India Human Development Survey: Design and Data Quality

Sonalde Desai
Amaresh Dubey
B.L. Joshi
Mitali Sen
Abusaleh Shariff
Reeve Vanneman

India Human Development Survey Technical Paper No. 1

India Human Development Survey: Design and Data Quality

India Human Development Survey 2005 (IHDS) is collaborative project of researchers from the University of Maryland and National Council of Applied Economic Research, New Delhi. It is a household survey whose primary goal is to deepen our understanding of human development in India. The IHDS was administered to a nationally representative sample of 41,554 households located across all states and union territories of India with the exception of Andaman Nicobar and Lakshadweep and contains an urban as well as rural sample. This note describes our data collection methods and sample selection and assesses the quality of the data.

A survey that encompasses a full range of human development issues faces practical challenges not encountered by more single focus projects. Every issue from questionnaire design to data cleaning to statistical analysis is complicated by the decision to broaden the range of human development issues addressed. The analytic gains are substantial, but the practical costs are also real. After a careful consideration of these issues it was decided to field the IHDS to over 41,000 Indian households residing in rural and urban areas selected from 33 states and union territories. The sample extends to 384 out of 593 districts identified in 2001 census.

The IHDS benefited from a rich history of survey research in India generally and at NCAER and its collaborating institutions in particular. Questionnaire design borrowed as needed from Indian and international household surveys. Some of the important Indian sources include the National Sample Surveys, the National Family and Health Surveys, and the 1994 Human Development Profile of India; international sources include five countries Status of Women and

Fertility Survey, the World Bank Living Standard Measurement Surveys and Indonesian and Malaysian Family Life Surveys. Organisation of fieldwork and oversight was in the capable hands of professionals with a generation of practical experience culled from a wide variety of surveys. Data cleaning and analysis enlisted a small army of personnel with well-developed, often obsessive, attention to detail. At its best, most of this work is invisible, thus permitting the analyst and the reader to focus on the central research questions. But the success of those analyses and the validity of their conclusions depend on the competent execution of the survey itself. This note reviews the major issues of that execution.

Sampling

The IHDS is a nationally representative survey of 41,554 urban and rural households. It covers all states and union territories of India – with the exception of Andaman/Nicobar and Lakshadweep. These households are spread across 33 states and union territories, 384 districts, 1503 villages and 971 urban blocks located in 276 towns and cities. District-wise coverage for total, rural and urban sample is shown in Figures 1, 2 and 3. These 41,554 households include 215,754 individuals. State-wise distribution of sampled households and individuals is presented in Table 1.

Villages and urban blocks (comprising of 150-200 households) formed the primary sampling unit (PSU) from which the households were selected. Urban and rural PSUs were selected using a different design. In order to draw a random sample of urban households, all urban areas in a state were listed in the order of their size with number of blocks drawn from each urban area allocated based on probability proportional to size. Once the numbers of blocks for each urban area were determined, the enumeration blocks were selected randomly with help

from Registrar General of India. From these Census Enumeration Blocks of about 150-200 households, a complete household listing were conducted and household sample of 15 households was selected per block. For sampling purposes, some smaller states were combined with nearby larger states.

The rural sample contains about half the households that were interviewed initially by NCAER in 1993-94 in a survey titled Human Development Profile of India -- HDPI (Shariff, 1999) and the other half of the samples were drawn from both districts surveyed in HDPI as well as from the districts located in the states and union territories not covered in HDPI. The original HDIP was a random sample of 33,230 households, located in 16 major states, 195 districts and 1,765 villages. In states where the 1993-94 survey was conducted and recontact details were available, 13,593 households were randomly selected for re-interview in 2005.

After a gap of 11-12 years, about 82% of the households were contactable for re-interview resulting in a resurvey of 11,153 original households as well as 2,440 households which separated from these root households but were still living in the village. In order to check the representativeness of the sample, in each district where re-interviews were conducted, two fresh villages were randomly selected using a probability proportional to size technique. In the villages selected for survey in this manner, 20 randomly selected households were interviewed. Comparing the panel sample with this randomly selected refresher sample allows us to determine whether this panel sample is overrepresented among certain segments of the society. A comparison of the reinterview sample and refresher sample in districts where both samples are present, suggests that on most variables of interest such as caste, religion, education and economic status, the re-interviewed sample does not differ substantially from the fresh sample

(Appendix Table 1). Additionally 3,993 rural households were randomly selected from the states where the 1993-94 survey was not conducted, or where re-contact information was not available. This approach to combining a randomly selected panel sample while refreshing it with another random sample has been used in a variety of surveys including the Panel Study of Income Dynamics in the U.S. and Malaysian Family Life Survey.[i] However, given the potential for significant sampling and non-sampling errors, we present a detailed analysis of the quality of IHDS data below.

Comparative Results

IHDS was not intended to provide national or certainly state wise estimates of *levels* of human development outcomes. There are already many excellent Indian surveys that fill that mission. IHDS's main purpose is to provide a means for gaining insight by analyzing the *relationships* among these human development outcomes and the connections between human development and its background causes.

Nevertheless, it is useful to compare IHDS estimates of human development levels with estimates from other more narrowly focused surveys that usually have larger sample sizes and smaller sampling errors. The National Sample Surveys and the National Family Health Surveys are obvious comparisons because of their excellent quality and wide use. The Indian Census provides another useful reference. The Census and these surveys differ not only in their objectives and design, but their question wording, sampling design, coding decisions, and government sponsorship – all of which should be expected to provoke somewhat differ answers from respondents and yield different frequencies.

However, a comparison of IHDS data with the National Sample Survey (2004-2005), National Family Health Survey III (2005-2006) and Census (2001) presented in Table 2 provides considerable reassurance for the robustness of IHDS data. IHDS sample distribution on urban residence, caste and religion is remarkably similar to NSS and NFHS-III, although all three surveys (IHDS, NSS and NFHS) have higher proportion of households claiming Scheduled Caste status than enumerated in Census. IHDS has a slightly higher proportion of households falling in Scheduled Caste category and slightly lower proportion in Scheduled Tribe category than NSS or NFHS. On other variables of interest, we find literacy and school enrolment in IHDS to be very similar to those in NSS. On work participation rate for males, IHDS falls in between NSS and Census estimates, however, given the special effort made to obtain estimates of women's unpaid work, it is not surprising that IHDS estimates for women's work participation are higher than both NSS and Census. Family size estimates range from 4.7 in NSS to 5.3 in Census. Average family size in IHDS was 5.2. Of particular interest is the poverty rate estimated at 25.7% in IHDS, close to 27.5% estimated by NSS. The IHDS records higher proportion of households owning TV, using electricity and LPG gas than the NSS, possibly due to differences in question wording. But on most other variables, IHDS results seem to be fairly consistent with the results from other surveys.

However, it is important to note that these broad similarities between IHDS data and other data sources do not remain quite so robust when we look at sub-national levels. Hence, we caution the users about not over-interpreting IHDS estimates for state wise or other smaller samples. The IHDS sample sizes are large enough to investigate the general patterns that determine human development outcomes, but if readers desire a precise point estimate of the

level of some particular indicator for a sub-sample of the Indian population, they are better referred to the sources such as the National Sample Surveys or Census.

Questionnaire Design

The one hundred pages of questions used in IHDS were carefully selected from items successfully administered in previous surveys in India and other developing countries, although some were modified after fielding these in the pre-testing of IHDS questionnaire. Some topics on which IHDS has special perspective (e.g., marriage and gender relations) required the development of new set of questions. But all questions, even those adopted from previous work, went through rigorous pre-testing and screening. The final questionnaires were the result of a careful, often painful, process of selection and revision in order to keep the questions understandable by respondents as well as interview length manageable with an eye on minimizing their burden as far as possible without sacrificing the required detail.

Some parts of the questionnaire attempted to replicate other work as precisely as possible in order to maximize comparability. The consumption questions used for calculation of poverty incidenc for instance, were copied from the short form of the consumption module developed for National Sample Survey's (NSS) employment/unemployment survey. The 61st Round NSS survey was administered in 2004-2005, allowing us to test the reliability of the IHDS estimates. One goal of IHDS was to compare a household's relative position on this much-used consumption index with data on income and on household amenities, two other measures of economic position. Comparability required replicating the NSS measures as far as possible.

Other parts of the interview borrowed substantially from past work but had to be adapted to the IHDS format. Reading, writing and arithmetic tests were developed in conjunction with

PRATHAM, although adapted for the IHDS use. Since PRATHAM's Annual Status of Education Report was prepared in 2005, once again, this allows for considerable data quality evaluation and comparability.

Some often used questions had to be replaced by alternatives that our respondents found more understandable. The social network questions, for example, first used a relational format ("with whom do you talk when you seek advice") but were changed to a more direct although less common positional format ("do you know anyone in …") which our respondents found easier to answer (and proved to be far more easily coded for analysis).

Some questions, even those used in many previous surveys, proved too ambiguous in pre-testing and had to be deleted altogether because no suitable alternative could be devised. For example, a question on interpersonal trust – one of the most widely cited questions around the globe – asked "Would you say that most people can be trusted or that you need to be careful in dealing with people?" Too many of our pre-test respondents asserted, not unreasonably, that both propositions were true and they could not choose between them.

The survey made specific effort at obtaining information for women's and children's work. Building on work done by the International Labour Organisation as well as time allocation studies done in India, special effort was made to determine women's and children's participation in caring for livestock or in farm related activities.

The questions finally fielded in IHDS were organised into two separate questionnaires, household and women. The household questionnaires were administered to the individual most knowledgeable about income and expenditure, frequently the male head of the household; the questionnaire for health and education was administered to a woman in the household – most

often the spouse of the household head. Each interview required between forty-five minutes and an hour and a half to complete, a length that seemed the outer limits of what we could reasonably ask from our respondents. Questions on fertility, marriage, and gender relations in the households were addressed to an ever-married woman between 15 and 49 in the household. If no household member fit these criteria, that portion of the questionnaire was skipped (about 19% of all households); if the household had more than one ever married woman between 15 and 49, one woman was selected randomly to answer those questions.

Because IHDS recognizes that all human development is nurtured within local and institutional contexts, separate questionnaires were developed to measure village characteristics and to assess the functioning of up to two schools and two medical facilities located within the selected villages. In cases where there were no school and/or medical facilities within the selected village, the nearest school(s) and medical facility(ies) were surveyed.

Fieldwork

The survey questions were originally drafted in English. However, given the multilingual diversity of India and large disparities in literacy levels, the questionnaires were then translated into Hindi for pre-testing, and then after revisions translated from the Hindi and English versions into eleven additional languages. The questionnaires translated in other languages were again pre-tested during training in respective areas before these were used by the field teams to gather the information.

Field work was performed by 25 agencies throughout the country selected for their experience with administering large scale scientific surveys. The length and diversity of IHDS required more extensive training than is needed for single topic surveys. NCAER staff, assisted

by researchers from the University of Maryland, organized eleven two-week training sessions across the country, each for 15-50 interviewers. Classroom reviews of each questionnaire section alternated with supervised field experience. In addition to written interviewer manuals, training films were developed in which interviewers could see actual survey administration.

Once trained, interviewers went into the field typically in teams of five: two pairs of male and female interviewers and a team leader. The team leader was responsible for supervising and assisting with the household interviews and usually conducted the village, school, and medical facility interviews. After arriving at a PSU, the team would contact local leaders to describe the survey, secure permissions, and develop a map of the area. Urban neighbourhoods and new villages selected in IHDS required creation of a sampling frame first. Large villages were divided into hamlets or sections within the village, and two opposite sections were randomly selected for complete canvassing. Villages interviewed in the 1994 HDPI did not require canvassing and sampling, but the previous households had to be tracked, each member accounted for, and split households located.

Once the sample had been drawn or the 1993-94 HDPI households located, pairs of interviewers began arranging interviews. After obtaining consent, the household roster was filled out in duplicate. Separate households were defined as people living under one roof and sharing the same kitchen. Joint families often required specific probing since two married brothers might share the same dwelling but maintain separate kitchens and food budgets. Absent family members had to be identified as either temporarily absent household members (i.e., living outside the household for less than six months) or residents of other households (e.g., students living in nearby towns to pursue their education).

Once the household roster was completed, the two copies were divided between the two interviewers, and the female interviewer then completed the education and health questionnaire, usually with the help from a senior woman in the household. If the household included more than one eligible woman for the marriage and fertility sections, one was selected using a standard random number procedure. After completing the two main household interviews, the interviewers administered the learning tests to any child in the in the age group 8-11 years, and his/her height and weight measurements were taken. Often, more than one visit was needed to complete all sections of the household interview.

Completed interviews were checked by the team supervisor, re-checked by the agency coordinator, and sent to NCAER headquarters in New Delhi where editing staff again reviewed the skip patterns, looked for missing data, and checked coding. These multilevel reviews enabled prompt identification of problems and feedback to interview teams. NCAER also maintained its own field staff in each state for random re-interview checks for data quality and for troubleshooting of problems encountered by interview teams. Phone contact between agency field staff and NCAER headquarters also resolved many issues before they became major problems.

Data entry was centralized at NCAER's New Delhi offices and was undertaken as completed interviews arrived. The questionnaire form was mostly self-coded for ease of data entry. The 1400 variables from the household interview were checked for consistency (e.g., no 5 year old mothers of three children) and problems resolved by consulting the originally filled questionnaire or occasionally telephone calls back to the interview site. The main data files are publicly available for downloading and further analyses by all interested scholars. IHDS should

become a premier resource for understanding the complexities of the human development process.

Sample Characteristics:

Gender

Each of the individual characteristics (gender, age, and education) was reported by the main household respondent. This results in some imprecision for age and education, including the usual age "heaping" at round ages (20, 30, etc.). Some corrections have been made based on other information in the survey (e.g., birth histories), but for comparisons of most human development outcomes, even imprecise measures are sufficient to reveal the strong patterns.

Measurement problems are not an issue for gender although difficulties in locating transient and homeless populations may result in an undercount of men. India is well known for its imbalanced sex ratios and "missing women". IHDS also recorded fewer females than males, especially among younger ages for whom the effects of sex selective abortions have become more apparent. Because women and men live in the same households, they don't differ greatly on household characteristics (although somewhat more women live in low income households). Individual differences are substantial, however; men average 6.3 years of education, for instance, compared to women's 3.6.

Age

India's fertility decline is fairly recent so India is still a young country: 45% of the IHDS household members are under 21.The young are somewhat more concentrated in poorer states where the fertility decline has been the weakest and in poorer households. There are more

elderly (age 60 or more) in states with an early fertility decline (e.g., Kerala) or where out-migration of the working-age population leaves a higher concentration of the elderly (e.g., Himachal Pradesh). Age is correlated inversely with years of schooling since education has expanded manifold since Independence. This correlation needs to be kept in mind in evaluating results from this survey since several human development outcomes tend to increase with both more education and older ages.

Education

Education is one of the most consistent predictors of favourable human development outcomes. Everything from incomes, to health, to social connections is higher among the better educated. Because of educational expansion, India has many highly qualified graduates whose future is promising; the country also still has many illiterates whose struggles are often poorly rewarded. The tables that follow divide years of education into groups according to the school system's natural break points. More than two in five adults have had no schooling. A small group, 9%, started primary school without finishing. Over a quarter of adults finished primary school without completing secondary school. Almost a quarter of adults, however, have completed their 10th standard matriculation: 10% finished at that level; 6% finished higher secondary school; and 7% are college graduates.

Higher levels of education are more common among every advantaged group. Urban residents are more educated than rural residents; high income households have more educated members than poor households; forward castes and non-Muslim minority religions have considerably more education on average than other groups while dalits and adivasis have the

least. Some of the many advantages of urban, affluent, forward castes result from their higher education; but some part of their higher education results from their many other advantages.

States

Regional inequalities have provoked growing debate as parts of India have grown especially rapidly in recent years. Differences across states are a recurring theme in IHDS results – often overwhelming differences by class and social group. But there are limitations to the extent of state differences that can be reliably reported. The survey was fielded in 33 states and union territories; only the offshore territories of Lakshadweep and the Andaman and Nicobar Islands were omitted from the sampling design (0.05% of the Indian population).

Sample sizes vary substantially across these states and territories (see Table 1). Care must always be taken not to rely too heavily on the position of any one state in the distribution of state outcomes; sampling errors almost always overlap between states with similar positions on any human development measure. Rather, much of the usefulness of state differences is to observe the pattern of state differences: rich versus poor; North versus South; high versus low education.

Some of the union territories and states have samples too small to reliably report separate results. Therefore, these smaller samples should be combined with neighbouring areas for reporting purposes (e.g. Goa with Maharashtra). All the smaller North-eastern states (Arunachal Pradesh, Manipur, Meghalaya, Tripura, etc.) are typically reported as a single entity. These states share some common features but are quite heterogeneous on many other dimensions. The other smaller states and territories were combined with larger neighbours: Chandigarh with

Punjab; Daman and Diu and Dadra and Nagar Haveli with Gujarat; Goa with Maharashtra; and, Pondicherry with Tamil Nadu. The Delhi sample is large enough to report separately for most purposes, but the rural sample in Delhi is based on only 7 semi-urban villages so Delhi.

This organization leaves 22 "states" that are compared in many analyses based on the IHDS data. Urbanization, income, and education are a coherent "package" that distinguishes states like Delhi and Kerala from states like Orissa and Jharkhand. There are exceptions, even within this development cluster, but it will be useful to think of this as one (among several) organizing principle for regional inequalities. However, other outcomes demonstrate a quite different pattern. Some social groups have strong state associations (e.g., Muslims in Jammu and Kashmir; Christians in the Northeast) but these are not usually development related (although tribal's more often reside in rural, less developed states and Sikhs in the wealthy Punjab). Some dimensions of gender inequality also cross-cut development levels. For example, unbalanced sex ratios are found in wealthy Punjab and poor U.P. while more balanced sex ratios are found in affluent Kerala and poorer Orissa. The lesson here is that development levels are an important but not the only dimension along which states in India differ.

Rural – Urban Residence

Village – city differences are a second type of regional inequality generally thought to be growing in recent years. Urban residents have higher incomes; their children stay in school longer; when sick they have better access to medical care. While India has been slowly urbanizing throughout the last century, the pace of urbanization is only modest by world standards. In 2005, India had 41 urban areas with over a million population; China had 95.

Villages still hold much staying power, and even urban migrants maintain ties with their native villages. The perception of growing rural – urban disparities could threaten this stability.

IHDS uses the Census 2001 definitions which classify as urban, places with a dense population of 5000 or more where most male employment is outside agriculture.[ii] 28% of India was urban in 2001; IHDS slightly over sampled (34%) urban areas but all analyses have been weighted back to the census proportions.

Both urban and rural areas encompass great diversity. India's major metropolitan areas are global cities: Mumbai's Bollywood is familiar to most of the world; Bangalore's IT industry and Chennai's call centres daily influence the lives of millions of people outside India. At the other end of the spectrum, thousands of small towns are barely distinguishable from large villages. To capture these differences, IHDS reports urban results in two categories: the six largest metropolitan areas[iii] (Mumbai, Kolkata, Delhi, Chennai, Hyderabad, and Bangalore) (7%) and all other urban areas (21%). Similarly, some villages have substantial infrastructure: paved roads with easy access to urban centres, postal and telephone connections, electricity to power lights and televisions. Others lack most of the conveniences of modern life and can be reached only by narrow footpaths, in some cases even one has to use some unconventional means, like camel or boat. IHDS divides villages into two approximately equal groups according to an index of infrastructural development. The more developed villages generally appear closer to urban areas on most human development outcomes.

Town and especially metropolitan households have higher incomes and education than rural households. Urban areas also differ on their caste and religious composition. Forward

castes and minority religions are especially concentrated in urban areas; dalits and especially adivasis are more rural.

Income

IHDS is the first major Indian survey to measure detailed income. The National Sample Surveys measure consumption expenditures and the National Family Health Surveys measure the ownership of consumer goods. IHDS measured these too. Each provides a somewhat different aspect of economic position but is closely related. The IHDS measure of income is summed across over fifty separate components including wages and salaries, net farm income, family business net income, property and pension incomes.

The average Indian household had an annual income of Rs. 29,009 in 2004; but because some households earned much more than this median, the mean was Rs. 49,442. For all tables, households are divided into five quintiles with cutting points at 14,155; 23,168; 36,486 and 69,000. A small number of households (2%) reported negative or very low incomes because of agricultural or business losses. Although these households are undergoing current economic distress, in many other ways (e.g., consumer goods owned, educational levels) they appear more like moderate income households than the poor households in the bottom quintile.

Household Education

Many of the human development outcomes benefit the entire household. An indoor water tap, access to nearby medical clinics, and connections to government officials are resources the entire household can take advantage of. To see how these advantages are related to educational levels, many analyses with IHDS use a measure of the highest adult (i.e., age 21 or

older) education in the household when appropriate.[iv] The same schooling categories are used as for individual education, but the distribution is higher. Only a quarter of Indian households have no adult without any formal education, but 37% have an adult who has matriculated 10th standard or gone further. At the top, 13% of households have an adult with a college degree. This measure of household education is associated with the same advantages as individual education: urban residence, higher incomes, and forward castes are more common in well-educated households.

Social Groups

Perhaps no other country in the world offers such a rich diversity of religious, caste, ethnic, and linguistic identities as it is found in India. Any useable grouping for a review of human development is bound to ignore important distinctions that the people themselves would never overlook. Much of the analyses based on IHDS follow a six-fold classification:

- Forward castes
- Other Backward Castes (OBC)
- Dalits (Scheduled Castes)
- Adivasis (Scheduled Tribes)
- Muslims
- Other minority religions (Christians, Sikhs, Buddhists, Jains)

Obvious questions for such a scheme are where one classifies Muslim OBCs, Christian adivasis, Sikh dalits, and other groups that easily fit more than one category. Muslim OBCs differ from Hindu OBCs and from other Muslims on most human development outcomes;

likewise for Christian adivasis, Sikh dalits, and other groups. Independent religion and caste classifications would avoid these ambiguities but would create too many categories for the compact presentation needed here. The compromise result is this six-category scheme[v]; more detailed classifications are available from the public data for analysts requiring more precision. However, caste and religion data are available in two separate questions for analysts to construct their own categories.

Religion and caste classifications are based on the main respondent's self-identification. Self-identification yields somewhat different information from official data which use detailed but state wise government schedules. The official schedules often miss migrants from other states. Self-identification also encourages marginal groups to claim scheduled caste or tribe membership in order to qualify for government reservations. As a result IHDS ends up with somewhat higher proportions of the population as dalits and adivasis than the census and slightly higher than the NSS.

The groups differ greatly on almost every measure of economic and social standing. Forward castes and non-Muslim minority religions are more urban, educated, and wealthy; dalits and adivasis are more often rural, illiterate, and poor. OBCs are somewhere between but usually closer to dalits than to forward castes. Muslims are also somewhere between but much closer to dalits on education, closer to forward castes on urbanization, and in between on incomes but slightly better off than OBCs. These groups differ also on most of the human development outcomes; sometimes these differences are a result of the economic, educational, and regional differences but sometimes some groups differences remain even when comparing otherwise equivalent households.

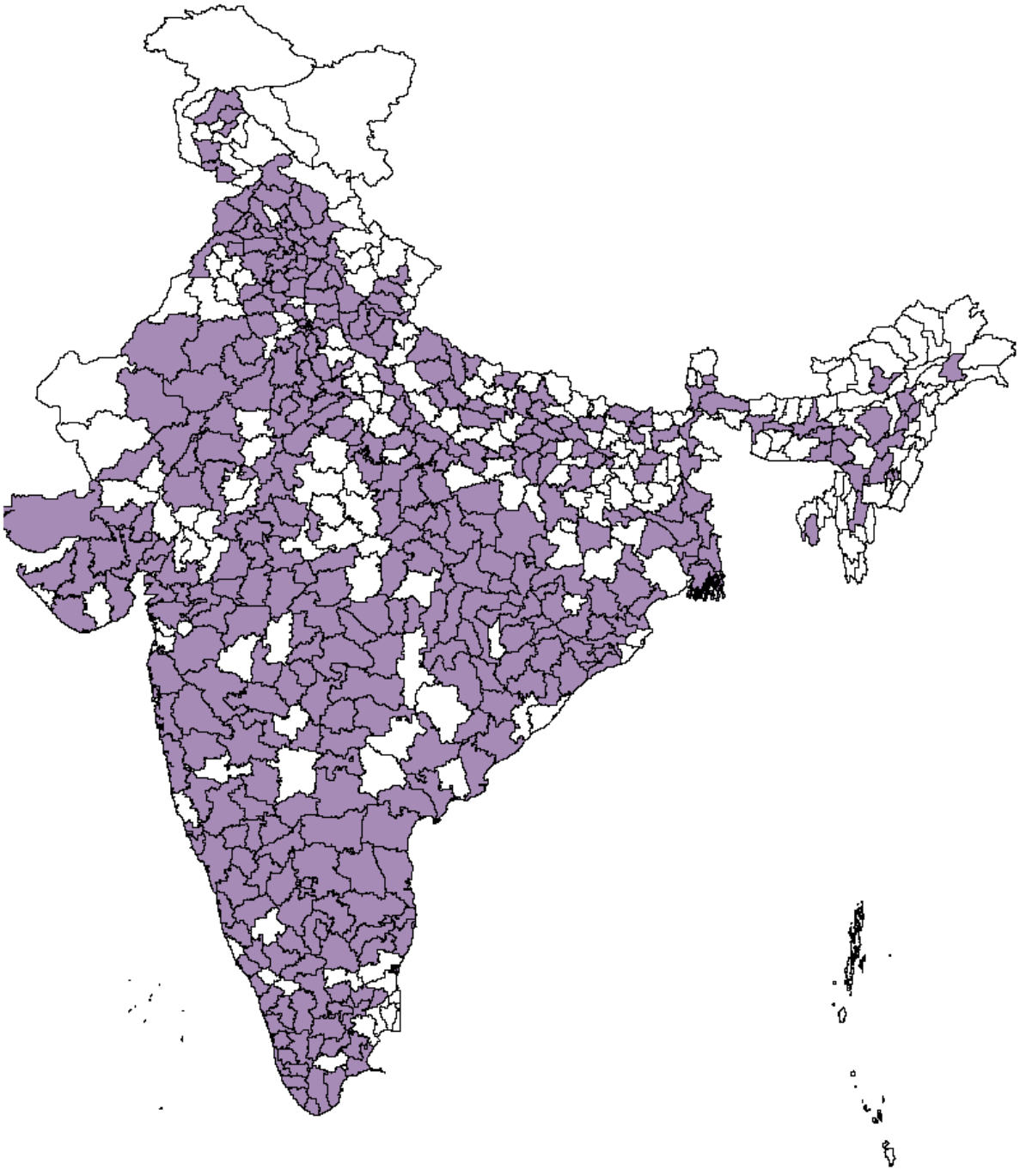
[i] 1 Leslie Kish and Alastair Scott were the first to describe the probability sampling procedures which are designed to optimize the reselection or "retention" of sample units during a transition from an old to a new sample design. A description of this can be found in: Kish, Leslie, and Scott, Alastair "Retaining units after changing strata and probabilities." Journal of the American Statistical Association, Vol. 667, Number 335, Applications Section, Sept. 1971.

[ii] The official Census definition of urban areas are "(a) All statutory places with a municipality, corporation, cantonment board or notified town area committee, etc. or (b) A place satisfying the following three criteria simultaneously: i) a minimum population of 5,000; ii) at least 75 per cent of male working population engaged in non-agricultural pursuits; and iii) a density of population of at least 400 per sq. km. (1,000 per sq. mile)".

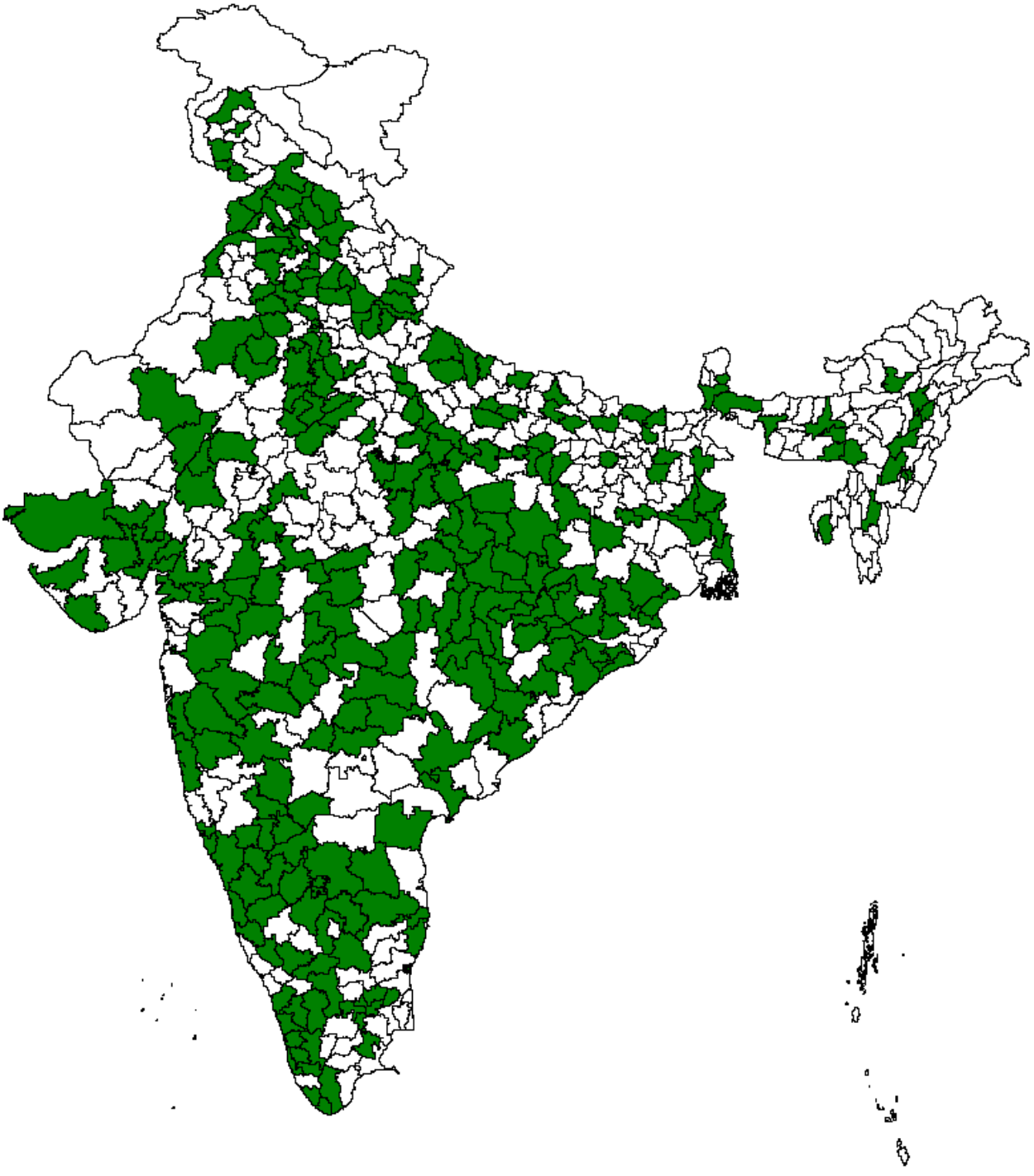
[iii] IHDS follows loosely follows the Census definitions of "Urban Agglomeration" which include areas outside the official municipal boundaries but which are integrated into the urban core. All urban residents in districts identified as part of the urban agglomeration are counted as living in the metropolitan area. Census rules do not allow urban agglomerations to cross state boundaries, but we have included Gurgaon (Haryana) and Ghaziabad and Gautam Buddha Nagar (U.P.) districts with the Delhi metropolitan area.

[iv] In households without any adult 21 years or older, the highest education is substituted.

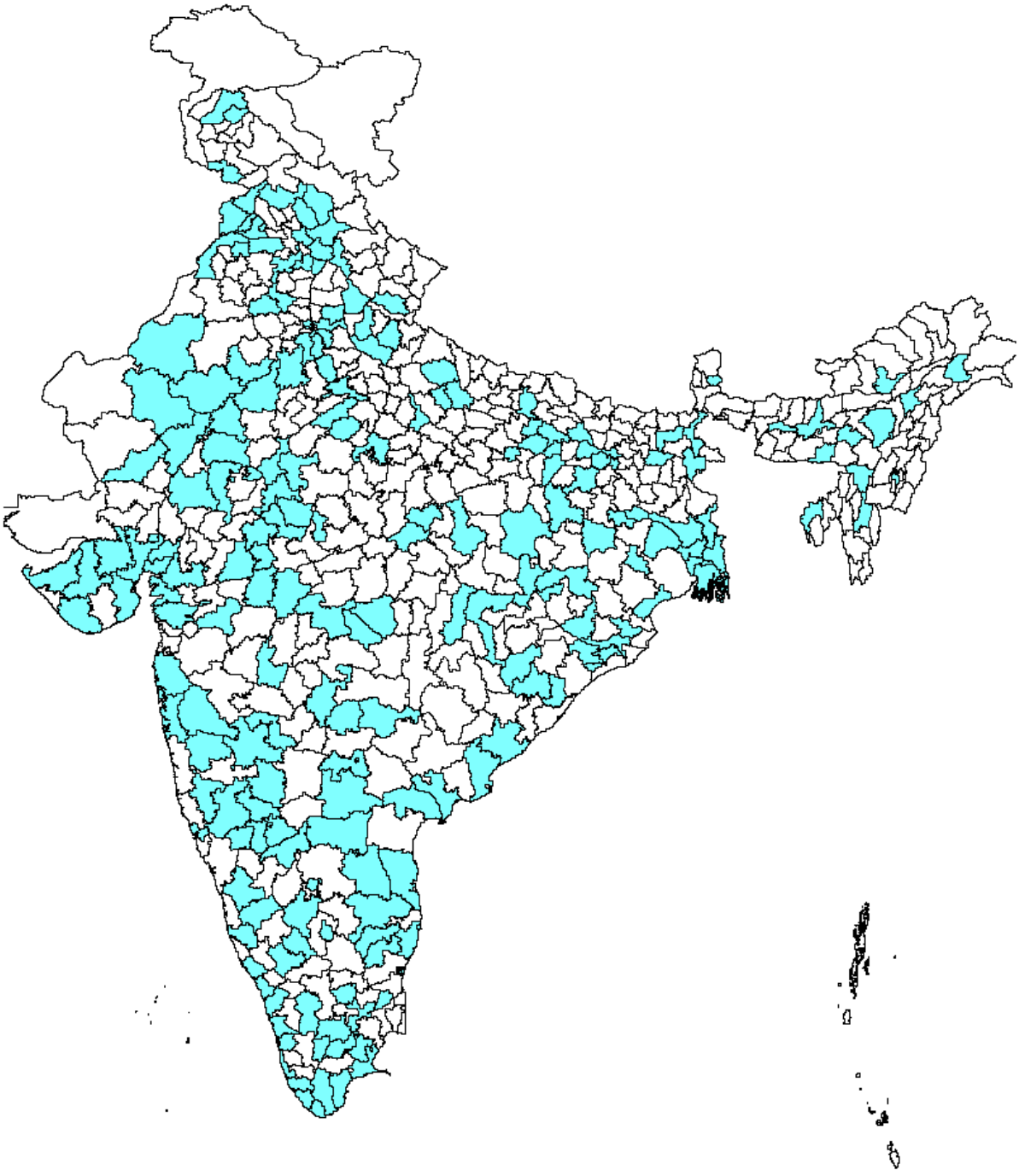
[v] The rules used for these tables assign households to dalit and adivasi categories regardless of religion; only Hindu and Sikh OBCs to the OBC group; Muslims, Christians, and other minority religions to the appropriate religious group unless they are dalits or adivasis; and Hindus who are not dalits, adivasis, or OBCs to forward castes.



India Human Development Survey 2005
District Coverage -- Urban or Rural Sample



India Human Development Survey 2005
District Coverage -- Rural Sample



India Human Development Survey 2005
District Coverage -- Urban Sample

Table 1: State-wise Distribution of IHDS Sample

	Disctricts in 2001 Census	Included in IHDS				Households Surveyed			Individuals Surveyed		
		Districts	Urban areas	Blocks	Villages	Rural	Urban	Total	Rural	Urban	Total
Jammu & Kashmir	14	5	5	21	20	400	315	715	2,528	1,702	4,230
HP	12	9	7	21	52	1,057	315	1,372	5,663	1,503	7,166
Punjab	17	13	11	36	61	1,033	560	1,593	6,202	2,831	9,033
Chandigarh	1	1	1	6	0	0	90	90	0	383	383
Uttaranchal	13	6	3	9	20	309	149	458	1,757	736	2,493
Haryana	19	14	6	18	79	1,350	268	1,618	8,112	1,291	9,403
Delhi	9	10	7	56	6	60	900	960	329	4,291	4,620
Rajasthan	32	23	17	60	88	1,590	895	2,485	9,663	4,805	14,468
UP	70	43	24	75	138	2,389	1,123	3,512	14,966	6,499	21,465
Bihar	37	17	10	31	61	965	465	1,430	5,950	2,856	8,806
Sikkim	4	1	1	3	3	60	45	105	293	212	505
Arunachal Pradesh	13	1	1	3	6	120	45	165	623	209	832
Nagaland	8	4	1	2	5	100	30	130	480	84	564
Manipur	9	3	1	3	3	60	45	105	359	239	598
Mizoram	8	1	1	3	3	60	45	105	263	239	502
Tripura	4	2	1	3	7	184	45	229	818	190	1,008
Meghalaya	7	3	1	3	6	116	45	161	505	250	755
Assam	23	8	7	21	38	699	318	1,017	3,286	1,404	4,690
WB	18	14	21	75	66	1,247	1,133	2,380	6,170	4,788	10,958
Jharkhand	18	6	9	27	26	519	405	924	2,913	2,095	5,008
Orissa	30	26	13	40	84	1,464	600	2,064	7,710	2,886	10,596
Chhattisgarh	16	15	6	18	49	905	270	1,175	4,833	1,377	6,210
MP	45	31	13	42	121	2,177	628	2,805	12,392	3,409	15,801
Gujarat	25	17	14	60	70	1,167	911	2,078	5,926	4,234	10,160
Diu & Daman	2	2	0	0	3	60	0	60	281	0	281
Dadra & Nagar Haveli	1	1	0	0	3	60	0	60	315	0	315
Mahrashtra	35	27	18	75	115	2,078	1,125	3,203	10,881	5,721	16,602
AP	23	19	18	60	94	1,526	909	2,435	6,669	3,992	10,661
Karnataka	27	26	21	78	144	2,832	1,189	4,021	14,184	5,675	19,859
Goa	2	2	1	3	6	100	65	165	475	307	782
Lakshadweep	1	0	0	0	0	0	0	0	0	0	0
Kerala	14	12	14	42	61	1,089	642	1,731	4,892	3,089	7,981
Tamil Nadu	30	21	22	74	62	898	1,200	2,098	3,691	4,855	8,546
Pondicherry	4	1	1	3	3	60	45	105	245	228	473
Andaman & Nicobar	2	0	0	0	0	0	0	0	0	0	0
Total	593	384	276	971	1503	26734	14820	41554	143374	72380	215754

Table 2: Comparison of IHDS estimates with other data sources

	IHDS 2004-5	NFHS -III 2005-06	NSS 2004-2005	CENSUS 2001
Urban	26	31	25.32	27.78
% literate				
Age 5+	66.62	67.35	66.28	NA
Age 7+	68.08	68.62	67.33	64.8
Caste				
Other backward classes	41.79	39.6	40.96	NA
Scheduled Castes	21.14	19.2	19.59	16.2
Scheduled Tribes	7.06	8.4	8.64	8.2
Other	30.01	31.9	30.81	NA
Religion				
Hindu	80.29	81.6	82.16	80.5
Muslim	14.01	12.5	12.66	13.4
Christian	2.16	2.7	2.09	2.3
Sikh	1.53	1.6	1.88	1.9
Buddhist	0.65	0.9	0.64	0.8
Jain	0.27	0.3	0.28	0.4
Others	1.11	0.4	0.3	0.7
% currently in school (age 5-14)	80.37	NA	82.58	NA
Knowledge of AIDS (women)	53.64	61	NA	NA
work participation rate for males	52.7	NA	54.7	51.7
work participation rate for females	31.9	NA	28.7	25.6
Average family size	5.2	4.8	4.69	5.3
# children ever born to women (age 40 - 44)	3.7	3.9	NA	NA
# children ever born to women (age 45 - 49)	4.02	4.14	NA	NA
% women married (age 15 - 49)	73.17	75.23	75.78	76.61
% women married (all ages)	47.52	47.22	48.24	47.7
% electricity	71.85	67.9	65.2	55.8
% piped water	40.4	24.5	40.5	36.7
TV ownership (color or b/w)	48.26	(Colour) 25.2	36.7	24.3
LPG use	33.3	24.7	21.9	17.5
% flush toilets	22.7	NA	19.2	18
% poor	25.73	NA	27.47	NA

Table 3: Sample Distribution Along Individual and Household Background Characteristics

	Rural	Urban	Total
INDIVIDUAL CHARACTERISTICS			
Age			
0-4	9.76	8.15	9.34
5-9	11.64	9.83	11.16
10-14	12.31	10.78	11.91
15-19	10.3	10.65	10.39
20-29	16.34	18.5	16.91
30-39	13.23	15.22	13.75
40-59	17.8	19.56	18.26
60+	8.62	7.31	8.28
Sex			
Male	50.69	50.89	50.74
Female	49.31	49.11	49.26
Education			
Illiterate	43.84	25.81	39.13
1-4 std	17.32	13.67	16.37
5-9 std	26.82	30.2	27.71
10-11 std	6.53	12.31	8.04
12-Some College	3.38	8.12	4.62
College graduate	2.11	9.88	4.14
HOUSEHOLD CHARACTERISTICS			
Social Group			
Forward Caste Hindu	16.51	31.07	20.58
OBC	37.4	31.31	35.7
Dalit (Hindu, Sikh Buddhist)	24.14	16.36	21.96
Adivasi (any religion)	9.84	2.63	7.83
Muslim	9.96	14.51	11.23
Christian, Sikh, Jain	2.15	4.12	2.7
Place of Residence			
Metro		26.61	7.57
Other urban		73.39	21.13
More devel. village	47.76		34.42
Less devel. village	51.16		36.88
Max. Adult Education in Household			
Illiterate	28.86	9.75	23.52
1-4 std	9.69	4.6	8.27
5-9 std	33.03	28.09	31.65
10-11 std	12.13	17.19	13.54
12-Some College	8.23	12.99	9.56
College graduate	8.07	27.38	13.46
Household Income Category			
Negative - Rs. 999	2.53	0.74	2.03
Quartile 1 (Rs. 1000-14155)	24.79	6.19	19.6
Quartile 2 (Rs. 14156-23168)	23.32	9.98	19.59
Quartile 3 (Rs. 23169-36486)	20.02	18.48	19.59
Quartile 4 (Rs. 36487-69000)	17.19	25.86	19.61
Quartile 5 (Rs. 69001+)	12.15	38.75	19.58

Appendix Table 1: Comparison of New and Reinterview Rural Samples In Districts where Any Reinterviews took place

	Reinterviewed Sample	New Sample
Individual Characteristics		
Age		
0-4	9.38	10.39
5-9	10.98	12.57
10-14	12.56	11.96
15-19	10.47	9.96
20-29	16.20	16.42
30-39	12.96	13.62
40-59	18.18	17.24
60+	9.27	7.84
Sex		
Male	50.88	50.38
Female	49.12	49.62
Education		
Illiterate	44.04	44.15
1-4 std	17.29	17.53
5-9 std	26.81	26.60
10-11 std	6.59	6.22
12-some college	3.21	3.51
College graduate	2.07	1.99
Household Characteristics		
Social group		
Forward Caste Hindu	18.07	14.63
OBC	35.63	40.91
Dalit	25.96	22.71
Adivasi	9.77	9.14
Muslim	8.88	9.93
Christian, Sikh, Jain	1.68	2.68
Place of residence		
Metro	0.23	0.00
Other urban	0.99	0.77
More develop village	49.58	45.40
Less develop village	49.19	53.83
Max. Adult Education		
Iliterate	29.20	29.00
1-4 std	9.83	9.78
5-9 std	32.86	33.26
10-11 std	12.05	12.01
12-some college	8.04	8.33
College graduate	8.03	7.63
Household Income Category		
Negative - Rs. 999	2.41	2.66
Quintile 1 (Rs.1000-14155)	23.22	27.60
Qunitile 2 (Rs.14156- 23168)	23.22	24.13
Quintile 3 (Rs.23169- 36486)	20.74	19.38
Qunitile 4 (Rs.36487-69000)	18.06	15.79
Qunitle 5 (Rs.69001+)	12.35	10.44