in favour of sons and in access to medical attention. However, such discrimination is less pronounced amongst Santals than amongst non-Santals, particularly as far as access to medical attention is concerned.

Interviews were conducted in the second half of 1999 in four rural villages in the west of the Midnapore District, two of which consisted entirely of Santals, one was a mixture of Santals and Hindu Bengalees and the fourth was entirely comprised of Hindu Bengalees. In total, 120 wives (or their representatives) were interviewed. Their responses in relation to the foci of this article are summarised in Table 1. As can be seen, compared to the Kondh-dominated villages, there is a much stronger preference for sons compared to daughters. Furthermore, there is much stronger discrimination in favour of sons as far as education, food availability and medical attention are concerned. Thus patriarchal dominance seems much more pronounced in these village samples in Santal and Hindu Bengalee communities in west Midnapore than in Kondh-dominated villages in western Orissa. Further evidence indicates that the extent of discrimination against girls tends to be stronger amongst Hindu Bengalees in this region than Santals. The difference is more marked when Santals continue to follow their Sari religion rather than Hinduism. Where Santals are converted to Hinduism, social convergence seems to be marked. However, some social convergence towards northern Hinduistic values occurs for most Santals (cf. Sahu, 1996).

Table 1

Summary of Responses by Wives (or their representatives) to some Questions Relating to Children's Affairs in Four Villages in the Midnapore Area of West Bengal

	Number	Percentage (%)
Q52 Preference for Sons		
a) More sons than daughters preferred	86	71.6
b) More daughters preferred	4	3.3
c) Equal number of each	30	25.1
d) No response	-	-
Total	120	100
Q57 Number of years of education		
a) More years of education for sons than daughters	70	58.3
b) More years for daughters	13	10.8
c) Same for both	17	14.2
d) No response	20	16.7
Total	120	100
Q59 Food availability		
a) Sons favoured with food	77	64.1
b) Daughters favoured with food	0	0
c) Equal preference	36	30.0
d) No response	7	6.9
Total	120	100
Q60 Medical Attention		
a) Sons favoured for medical attention	60	50
b) Daughters favoured	0	0
c) Treated equally	50	41.6
d) No response	10	8.4
Total	120	100

Source: Author's survey

Thus, daughters in the west Midnapore Santal area surveyed seem to be more deprived of human capital relative to sons than is so in the west Orissa Kondh-dominated area surveyed. This is so despite the fact that the economic situation of all these villages seems similar. Poverty is common to all the villages surveyed, and probably economic deprivation is even

more marked in the sample from Orissa than that for West Bengal. Hence, differences between the regions in gender bias in access of children to human capital seem to arise from variations in cultural factors rather than from any significant difference in economic conditions. Consequently, application of the economic cost-benefit theory of the family needs to be varied according to the cultural and social customs that prevail in individual societies. It is dangerous to apply economic theories of the family without taking thorough account of the social and cultural context in which they are to be applied. This is because economic theories of the family are partial rather than holistic theories.

4. Impacts on Economic Welfare and on Development of Gender Discrimination between Children

Some human capital theorists (e.g. Mincer and Polachek, 1979) have argued that even in Western societies, maximum economic welfare in the Kaldor-Hicks sense is likely to be achieved by showing a gender preference for boys in the allocation of investment in human capital, such as in education. In the absence of such a preference, it is argued that a Kaldor-Hicks gain would be possible for society, that is the gainers (boys or males in this case) could compensate the losers (girls or females) and still remain better off than prior to the preference in access to human capital or education for boys. It is argued that aggregate production or returns on investment in human capital will be maximised by showing a preference for boys in the allocation. Furthermore, it is claimed that this does not involve economic discrimination according to gender but merely reflects the underlying economics. The main argument in support of this position is that women during child-bearing have their capacity to participate in the workforce reduced and tend to lose their work skills and slip down the work-experience ladder. In some societies, also, social restrictions on the ability of wives or women to work outside the home limit their opportunities to make full use of their human capital. This is true in some parts of India.

To illustrate the argument, let us consider investment in the education of boys and girls taking a theoretical example. In Figure 2, line ABC represents the marginal efficiency of capital invested in the education of a boy and line DEF indicates that invested in the education of a girl. The line for the marginal rate of return on education of the boy is higher than for the girl. Therefore, if a limited amount of capital is available for investment in the education of the boy and the girl, the total return on the available capital is maximised when more capital is invested in the education of the boy than the girl. Thus, if the available capital for investment

in education is equal to BE, the total return on the investment is maximised when BG is allocated to the boy and EG to the girl. Then $BG > EG$. The necessary condition for maximising the return from investment in education is that the marginal efficiency or marginal rate of return be equalised for this investment in the boy and the girl.

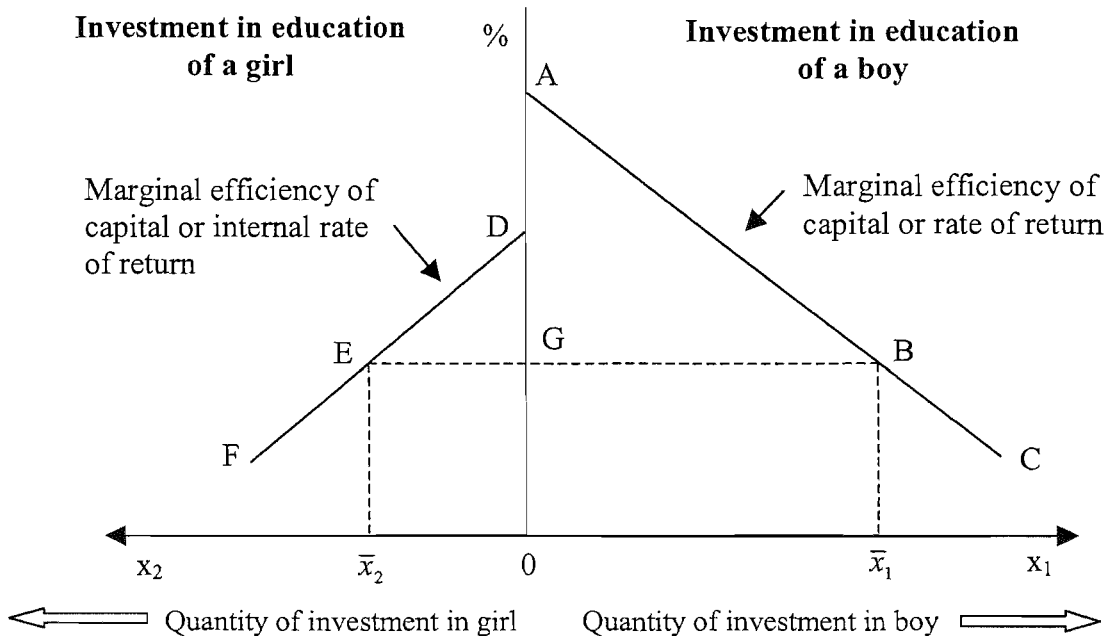


Figure 2 The marginal rate of return from investment in the education (or human capital) of a boy may be higher than for a girl. Economic efficiency considerations in such cases would ‘bias’ the allocation of investment in favour of the boy

While there may be some natural reasons why the private marginal internal rate or investment in the human capital of a girl tends to be lower on average than that for a boy (mainly due to the child-bearing role of females), differences may be socially or culturally widened. Females may in some societies have fewer employment opportunities than males and they may be required to shoulder the major burden of family care. This discrimination in adult life, due to social and cultural factors, reduces the private return from investment in the education of females compared to males.

Nevertheless, from a social point of view, it seems important that investment in human capital be influenced by social returns rather than private returns. It could be argued that wives as the primary family-carers, generate significant spillover benefits from their education to their children. There is also evidence that more educated women are likely to have smaller sized families. Furthermore, better developed women are likely to be in a

superior position to take care of their families. Thus, from a social point of view, greater equality seems justified between boys and girls in access to human capital, than appears to be optimal from a private viewpoint.

Many parents only appropriate a small portion of the benefits from educating their children and investing in their human capital. Narrow parental self-interest is hard pressed to fully explain parental behaviour towards their children. Altruism, the desire for social approval, and according to some biologists, the desire to leave behind genetic successors plays a role in the support of parents for their children. While economic considerations do help to explain gender discrimination between boys and girls in some families in India, the explanation is partial. In some patriarchal communities in India, parents seem less inclined to invest in the human capital of girls compared to boys on the grounds that the former will leave their family whereas the latter are likely to stay. The benefits of providing education and other human capital to a daughter are therefore, viewed by many parents as being external to their family. However, as has been seen, some communities such as Kondh-dominated ones give less weight to this factor than others, such as villagers Bengalee Hindu or Santal communities in the west of Midnapore. Culture can significantly mediate the extent to which narrow economic considerations prevail in parental care of children and their access to human capital.

5. Concluding Comments

While economic theories of the family shed some light on the basis of decisions about family size, gender preference for children and differences in access of daughters and sons to human capital, they need to be supplemented by sociological considerations. Family decisions are not purely economic ones. Furthermore, the extent to which economic factors play a role in parental decisions about children seem to vary significantly with differences in the cultural and social setting of the family, as has been illustrated by cases from India.

Nevertheless, economic factors do influence the size of families, and some of the likely changes in family size as economic development occurs are predictable. At the same time, social and cultural factors play a major role (sometimes an overriding one) in gender preferences for children and in discrimination between daughters and sons in their access to human capital. To reiterate for emphasis: The extent to which economic factors feature in decisions about the family, particularly decisions about children and their resource

entitlements, depends on the cultural context in which the family exists. It is dangerous to apply economic theories of the family without relating these to the social and cultural context in which they are to be applied.

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