WATER ACCESS, HOUSEHOLD SANITATION AND CHILD SURVIVAL IN INDIA

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ABSTRACT

This paper examines correlates of child survival in India, a country where mortality rates of infants and children have been stagnating at relatively high levels since the 1990s. This study focuses on the impact of water access and household sanitation on child survival, an impact that is still largely debated in the literature. The analysis is based on data from the 1998-99 National Family Health Survey (NFHS-2).

Results suggest that the relative importance of environmental factors for child survival varies greatly by state. In states that have either very low or very high levels of child survival, environmental variables seem to be unimportant in determining levels of child survival, once mother's education and other factors are taken into account. In states where both water and sanitary conditions are poor, safe drinking water seems to be a more important predictor of child survival than sanitation. In states that have overall better water access, the type of sanitation becomes an important predictor of child survival.

INTRODUCTION

India experienced substantial mortality declines during the last three decades. Between 1971-75 and 1991-95, life expectancy at birth increased from about 50 to 60 years, for both males and females (according to the India's Sample Registration System). This improvement is quite rapid if we compare it with the experience of historical European populations. For example, it took about 40 years, from 1880 to 1920, for Swedish females to experience similar mortality improvements.

The examination of recent trends in infant mortality, however, does not offer as positive a picture. After substantial declines in the 60s, 70s and 80s (50% reduction between 1961 and 1991), infant mortality seems to have stopped improving in the 1990s and has stayed relatively high at a level above 70 per 1000. Although this slowdown has attracted attention among scholars (Claeson et al. 1999; Bhat and Zavier 2003), the reasons for this slowdown are still unclear. For policy purposes, however, it is key to identify the factors associated with this worrisome lack of progress in child survival.

Explanations of infant and child mortality have focused on three categories of factors: (1) the socio-economic characteristics of the child's household; (2) Use of health care; and (3) the characteristics of the environment in which the child lives.

In the first category, it is widely acknowledged that educational level of the mother is a prime contributor to infant/child mortality levels. Higher levels of educational attainment are associated with higher rates of infant survival (Caldwell and Mc Donald 1982; United Nations 1985, 1991; Pant 1991; Hobcraft 1993; Caldwell 1994; Desai and Alva 1998). Similarly, there is evidence that higher levels of income are associated with better child survival, although the relative importance of income and education is not clear-cut. In the second category, the factors that are most often cited include distance to health facilities, medical attendance at birth, use of prenatal care, and participation in vaccination programs (Niraula 1994; Frankenberg 1995). In the third category, factors potentially associated with infant mortality include the type of drinking water supply and the type of sanitary facilities (toilets) available.

The focus of this paper is on the impact of these two important environmental variables, i.e., water access and household sanitation, on child mortality in India, 1994-1998. The reason for this focus is both general and specific. First, in developing countries overall, the real impact of water access and household sanitation on child mortality is still debated. There are clear pathways which suggest that water and sanitation ought to play an important role in child mortality levels. The ingestion of water containing microbiological contaminants causes gastrointestinal illness, increased incidence and severity of diarrhea, and nutritional deficiencies (Jalan and Ravallion 2001). The most important concern is about water contaminated by human and animal waste. Other concerns involve water contaminated by nitrates, fluoride, pesticides and fertilizers (World Bank 2001). The amount of water available also plays a positive role on child survival. This gives an additional advantage to households with private access to water. Although the pathways are well documented, the role that water and sanitation play, relative to

other factors, is still uncertain. Some studies have argued that the effect of water supply is not important, or secondary, after controlling for other variables (United Nations 1985; Merrick 1985). Some other studies suggest that access to safe water will not improve child survival unless sanitation is also good (Esrey and Habicht 1985; van Poppel and van der Heijden 1997). In another study, it is argued that the effects of both water supply and sanitation disappears after controlling for household socio-economic characteristics (Woldemicael 2000). In a study of child mortality in South Africa, Anderson et al. (2001) found that access to water was the main determinant of a child's health for the African population, and that sanitation mattered only after safe water was secured. By examining this issue using extensive Indian data from the second National Family and Health Survey (NFHS-2) conducted in 1998-99, this paper aims at bringing new evidence regarding the relative role of water and sanitation on child mortality.

The second, more specific motivation for focusing on water and sanitation is that these factors are often cited as important contributors to high and stagnating child mortality in India. It is estimated that 1.5 million child deaths per year in India are due to diarrhea and other diseases related to unsafe water (Jalan and Ravallion 2001; Parikh et al. 1999). In spite of these claims, the relative role of water and sanitation on child mortality has not been systematically evaluated in Indian states (a notable exception being a World Bank study (World Bank 2001), focusing on Andhra Pradesh, 1992-93). Here we build on previous research by using the more recent NFHS-2 data, and by conducting analyses separately for 14 major Indian states.

DATA

The data upon which this study is based are from the second National Family Health Survey of India (NFHS-2), which was conducted in 1998-99 under the coordination of the International Institute for Population Sciences (IIPS).

The NHFS-2 data provide a wealth of information covering household characteristics, female characteristics and birth histories for ever-married women aged 15-49. In addition, detailed information was collected for children born three years before the survey. Finally, in rural areas, information was collected on village characteristics.

Altogether, a sample of 89,199 women were interviewed in 26 states, covering 99 percent of India's population. A notable feature of this survey is that the sampling frame was conducted at the state level. Within each state, the sample size was designed so that it can provide representative information at the state level, as well as significant results even for states that are of smaller size. NFHS-2 is really a combination of 26 surveys, allowing insightful state-specific analyses. In this paper, we focus on the 14 most populated states.

The NFHS-2 data are not free of errors. In particular, there are concerns about age misreporting and under-enumeration of children in the survey. For this reason, we focus on whether a child is dead or alive at the time of the survey, rather than relying on time-series analyses which are more sensitive to age misreporting. Also, it could be the case that the coverage of child deaths is better among more educated women than among less educated women. However, we will see

that the relationships between socio-economic status and child survival correspond to what would be expected in the absence of underreporting in the survey. Thus, even if the overall levels of child mortality implied by the survey may be underestimated to some extent, we believe that the data is useful for the identification of factors associated with relative mortality risks.

The individuals in our analyses are children born in the five years preceding the survey (1994-98). The response (dependent) variable is whether or not the child is alive at the time of the survey. The explanatory (independent) variables can be organized in three categories, corresponding to the three main influences commonly identified as important contributors to child mortality levels.

(1) Socio-economic characteristics of the child's household. Variables in this category include maternal education, standards of living index and urban/rural residence. The NFHS standard of living index (SLI) is estimated for each household on the basis of various ownership and housing conditions. In this first set of variables, we also included some demographic characteristics such as the age of the mother at birth and the sex of the child.

(2) Use of health care. In this category, we included only delivery assistance. Delivery assistance is often cited as the most important dimension of the health care for infant and child survival, because it is highly correlated with antenatal care as well as immunization and care during the first years of life (Bhat and Zavier 2003). One drawback of this variable is that it is reported only for children born in the three years preceding the survey. For children born earlier (but at least five years before the survey), we inferred delivery assistance information on the basis of siblings born in the last three years for which we have information. For the children with no siblings born in the last three years, which comprised only about 12% of births in our sample, we predicted delivery assistance on the basis of mother's education, standards of living, residence and sex.

(3) Environmental variables. Variables in this category include source of domestic water and type of sanitation. The various categories of for all these variables are indicated in Table 2.

CHILD SURVIVAL AND BACKGROUND HOUSEHOLD CHARACTERISTICS IN INDIAN STATES

Table 1 shows the proportion of children surviving by state. These proportions correspond to the life table value ${}_5L_0/(5*l_0)$ for cohorts born in 1994-1998. The pattern of regional variation in these proportions is well known. Highest proportion of children surviving are found in Southern states (Kerala, Tamil Nadu, Karnataka) and in Maharashtra and West Bengal. Lowest survivorship is found in Northern States (Rajasthan, Uttar Pradesh, Madhya Pradesh, Bihar) and in Orissa.

This geographical pattern is identical to the pattern observed for infant mortality rates (${}_1q_0$) or child mortality rates (${}_5q_0$), and has been extensively discussed in the literature (Jain 1985). Regional differences in female literacy, levels of poverty, levels of urbanization, and availability

of medical facilities appear to be the most important explanations (Murthi, Drèze and Guio, 1995). In addition, particularly low levels of infant and child mortality in the Southern states (lower than we would expect on the basis of their levels of the variables mentioned above) are attributed to factors of a more structural nature, such as differences in kinship systems, property rights and female autonomy (Dyson and More 1983; Murthi, Drèze and Guio, 1995).

In fact, many of the factors commonly cited for their impact on infant/child mortality vary tremendously by state, as shown in Table 2. Proportions of children having a mother with higher education vary from about 3% in Bihar and Rajasthan to 28% in Kerala. Proportion of children born in household with high standards of living also vary greatly, from 8-9% in Bihar and Orissa to 20% in Maharasthra and 50% in Punjab.

The distribution of children by urban/rural residence reflect the population distribution by residence. The most rural states include Bihar, Uttar Pradesh and Orissa (with more than 80% of children in rural areas), while the most urban states comprise Maharashtra and Tamil Nadu (with more than 40% of children in urban areas).

There is a clear North/South breakdown in delivery assistance. In Kerala, almost all births take place with professional delivery assistance, and high proportions (more than 60% of births) are also recorded in Andhra Pradesh, Maharshtra, Tamil Nadu and West Bengal. Lowest proportions of births with professional delivery assistance (less than 35%) are found in Madhya Pradesh, Orissa and Rajasthan.

Household environmental conditions, which are the particular focus of this paper, also appear to vary greatly by state. For water access, no state has a majority of children with access to piped water. Highest proportions are found in Gujarat, Maharastra and Rajastan. Lowest proportions (less than 10%) are found in Bihar, Kerala, Orissa and Uttar Pradesh. The most frequent category of water access also vary greatly by state. Three states have public tap as the most frequent category, four states have residential handpump, three states have public handpump, and only one state (Kerala) has open well in residence as the most frequent category, with about 64% of children.

In all states except Kerala and Maharshtra, the majority of children live in households with no toilet facility. The highest proportions are found in Bihar, Madhya Pradesh and Orissa (with more 80% of children). Highest proportion of children with access to flush toilets are found in Maharshtra, Tamil Nadu and West Bengal (more than 35% of children). Pit toilet is not a common type of facility in India, except in Kerala where it comprises about 68% of children.

These results illustrate the large diversity by state in terms of characteristics associated with child survival. There is no doubt these differences explain a large part of the state differences in child mortality, as already shown for districts (Murthi, Guio and Drèze 1995; Pandey et al. 1998). Overall, states with higher rates of child survival, mostly found in the South, tend to have higher proportions of children with highly educated mothers and higher proportions of children living in wealthier households. These states also tend to be more urban (except Kerala), and to

have higher proportions of children born with professional delivery assistance. They also tend to have lower proportions of children born in household with public handpump or public open well (the less desirable sources of domestic water), and higher proportion of children with access to flush toilets.

The aim of this paper, however, is not to explain differentials in child survival by state, but rather to identify, for each state, the factors that are likely to play the most important role for child survival. In a country where regional circumstances vary so greatly, priorities for reducing child mortality may be better addressed at the state level. For this purpose, we now turn to the analysis of the associations between children's characteristics and their survival in each state.

ANALYSIS OF VARIABLES RELATED TO CHILD MORTALITY IN INDIAN STATES

This section analyzes bivariate relationships between characteristics of children and their survival. These associations will tell little about real effects that these factors may play, because of the lack of control for potentially important lurking variables. However, these bivariate associations are informative for two purposes. First, they permit to verify if the bivariate associations are in the expected direction, a verification which increases confidence in the quality of the data. Second, it is always useful to first analyze the significance of the associations at the bivariate level, in order to observe the behavior of these variables once we include more controls in the multivariate models. The significance of these associations, estimated on the basis of $\mathbf{P}^2$ significance, is shown in Table 3.

Socio-economic characteristics of the household

As expected, maternal education, standard of living and rural/urban residence, when considered separately, are strongly associated with child survival in most states. Higher maternal education, higher standards of living, and urban residence are associated with significantly higher survival. Notable exceptions are Kerala (where none of these characteristics mattered for child survival), and Tamil Nadu (for standard of living and residence). These two states are Southern states well-known for having a specific demographic regime poorly explained by common socio-economic dimensions.

Sex differentials in survival are not statistically significant in most states. The only states where female children experienced significantly lower survival are Uttar Pradesh and Rajasthan. Here also, this result is not surprising, because these states are known for having strong patriarchal tradition, son preference, and associated excess female child mortality (Dyson and Moore 1983; Murthi, Drèze and Guio, 1995; Arnold, Choe and Roy 1998; Pandey et al. 1998). Age at birth has the usual non-linear relationship with child survival, a relationship that is statistically significant in 10 out of 14 states.

Delivery assistance

Delivery assistance, our proxy for use of health care, does not appear to be the most important

predictor of child survival, even when taken separately. The association is significant in only half of the states. This is somewhat surprising since professional delivery assistance appears to be one of the best predictor of state differences in infant mortality (Bhat and Zavier 2003). In almost all states, however, professional attendance at birth is associated with greater survival. Simply, the amount of variation is not large enough to produce significant differences.

Environmental variables

There are strong correlations between child survival and both environmental variables taken separately. Water access is significantly associated with survival in 10 out of 14 states. As expected the categories that are associated with better survival are piped into residence and handpump in residence. Taken separately, sanitation is also strongly associated with child survival. In all but 3 states, there is significantly higher survival associated with owning a flush toilet.

Overall, characteristics of children and their household tend to be significantly associated with child survival, and the associations are in the expected direction. This is reassuring about the quality of the data, but it is not informative about the relative role that these characteristics may play on child survival. While improvements in the characteristics discussed here may impact on child survival to some extent, the bivariate associations tell little about which factors are likely to play the most important role on child survival. This relative influence of different factors is of greater relevance for policy purposes, where the goal is to allocate resources to the factors that are likely to yield the most important improvements. The relative role of factors associated with child survival is estimated for each state in the next section.

MULTIVARIATE ANALYSIS OF CHILD MORTALITY IN INDIAN STATES

This section presents results of multivariate analyses of child mortality in Indian states. These analyses allow to assess if some of the bivariate relationships that we pointed out in the previous section remain significant after controlling for other factors, and to identify the characteristics which appear to matter most for child survival. In particular, we are interested in the relative role that water and sanitation play once we control for the other most obvious determinants of child survival.

These multivariate analyses are based on logistic regression, with the explanatory variable being whether the child was alive at the time of the survey (1 if surviving, 0 if dead). In these regressions, all variables except education, standard of living and delivery assistance are treated as categorical variables (with omitted categories indicated in the regression tables). Our strategy consists of building various models with different set of variables in them, and to compare if individual variables or groups of variable are significant or significantly improve the explanatory power of the model, relative to models with fewer variables. Models are estimated separately for each state.

Model I involves socio-economic variables only. Models II-IV add to model I delivery assistance, water access, and sanitation, respectively. Model V adds both water and sanitation to model I, while Model VI considers all variables. For each model, we do not only consider the significance of individual variables. We also examine the significance of the model as a whole, and the significance of the increment in $\mathbf{P}^2$ relative to models with fewer variables. In particular, models II-IV are compared to model I, and model VI (with all variables) is compared to model II.

Results are shown in Annex Tables 1-14. Rather than analyzing each state separately, we focus the discussion on how variables or set of variables behave differently across states, in light of the significance of individual variables and of $\mathbf{P}^2$ increments.

Socio-economic variables

Education and standards of living remain significant predictors of child survival in most states, even after adding various factors. If only one of the two is significant, it is most likely to be education (except in Andhra Pradesh and Bihar). In Kerala, Maharshtra and Punjab, however, neither education nor standards of living turned out to be significantly associated with child survival, once other variables were included in the model. This is not surprising for Kerala, where bivariate associations for these variables were not significant either. For Maharshtra and Punjab, this lack of significance implies that education and standards of living are correlated with one another to the point that they do not have separate influences on child survival.

Residence does not appear to be significantly correlated with child survival when education and standards of living are controlled for. This is also an expected result, as rural/urban differences in mortality are often largely attributable to differences in educational levels and standards of living.

Delivery assistance

Delivery assistance did not improve the model in none of the 14 states (except Haryana). The significant associations that we found in seven states at the bivariate level disappear when education and standards of living, among other factors, are taken into account. This also suggests that professional delivery at birth is correlated with standards of living and maternal education, producing differentials in child survival across states, but that the separate influence of professional delivery assistance may not be as strong as suggested by the bivariate associations. Bhat and Zavier (2003) note that, in the 1990s, infant mortality did not improve as much as one should expect in view of improvements in delivery assistance during the same period. This longitudinal finding also suggests that delivery assistance may not be the most important source of variation in child survival.

Environmental variables

The effects of environmental variables (after controlling for socioeconomic variables and

delivery assistance) are more complex and tend to vary extensively by state. However, the results of the regressions suggest the following typology:

- States where water access is a better predictor of child survival than household sanitation: Andhra Pradesh, Bihar, Haryana, Orissa, Uttar Pradesh

- States where sanitation is a better predictor of child survival than household sanitation: Gujarat, Punjab

- States where neither household sanitation or water access were significantly associated with child survival:
  Madhya Pradesh, Rajasthan
  Karnataka, Kerala, Maharashtra, Tamil Nadu, West Bengal

In five states (Andhra Pradesh, Bihar, Haryana, Orissa, Uttar Pradesh), water access is an important predictor of child survival, and matters more than household sanitation. These are states which tend to have worst access to safe water and worst sanitation conditions, and who also have below-average rates of child survival. This result suggests that, in these states, greater gains in child survival may be expected from improvements in water access than from improvements in household sanitation.

In two states (Gujarat and Punjab), household sanitation turns out to be significantly associated with child survival, and seems to play a more important than water access. Interestingly, these states have better overall conditions of water access than other states (high proportions of children in households with piped water into residence, and low proportions in households using water from public open well, as shown in Table 2), but they do not rank as well in terms of their household sanitation conditions and their levels of child survival. For these states which have already made significant progress in terms of the water access, greater gains in child survival conditions may be expected from improvements in household sanitation than from further improvements in water access. Overall, it seems that when water access is poor, water is an important factor for child survival, but that once higher levels of access to safe water are reached, sanitation starts to matter more for child survival that water access. This result is consistent with conclusions of a study of the effect of safe water and sanitation on child survival for the African and Coloured Populations of South Africa (Anderson et al. 2002).

In the remaining seven states, the effect of water and sanitation disappears once other factors are taken into account. These states can be divided into two different groups. The first group includes two states (Madhya Pradesh, Rajasthan) that are among the three worst states in terms of child survival, in spite of average water and sanitation conditions. In these two states, socio-economic variables are the most important predictors of child survival. This suggests that in these two states, progress in water and sanitation conditions may not yield as much improvement in child survival as one would expect, perhaps because of other barriers such as low levels of maternal education (indeed, these two states have very high proportions of non-educated mothers). Perhaps in these states, improvements in maternal education and poverty reductions

may be more pressing priorities for improvements in child survival than improvements in water and sanitation conditions.

The second group of states for which the effect of water and sanitation disappears once other factors are taken into account includes the five states with the highest levels of child survivorship (Karnataka, Kerala, Maharashtra, Tamil Nadu, West Bengal). These favorable survival conditions occur in spite of less than ideal environmental conditions for households (except in Maharshtra which has arguably the best water and sanitation conditions of the country). In these states, overall, the variables included in the models are not good predictors of child survival, particularly in Kerala and Tamil Nadu. Here again, in these states, favorable child survival is not easily explained by variables commonly thought to be important factors. Other factors already mentioned, such as kinship systems, property rights and female autonomy, are difficult to control for but may play dominant roles in explaining rates of child survival. It may also be the case that, as average proportions of children surviving become close to the maximum of 100%, there is less room for variation in child survival by socio-economic conditions or household environmental conditions, which may explain the lack of explanatory power of our variables in these five states.

DISCUSSION AND CONCLUSIONS

These results need to be interpreted with caution for several reasons. First, the cross-sectional nature of the NFHS makes it difficult to interpret the observed associations among variables in terms of real effects. For example, disadvantaged areas may be targeted for program interventions, which can make some of the cross-sectional associations spurious.

Also, the effect of environmental variables may operate at the community level in addition to or instead of the household level. In our analysis, we focused on household effects, but exposure to water-borne diseases may be also affected by the overall water and sanitary management of the neighborhood or community. One study estimates that the water and sanitation conditions of the community as a whole has a large impact on child survival (World Bank 2001). For rural areas in particular, it is argued that living in a community with safer water supply and better sanitation matters more than having private water supply or private toilets, as far as child mortality is concerned. However, this result is difficult to interpret since the authors do not make the distinction between household-level and community-level variables in the statistical modeling. Further research is required to assess the relative effect on child survival of household and community levels of water access and household sanitation.

Another research direction is the inclusion of breastfeeding and water treatment as dimensions interacting with the source of domestic water. Previous research has shown that the source of drinking water matters little for postneonatal mortality, as long as the child is fed exclusively with breast milk (Woldemichael 2000). As infant feeding practices vary greatly by state (IIPS 2000), it is possible that breastfeeding could mediate the effect of water on child survival, at least during the first months of life. Treatment of water is another potentially important dimension affecting child survival, given a certain source of domestic water. For example, appropriate

water purification may counterbalance the negative effect of unsafe water sources. While part of the effect may be captured by maternal education in our models, more research is needed to estimate the direct role of water purification on child survival. One can already note, however, that the majority (68%) of households in India do not use any method of water purification (IIPS 2000).

In spite of these limitations, the results of this study suggest that the relative importance of environmental factors for child survival varies greatly by state. In states that have either very low or very high levels of child survival, environmental variables seem to be unimportant in determining levels of child survival, once mother's education and other factors are taken into account. In states where both water and sanitary conditions are poor, safe drinking water seems to be a more important predictor of child survival than sanitation. In states that have overall better access to safe water, the type of sanitation becomes an important predictor of child survival.

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Table 1: Proportion of children born in the five years preceding the survey who are surviving by the time the time of the survey. NFHS-2 (1998-99)

State	Proportion surviving	N
Andhra Pradesh	92.72	1,938
Bihar	91.47	5,214
Gujarat	93.30	2,178
Haryana	93.46	1,850
Karnataka	94.15	2,258
Kerala	98.43	1,211
Madhya Pradesh	89.06	5,110
Maharshtra	95.39	2,952
Orissa	90.55	2,656
Punjab	93.89	1,555
Rajasthan	90.33	5,297
Tamil Nadu	94.65	2,298
Uttar Pradesh	90.06	7,592
West Bengal	95.03	2,094

Source: Authors' calculations based on the NFHS-2 data

Table 2: Distribution of children by characteristics, NFHS-2, 1998-99

		Andhra Pradesh	Bihar	Gujarat	Haryana	Karna-taka	Kerala	Madhya Pradesh	Maha-rashtra	Orissa	Punjab	Rajas-than	Tamil Nadu	Uttar Pradesh	West Bengal
Mother's Education	None	51.29	77.29	47.80	52.43	50.13	2.23	63.89	31.40	55.31	38.84	77.50	25.24	70.01	42.26
	Low	17.39	5.96	17.13	15.41	11.43	11.73	18.34	19.72	18.34	15.69	10.19	26.72	13.01	23.16
	Medium	24.25	13.79	24.10	23.51	28.08	57.72	11.82	36.65	22.10	33.12	8.91	35.47	11.17	27.13
	High	7.07	2.95	10.93	8.65	10.36	28.32	5.89	12.23	4.25	12.35	3.36	12.43	5.81	7.16
Standard of Living Indicator	Low	38.08	57.92	27.36	35.39	35.39	15.36	36.71	26.59	55.80	5.85	27.05	36.16	33.60	44.08
	Medium	46.34	34.14	49.63	48.32	48.32	55.82	48.14	48.64	34.19	42.70	54.82	47.87	51.44	41.40
	High	15.58	7.81	22.82	15.90	15.90	28.82	14.79	20.05	9.45	50.87	17.59	14.75	12.61	12.75
Residence	Urban	26.57	8.46	37.24	23.46	29.98	26.42	22.02	55.93	18.52	27.97	19.26	44.30	15.96	35.10
	Rural	73.43	91.54	62.76	76.54	70.02	73.58	77.98	44.07	81.48	72.03	80.74	55.70	84.04	64.90
Sex	Male	50.72	51.65	51.79	54.05	50.93	51.86	51.17	52.74	51.09	53.70	52.03	51.87	51.05	52.01
	Female	49.28	48.35	48.21	45.95	49.07	48.14	48.83	47.26	48.91	46.30	47.97	48.13	48.95	47.99
Mother's Age at Birth	<20	23.27	20.37	18.50	16.81	28.61	8.92	24.52	22.53	17.51	9.97	17.42	16.45	19.39	23.40
	>=20 but <35	73.17	73.3	77.87	79.51	69.95	87.37	70.88	75.20	78.84	87.52	76.67	81.29	73.34	73.78
	>35	3.56	6.33	3.63	3.68	2.44	3.72	4.60	2.27	3.65	2.51	5.91	2.26	7.27	2.82
Delivery Assistance	Professional	67.85	37.42	49.54	37.19	54.78	96.37	23.33	66.12	31.10	59.29	30.87	85.64	46.17	60.55
	Traditional	25.59	54.64	46.37	62.70	12.58	2.39	56.36	20.02	17.77	32.54	49.18	9.75	53.27	21.16
	Relative	6.19	7.71	4.09	0.11	32.20	1.16	19.45	12.50	50.41	8.17	18.97	4.40	0.57	16.81
	Other/None	0.36	0.23	0.00	0.00	0.44	0.08	0.86	1.36	0.72	0.00	0.98	0.22	0.00	1.48
Water Access	Piped into residence	19.04	4.35	45.87	19.35	23.34	8.34	13.93	45.60	3.13	29.26	25.67	19.80	7.86	11.94
	Public tap	33.33	2.05	19.15	20.00	42.52	11.31	11.78	28.46	6.78	5.34	11.48	48.48	3.90	13.13
	Handpump in resid.	2.22	41.64	3.72	27.35	1.90	1.32	3.78	0.81	5.12	59.16	3.76	4.35	44.72	15.81
	Public handpump	25.90	29.75	13.13	20.49	19.88	0.91	31.27	9.62	49.36	4.31	24.92	13.40	26.78	48.47
	Covered well in resid.	0.88	2.42	1.56	0.05	1.77	3.72	0.80	0.64	2.03	0.26	1.32	0.96	0.83	0.43
	Open well in residence	3.51	6.96	1.47	0.38	2.21	63.58	8.57	2.68	7.19	0.26	5.59	2.31	3.07	3.30
	Public covered well	1.24	2.17	1.42	0.76	1.06	1.16	1.29	0.75	0.64	0.13	2.85	0.04	0.63	0.53
	Public Open well	11.2	8.67	7.85	11.51	5.89	8.01	25.05	9.86	17.7	1.16	19.39	7.31	9.64	5.25
	Spring	0.31	0.08	0.14	0.00	0.13	0.13	0.31	0.14	1.09	0.00	0.00	0.17	1.24	0.10
	Other	2.37	1.91	5.69	0.11	1.30	1.52	3.22	1.44	6.96	0.12	5.02	3.18	1.33	1.04
Household Sanitation	None	72.29	84.93	64.23	67.78	68.51	13.79	81.14	45.22	86.26	53.25	79.20	59.31	78.21	53.15
	Pit Toilet	7.54	4.28	11.44	8.33	15.32	67.79	1.72	2.92	2.41	16.08	3.50	1.31	13.93	10.60
	Flush	20.17	10.8	24.15	23.56	16.17	18.41	17.15	51.79	11.34	30.68	16.75	39.25	7.68	36.06
N		1,938	5,214	2,178	1,850	2,258	1,211	5,110	2,952	2,656	1,555	5,297	2,298	7,592	2,094

Table 3: Proportion of Children Surviving, by characteristics, NFHS-2, 1998-99

		Andhra Pradesh		Bihar		Gujarat		Haryana		Karnataka		Kerala		Madhya Pradesh	
		% Surv	N	% Surv	N	% Surv	N	% Surv	N	% Surv	N	% Surv	N	% Surv	N
Mother's	None	91.45	994	90.52	4,030	90.87	1,041	91.55	970	92.67	1,132		27	87.47	3,265
Education	Low	92.98	337	93.25	311	93.30	373	95.09	285	94.19	258	99.3	142	90.29	937
	Medium	95.53	470	94.99	719	96.38	525	94.94	435	95.27	634	98.28	699	91.39	604
	High	91.97	137	96.1	154	97.06	239	98.13	160	98.29	234	98.25	343	97.67	304
	P^2 probability	**0.05**		**<0.01**		**<0.01**		**<0.01**		**0.04**		0.54		**<0.01**	
Standard	Low	90.51	738	89.50	3,020	90.27	596	89.71	243	92.37	799	96.77	186	85.87	1,876
of Living	Medium	93.32	898	93.71	1,780	93.06	1,085	92.07	933	94.59	1,091	99	676	89.71	2,460
Index	High	96.36	302	96.31	414	97.59	497	96.83	674	96.66	368	98.28	349	94.71	774
	P^2 probability	**<0.01**		**<0.01**		**<0.01**		**<0.01**		**0.02**		0.1		**<0.01**	
Residence	Urban	95.15	515	93.88	441	95.07	811	94.93	434	95.86	677	98.44	320	93.33	1,125
	Rural	91.85	1,423	91.24	4,773	92.25	1,367	93.01	1,416	93.42	1,581	98	891	87.85	3,985
	P^2 probability	**0.01**		0.06		**0.01**		0.16		**0.02**		0.99		**<0.01**	
Sex	Male	92.15	983	91.39	2,693	92.73	1,128	94.00	1,000	94.00	1,150	98	628	89.67	2,615
	Female	93.29	955	91.55	2,521	93.90	1,050	92.82	850	94.31	1,108	99	583	88.42	2,495
	P^2 probability	0.33		0.83		0.27		0.31		0.75		0.15		0.15	
Mother's	<20	92.24	451	96.37	1,062	87.84	403	91.00	311	93.03	646	99.07	108	85.00	1,253
Age at Birth	>=20 but <35	93.16	1,418	92.55	3,822	94.75	1,696	94.36	1,471	94.86	1,557	98	1,058	90.34	3,622
	>35	86.96	69	94.03	330	89.87	79	59.00	68	87.27	55	96	45	91.06	235
	P^2 probability	0.13		**<0.01**		**<0.01**		**<0.01**		**0.02**		0.3		**<0.01**	
Delivery	Professional	93.99	1,315	91.80	1,951	95.18	1,079	93.46	688	94.83	1,237	98	1,167	91.78	1,192
Assistance	Traditional	90.52	496	91.37	2,849	91.78	1,010	93.45	1,160	91.90	284	97	29	88.82	2,880
	Relative	87.50	120	90.80	402	87.64	89	100.00	2	93.81	727	100	14	86.52	994
	Other/None	100.00	7	83.33	12	N/A	0	N/A	0	100.00	10	100	1	88.64	44
	P^2 probability	**0.01**		0.67		**<0.01**		0.93		0.22		0.82		**<0.01**	
Water	Piped into Residence	96.75	369	92.95	237	96.00	999	97.21	358	96.58	527	99.01	101	94.24	712
Access	Public tap	92.72	646	96.26	117	89.00	417	91.08	370	94.38	960	98.54	137	90.37	602
	Handpump in Resid.			92.26	2181	96.30	96	93.87	506	93.02	43			89.64	193
	Public handpump	89.00	502	89.88	1,551	93.01	286	93.67	379	91.09	449	90.91	11	88.74	1598
	Covered well in resid.	88.24	17	96.03	136					95.00	40			90.24	41
	Open well in resid.	95.59	68	92.01	363	96.88	32			92.00	50	98.83	770	89.50	438
	Public covered well	95.83	24	90.27	123	93.55	31	85.71	14			85.71	14	84.85	66
	Public Open well	92.17	217	88.27	452	91.23	171	90.61	213	92.48	133	96.91	97	86.33	1,280
	Spring	83.33	6											87.50	16
	Other	93.68	89	98.08	102	90.68	161	90.00	10	98.21	56	98.77	81	85.98	164
	P^2 probability	**0.01**		**<0.01**		**<0.01**		**0.01**		**0.02**		**<0.01**		**<0.01**	
Household	None	91.51	1,401	90.90	4,428	91.38	1,399	93.00	1,254	93.47	1,547	98.20	167	87.75	4,146
Sanitation	Pit Toilet	94.52	146	93.27	223	95.58	249	95.45	154	93.64	346	98.54	821	97.67	88
	Flush	96.42	391	95.20	563	97.34	530	95.18	442	97.53	365	98.21	223	94.52	876
	P^2 probability	**<0.01**		**<0.01**		**<0.01**		**0.1**		**0.01**		0.91		**<0.01**	
Total		**92.72**	**1,938**	**91.47**	**5,214**	**93.30**	**2,178**	**93.46**	**1,850**	**94.15**	**2,258**	**98.43**	**1,211**	**89.06**	**5,110**

Table 3: Proportion of Children Surviving, by characterics, NHFS-II, 1998-90 (continued)

		Maharashtra		Orissa		Punjab		Rajasthan		Tamil Nadu		Uttar Pradesh		West Bengal	
		% Surv	N	% Surv	N	% Surv	N	% Surv	N	% Surv	N	% Surv	N	% Surv	N
Mother's Education	None	94.61	927	88.63	1,469	92.22	604	89.28	4,105	91.55	580	88.77	5,315	92.99	885
	Low	94.67	582	90.14	487	91.39	244	91.11	540	93.97	614	92.31	988	94.43	485
	Medium	96.03	1,082	94.21	587	96.12	515	96.19	472	96.56	815	91.86	848	97.71	568
	High	96.68	361	98.23	113	96.35	192	96.63	180	96.88	289	97.05	441	99.33	156
	P^2 probability	0.23		**<0.01**		**0.01**		**<0.01**		**<0.01**		**<0.01**		**<0.01**	
Standard of Living Index	Low	93.76	785	88.8	1,482	90.11	91	87.65	1,433	93.86	831	87.34	2,669	93.39	923
	Medium	95.89	1,436	92	908	92.02	664	89.98	2,904	94.55	1,100	90.42	3,925	95.96	867
	High	96.96	731	96.81	266	95.95	800	95.60	960	96.46	367	95.51	998	97.75	304
	P^2 probability	**0.01**		**<0.01**		**0.01**		**<0.01**		0.19		**<0.01**		**0.01**	
Residence	Urban	96.37	1,651	90.85	492	96.09	435	91.96	1,020	95.38	1,018	92.90	1,212	97.28	735
	Rural	94.16	1,301	90.48	2,164	93.04	1,120	89.95	4,277	94.06	1,280	89.51	6,380	93.82	1,359
	P^2 probability	**<0.01**		0.8		**0.02**		**0.05**		0.16		**<0.01**		**<0.01**	
Sex	Male	95.38	1,557	90.20	1,357	94.85	835	91.22	2,756	94.97	1,192	91.05	3,876	94.58	1,089
	Female	95.41	1,395	9092	1,299	92.78	720	89.37	2,541	94.30	1,106	89.02	3,716	95.52	1,005
	P^2 probability	0.97		0.53		0.09		**0.02**		0.48		**<0.01**		0.32	
Mother's Age at Birth	<20	93.23	665	86.45	465	90.97	155	88.08	923	94.44	378	86.30	1,472	93.50	490
	>=20 but <35	96.10	2,220	91.5	2,094	94.05	1,361	90.91	4,061	94.90	1,868	91.40	5,568	95.60	1,545
	>35	94.00	67	91	97	100.00	39	89.00	313	86.50	52	86.60	552	93.20	59
	P^2 probability	**<0.01**		**<0.01**		0.09		**0.03**		**0.03**		**<0.01**		0.14	
Delivery Assistance	Professional	96	1,952	93.10	826	94.69	922	92.05	1,635	95	1,968	91	3,505	96	1,268
	Traditional	95	591	88.35	472	92.29	506	90.29	2,605	95	224	89	4,044	93	443
	Relative	95	369	89.69	1,339	94.49	127	87.56	1,005	94	101	91	43	94	352
	Other/None	87.5	40	94.74	19	N/A	0	92.31	52	80	5	N/A	0	87.1	31
	P^2 probability	0.12		**0.02**		0.19		**<0.01**		0.53		**0.01**		**<0.01**	
Water Access	Piped into Residence	95.25	1,346	96.39	83	95.82	455	91.91	1,360	96.00	455	95.31	597	98.00	250
	Public tap	96.31	840	87.22	180	91.57	83	89.64	608	94.70	1,114	89.00	296	96.00	275
	Handpump in Resid.			98.00	136	93.70	920	92.96	199	93.00	100	90.78	3,395	95.47	331
	Public handpump	93.66	284	90.47	1311	88.06	67	89.24	1,320	93.00	308	88.74	2,033	94.38	1,015
	Covered Well in resid	89.47	19	94.44	54			90.00	70			88.89	63		
	Open well in resid	93.67	79	95.81	191	75.00	4	91.22	296	92.11	53	87.12	233	94.20	69
	Public covered well			88.00	17			89.40	151		1	77.08	48		
	Public Open well	95.53	291	87.87	470	94.44	18	89.39	1,027	93.00	168	87.57	732	90.00	110
	Spring			93.10	29							95.74	94		
	Other	96.77	90	86.49	185	87.50	185	90.60	266	95.96	99	90.10	101	97.93	44
	P^2 probability	0.42		**<0.01**		0.09		0.33		0.31		**<0.01**		**0.04**	
Household Sanitation	None	94.02	1,335	89.79	2,291	91.37	828	89.59	4,205	93.92	1,363	89.18	5,938	93.2	1,113
	Pit Toilet	97.67	88	98.44	64	96.40	250	90.27	195	93.33	30	92.91	1058	96.4	222
	Flush	96.47	1529	94.68	301	96.44	477	93.91	897	93.92	905	93.83	596	97.35	759
	P^2 probability	**<0.01**		**<0.01**		**<0.01**		**<0.01**		0.15		**<0.01**		**<0.01**	
Total		**95.39**	**2,952**	**90.55**	**2,656**	**93.89**	**1,555**	**90.33**	**5,297**	**94.65**	**2,298**	**90.06**	**7,592**	**95.03**	**2,094**

ANNEX TABLE 1: ANDHRA PRADESH

	Model I	Model II	Model III	Model IV	Model V	Model VI
Mother's Education	-0.01	-0.03	-0.05	-0.03	-0.07	-0.08
(No Education=0, Higher Secondary=3)	(-0.92)	(-0.75)	(0.63)	(0.77)	(0.55)	(0.45)
Standard of Living	**0.39**	**0.35**	0.28	0.30	0.24	0.21
(Low=1, High=3)	(0.01)	(0.03)	(0.08)	(0.07)	(0.16)	(0.22)
Residence	-0.36	-0.31	-0.17	-0.15	-0.06	-0.03
(Urban=1, Rural=2)	(0.14)	(0.22)	(0.50)	(0.59)	((0.84)	(0.92)
Sex(Male=1, Female=2)	-0.17	-0.18	-0.17	-0.16	-0.17	-0.18
	(0.34)	(0.29)	(0.33)	(0.35)	(0.34)	(0.30)
Mother's Age at Birth						
Reference: Age>20 and <=34						
Age at Birth (<20)	-0.03	-0.02	-0.01	-0.01	0.00	0.01
	(0.89)	(0.91)	(0.96)	(0.96)	(0.99)	(0.97)
Age at Birth (>35)	-0.74	-0.75	-0.77	-0.74	-0.76	-0.76
	(0.07)	(0.07)	(0.06)	(0.07)	(0.06)	(0.07)
Delivery Assistance		-0.22				-0.20
Professional=1, None=4		(0.06)				(0.11)
Water:Reference: Piped into Residence						
Public tap			-0.61		-0.53	-0.52
			(0.09)		(0.15)	(0.17)
Public handpump			**-0.94**		**-0.87**	**-0.84**
			(0.01)		(0.03)	(0.03)
Covered Well in resid			-1.21		-1.17	-1.09
			(0.15)		(0.16)	(0.20)
Open well in residence			-0.05		0.00	-0.05
			(0.94)		(0.99)	(0.94)
Public covered well			0.05		0.12	0.28
			(0.96)		(0.92)	(0.81)
Public Open Well			-0.65		-0.58	-0.57
			(0.13)		(0.19)	(0.19)
Other			-0.44		-0.43	-0.40
			(0.42)		(0.43)	(0.46)
Satitation, Reference : No Facility						
Pit				0.20	0.05	0.04
				(0.63)	(0.90)	(0.92)
Flush				0.56	0.38	0.35
				(0.13)	(0.32)	(0.37)
Constant	**2.82**	**3.17**	**3.32**	**2.51**	**3.07**	**3.38**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
CHI-Sq	**18.56**	**21.36**	**28.36**	**20.95**	**29.42**	**31.57**
Pr>Chi	(0.01)	(<0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Increment in Chi- Sq		2.80	9.80	2.39	10.86	10.21
p-value, against Model I		(0.09)	(0.20)	(0.30)	(0.28)	
p-value, against Model II						(0.33)

ANNEX TABLE 2: BIHAR

Education	**0.17**	**0.17**	0.17	0.16	0.16	0.17
(No Education=0, Higher Secondary=3)	(0.06)	(0.05)	(0.06)	(0.07)	(0.07)	(0.06)
Standard of Living	**0.38**	**0.38**	**0.36**	**0.37**	**0.36**	**0.36**
(Low=1, High=3)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Residence	-0.12	-0.12	-0.08	-0.11	-0.08	-0.09
(Urban=1, Rural=2)	(0.58)	(0.56)	(0.70)	(0.63)	(0.72)	(0.71)
Sex(Male=1, Female=2)	0.02	0.02	0.02	0.02	0.02	0.02
	(0.83)	(0.84)	(0.82)	(0.83)	(0.81)	(0.82)
Mother's Age at Birth Reference: Age>20 and <=34						
Age at Birth (<20)	**-0.43**	**-0.43**	**-0.43**	**-0.43**	**-0.42**	**-0.43**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Age at Birth (>35)	**-0.63**	**-0.62**	**-0.63**	**-0.63**	**-0.63**	**-0.62**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Delivery Assistance		0.04				0.04
		(0.66)				(0.68)
Water: Reference: Piped into Residence						
Public tap			1.05		1.05	1.05
			(0.07)		(0.07)	(0.07)
Handpump in Residence			0.20		0.20	0.20
			(0.48)		(0.47)	(0.48)
Public handpump			0.13		0.13	0.12
			(0.66)		(0.66)	(0.67)
Covered Well in residence			0.93		0.93	0.93
			(0.08)		(0.08)	(0.08)
Open well in residence			0.20		0.20	0.20
			(0.55)		(0.55)	(0.55)
Public covered well			0.15		0.16	0.16
			(0.72)		(0.72)	(0.71)
Public Open Well			-0.05		-0.05	-0.05
			(0.87)		(0.88)	(0.88)
Other			**1.83**		**1.83**	**1.83**
			(0.02)		(0.02)	(0.02)
Sanitation, Reference : No Facility						
Pit				-0.02	-0.02	-0.02
				(0.93)	(0.93)	(0.94)
Flush				0.04	0.03	0.03
				(0.87)	(0.92)	(0.90)
Constant	**2.12**	**2.07**	**1.89**	**2.11**	**1.88**	**1.83**
	(<0.00)	(<0.00)	(<0.00)	(<0.00)	(<0.00)	(<0.00)
CHI-Sq	**61.56**	**61.76**	**81.48**	**61.60**	**81.50**	**81.68**
Pr>Chi	(<0.00)	(<0.00)	(<0.00)	(<0.00)	(<0.00)	(<0.00)
Increment in Chi- Sq		0.19	**19.92**	0.04	**19.24**	**19.92**
p-value, against Model I		(0.65)	(0.01)	(0.97)	(0.03)	
p-value, against Model II						(0.03)

ANNEX TABLE 3: GUJARAT

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	**0.31**	**0.27**	**0.29**	**0.24**	**0.24**	0.21
	(0.01)	(0.02)	(0.01)	(0.03)	(0.03)	(0.08)
Standard of Living	0.17	0.15	0.08	0.04	-0.01	-0.01
(Low=1, High=3)	(0.25)	(0.31)	(0.59)	(0.78)	(0.95)	(0.94)
Residence	-0.18	-0.12	-0.20	0.12	0.05	0.08
	(0.37)	(0.55)	(0.33)	(0.60)	(0.84)	(0.73)
Sex	0.20	0.19	0.19	0.20	0.19	0.18
	(0.26)	(0.29)	(0.29)	(0.26)	(0.29)	(0.31)
Mother's Age at Birth						
Age at Birth (<20)	**-0.75**	**-0.75**	**-0.73**	**-0.74**	**-0.73**	**-0.73**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Age at Birth (>35)	-0.47	-0.46	-0.44	0.20	-0.46	-0.45
	(0.23)	(0.24)	(0.27)	(0.26)	(0.25)	(0.26)
Delivery Assistance		-0.23				-0.21
		(0.17)				(0.21)
Water:Reference: Piped into Residence						
Public tap			**-0.59**		-0.47	-0.45
			(0.01)		(0.05)	(0.06)
Handpump in Residence			0.37		0.57	0.59
			(0.55)		(0.36)	(0.34)
Public handpump			-0.02		0.11	0.14
			(0.96)		(0.72)	(0.64)
Open Well in residence			0.83		0.91	0.99
			(0.42)		(0.38)	(0.34)
Public Covered Well			0.13		0.26	0.31
			(0.86)		(0.74)	(0.69)
Public Open Well			-0.23		-0.14	-0.13
			(0.50)		(0.68)	(0.70)
Other			-0.29		-0.19	-0.14
			0.39		0.58	0.68
Sanitation, Reference : No Facility						
Pit				0.38	0.33	0.31
				(0.28)	(0.35)	(0.39
Flush				**0.93**	**0.87**	**0.84**
				(0.01)	(0.02)	(0.02)
Constant	**2.30**	**2.67**	**2.70**	**1.90**	**2.24**	**2.56**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
CHI-Sq	**44.64**	**46.56**	**54.71**	**52.00**	**61.05**	**62.61**
Pr>Chi	0.00	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Increment in Chi- Sq		1.92	10.06	**7.35**	16.41	16.05
p-value, against Model I		(0.16)	(0.19)	(0.03)	(0.06)	
p-value, against Model II						(0.07)

ANNEX TABLE 4: HARYANA

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	**0.27**	**0.33**	0.23	**0.28**	**0.24**	**0.29**
	(0.02)	(0.01)	(0.06)	(0.02)	(0.05)	(0.02)
Standard of Living	**0.31**	**0.36**	0.26	**0.33**	0.29	**0.33**
(Low=1, High=3)	(0.04)	(0.02)	(0.09)	(0.04)	(0.07)	(0.05)
Residence	0.00	-0.08	0.23	-0.05	0.14	0.08
	(0.99)	(0.74)	(0.40)	(0.86)	(0.62)	(0.79)
Sex	-0.15	-0.16	-0.16	-0.16	-0.17	-0.17
	(0.42)	(0.41)	(0.41)	(0.41)	(0.39)	(0.36)
Mother's Age at Birth						
Age at Birth (<20)	**-0.59**	**-0.61**	**-0.58**	**-0.59**	**-0.58**	**-0.59**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Age at Birth (>35)	-0.71	**-0.74**	-0.71	-0.73	-0.72	-0.75
	0.06	0.05	0.07	0.06	0.06	0.05
Delivery Assistance		**0.45**				**0.43**
		(0.04)				(0.05)
Water:Reference: Piped into Residence						
Public tap			**-0.94**		**-0.98**	**-0.95**
			(0.02)		(0.02)	(0.02)
Handpump in residence			-0.65		-0.67	-0.66
			(0.09)		(0.08)	(0.09)
Public handpump			-0.56		-0.60	-0.58
			(0.19)		(0.16)	(0.17)
Public covered well			-1.50		-1.55	-1.38
			(0.08)		(0.07)	(0.11)
Public Open Well			**-1.00**		**-1.04**	**-1.04**
			(0.02)		(0.02)	(0.02)
Other			-0.88		-1.08	-1.04
			(0.43)		(0.34)	(0.36)
Sanitation, Reference : No Facility						
Pit				0.25	0.18	0.24
				(0.55)	(0.68)	(0.57)
Flush				-0.14	-0.27	-0.20
				(0.66)	(0.39)	(0.52)
Constant	**2.18**	**1.48**	**2.58**	**2.25**	**2.75**	**2.04**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
CHI-Sq	**28.25**	**32.5**	**37.02**	**28.96**	**38.10**	**41.87**
Pr>Chi	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Increment in Chi- Sq		**4.25**	8.77	0.71	9.86	9.37
p-value, against Model I		(0.04)	(0.19)	(0.7)	(0.27)	
p-value, against Model II						(0.31)

ANNEX TABLE 5: KARNATAKA

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	0.21	**0.27**	0.21	0.21	0.22	**0.28**
	(0.06)	(0.02)	(0.06)	(0.06)	(0.06)	(0.02)
Standard of Living	0.21	0.22	0.19	0.20	0.19	0.20
(Low=1, High=3)	(0.17)	(0.15)	(0.22)	(0.20)	(0.23)	(0.21)
Residence	-0.21	-0.28	-0.05	-0.29	-0.16	-0.21
	(0.37)	(0.24)	(0.83)	(0.30)	(0.59)	(0.46)
Sex	0.05	0.05	0.07	0.03	0.05	0.06
	(0.78)	(0.78)	(0.69)	(0.86)	(0.76)	(0.75)
Mother's Age at Birth						
Age at Birth (<20)	-0.18	-0.17	-0.18	-0.18	-0.19	-0.17
	(0.37)	(0.39)	(0.36)	(0.37)	(0.35)	(0.38)
Age at Birth (>35)	**-1.00**	**-1.03**	**-0.97**	**-1.00**	**-0.97**	**-1.00**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Delivery Assistance		0.16				0.17
		(0.15)				(0.14)
Water:Reference: Piped into Residence						
Public tap			-0.12		-0.13	-0.12
			(0.70)		(0.69)	(0.71)
Handpump in residence			-0.73		-0.77	-0.77
			(0.26)		(0.24)	(0.24)
Public handpump			-0.57		-0.59	-0.59
			(0.09)		(0.08)	(0.08)
Covered Well in residence			-0.27		-0.28	-0.29
			(0.73)		(0.72)	(0.71)
Open Well in residence			-0.74		-0.74	-0.73
			(0.22)		(0.22)	(0.22)
Public Open Well			-0.45		-0.48	-0.45
			(0.31)		(0.28)	(0.31)
Other			1.10		1.04	1.06
			(0.30)		(0.32)	(0.32)
Satitation, Reference : No Facility						
Pit				-0.46	-0.51	-0.50
				(0.14)	(0.10)	(0.11)
Flush				0.33	0.28	0.31
				(0.44)	(0.52)	(0.48)
Constant	**2.63**	**2.38**	**2.60**	**2.84**	**2.87**	**2.58**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
CHI-Sq	**21.73**	**23.77**	**31.11**	**26.30**	**35.88**	**38.02**
Pr>Chi	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Increment in Chi- Sq		2.04	9.38	4.57	14.15	14.26
p-value, against Model I		(0.15)	(0.22)	(0.10)	(0.12)	
p-value, against Model II						(0.11)

ANNEX TABLE 6: KERALA

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	-0.58	-0.60	-0.68	-0.58	-0.69	-0.69
	(0.14)	(0.13)	(0.10)	(0.14)	(0.09)	(0.09)
Standard of Living	0.60	0.60	0.41	0.69	0.50	0.50
(Low=1, High=3)	(0.14)	(0.14)	(0.33)	(0.13)	(0.29)	(0.30)
Residence	-0.04	-0.03	-0.01	-0.06	-0.03	-0.03
	(0.94)	(0.95)	(0.99)	(0.91)	(0.96)	(0.96)
Sex	0.76	0.77	0.77	0.77	0.80	0.80
	(0.13)	(0.13)	(0.13)	(0.12)	(0.12)	(0.12)
Mother's Age at Birth						
Age at Birth (<20)	0.43	0.46	0.40	0.45	0.44	0.44
	(0.68)	(0.66)	(0.70)	(0.67)	(0.68)	(0.68)
Age at Birth (>35)	-1.42	-1.41	**-1.60**	-1.40	**-1.57**	**-1.57**
	(0.07)	(0.07)	(0.05)	(0.08)	(0.05)	(0.05)
Delivery Assistance		-0.27				-0.07
		(0.75)				(0.94)
Water:Reference: Piped into Residence						
Public tap			-0.85		-0.97	-0.96
			(0.50)		(0.45)	(0.45)
Open Well in Residence			-0.57		-0.60	-0.60
			(0.60)		(0.58)	(0.58)
Public Covered Well			**-3.41**		**-3.53**	**-3.52**
			(0.01)		(0.01)	(0.01)
Public Open Well			-1.54		-1.63	-1.63
			(0.20)		(0.18)	(0.18)
Other			-1.21		-1.24	-1.24
			(0.34)		(0.33)	(0.33)
Satitation, Reference : No Facility						
Pit				-0.12	-0.06	-0.06
				(0.87)	(0.93)	(0.94)
Flush				-0.47	-0.60	-0.60
				(0.61)	(0.52)	(0.52)
Constant	**3.26**	**3.54**	**4.63**	**3.25**	**4.69**	**4.77**
	(<0.01)	(0.05)	(0.019)	(0.05)	(0.02)	(0.03)
CHI-Sq	7.71	7.8	16.41	8.07	17.13	17.14
Pr>Chi	(0.26)	(0.35)	(0.12)	(0.42)	(0.19)	(0.24)
Increment in Chi- Sq		0.09	8.7	0.36	9.42	9.33
p-value, against Model I		(0.76)	(0.12)	(0.82)	(0.22)	
p-value, against Model II						(0.23)

ANNEX TABLE 7: MADHYA PRADESH

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	**0.19**	**0.18**	**0.18**	**0.16**	**0.16**	**0.15**
	(0.01)	(0.01)	(0.01)	(0.02)	(0.03)	(0.03)
Standard of Living	**0.30**	**0.30**	**0.30**	**0.28**	**0.28**	**0.28**
(Low=1, High=3)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Residence	**-0.36**	**-0.34**	-0.29	-0.27	-0.22	-0.22
	(0.01)	(0.02)	(0.06)	(0.08)	(0.17)	(0.18)
Sex	-0.14	-0.14	-0.13	-0.13	-0.13	-0.13
	(0.13)	(0.13)	(0.15)	(0.14)	(0.16)	(0.16)
Mother's Age at Birth						
Age at Birth (<20)	**-0.45**	**-0.45**	**-0.45**	**-0.44**	**-0.44**	**-0.44**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Age at Birth (>35)	0.21	0.21	0.22	0.21	0.22	0.22
	(0.37)	(0.37)	(0.36)	(0.38)	(0.36)	(0.36)
Delivery Assistance		-0.05				-0.03
		(0.48)				(0.71)
Water:Reference: Piped into Residence						
Public tap			-0.12		-0.10	-0.10
			(0.61)		(0.68)	(0.67)
Handpump in Residence			-0.41		-0.40	-0.40
			(0.16)		(0.17)	(0.18)
Public handpump			-0.09		-0.05	-0.04
			(0.66)		(0.83)	(0.84)
Covered Well in residence/yar			-0.27		-0.26	-0.26
			(0.63)		(0.65)	(0.65)
Open well in residence			-0.06		-0.01	0.00
			(0.79)		(0.97)	(0.99)
Public covered well			-0.51		-0.49	-0.48
			(0.19)		(0.22)	(0.23)
Public Open well			-0.29		-0.24	-0.23
			(0.16)		(0.27)	(0.28)
Spring			-0.20		-0.15	-0.15
			(0.80)		(0.85)	(0.85)
Other			-0.21		-0.17	-0.16
			(0.49)		(0.58)	(0.60)
Satitation, Reference : No Facility						
Pit				0.98	0.98	0.97
				(0.10)	(0.10)	(0.10)
Flush				0.21	0.20	0.19
				(0.30)	(0.35)	(0.36)
Constant	**2.47**	**2.55**	**2.51**	**2.31**	**2.34**	**2.39**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
CHI-Sq	**92.83**	**93.32**	**99.35**	**97.06**	**103.38**	**103.51**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Increment in Chi- Sq		0.49	6.51	4.23	10.54	10.19
p-value, against Model I		(0.49)	(0.68)	(0.12)	(0.48)	
p-value, against Model II						(0.51)

ANNEX TABLE 8: MAHARASHTRA

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	0.11	0.12	0.18	0.07	0.15	0.17
	(0.24)	(0.21)	(0.06)	(0.43)	(0.13)	(0.09)
Standard of Living	-0.07	-0.06	-0.05	-0.08	-0.07	-0.07
(Low=1, High=3)	(0.19)	(0.20)	(0.32)	(0.11)	(0.18)	(0.19)
Residence	**-0.45**	**-0.48**	**-0.58**	-0.20	-0.27	-0.30
	(0.02)	(0.02)	(0.01)	(0.46)	(0.34)	(0.30)
Sex	0.02	0.02	0.01	0.02	0.01	0.01
	(0.92)	(0.93)	(0.94)	(0.91)	(0.94)	(0.95)
Mother's Age at Birth						
Age at Birth (<20)	**-0.48**	**-0.49**	**-0.49**	**-0.47**	**-0.47**	**-0.48**
	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)
Age at Birth (>35)	-0.46	-0.46	-0.43	-0.47	-0.43	-0.43
	(0.38)	(0.39)	(0.42)	(0.38)	(0.42)	(0.43)
Delivery Assistance		0.06				0.09
		(0.64)				(0.49)
Water:Reference: Piped into Residence						
Public tap			**0.46**		**0.55**	**0.55**
			(0.05)		(0.02)	(0.02)
Public handpump			0.18		0.30	0.30
			(0.56)		(0.34)	(0.35)
Covered Well in residence/yar			-0.64		-0.51	-0.49
			(0.41)		(0.51)	(0.53)
Open well in residence			0.25		0.39	0.38
			(0.61)		(0.44)	(0.46)
Public Open well			**0.69**		**0.79**	**0.79**
			(0.05)		(0.03)	(0.03)
Other			0.87		0.96	0.96
			(0.16)		(0.12)	(0.12)
Sanitation Facility: Reference: No Facility						
Pit				0.92	1.06	1.08
				(0.21)	(0.15)	(0.14)
Flush				0.38	0.53	0.55
				(0.20)	(0.08)	(0.07)
Constant	**3.85**	**3.77**	**3.69**	**3.34**	**2.99**	**2.85**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
CHI-Sq	**17.55**	**17.77**	**25.88**	**20.56**	**30.42**	**30.89**
Pr>Chi	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Increment in Chi- Sq		0.22	8.33	3.01	12.87	13.12
p-value, against Model I		(0.63)	(0.21)	(0.22)	(0.12)	
p-value, against Model II						(0.10)

ANNEX TABLE 9: ORISSA

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	**0.28**	**0.28**	**0.24**	**0.26**	**0.21**	**0.22**
	(0.01)	(0.01)	(0.02)	(0.01)	(0.03)	(0.03)
Standard of Living	**0.27**	**0.27**	0.19	0.23	0.17	0.17
(Low=1, High=3)	(0.03)	(0.03)	(0.11)	(0.07)	(0.16)	(0.16)
Residence	0.21	0.21	0.13	0.28	0.18	0.18
	(0.25)	(0.26)	(0.53)	(0.14)	(0.38)	(0.39)
Sex	0.12	0.12	0.12	0.12	0.12	0.11
	(0.36)	(0.36)	(0.38)	(0.39)	(0.39)	(0.39)
Mother's Age at Birth						
Age at Birth (<20)	**-0.44**	**-0.44**	**-0.41**	**-0.45**	**-0.42**	**-0.42**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Age at Birth (>35)	0.002	0.00	-0.01	-0.01	-0.02	-0.02
	(0.99)	(0.99)	(0.98)	(0.97)	(0.95)	(0.95)
Delivery Assistance		0.01				0.01
		(0.92)				(0.88)
Water:Reference: Piped into Residence						
Public tap			-0.87		-0.85	-0.85
			(0.18)		(0.20)	(0.20)
Handpump in Residence			0.77		0.75	0.75
			(0.37)		(0.38)	(0.38)
Public handpump			-0.43		-0.39	-0.39
			(0.51)		(0.56)	(0.56)
Covered Well in residence/yard			-0.17		-0.13	-0.13
			(0.84)		(0.88)	(0.88)
Open well in residence			0.22		0.23	0.23
			(0.76)		(0.75)	(0.75)
Public covered well			-0.68		-0.68	-0.67
			(0.48)		(0.50)	(0.50)
Public Open well			-0.66		-0.61	-0.61
			(0.31)		(0.36)	(0.37)
Spring			0.15		0.18	0.18
			(0.88)		(0.85)	(0.85)
Other			-0.66		-0.62	-0.62
			(0.33)		(0.38)	(0.38)
Satitation, Reference : No Facility						
Pit				1.61	1.47	1.47
				(0.12)	(0.15)	(0.15)
Flush				0.20	0.17	0.17
				(0.53)	(0.62)	(0.61)
Constant	**1.22**	**1.20**	**1.95**	**1.14**	**1.85**	**1.82**
	(<0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)
CHI-Sq	**39.55**	**39.56**	**56.98**	**43.84**	**60.30**	**60.33**
Pr>Chi	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Increment in Chi- Sq		0.01	**17.43**	4.29	**20.75**	**20.76**
p-value, against Model I		(0.92)	(0.04)	(0.11)	(0.04)	
p-value, against Model II						(0.04)

ANNEX TABLE 10: PUNJAB

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	0.23	0.23	0.20	0.17	0.15	0.17
	(0.06)	(0.06)	(0.08)	(0.12)	(0.16)	(0.14)
Standard of Living	0.12	0.14	0.10	0.05	0.03	0.03
(Low=1, High=3)	(0.49)	(0.48)	(0.65)	(0.89)	(0.99)	(0.99)
Residence	-0.33	-0.35	-0.22	-0.02	0.04	0.04
	(0.26)	(0.25)	(0.50)	(0.97)	(0.84)	(0.85)
Sex	-0.34	-0.34	-0.34	-0.33	-0.33	-0.33
	(0.11)	(0.11)	(0.10)	(0.12)	(0.12)	(0.12)
Mother's Age at Birth						
Age at Birth (<20)	-0.27	-0.29	-0.31	-0.27	-0.28	-0.27
	(0.38)	(0.39)	(0.36)	(0.45)	(0.41)	(0.43)
Age at Birth (>35)						
Delivery Assistance		0.06				0.09
		(0.79)				(0.68)
Water:Reference: Piped into Residence						
Public tap			-0.42		-0.33	-0.33
			(0.38)		(0.49)	(0.49)
Handpump in Residence			-0.27		-0.21	-0.20
			(0.36)		(0.49)	(0.50)
Public handpump			-0.71		-0.59	-0.60
			(0.15)		(0.24)	(0.23)
Public Open Well			0.09		0.25	0.22
			(0.91)		(0.80)	(0.82)
Other			-1.19		-1.11	-1.12
			(0.12)		(0.15)	(0.15)
Satitation, Reference : No Facility						
Pit				**0.77**	**0.74**	**0.74**
				(0.04)	(0.05)	(0.05)
Flush				0.63	0.58	0.59
				(0.08)	(0.11)	(0.10)
Constant	**3.32**	**3.22**	**3.49**	**2.73**	**2.91**	**2.75**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
CHI-Sq	**15.67**	**15.99**	**19.49**	**22.05**	**24.92**	**25.16**
Pr>Chi	(0.01)	(0.01)	(0.03)	(0.01)	(0.01)	(0.02)
Increment in Chi- Sq		0.11	3.61	**6.17**	9.04	9.17
p-value, against Model I		(0.74)	(0.60)	(0.05)	(0.24)	
p-value, against Model II						(0.24)

ANNEX TABLE 11: RAJASTHAN

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	**0.36**	**0.34**	**0.36**	**0.33**	**0.33**	**0.32**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Standard of Living	**0.22**	**0.21**	**0.22**	**0.20**	**0.20**	**0.19**
(Low=1, High=3)	(<0.01)	(<0.01)	(<0.01)	(0.01)	(0.01)	(0.01)
Residence	0.05	0.08	0.05	0.13	0.12	0.14
	(0.70)	(0.57)	(0.74)	(0.39)	(0.45)	(0.40)
Sex	**-0.21**	**-0.21**	**-0.21**	**-0.21**	**-0.21**	**-0.21**
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Mother's Age at Birth						
Age at Birth (<20)	**-0.31**	**-0.32**	**-0.31**	**-0.31**	**-0.31**	**-0.31**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Age at Birth (>35)	-0.05	-0.05	-0.05	-0.06	-0.06	-0.06
	(0.79)	(0.80)	(0.78)	(0.76)	(0.75)	(0.76)
Delivery Assistance		-0.09				-0.09
		(0.20)				(0.21)
Water:Reference: Piped into Residence						
Public tap			0.04		0.08	0.09
			(0.82)		(0.66)	(0.62)
Handpump in Residence			0.30		0.34	0.33
			(0.32)		(0.26)	(0.28)
Public handpump			-0.03		0.01	0.01
			(0.87)		(0.95)	(0.96)
Covered Well in residence/yar			-0.10		-0.07	-0.02
			(0.81)		(0.88)	(0.95)
Open well in residence			0.13		0.17	0.18
			(0.60)		(0.49)	(0.46)
Public covered well			0.02		0.04	0.08
			(0.95)		(0.88)	(0.80)
Public Open well			-0.01		0.03	0.04
			(0.96)		(0.87)	(0.80)
Spring			0.25		0.29	0.31
			(0.69)		(0.64)	(0.62)
Other			0.10		0.14	0.16
			(0.71)		(0.60)	(0.54)
Satitation, Reference : No Facility						
Pit				-0.02	-0.03	-0.05
				(0.93)	(0.90)	(0.86)
Flush				0.21	0.23	0.22
				(0.29)	(0.25)	(0.28)
Constant	**2.01**	**2.16**	**2.00**	**1.87**	**1.84**	**1.99**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
CHI-Sq	**58.27**	**59.88**	**60.42**	**59.48**	**61.89**	**63.48**
Pr>Chi	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Increment in Chi- Sq		1.62	2.15	1.21	3.62	5.21
p-value, against Model I		(0.2)	(0.98)	(0.54)	(0.97)	
p-value, against Model II						(0.95)

ANNEX TABLE 12: TAMIL NADU

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	**0.37**	**0.39**	**0.36**	**0.38**	**0.36**	**0.38**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Standard of Living	0.07	0.07	0.07	0.07	0.07	0.07
(Low=1, High=3)	(0.56)	(0.55)	(0.55)	(0.56)	(0.57)	(0.57)
Residence	-0.04	-0.06	-0.07	-0.08	-0.08	-0.10
	(0.86)	(0.75)	(0.74)	(0.76)	(0.75)	(0.70)
Sex	-0.10	-0.09	-0.09	-0.10	-0.09	-0.08
	(0.60)	(0.62)	(0.63)	(0.60)	(0.63)	(0.65)
Mother's Age at Birth						
Age at Birth (<20)	-0.02	-0.03	-0.01	-0.03	-0.02	-0.03
	(0.92)	(0.89)	(0.95)	(0.90)	(0.95)	(0.91)
Age at Birth (>35)	-0.81	-0.82	-0.82	-0.81	-0.82	-0.82
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Delivery Assistance		0.13				0.14
		(0.49)				(0.45)
Water:Reference: Piped into Residence						
Public Tap			0.08		0.08	0.09
			(0.78)		(0.80)	(0.78)
Handpump in Residence			-0.48		-0.49	-0.49
			0.30		0.29	0.29
Public handpump			-0.23		-0.24	-0.24
			(0.51)		(0.50)	(0.51)
Open well in residence			0.90		0.89	0.89
			(0.39)		(0.40)	(0.40)
Public Open well			-0.11		-0.12	-0.13
			(0.80)		(0.79)	(0.77)
Other			0.32		0.31	0.33
			(0.58)		(0.59)	(0.57)
Satitation, Reference : No Facility						
Pit				-0.35	-0.35	-0.33
				(0.65)	(0.65)	(0.67)
Flush				-0.06	0.00	0.02
				(0.85)	(0.99)	(0.96)
Constant	**2.56**	**2.42**	**2.60**	**2.6**	**2.64**	**2.46**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
CHI-Sq	**23.06**	**23.56**	**27.39**	**23.37**	**27.59**	**28.18**
Pr>Chi	(0.01)	(<0.01)	(0.01)	(0.00)	(0.01)	(<0.01)
Increment in Chi- Sq		0.5	4.33	0.21	4.53	4.61
p-value, against Model I		(0.48)	(0.63)	(0.90)	(0.80)	
p-value, against Model II						(0.79)

ANNEX TABLE 13: UTTAR PRADESH

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	**0.24**	**0.23**	**0.21**	**0.22**	**0.21**	**0.20**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Standard of Living	**0.11**	**0.10**	**0.09**	**0.10**	**0.08**	**0.08**
(Low=1, High=3)	(0.01)	(0.01)	(0.03)	(0.01)	(0.03)	(0.04)
Residence	-0.21	-0.20	-0.12	-0.10	-0.06	-0.05
	(0.08)	(0.11)	(0.36)	(0.50)	(0.68)	(0.75)
Sex	**-0.22**	**-0.22**	**-0.21**	**-0.22**	**-0.21**	**-0.21**
	(<0.01)	(0.01)	(0.01)	(<0.01)	(0.01)	(0.01)
Mother's Age at Birth						
Age at Birth (<20)	**-0.49**	**-0.49**	**-0.48**	**-0.49**	**-0.48**	**-0.48**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Age at Birth (>35)	**-0.41**	**-0.41**	**-0.41**	**-0.41**	**-0.41**	**-0.41**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Delivery Assistance		-0.08				-0.08
		(0.31)				(0.32)
Water:Reference: Piped into Residence						
Public tap			**-0.65**		**-0.64**	**-0.63**
			(0.02)		(0.02)	(0.02)
Handpump in Residence			-0.38		-0.37	-0.37
			(0.07)		(0.08)	(0.08)
Public handpump			**-0.53**		**-0.51**	**-0.50**
			(0.02)		(0.02)	(0.02)
Covered Well in residence/yar			-0.54		-0.51	-0.52
			(0.24)		(0.27)	(0.25)
Open well in residence			**-0.70**		**-0.67**	**-0.66**
			(0.02)		(0.02)	(0.02)
Public covered well			**-1.40**		**-1.37**	**-1.38**
			(<0.01)		(<0.01)	(<0.01)
Public Open well			**-0.61**		**-0.58**	**-0.58**
			(0.01)		(0.02)	(0.02)
Spring			0.27		0.29	0.30
			(0.63)		(0.60)	(0.60)
Other			-0.51		-0.49	-0.48
			(0.19)		(0.22)	(0.23)
Satitation, Reference : No Facility						
Pit				0.26	0.18	0.18
				(0.06)	(0.20)	(0.21)
Flush				0.15	0.04	0.04
				(0.48)	(0.85)	(0.86)
Constant	**2.78**	**2.88**	**3.09**	**2.54**	**2.95**	**3.05**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
CHI-Sq	**96.64**	**97.66**	**117.15**	**100.37**	**118.86**	**119.85**
Pr>Chi	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Increment in Chi- Sq		1.03	**20.52**	3.74	**22.22**	**22.19**
p-value, against Model I		(0.31)	(0.01)	(0.15)	(0.02)	
p-value, against Model II						(0.02)

ANNEX TABLE 14: WEST BENGAL

	Model I	Model II	Model III	Model IV	Model V	Model VI
Education	**0.33**	**0.30**	**0.31**	**0.27**	**0.26**	0.24
	(0.01)	(0.01)	(0.02)	(0.04)	(0.05)	(0.07)
Standard of Living	0.05	0.05	0.03	0.03	0.02	0.01
(Low=1, High=3)	(0.61)	(0.62)	(0.78)	(0.76)	(0.86)	(0.87)
Residence	**-0.57**	-0.49	-0.54	-0.33	-0.37	-0.34
	(0.03)	(0.07)	(0.09)	(0.32)	(0.31)	(0.35)
Sex	0.19	0.20	0.19	0.20	0.20	0.21
	(0.35)	(0.33)	(0.35)	(0.33)	(0.34)	(0.31)
Mother's Age at Birth						
Age at Birth (<20)	-0.30	-0.31	-0.31	-0.29	-0.30	-0.30
	(0.17)	(0.17)	(0.17)	(0.20)	(0.19)	(0.18)
Age at Birth (>35)	-0.23	-0.24	-0.26	-0.22	-0.25	-0.26
	(0.67)	(0.66)	(0.63)	(0.69)	(0.64)	(0.63)
Delivery Assistance		-0.17				-0.15
		(0.16)				(0.21)
Water:Reference: Piped into Residence						
Public tap			-0.47		-0.44	-0.44
			(0.40)		(0.43)	(0.43)
Handpump in Residence			-0.18		-0.11	-0.08
			(0.76)		(0.84)	(0.89)
Public handpump			-0.36		-0.26	-0.25
			(0.49)		(0.63)	(0.64)
Public Open well			-0.88		-0.73	-0.70
			(0.14)		(0.24)	(0.26)
Other			-0.23		-0.10	-0.09
			(0.72)		(0.88)	(0.90)
Satitation, Reference : No Facility						
Pit				0.39	0.35	0.31
				(0.32)	(0.39)	(0.45)
Flush				0.43	0.36	0.31
				(0.24)	(0.35)	(0.42)
Constant	**3.40**	**3.58**	**3.76**	**2.89**	**3.30**	**3.52**
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
CHI-Sq	**25.53**	**27.48**	**29.11**	**27.43**	**30.36**	**31.90**
Pr>Chi	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
Increment in Chi- Sq		1.95	3.58	1.90	4.83	4.42
p-value, against Model I		(0.26)	(0.61)	(0.39)	(0.68)	
p-value, against Model II						(0.73)