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Urbanization and the South Asian Enigma

A Case Study of India

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Abstract

South Asia has the highest rate of child malnutrition in the world, despite rapid economic growth compared to other regions such as sub-Saharan Africa. Known as the 'South Asian enigma' this feature is partly attributed to the low status of women in South Asian societies. This paper examines this tenet in the context of India, with particular emphasis on possible differences between rural and urban scenarios. The empirical evidence reveals some important differences, which are relevant for policies relating to women's empowerment against a backdrop of rapid urbanization.

Keywords: urbanization, women, malnutrition, slums, India

JEL classification: D1, I11, R0

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Acronyms

AFDC Aid to Families with Dependent Children

BMI body mass index

NFHS National Family Health Survey

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1 Introduction

Food security, defined as access to sufficient food for an active and healthy life, is pivotal to early childhood development. Children's food security is, thus, a factor in economic growth since well-developed children are more productive as adults. Yet, malnutrition afflicts about a third of preschool aged children in less developed countries. It is associated with over half of worldwide child mortality (Pelletier et al. 1995). South Asia has the world's highest rate of child malnutrition, with 49.3 per cent of its 0 to 5 year old children underweight (Smith and Haddad 2000), this despite the fact that South Asia fares better than sub-Saharan Africa, for example, by a number of measures of economic development: the so-called South Asian Enigma. It has been argued that this is due in part to the particularly low status of women in South Asia (e.g., Smith et al. 2003).

We expect growing urbanization to change that. One of the main reasons behind the low status of south-Asian women is that they are often forced to lead a cloistered life, mostly in rural areas, cut off from support groups or any exposure to progressive norms of behaviour. Relocation to urban areas can facilitate such exposure and urge women to participate in household decisions, especially those pertaining to her children. The objectives of this paper are to assess if there are major differences in women's status between rural and urban areas of India, and, to estimate the effect of the status of women on child malnutrition in both rural and urban areas. Within urban areas, we make a distinction between slums and non-slum areas. In the process, we also try to contribute to an on-going debate about what are the good measures of women's status. The main problem here, as we see it, is that some of the popular measures of women's (bargaining) status can be 'endogenous' (we contextualize it later). We try to address it by making a distinction between ex ante and ex post[1] measures of women's status and test, on the one hand, how they differ between rural and urban areas, and on the other, which is more relevant for child health, statistically.

Inquiry into the effect of women's intra-household status relative upon children's food security is also the means of testing between two competing views of households. While economists have traditionally considered the household a monolithic unit, this 'unitary' model has been yielding to the view that a household's allocation decisions result instead from bargaining between its members. The unitary model, attributed to Becker (1965, 1981), typically assumes that, subject to a budget constraint, the household combines its labour with market inputs to produce a composite consumption good that is distributed among its members according to a single set of household preferences. It follows that improvement in women's status may not affect intra-household distribution. Collective models of intra-household allocation, on the other hand, often view intra-household distribution as the outcome of Nash bargaining between members, so that allocations to a member (and her constituency) are dependent on her bargaining power. Thus, the models predict that improvement in women's status shall increase allocations to women and children. Our presumption is that women's bargaining status could be higher in urban areas and hence have a relatively greater positive impact on health outcomes of her children than her rural counterparts. It is necessary to test between these competing views of households since mistaken adherence to the unitary model may reduce the efficacy of policy (Haddad, Hoddinott, and Alderman 1997). For

[1] The ex ante measures may suffer from potential endogeneity.

instance, public transfers to benefit children may be less effective if the particular adult recipient is not wholly solicitous about children.

There is now much empirical support of bargaining models of intra-household allocation. For example, Schultz (1990) finds that a woman's unearned income in Thailand has a more pronounced positive effect upon her fertility and consumption of leisure than the unearned income of her spouse, such income being taken to measure intra-household bargaining power. Similarly, Thomas (1990) discovers that family health outcomes in Brazil, such as child survival probabilities, are much more improved by increases in mothers' than fathers' unearned income. Hoddinott and Haddad (1995) find that an increase in the share of household income earned by women in Cote d'Ivoire raises the proportion of the household budget expended on food and reduces the budget shares of alcohol and cigarettes. Handa (1996) uncovers evidence from Jamaica that the presence in a household of a female decisionmaker generally increases the share of the household budget allocated to child and family goods. Lundberg, Pollak, and Wales (1997), in an examination of a late 1970s policy change in the UK that transferred a substantial child allowance to wives, find that this resulted in greater expenditures on women's and children's clothing relative to men's clothing. Pitt and Khandker (1998), in a study of microcredit programmes in Bangladesh, determine that household consumption expenditure increased by 18 *taka* for every 100 *taka* borrowed by women, as opposed to an increase of only 11 *taka* for every 100 *taka* borrowed by men. Similarly, Levin, Ruel, and Morris (1999), in a study of urban households in Ghana, find that women allocate a larger share of their income towards meeting their children's and their own basic needs despite earning less than men. Thomas, Contreras and Frankenberg (2002) learn that child health in Java is influenced by the relative asset positions of parents at the time of their marriage, pre-marital assets being taken to measure intra-household bargaining power. In their examination of US data, Rubalcava and Thomas (2002) find that a woman's options outside her marriage, as proxied by the generosity of Aid to Families with Dependent Children (AFDC) benefits in her state of residence, appear to influence her bargaining power with consequences for intra-household resource allocation. Using assets at the time of marriage as measures of bargaining power, Quisumbing and Maluccio (2003) reject the unitary model of the household in data from Bangladesh, Ethiopia, Indonesia, and South Africa. Lastly, Guha-Khasnobis and Hazarika (2007) find evidence of a positive association between child health and women's education level in Pakistan. They also find that a smaller age-gap between the spouses results in better child health outcomes. This makes sense in traditional, patriarchal and rural families where age is a measure of status. The situation may be different in an urban setting.

It is clear, therefore, that tests of the unitary model against collective models of households have consisted of the investigation of links between, on the one hand, plausible measures of household members' bargaining power and, on the other, either household demand for certain goods and services, such as health care and food, or the consequences thereof, such as children's health outcomes. Quisumbing and Maluccio (2003) aptly note it is imperative that the tests employ exogenous measures of bargaining power. Accordingly, Hoddinott's and Haddad's (1995) measure of women's bargaining power as the share of household income earned by women may not be suitable since earned or labour income reflects time allocation decisions that may be the outcomes of bargaining. In other words, the share of household income earned by women may be correlated with the unobserved aspects of bargaining power that make up part of the error term in a regression of household expenditure patterns against

women's income share. Other tests have adopted the intra-household distribution of unearned income (e.g., Shultz 1990), or of the ownership of inherited or pre-marital assets (e.g., Thomas, Contreras and Frankenberg 2002), as their measure of bargaining power. While it is more likely to be exogenous than earned income, unearned income too may be endogenous if it derives from assets accumulated by the means of earned income. Neither are inherited or pre-marital assets unambiguously exogenous. For instance, if parents follow the compensatory strategy of bequeathing more to less able children, and ability is correlated with post-marital bargaining power, inherited assets shall be endogenous. Marriage market selection poses difficulties as well. For example, a study that finds a positive relation between mother's schooling and children's educational outcomes would be wrong in concluding that this owes to the increased resources for children's education wrested from the household budget by means of the greater bargaining power of a more educated mother, if the children's favourable educational outcomes are due instead to the father's unobserved taste for educated children, the very taste that drove him to take an educated wife (Foster 2002). Only measures of bargaining power related to state supplied resources such as the child allowance in the UK investigated by Lundberg, Pollak, and Wales (1997) are likely to be unambiguously exogenous. Such natural experiments are, however, rare.

Thus, there is clearly a need to define supposedly exogenous measures of women's status. One of the objectives of our paper is to develop such a measure, based on responses from women regarding their actual treatment at home. Explicit questions regarding physical and mental torture were asked. These, we postulate, are ex post measures of a woman's true status at home, and it would be interesting to see how they correlate with the controversial ex ante measures discussed earlier. It is also interesting to compare the absolute levels of women's status between rural and urban settings, and also the correlations. For example, the ex ante and ex post measures may be positively correlated in urban areas, but not so in rural areas. We hope such findings will be useful for policymaking in the areas of women's empowerment and eradication of malnutrition. As the urban population in all developing regions grows over the next 20 years, governments and families will face unique challenges in their efforts to ensure the wellbeing of millions of children. They will have to take into account changes in women's roles, in strategies for childcare, and in the means of obtaining food security. All these changes will have major implications for the livelihoods of people residing in the new urban megacities.

2 Data

The data for the study are drawn from the third round of the National Family Health Survey (NFHS-3) conducted in India during 2005-06. The NFHS is the equivalent of the Demographic Health Surveys (DHS) conducted across many developing countries time to time. The NFHS conducted in 2005-06 is the third in the series. The first NFHS was conducted in 1992-93 and the second in 1998-99. The NFHS-3 interviewed 1,24,385 women between 15 and 49 years of age from 29 states across India. The urban and rural samples within each state were drawn separately based on the size of the population in rural and urban areas. The main objective of the survey is to provide national and state level estimates on important demographic, health and socioeconomic indicators. The field level data of the survey were made available to the public a year after the survey (www.measuredhs.com).

The analysis for this study is carried out using information collected from NFHS-3 from eight cities in India. The reasons for limiting the study scope to eight cities of India are as follows. First, NFHS-3 has sampled these eight cities separately to facilitate city level estimates. Second, the sample size in these cities was adequate enough to have separate estimates for slum and non-slum population independently. Third, these cities are old urban settlements with considerable expansion in recent years which may provide greater insights into the changing characteristics of urban living than the comparatively new urban settlement in India. The selected cities and the sample size drawn from these cities are presented in Table 1.

We have also chosen for the analysis women belonging to the rural areas of the state where the eight cities are located in order to compare between urban and rural areas. Table 1 also presents sample size from the selected rural areas of the respective states. The information was collected from all the women in the age group 15-49 from the sample households. Altogether a total sample of 20,508 women from the 15-49 age group were interviewed from the selected cities and 48,335 women of the same age group from the selected rural areas of these seven states. Around 47 per cent of the city population was drawn from slum areas constituting 9,643 women in the same age group.

As already pointed out, the objective of the study is to understand the impact of urbanization on the status of women and the health of their children in India. The study makes a comparison between slum and non-slum areas of the eight cities and the rural areas of the respective states to understand how far the status of women varies across these three distinct areas. As a first step, the comparison is carried out with the traditional status of women indicators which we call ex ante indicators. However, of late, it is argued that the traditional indicators alone will not be able to capture different dimensions of the status of women. NFHS-3 has also collected information on other indicators of status of women which are more probably more relevant in defining the actual status of the woman in the family than the ex ante indicators. These include the extent of involvement of women in the decisionmaking within the household, violence against women etc. We call these ex post indicators. Studies have shown that the correlation between ex ante and ex post indicators in different states in India is rather weak and hence status of women cannot be solely measured through the former alone

Table 1
Number of women in the age group 15-49 interviewed in slum and non-slum areas of eight cities and corresponding rural areas of seven states in India, 2005-06

	Sample size for:	
Name of the cities (states)	The cities	Rural areas of the state
Delhi (Delhi)	3,106	243
Meerut (Uttar Pradesh)	2,713	7,025
Kolkata (West Bengal)	2,471	3,152
Indore (Madhya Pradesh)	2,280	3,053
Mumbai (Maharashtra)	2,159	2,640
Nagpur (Maharashtra)	2,579	2,640
Hyderabad (Andhra Pradesh)	3,140	2,524
Chennai (Tamil Nadu)	2,060	2,720
Total	20,508	21,357

Source: Computed from the NFHS-3 data.

(Kishor and Gupta 2004). Therefore, it is important to understand the impact of both these sets of indicators in the urban context to find out how far the urban living provides positive or negative environment for enhancing women's position in the society. As a first step, we will look into the traditional status of women indicators in the context of urban and rural living in India.

3 Urbanization and women's status

There is a strong criticism that the urbanization process in developing countries has been often accompanied by higher levels of poverty and slum creation. The poverty levels estimated in urban areas are nearly the same as these of rural areas in India at the aggregate level. For instance, the population below poverty line was 25.7 per cent in urban areas as compared to 28.3 per cent in rural areas according to the 2004-05 estimates of Planning Commission. In many states, however, (Andhra Pradesh, Delhi, Karnataka, Kerala, Maharastra, Madhya Pradesh, etc.) the urban poverty rates are higher than rural poverty indicating vulnerability of urban residents in the country. The health status of urban poor is also a matter of immense concern and there are evidences of deterioration of health status in urban areas, particularly child health (Chandrasekhar and Mukhopadhyay 2008; Haddad, Ruel and Garrett 1999).

However, whether urbanization had been beneficial in general to the population is matter of debate. While several studies looked at the economic angle of urbanization, investigation into the non-economic aspects of urban living is limited. Although several rhetoric on the acute poverty and profound ill-health prevailing in urban slums are often reported in press and in micro level studies, they cannot serve as a benchmark to understand the impact of urban living compared to rural areas (Hardoy, Cairncross and Satterthwaite 1990; Harpham, Lusty and Vaughan1988; Kundu 1992). It is particularly true when the issues like status of women are discussed in the urban context.

We look into the ex ante indicators of the status of women in urban and rural context in India. These indicators measure women's position by considering the progress of selected socioeconomic indicators in comparison to men.

Table 2 presents the ex ante status of women (including some general socioeconomic indicators) in slum and non-slum areas of eight cities and the corresponding rural areas of the respective states.

The table clearly shows that according to all the indicators measuring women's position in India, irrespective of whether one considers the absolute level or in comparison with men, the urban areas are better off than the rural areas. The analysis clearly reveals the positive impact of urbanization as far as women's position is concerned. Definitely, the standard of living index measured considering the asset holding and amenities within the household itself shows that the urban areas have better living standard compared to rural areas.

Urbanization also leads to the creation of slums; the poverty levels and the other social indicators in urban slums often show elements of extreme vulnerability and exploitation.

Table 2
Percentage distribution of women by status of women indicators in slums and non-slums areas of the research locations, 2005-06

Ex ante indicators/classification	Eight cities			Rural areas of the seven corresponding states where cities located
	Slum	Non-slum	Total	
Wealth index (household)				
Poorest	0.4	0.1	0.2	27.0
Poorer	2.0	1.0	1.3	27.6
Middle	10.7	4.4	6.5	24.2
Richer	38.3	20.4	26.5	15.4
Richest	48.7	74.1	65.4	5.7
Highest educational level of woman				
No education	22.0	12.3	15.6	56.1
Primary	13.6	9.1	10.6	17.8
Secondary	54.7	51.1	52.3	24.3
Higher	9.7	27.6	21.5	1.8
Age at marriage of woman				
marriage age < 18	46.3	33.7	38.1	69.7
marriage age 18-21	36.9	37.9	37.6	25.9
marriage age >21	16.8	28.4	24.4	4.4
Age difference between spouses				
Diff >= 5 years	55.7	54.2	54.7	56.6
Diff < 5 Years	44.3	45.8	45.3	43.4
Woman works for cash outside home				
Does not work for cash	68.2	71.8	70.6	67.5
Works for cash	31.8	28.2	29.4	32.5
Body mass index (BMI) of woman				
Low BMI	23.2	17.4	19.4	40.2
Normal BMI	52.9	51.3	51.8	53.0
Obese	24.0	31.3	28.7	6.8
Anaemia level of woman				
Anaemic	39.8	39.2	39.4	53.7
Not anaemic	44.1	42.6	43.1	41.3
No. of cases*	1,913	3,691	5,604	31,907

Note: Computed from the National Family Health Survey 2005-06, India

But interestingly, all the indicators reported in Table 2 show better levels of progress in urban slums compared to rural areas. All the status of women variables are better in urban slums compared to rural areas. However, it is well-known that the slum areas are worse off than the non-slum areas of the city which is revealed through this data as well.

We used Z test to measure the statistical significance of the observed difference between indicators of urban slums and rural areas.

$$Z = \frac{P_1 - P_2}{\sqrt{P_c\,(1- P_c)\left[\frac{1}{n_1} + \frac{1}{n_2}\right]}}$$

Where,

$$P_c = \frac{n_1 P_1 + n_2 P_2}{n_1 + n_2}$$

P1 and P2 are the proportions of the first and second samples and n1 and n2 are the respective sample sizes.

Table 3 presents the Z value with regard to different indicators reported in Table 2 between urban slums and rural areas.

The values of proportion test (Z test) between urban slums and rural areas and urban areas are highly significant (at 0.01 level).The proportion test also points out that the differences observed between urban slums and rural areas are statistically significant. Perhaps living in urban area seems to enhance the status of women as compared to rural living irrespective of slums or non-slums. Hence it is now nearly certain that the urbanization is helpful at least to ensure better status of women measured in terms of the ex ante indicators.

We also examined the nutritional measures of children living in these diverse settings. Table 4 presents the percentage distribution of children by various health indicators in slum, non-slum areas of eight cities and rural areas of corresponding seven states.

For all the four important nutritional indicators considered for the analysis, the Z test shows a significant statistical difference between slum and rural areas, invariably indicating that urban living even within the context of slums is better than the rural living as far as the child health indicators are concerned.

Table 3
Significance of rural-urban difference

Indicators	Classification	Values Z
Age at marriage of woman	Marriage age <18	682.1
	Marriage age 18-21	338.5
	Marriage age >21	776.5
Age difference between spouses	Diff <5 Years	21.8
Woman works for cash outside the home	Works for cash	29.7
BMI of woman	Low BMI	562.3
	Normal BMI	4.3
	Obese	1056.0
Anaemia level of woman	Anaemia	510.2

Table 4
Percentage distribution of the child nutrition indicators in eight cities and the corresponding rural areas of seven states in India, 2005-06

	Urban areas in eight cities				
Health indicators of children	Slum	Non-slum	Total	Rural	Proportion test (Z)
Stunted (less than -2 SD)	38.5	29	32.7	46.4	70.9
Wasted (less than -2 SD)	39.4	30	33.7	50.7	100.8
Underweight (less than -2 SD)	13.3	14.4	14	16.5	38.2
Severe, moderate and mild anaemia	58.5	54	55.7	71.2	100.9
Total cases	460	713	1173	16799	

Note: Z test compares slum and rural areas.

4 Urbanization and ex post indicators of status of women

However, the ex ante indicators alone are incomplete in understanding the complexity involved in measuring status of women. For example, a woman may work outside the house (and, in that sense, be economically empowered), but still be subject to domestic violence at home. A woman may be educated, but still not have any decisionmaking power at home due to traditional patriarchal norms. Therefore, we need to understand the relationship between the two alternative sets of indicators, especially if they differ according to location (rural, urban, slum, non-slum). Otherwise, one may draw erroneous conclusions from a variety of econometric analyses which explore the relationship between women's status, and, family welfare outcomes (e.g., child health). Prior to NFHS-3, the National Family Health Survey-2 conducted in 1998-99 gathered information on several ex post indicators to understand women's position in India. The survey showed that even with high status of women measures in terms of, what we call, ex ante variables, the percentage of women accepting and agreeing wife beating by the husband, for some reason, are higher in states like Kerala and Tamil Nadu (James 2004). Wife beating was very high in Tamil Nadu and had second position in India after Bihar. The poor correlation, thus, observed between ex ante and ex post indicators of status of women gives ample justification on considering ex post indicators to understand the true status of women.

Table 5 presents the position of women in slum and non-slum areas of eight cities and rural areas of corresponding seven states in several ex post indicators.

The NFHS-3 gathered three sets of information on ex post measures of status of women. The first set of measures is on women's degree of control over their surroundings. These are measured through their participation in household decision making and their freedom of movement. Another set of information is on women's attitude towards gender equality. These are measured through their attitudes towards wife beating for specific reasons. To understand the position of the women better the NFHS-3 also sought information on the extent physical, sexual, and emotional violence from the partner. Physical violence by the partner is measured through the following criteria: (i) slapping, (ii) twisting arm or pulling hair, (iii) pushing, shaking or throwing something at the woman, (iv) punching with fist or something that would hurt the woman, (v) kicking, dragging or beating, (vi) choking or burning and (vii) threatening to attack by knife, gun or any other weapon. Experience of any of the above acts from the spouse is considered as violence. Sexual violence is considered using two measures and they are (i) physically forcing the woman to have sexual intercourse against her wishes, and (ii) forcing the performance of any sexual act that the woman does not want. Emotional violence is measured by three aspects and they are (i) saying or doing something to humiliate the woman in front of others, (ii) threatening to hurt or harm the woman or someone close to her and (iii) insulting the woman or make her feel bad about her partner.

The status of women variables measured in terms of ex post variables are also ahead in urban slums compared to rural areas. In other words, the both ex ante variables and ex post variables measuring status of women seem to be better in urban areas including slums as compared to rural areas. This is irrespective of the fact that the correlation between ex ante and ex post variables has been poor across states in India.

Table 5
Percentage distribution of the ex post status of women indicators
in eight cities and corresponding rural areas of seven states in India, 2005-06

	Eight cities				
Ex post indicators / classification	Slum	Non-slum	Total	Rural	Proportion test Z
Decisions within the household					
Wife not involved in decision	8.5	8.5	8.5	22.8	417.5
Wife involved in some decision	18.5	18.2	18.3	28.4	267.1
Wife involved in most decisions	73	73.3	73.2	48.8	587.2
Women's attitude towards wife beating					
Disapproves of wife beating	64.5	73	70.1	48	623.2
Approves beating in some cases	26.9	21.9	23.6	33.7	283.1
Approves beating in many cases	8.6	5.1	6.3	18.3	470.6
Sexual violence					
Any sexual violence from spouse	3.9	3.1	3.4	9.6	188.9
Emotional violence					
Any emotional violence from spouse	9.5	7.6	8.3	16.9	191.3

Note: Z test compares slum and rural areas.

5 Discriminant analysis

The analysis above reveals that the status of women considering both ex ante and ex post variables are significantly better off in urban environment irrespective of living in slum or non-slum areas as compared to those living in rural areas. Perhaps, this brings out the unequivocal advantages of urbanization on the position of women in India. This finding is particularly interesting given the fact that the vulnerability of urban slums has been depicted extensively in different studies over the past several years. It is also found that although the previous studies have indicated poor connection between ex ante and ex post variables in India across states, it is not true as far as the urban slums are concerned. Both ex ante and ex post indicators go hand in hand in urban slums in comparison to rural areas.

We performed discriminant analysis of both ex ante and ex post variables between rural and urban slums. It tries to discriminate among the selected ex ante and ex post indicators between two distinct areas (in our case between slum and rural areas) and brings out important factors that explain the differences between these two areas. The analysis is useful for situations where it is necessary to build a predictive model of group membership based on observed characteristics of each case. It discriminates between groups based on linear combinations of the predictor variables that provide the best discrimination between the groups. As the discriminant analysis is carried out between rural and slums in urban areas, the non-slum area has been omitted from the analysis. Table 6 provides the overall power of the model and Table 7 presents the results of the step-wise discriminant analysis.

Table 6
Discriminant analysis between rural and urban slums (Wilks' Lambda)

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
Rural vs slums	0.970	741.316	7	0.000

It is clear that the variables included in the model are significant enough to separate the groups. The statistical test indicates that the variables included in the model are highly significant in separating the groups (between rural and urban slums).

The result from Table 7 shows that two variables, age difference between spouse and work status of women for cash outside, are not significant to discriminate between rural and urban slums. These two variables are omitted by the model. All the other variables included in the model are significant and confirm the conclusions derived from the earlier analysis that the women's position both in terms of ex ante and ex post indicators are better in urban slums than in rural areas. Educational status and 'age at marriage' are better in urban slums compared to rural areas. More slum women are involved in household decisions compared to rural areas and the women approving violence against them are also lower in urban slums. Further, the physical, sexual and emotional violence is also lower in urban slums compared to rural areas.

Table 7
Step-wise discriminant analysis between urban slums and rural areas for important variables, 2005-06

Variables in the equation	Standardized discriminant coefficient	Level of sig.
Highest year of education	0.414	0.000
Age at first marriage	0.604	0.000
Decisionmaking within the household (0=not involved; 1=involved)	0.318	0.000
Women's attitude towards wife beating (0=not approves; 1= approves)	-0.285	0.000
Physical violence (0=no violence; 1=yes)	-0.091	0.000
Sexual violence(0=no violence; 1=yes)	-0.133	0.000
Emotional violence(0=no violence; 1=yes)	-0.089	0.000
Variables not in the equation		
Age difference between spouses		
Works for cash		

6 Status of women and child health

As discussed in the introduction, it is well-recognized that women's position has a direct bearing on their children's health. Women with low status tend to have weaker control over household resources, tighter time constraints, less access to information and health services, poorer mental health, and lower self-esteem . These factors are expected to be closely linked not only to the women's own health status but also to their children's health. The empirical evidence on this relationship has been strong across regions and countries. For instance, the study by Smith et al. (2002) across countries on three main continents has unequivocally proved the strong connection existing between women's position and child health indicators. However, it should be pointed out that the most of the women's position indicators considered by these studies have been primarily ex ante variables. Although ex ante variables bring out the extent of women's position in relation to men, it provides only indirect measure of women's position. But the direct indicators like violence against women give more proximate measures of women's position. Hence, it is necessary to understand how far the ex post indicators of status of women influence children's health, particularly in the context of urbanization.

7 Logistic regression analysis

We have used four measures looking mainly at the nutritional status of children. They are height-for-age (stunting), weight-for-height (wasting), weight-for-age (underweight) and level of anaemia. A child is classified as 'stunted' if his/her height for age is below -2 standard deviations from the median. A stunted child has suffered from long-term inadequate nutrition or poor health. A child's weight-for-height Z-score measures shorter-term nutritional status. A child is considered 'wasted' if the Z score of weight-for-height measure is below –2 standard deviations. Wasting is a very sensitive measure of recent and severe events leading to a substantial weight loss, usually as a consequence of acute shortage of food or severe disease or both. A child is considered to be 'underweight' if the Z score is less than –2 standard deviations. It is a commonly used measure of nutritional deficiency. A child is considered anaemic if the child is severely, moderately or mildly anaemic based on the haemoglobin level.

Table 8
Logistic regression on the determinants of stunting, wasting, underweight and anaemic in eight cities and rural areas of seven states

Variables	Stunted	Wasted	Underweight	Anaemic
Constant	1.520*	1.174	0.177	0.084*
Male child	0.950	0.908*	1.099	1.049
Age of the child	1.182*	1.139*	0.926	1.534
Number of siblings	1.094*	1.011	0.936	0.977
Standard of living (ref: poorest)				
Poorer	0.804*	0.741*	0.887	1.025
Middle	0.667*	0.579*	0.559	1.278*
Richer	0.544*	0.501*	0.604	1.503*
Richest	0.357*	0.321*	0.452	1.954*
Mother's education (ref: no education)				
Primary education	0.729*	0.770*	1.142	1.273
Secondary education	0.691*	0.738*	1.063	1.335
Higher education	0.436*	0.388*	0.914	1.382
Mother's age at child birth	0.983*	0.998	1.023	1.013
Age at marriage	0.980*	1.002	1.003	1.008
Mother works for cash (0= not working, 1= working for cash)	1.124*	1.252*	1.310	1.026
Father's years of schooling	0.998	0.998	1.003	1.007
Age difference between spouse less than 5 yrs	1.117*	1.089*	1.148	0.945
Decisionmaking within the household (0=not involved; 1=involved)	1.046	1.058	0.895	0.936
Women's attitude towards wife beating (0=disapproves; 1= approves)	0.968	0.926	0.877	0.918
Experienced any violence (physical, sexual or emotional (0=no violence; 1=yes)	1.024	1.094*	0.980	0.873
Place of residence (ref: rural areas)				
Slum	1.222*	1.079	1.254	0.923
Non slum	1.198*	1.033	1.177	1.121
-2 log likelihood	12711.33	12989.37	8855.77	10766.12
No. of cases	10,038	10,038	10,038	9,170

Note: The values presented here are log odds ratio. * is significant less than 0.05 level.

Several indicators measuring women's positions are considered in the analysis as independent variables. The other important (control) variables included in the model are gender and age of the child, number of siblings and standard of living of the household. As the dependent variables, the nutritional status of children, are dichotomous, a logistic regression model is worked out to estimate the parameters relating to status of women as well as other control variables.

We first do a logistic regression analysis with data from all the three distinct areas together (slum, non-slum and rural areas). In this model we have introduced the slum areas and non-slum areas as dummy variable to measure how far the area of living matters as far as the child health is concerned. The results of the estimated model with log odds ratio for the four measures of child nutritional variables (stunting, wasting, underweight and anaemia) are presented in Table 8.

In the case of stunting, most variables show significant relationship indicating that stunted children are clustered among those households where the position of women is comparatively poor. The dummy variables included in the model to measure the slum and non-slum effect on child nutrition compared to rural living are significant in the case of stunting. The odds ratio value of more than one in this case implies that urban areas, irrespective of living in slum or non-slum areas, have better nutritional status of children compared to rural areas as measured by stunting of children. In the case of other nutritional measures such as wasting, underweight and anaemia, however, the place of residence dummy did not turn out to be significant. This means that the wasting, underweight and anaemia are spread across urban and rural areas without any clustering. The place where the children are currently living does not make a significant difference as far as these nutritional measures are concerned. Among the two ex post variables entered into the model, the experience of any violence is significant for wasting. In the case of underweight and anaemia, most variables considered in the model turned out to be insignificant. Perhaps, this reflects the generally high level of nutritional deficiency in India cutting across class, education and gender positioning.

8 Concluding remarks

To the best of our knowledge, the relation between women's status and child health has not been examined in a comparative (rural-urban) perspective. There are some interesting observations on how urbanization can affect the dynamics of family relationships. When the developed countries (particularly the US) urbanized, say between 100-150 years ago, it was perceived that the new urban environment was hard on families. Crowded cities were emotionally isolating places, with many families breaking up under the strain (launching the so-called era of divorce). This is obviously a negative effect of urbanization from the *family's* perspective, but may not be so from the perspective of individual members, especially the female members—more so in today's south-Asian context. Not unsurprisingly, therefore, that the same period witnessed the feminist revolution.

However, urban residence can have mixed consequences for the relationship between the woman and her children. On the one hand, women workers in an urban economy can potentially earn a higher percentage of the family income. Since percentage of income earned as discussed above, has been related to decision-making in the family,

these women might be less tied to traditional restrictions, such as food taboos during pregnancy. According to a recent United Nations study, urban women also have fewer children, and they and their children are much more likely to be literate than rural women and theirs. Services such as family planning may be more available in urban areas, and women's increased independence may lead to higher self-esteem and recognition of rights.

Our objective in this chapter was to examine the status of women measured by different sets of indicators. We argued that some common measures of women's empowerment may not be adequate, and they need to be examined more closely by looking at a broader set of indicators that are more truly reflective of women's actual empowerment within the family. We found that urban women in our sample seem to be better empowered, irrespective of whether they live in slums or not, compared to their rural counterparts. The policy implication is not to encourage the movement of rural women to urban slums. Rather, we argue that living conditions in cities, particularly those in the slums, should be improved, so that the positive externalities of urban dwelling on women's status can be exploited to the fullest extent. This is also beneficial for the child.

References

Becker, G. A. (1965). 'A Theory of the Allocation of Time'. *Economic Journal*, 75 (229): 493-517.

Becker, G. A. (1981). *A Treatise on the Family*. Cambridge, MA: Harvard University Press.

Chandrasekhar, S., and A. Mukhopadhyay (2008). 'Multiple Dimensions of Urban Well-Being: Evidence from India'. PGY Working Paper No. 11. New York: Population Council.

Das Gupta, M. (1987). 'Selective Discrimination against Female Children in Rural Punjab, India'. *Population and Development Review*, 13: 77-100.

Deaton, A. (1989). 'Looking for Boy-Girl Discrimination in Household Expenditure Data'. *World Bank Economic Review*, 3: 1-15.

Foster, A. D. (2002).'Marriage-Market Selection and Human Capital Allocations in Rural Bangladesh'. Philadelphia: Economics Department, University of Pennsylvania. Mimeo.

Guha-Khasnobis, B., and G. Hazarika (2007). 'Women's Status and Children's Food Security in Pakistan'. In B. Guha-Khasnobis, S. S. Acharya and B. Davis (eds), *Food Security: Indicators, Measurement, and the Impact of Trade Openness.* London: OUP.

Haddad, L., J. Hoddinott, and H. Alderman (eds) (1997). *Intrahousehold Resource Allocation in Developing Countries: Methods, Models, and Policy*. Baltimore, MD: Johns Hopkins University Press.

Haddad, L., M. T. Ruel, and J. L. Garrett (1999). 'Are Urban Poverty and Undernutrition Growing? Some Newly Assembled Evidence'. *World Development*, 27 (11): 1891-1904.

Handa, S. (1996). 'Expenditure Behaviour and Children's Welfare: An Analysis of Female Headed Households in Jamaica'. *Journal of Development Economics*, 50: 165-87.

Hardoy, J., S. Cairncross, and D. Satterthwaite (eds) (1990). *The Poor Die Young—Housing and Health in Third World Cities*. London: Earthscan Publications, Ltd.

Harpham T., T. Lusty, and P. Vaughan (eds) (1988). *In the Shadow of the City; Community Health and the Urban Poor*. Oxford: Oxford University Press.

Hoddinott, J., and L. Haddad (1995).'Does Female Income Share Influence Household Expenditures? Evidence from Côte d'Ivoire'. *Oxford Bulletin of Economics and Statistics*, 57 (1): 77-95.

Kishor, S. (2000).'Empowerment of Women in Egypt and Links to the Survival and Health of Their Infants'. In H. Pressler and G. Sen (eds), *Women's Empowerment and Demographic Processes*. Oxford: Oxford University Press.

Kishor, S., and K. Gupta (2004). 'Women's Empowerment in India and Its States'. *Economic and Political Weekly*, 39 (7): 694-712.

Kundu, A. (1992). *Urban Development and Urban Research in India*. New Delhi: Kharma Publishers.

Levin, C. E., M. T. Ruel, and S. S. Morris (1999). 'Working Women in an Urban Setting: Traders, Vendors and Food Security in Accra'. *World Development*, 27 (11): 1977-91.

Lundberg, S. J., R. A. Pollak, and T. J. Wales (1997). 'Do Husbands and Wives Pool Their Resources?: Evidence from the United Kingdom Child Benefit'. *Journal of Human Resources*, 32 (3): 463-80.

Pelletier, D. L., E. A. Frongillo, Jr., D. G. Schroeder, and J. P. Habicht (1995). 'The Effects of Malnutrition on Child Mortality in Developing Countries'. *Bulletin of the World Health Organization*, 73 (4): 443-8.

Pitt, M. M., and S. Khandker (1998). 'The Impact of Group-Based Credit Programmes on Poor Households in Bangladesh: Does the Gender of Participants Matter?'. *Journal of Political Economy*, 106: 958-96.

Quisumbing, A. R., and J. A. Maluccio (2003). 'Resources at Marriage and Intrahousehold Allocation: Evidence from Bangladesh, Ethiopia, Indonesia, and South Africa'. *Oxford Bulletin of Economics and Statistics*, 65: 283-327.

Rubalcava, L., and D. Thomas (2002).'Family Bargaining and Welfare'. Santa Monica, CA: RAND. Mimeo.

Schultz, T. P. (1990).'Testing the Neo-Classical Model of Family Labour Supply and Fertility'. *The Journal of Human Resources*, 25 (4): 599-634.

Smith, L. C., and L. Haddad (2000).'Explaining Child Malnutrition in Developing Countries: A Cross-Country Analysis'. IFPRI Research Report 111. Washington, DC: International Food Policy Research Institute.

Smith, L. C., U. Ramakrishnan, A. Ndiaye, L. Haddad, and R. Martorell (2003). *The Importance of Women's Status for Child Nutrition in Developing Countries*. Washington, DC: International Food Policy Research Institute.

Thomas, D. (1990). 'Intra-Household Resource Allocation: An Inferential Approach'. *The Journal of Human Resources*, 25: 635-64.

Thomas, D., D. Contreras, and E. Frankenberg (2002). 'Distribution of Power Within the Household and Child Health'. Santa Monica, CA: RAND. Mimeo.

Walker, T. S., and J. G. Ryan (1990). *Village and Household Economies in India's Semi-Arid Tropics*. Baltimore, MD: The Johns Hopkins University Press.

World Health Organization (1983). *Measuring Change in Nutritional Status*, Geneva: WHO.