

REPORT ON POOLING OF CENTRAL & STATE SAMPLE DATA OF NSS 69TH ROUND

July 2012 -December 2012

Schedule 1.2:

**DRINKING WATER, SANITATION, HYGIENE
& HOUSING CONDITION IN NAGALAND**



**GOVERNMENT OF NAGALAND
DIRECTORATE OF ECONOMICS & STATISTICS
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PERFACE

The National Statistical Commission (NSC) constituted a Committee on Pooling of Central and State samples of National Sample Surveys (NSS), to identify the preconditions for pooling of Central and State sample NSS data, to suggest appropriate methodology for pooling the data and to bridge the data gaps and in turn strengthen the database for decentralized planning and governance.

The necessity for pooling of Central and State sample NSS data arose due to the growing need for improving the precision of estimates of policy parameters such as the incidence of poverty, State Domestic Product (SDP), District Domestic Product (DDP), etc and for strengthening the database at district level required for decentralised governance.

The Directorate of Economics and Statistics, Nagaland is bringing out the pooled report of the Central & State Samples data on NSS 69th round on “Drinking water, Sanitation, Hygiene and Housing Condition” and is the fourth in the series using the poolability tests and methodologies for pooling as recommended by the NSC’s professional Committee.

The objective of the survey on “Drinking water, Sanitation, Hygiene and Housing Condition” was to examine and study different aspects of living conditions necessary for decent and healthy living of the household members by developing suitable indicators based upon collected information.

This report is brought out with the hope that it will be useful to planners, policy makers, students and researchers.

Comments and suggestions for improving this report are most welcome.

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February, 2019

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CHAPTER ONE

INTRODUCTION

1. Background

One of the objectives of the states participation in the NSS programme is to provide a mechanism by which sample size would be increased and the pooling of the two set of data can be done so as to enable better estimates at lower sub state level, particularly at the District Level. At the State Level, this will result in increased precision of the estimates and at the disaggregated level, estimates will be more stable. But the major benefit will be derived in the case of estimates are generated at sub state level like NSS Region/ Districts.

Although the needs for pooling central and state sample data was felt for quite some time. The National Statistical Commission (NSC) constituted a committee under the Chairmanship of Dr. R. Radha Krishna on Pooling of Central and State samples of National Sample Surveys (NSS) to identify the preconditions for pooling of Central and State sample NSS data and to suggest appropriate methodology for pooling the data to bridge the data gaps and in turn strengthen the database for decentralized planning and governance. The National Statistical Commission in its report has indicated the importance of pooling in the statement: "The Statistical Agencies of different State governments have been participating in the NSS programme and canvassing the same questionnaires in matched samples of households in their respective States following identical concepts, definitions and procedures. Results from the central samples and state samples have occasionally been compared. The main purpose of the programme is to pool the two samples and obtain dependable estimates for regions within the States". The Commission recommended: "The State sample data should be processed regularly within a reasonable time after the completion of fieldwork and attempts should be made to obtain and utilize pooled estimates by combining central and state samples.

List of abbreviation often used in the pooling of Central and State Sample

Abbreviation	Description	Abbreviation	Description
FSU	First Stage Unit	NSC	National Statistical Commission
HH	Household	NSSO	National Sample Survey Office
IV	Inverse Variance	RSE	Relative Standard Error
MPCE	Monthly Per-Capita (Consumer) Expenditure	SSB	State Statistical Bureau
MR	Matching Ratio	UFS	Urban Frame Survey
MRP	Mixed Reference Period	URP	Uniform Reference Period
MMRP	Modified Mixed Reference Period	USU	Ultimate Stage Unit
MSE	Mean Standard Error	DES	Directorate of Economics and Statistics

TESTING POOLABILITY AND METHODOLOGY FOR POOLING

1. Testing Poolability of central and state sample

1.1 Though the central sample and state sample are drawn independently following identical sampling design with same concepts, definitions and instructions to collect the state sample data but due to lack of adequate training of field and processing staff of State DES, unit level data in some cases are not properly validated. There is also expected agency bias in the two sets of data generated by different agencies. As such they cannot be merged for generating pooled estimate. Therefore one needs to test that the samples are coming from identical distribution function. Since the parametric distribution of the sample mean is unknown one may adopt non-parametric tests such as Run test, Mean test, Chi-square test Wald-Wolfowitz run test etc to test that the samples are coming from identical distribution function.

1.2 Median test

1.2.1 In statistics, the median test is a special case of Pearson's Chi-square test. It tests the null hypothesis that the medians of the populations from which two samples are drawn, are identical. Observations in each sample are assigned to two groups, one consisting of data whose values are higher than the median value in the two groups combined, and the other consisting of data whose values are at the median or below. A Pearson's Chi-square test is then used to determine whether the observed frequencies in each group differ from expected frequencies derived from a distribution combining the two groups. The statistical power of this test may sometimes be improved by using a value other than the median to define the groups say quintile classes– that is, by using a value which divides the groups into more nearly equal groups than the median would. This test is useful when the distributions of data differ markedly from normality, for example when raw scores have been arbitrarily classified into inappropriate ranges before being recorded such as size class of land possessed etc and often useful as an initial step of exploratory analysis of data.

Let m^* be the median of the pooled sample data. Construct 2 X 2 contingency table as below and use chi-square test if columns and rows are independent.

Observed frequency of each cell $O_{ij} = N_{ij}$ where $i = 1$ to $2, j = 1$ to 2 .

Sample-type	No of sample observation		Total
	$\leq m^*$	$> m^*$	
State Sample	N11	N12	N1.
Central Sample	N21	N22	N2.
Total	N.1	N.2	N..

Expected frequency of each cell $E_{ij} = (N_{i.} * N_{.j}) / N_{..}$ where $i = 1$ to $2, j = 1$ to 2 .

$$\chi^2 \text{ Value} = \sum_{i=1}^2 \sum_{j=1}^2 (O_{ij} - E_{ij})^2 / O_{ij} \text{ with degrees of freedom} = (2-1)*(2-1) = 1$$

The statistical power of this test may sometimes be improved by using a value other than the median to define the groups say quintile classes– that is, by using a value which divides the groups into more nearly equal groups than the median would.

1.3 Multinomial distribution test or χ^2 test

For discrete data such as status of activity, educational level and categorical variable such as land possessed etc, standard tests of equality of sample proportions of two sets of data based on multinomial distributions, relevant chi-square tests

may be used after grouping the attributes/categorical variables in to a suitable number of classes so that each class contains adequate number of sample observations. Construct 2 X k contingency table for k classes at the domain where two sets of data are to be pooled as below and use chi-square test if State sample and Central sample have identical distribution.

Observed frequency of each cell $O_{ij} = N_{ij}$ where $i = 1$ to $2, j = 1$ to k .

Expected frequency of each cell $E_{ij} = (N_{i.} * N_{.j})/N_{..}$ where $i = 1$ to $2, j = 1$ to k .

$$\chi^2 \text{ Value} = \sum_{i=1}^2 \sum_{j=1}^k (O_{ij} - E_{ij})^2 / O_{ij} \text{ with degrees of freedom} = (2-1)*(k-1) = k-1$$

Sample-type	No of sample observation					Total
	Class-1	Class-2	...	Class-k-1	Class-k	
State Sample	N_{11}	N_{12}	...	N_{1k-1}	N_{1k}	$N_{1.}$
Central Sample	N_{21}	N_{22}	...	N_{2k-1}	N_{2k}	$N_{2.}$
Total	$N_{.1}$	$N_{.2}$...	$N_{.k-1}$	$N_{.k}$	$N_{..}$

1.4 Wald-Wolfowitz run test

1.4.1 Suppose X and Y are independent random samples with cumulative distribution function (CDF) as $F_s(x)$ and $F_c(y)$. Null Hypothesis to be tested is $H_0: F_s(x) = F_c(x)$ for all x against alternative Hypothesis is $H_1: F_s(x) \leq F_c(x)$ for all x and $F_s(x) < F_c(x)$ for some x. Let x_1, x_2, \dots, x_m be iid observation from state sample with distributive function F_s and y_1, y_2, \dots, y_n be iid observation from central sample with distributive function F_c . Pool the data and order them with respect to comparable characteristic under consideration say monthly per capita expenditure (MPCE). In the pooled order sequence put "1" for X and "0" for Y. Let U be the total runs observed where 'run' is a sequence of adjacent equal symbols. For example, following sequence: 111100011100111110000 is divided in six runs, three of them are made out of "1" and the others are made out of "0". The number of runs U is a random variable whose distribution for large sample can be treated as normal with:

$$\text{mean: } \frac{2mn}{m+n} + 1$$

$$\text{variance: } \frac{2mn(2mn - m - n)}{(m+n)^2(m+n-1)}$$

After normalizing the variable U one may use one sided z-test for testing the Null hypothesis. In extreme case the value of U will be 2 meaning by observed characteristic of all the observation of one sample is less than the other samples.

1.4.2 One of the limitations of this test is when there is a tie between two samples in the observed value. One has to resolve ties in usual manner. However if there is large number of ties which is bound to occur specially for qualitative attributes like education level, activity status etc, this test is not recommended. This test can be well applied for a continuous variable such as MPCE which are less prone to ties. For discrete variable chi-square test is recommended.

1.5 Parametric test

1.5.1 Aggregate estimate: Let t_{yc} and t_{ys} be the estimate of Y at domain level of pooling based on central and state sample respectively with corresponding variances $V(t_{yc})$ and $V(t_{ys})$. For large sample, making all assumption of parametric test, one may use Z-Statistic to test the null hypothesis $H_0 E(t_{yc}) = E(t_{ys})$ where E stands for expectation.

$$Z = \frac{(t_{yc} - t_{ys})}{\sqrt{(V(t_{yc}) + V(t_{ys}))}}$$

$V(t_{yc})$ and $V(t_{ys})$ could be estimated as

$$\hat{V}(t_{yc}) = \sum_l (t_{yc1} - t_{yc2})^2 / 4, \quad \hat{V}(t_{ys}) = \sum_l (t_{ys1} - t_{ys2})^2 / 4$$

based on sub-sample 1 & 2 estimates where \sum_l stands for summing over stratum x sub-stratum level variance at the domain of pooling.

1.5.2 Estimate of rate: Let r_c and r_s be the estimate of population rates R_c and R_s ie Y/X based on central and state sample respectively with corresponding mean square error $MSE(r_c)$ and $MSE(r_s)$. For large sample, making all assumption of parametric test, one may use Z-Statistic to test the null hypothesis $H_0 E(r_c) = E(r_s)$ where E stands for expectation.

$$Z = \frac{(r_c - r_s)}{\sqrt{(MSE(r_c) + MSE(r_s))}}$$

$MSE(r_c)$ and $MSE(r_s)$ are estimated as follows:

$$mse(r_c) = (\hat{V}(t_{yc}) - 2 * r_c \hat{Cov}(t_{yc}, t_{xc}) + r_c^2 * \hat{V}(t_{xc})) / t_{xc}^2$$

$$mse(r_s) = (\hat{V}(t_{ys}) - 2 * r_s \hat{Cov}(t_{ys}, t_{xs}) + r_s^2 * \hat{V}(t_{xs})) / t_{xs}^2$$

where

$$\hat{V}(t_{yc}) = \sum_l (t_{yc1} - t_{yc2})^2 / 4, \quad \hat{V}(t_{ys}) = \sum_l (t_{ys1} - t_{ys2})^2 / 4$$

$$\hat{V}(t_{xc}) = \sum_l (t_{xc1} - t_{xc2})^2 / 4, \quad \hat{V}(t_{xs}) = \sum_l (t_{xs1} - t_{xs2})^2 / 4$$

$$\hat{Cov}(t_{yc}, t_{xc}) = \sum_l (t_{yc1} - t_{yc2})(t_{xc1} - t_{xc2}) / 4 \quad \text{based on sub-sample 1 \& 2 estimates.}$$

where \sum_l stands for summing over stratum x sub-stratum level variance, covariance at the domain of pooling.

2 Methodology for pooling

2.1 Pooling by inverse weight of the variance of the estimates

2.1.1 Aggregate estimate: For any characteristic, consider the state sample [s] in the form of two independent sub-sample s1 and s2 and the central sample [c] in the form of two independent sub-sample c1 and c2. Based on this, the respective estimates for state and central can be computed as:

$$t_s = \sum_l (t_{s1} + t_{s2}) / 2 \quad \text{and} \quad t_c = \sum_l (t_{c1} + t_{c2}) / 2$$

Pooled estimate leading to optimum combination of these two estimates is given by weighing with inverse of the variance of the estimate. Thus the pooled estimate is given by:

$$T_p = \frac{V(t_c)t_s + V(t_s)t_c}{V(t_c) + V(t_s)} \text{ with } V(T_p) = \frac{V(t_c)V(t_s)}{V(t_c) + V(t_s)}$$

In general $V(t_c)$ and $V(t_s)$ are unknown and can be estimated as

$$\hat{V}(t_c) = \sum (t_{c1} - t_{c2})^2 / 4, \hat{V}(t_s) = \sum (t_{s1} - t_{s2})^2 / 4$$

where \sum stands for summing over stratum l x sub-stratum level variance at the domain of pooling.

Thus pooled estimate and estimate of pooled variance is given by

$$\hat{t}_p = \frac{\hat{V}(t_c)t_s + \hat{V}(t_s)t_c}{\hat{V}(t_c) + \hat{V}(t_s)}, \hat{V}(t_p) = \frac{\hat{V}(t_c)\hat{V}(t_s)}{\hat{V}(t_c) + \hat{V}(t_s)}$$

2.1.2 By virtue of weighing the two estimates at the domain level at which two estimates are pooled, the pooled estimate will always lie between the central and state sample estimates.

2.1.3 Estimate of rate: Let r_c and r_s be the estimate of R_c and R_s ie Y/X based on central and state sample respectively with corresponding estimated mean square error $mse(r_c)$ and $mse(r_s)$. The pooled estimate and estimate of variance of pooled ratio estimate may be given by:

$$r_p = \frac{mse(r_c)r_s + mse(r_s)r_c}{mse(r_c) + mse(r_s)}, mse(r_p) = \frac{mse(r_c)mse(r_s)}{mse(r_c) + mse(r_s)}$$

Where $mse(r_c)$ and $mse(r_s)$ are calculated using formula given in para 1.5.2 above. Alternatively one can generate the pooled estimate of aggregate by inverse weight of estimate of variance obtained from central and state sample using formula given in para 2.1.1 for the characteristics x as well as y and obtain the pooled estimate of ratio as ratio of pooled estimate of aggregate. This will ensure consistency between pooled estimates of aggregate and the pooled estimate of ratio.

Let t_{xp} and t_{yp} be the pooled estimate of aggregate for the parameter X and Y . The pooled estimate of R (i.e Y/X) is given by

$$r_p = t_{yp} / t_{xp}$$

where $t_{yp} = at_{yc} + bt_{ys}$ and $t_{xp} = ct_{xc} + dt_{xs}$ and $(a, b), (c, d)$ are the estimated inverse variance weight pair of the characteristic x and y respectively.

The estimated mse of pooled ratio estimate r_p is given by:

$$mse(r_p) = (\hat{V}(t_{yp}) - 2 r_p \hat{Cov}(t_{yp}, t_{xp}) + r_p^2 \hat{V}(t_{xp})) / t_{xp}^2$$

where $\hat{V}(t_{yp}) = \frac{ab}{\hat{V}(t_{yp})}$, $\hat{V}(t_{xp}) = \frac{cd}{\hat{V}(t_{xp})}$ and

$$\hat{Cov}(t_{yp}, t_{xp}) = ac \hat{Cov}(t_{yc}, t_{xc}) + bd \hat{Cov}(t_{ys}, t_{xs})$$

$$\hat{Cov}(t_{yc}, t_{xc}) = \sum_l \frac{(t_{yc1} - t_{yc2})(t_{xc1} - t_{xc2})}{4} \text{ based on sub-sample 1 \& 2 estimates.}$$

$$\text{Similarly, } \hat{Cov}(t_{ys}, t_{xs}) = \sum_l \frac{(t_{ys1} - t_{ys2})(t_{xs1} - t_{xs2})}{4}$$

where \sum_l stands for summing over stratum x sub-stratum level covariance at the domain of pooling.

2.1.4 Method laid down in para 2.1.1 and 2.1.2 requires calculation of estimate of variance of the estimates before pooling them. Reliability of estimate of variance should be ascertained with due consideration of sample size. Besides the complex calculations of variances and covariances for each cell of the table, one needs to address the issue of non-additivity of the component estimates with the estimate of marginal total. For e.g. pooled estimate of MPCE of FOOD and NON-FOOD may not add up to MPCE of TOTAL. To obviate this problem one may generate the pooled estimates of components first and then derive the estimate of total as sum of estimates of components.

2.2 Pooling by simple average of the estimates

2.2.1 Many of the States are not fully equipped with complex calculation of estimate of variance especially when cells of the table contains ratio of two characteristics which is usually presented in the NSS reports. When the State's participation is equal matching of central samples, the simple average of two estimates may be a way of combining the estimates considering central and state samples as independent samples. The pooled estimate will always lie between the estimates based on central and state sample separately.

2.2.2 When the State's participation is of unequal matching of central samples, the weighted average of two estimates with weights being matching ratio of central and state sample may be a better way of combining the estimates considering central and state samples as independent samples. For any characteristic, consider the state sample [s] in the form of two independent sub-sample s1 and s2 and the central sample [c] in the form of two independent sub-sample c1 and c2. Let matching ratio of state and central sample be m : n. Based on this, the respective estimates for state and central can be computed as:

$$t_s = \sum_l (t_{s1} + t_{s2})/2 \text{ and } t_c = \sum_l (t_{c1} + t_{c2})/2$$

Pooled estimate of these two estimates is given by weighing with matching participation rate m:n. Thus the pooled estimate is given by:

$$t_p = \frac{mt_s + nt_c}{m+n} \text{ with } V(t_p) = \frac{m^2V(t_s) + n^2V(t_c)}{(m+n)^2}$$

$$\hat{V}(t_c) = \sum_l (t_{c1} - t_{c2})^2 / 4, \hat{V}(t_s) = \sum_l (t_{s1} - t_{s2})^2 / 4$$

$$\text{In general } V(t_c) \text{ and } V(t_s) \text{ can be estimated as}$$

$$\text{and thus } \hat{V}(t_p) = \frac{m^2 \hat{V}(t_s) + n^2 \hat{V}(t_c)}{(m+n)^2}$$

The pooled estimate will always lie between the estimates based on central and state sample separately.

2.3 Summing up: For those characteristics which are known to be distributed as Normal, poolability of the two sets of

central and state data may be tested by standard parametric tests such as Z-test. For those characteristics for which transformation makes them Normal, such methodology may be adopted. In most of the situations where the distribution is non-normal and unknown, the two sets of data may be tested through various non-parametric tests such as those laid down in para 1 of above. For discrete data, Standard tests of equality of proportions based on binomial distribution may be used and for multinomial distributions relevant chi-square tests may be used.

Sample size: Total sample size of Nagaland state for central and state sample are given below:

In Nagaland state, during 69th round 44 rural samples were covered and 528 households were surveyed whereas in urban Nagaland, 84 samples were covered and 1008 households were surveyed.

CHAPTER TWO

Result of Poolability Test Schedule 1.2

Sample size: Total sample size of Nagaland state for central and state sample are given below:

Nagaland – Rural				
Schedule	Central Sample		State Sample	
	FSUs	Household surveyed	FSUs	Household surveyed
1.2	44	528	44	528
Nagaland – Urban				
Schedule	Central Sample		State Sample	
	FSUs	Household surveyed	FSUs	Household surveyed
1.2	28	336	84	1008

In Nagaland state, during 69th round 44 rural samples were covered and 528 households were surveyed whereas in urban Nagaland, 84 samples were covered and 1008 households were surveyed.

State Nagaland Sector: Rural [Schedule 1.2] Run Test

Table:-0.1(R) District wise result of Run Test of Floor Area for Pooled Sample $Z_{0.01} = -2.33$ [one sided test] reject if $Z\text{-Value} < Z_{0.01}$

District Code	District Name	Z-value	Accept
1	Mon	-7.1978469	N
2	Mokokchung	-3.9841737	N
3	Zunheboto	-0.8208282	Y
4	Wokha	-0.8208282	Y
5	Dimapur	-6.53E-02	Y
6	Phek	-1.2609503	Y
7	Tuensang	-1.2400399	Y
8	Longleng	0.205207	Y
9	Kiphire	-1.7507762	Y
10	Kohima	-0.8753881	Y
11	Peren	-0.5835921	Y

State Nagaland Sector: Rural [Schedule 1.2] Run Test

Table:-0.1(U) District wise result of Run Test of Floor Area for Pooled Sample $Z_{0.01} = -2.33$ [one sided test] reject if $Z\text{-Value} < Z_{0.01}$

District code	District Name	z-value	Accept
1	Mon	-4.9425268	N
2	Mokokchung	-0.5491696	Y
3	Zunheboto	0	Y
4	Wokha	-0.5491696	Y
5	Dimapur	0.5491696	Y
6	Phek	-0.9664764	Y
7	Tuensang	-2.1262481	Y
8	Longleng	0.5491696	Y
9	Kiphire	-2.7458482	N
10	Kohima	-3.0204331	N
11	Peren	1.0983393	Y

State Nagaland Sector: Rural [Schedule 10] Chi-square Test

Table:-0.2 (R) District wise chi-square test for type of structure for pooled sample $\chi^2 .01 = 9.21$ $df = 2$ [one sided test] reject if $\chi^2 -Value > \chi^2.01$

District code	District Name	Z-value	Accept
1	Mon	33.4204	N
2	Mokokchung	2.333556	Y
3	Zunheboto	17.46978	N
4	Wokha	17.97166	N
5	Dimapur	6.825113	Y
6	Phek	10.54245	N
7	Tuensang	29.58791	N
8	Longleng	19.51667	N
9	Kiphire	8.094074	Y
10	Kohima	1.978022	Y
11	Peren	0.129555	Y

State Nagaland Sector: Urban [Schedule 10] Chi-square Test

Table:-0.2 (U) District wise chi-square test for type of structure for pooled sample $\chi^2 .01 = 9.21$ $df = 2$ [one sided test] reject if $\chi^2 -Value > \chi^2.01$

District code	District Name	Z-value	Accept
1	Mon	1.705721	Y
2	Mokokchung	18.58461	N
3	Zunheboto	3.648179	Y
4	Wokha	0.644384	Y
5	Dimapur	8.173953	Y
6	Phek	12.716	N
7	Tuensang	1.253857	Y
8	Longleng	2.74937	Y
9	Kiphire	1.997933	Y
10	Kohima	1.885616	Y
11	Peren	18.96007	N

State Nagaland Sector: RURAL [Schedule 1.2] MEAN TEST

Table:-0.3 (R) District wise test of per 1000 distribution of dwelling units by tenurial status (owned, hired, others) of the household pooled sample $Z_{0.005} = 2.575$ [one sided test] reject if absolute z value > $z_{0.005}$

Dist code	District Name	Owned		Hired		Others	
		Z -value	Accept	Z -value	Accept	Z -value	Accept
1	Mon	0	N	0	N	0	Y
2	Mokokchung	102.9463969	N	0.863753336	Y	0	Y
3	Zunheboto	0.020325203	Y	0	N	0	Y
4	Wokha	1.146928915	Y	0.819873739	Y	0	Y
5	Dimapur	0.68	Y	0	N	0	Y
6	Phek	0.217952422	Y	1.843997787	Y	0	Y
7	Tuensang	0.098001744	Y	0.078973107	Y	0	Y
8	Longleng	11.96088088	N	1.006643849	Y	0	Y
9	Kiphire	0	N	0	N	0	Y
10	Kohima	0	N	0	N	0	Y
11	Peren	0	N	0	N	0	Y

State Nagaland Sector: URBAN [Schedule 1.2] MEAN TEST

Table:-0.3 (U) District wise test of per 1000 distribution of dwelling units by tenurial status (owned, hired, others) of the household pooled sample $Z_{0.005} = 2.575$ [one sided test] reject if absolute z value > $z_{0.005}$

Dist code	District Name	Owned		Hired		Others	
		Z -value	Accept	Z -value	Accept	Z-Value	Accept
1	Mon	0.182188607	Y	0.961025897	Y	0	Y
2	Mokokchung	0.646771315	Y	0.26655261	Y	0	Y
3	Zunheboto	2.947804032	N	5.749974164	N	0	Y
4	Wokha	3.472981842	N	2.660242983	N	0	Y
5	Dimapur	0.73052126	Y	100	N	0	Y
6	Phek	0.615869785	Y	3.811517921	N	0	Y
7	Tuensang	1.574680531	Y	1.830384779	Y	0	Y
8	Longleng	2.672299513	N	0.108705747	Y	0	Y
9	Kiphire	0.366383826	Y	0.711890865	Y	0	Y
10	Kohima	0.683460387	Y	0.415529297	Y	0	Y
11	Peren	1.71706241	Y	0.346610301	Y	0	Y

CHAPTER THREE

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table-1.1a (R): District wise estimate no of household (00) and their RSEs for Central ,State and Pooled Sample

District Name	Estimated households (00)			RSE of Estimated households			Sample Households		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	129	442	286	6.75	76.16	58.87	72	72	156
Mokokchung	1694	60	877	45.69	7.4	44.13	84	84	132
Zunheboto	242	133	188	7.18	32.59	12.42	48	48	96
Wokha	103	74	88	5.55	22.13	9.86	48	48	96
Dimapur	82	509	295	6.28	83.91	72.40	48	48	108
Phek	261	875	568	22.28	56.1	43.51	48	48	120
Tuensang	731	247	489	70.42	5.71	52.65	60	60	108
Longleng	151	130	140	9.51	6.68	5.99	48	48	96
Kiphire	38	28	33	1.98	0	1.14	24	24	48
Kohima	92	75	83	7.48	8	5.50	24	24	48
Peren	75	64	69	12.37	8.03	7.69	24	24	48
All	3598	2635	3117	7.62	6.95	5.29	528	528	1056

Pooled Result of Schedule 1.2

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table-1.1a (U): District wise estimate no of household (00) and their RSEs for Central ,State and Pooled Sample

District Name	Estimated households (00)			RSE of Estimated households			Sample Households		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	49	45	47	4.29	10.42	5.47	24	24	96
Mokokchung	45	33	39	2.87	1.16	1.73	24	24	96
Zunheboto	124	121	122	5.22	1.19	2.72	48	48	192
Wokha	39	40	40	10.08	0.68	4.93	24	24	96
Dimapur	64	66	65	11.11	10.5	7.64	24	24	96
Phek	207	265	236	4.53	7.15	4.48	48	48	192
Tuensang	188	157	172	13.52	2.63	7.49	48	48	192
Longleng	59	62	61	9.79	4.8	5.33	24	24	96
Kiphire	46	34	40	6.74	5.33	4.49	24	24	96
Kohima	14	15	14	16.6	12.85	40.78	24	24	96
Peren	27	29	28	21.21	1.57	10.26	24	24	96
All	862	869	865	3.53	2.48	2.16	336	336	1344

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table-1.1b (R): District wise per 1000 distribution of dwelling units by tenurial status of household for central, state and pooled sample

District Name	Owned			Hired			Others			Estimated nos. (00)		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	939	997	984	61	3	16	0	0	0	129	442	286
Mokokchung	999	1000	1000	1	0	0	0	0	0	1694	60	877
Zunheboto	1000	953	983	0	47	17	0	0	0	242	133	188
Wokha	1000	966	986	0	34	14	0	0	0	103	74	88
Dimapur	952	1000	993	48	0	7	0	0	0	82	509	295
Phek	796	791	792	198	185	188	6	24	19	261	875	568
Tuensang	1000	932	983	0	68	17	0	0	0	731	247	489
Longleng	1000	994	997	0	6	3	0	0	0	151	130	140
Kiphire	1000	1000	1000	0	0	0	0	0	0	38	28	33
Kohima	931	999	961	0	1	1	69	0	38	92	75	83
Peren	1000	1000	1000	0	0	0	0	0	0	75	64	69
All	980	920	955	18	72	41	2	8	5	3598	2635	3117

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table-1.1b (U): District wise per 1000 distribution of dwelling units by tenureal status of household for central, state and pooled sample

District Name	Owned			Hired			Others			Estimated nos. (00)		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	713	793	751	287	207	249	0	0	0	49	45	47
Mokokchung	915	668	809	85	332	191	0	0	0	45	33	39
Zunheboto	687	560	624	313	440	376	0	0	0	124	121	122
Wokha	1000	624	810	0	376	190	0	0	0	39	40	40
Dimapur	643	864	755	307	136	220	50	0	25	64	66	65
Phek	282	476	391	718	399	539	0	124	70	207	265	236
Tuensang	296	440	362	640	560	603	65	0	35	188	157	172
Longleng	901	810	854	99	190	146	0	0	0	59	62	61
Kiphire	774	878	818	226	114	178	0	8	4	46	34	40
Kohima	859	924	893	141	76	107	0	0	0	14	15	14
Peren	981	967	974	19	33	26	0	0	0	27	29	28
All	560	606	583	422	356	389	18	38	28	862	869	865

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table-1.1c (R): District wise per 1000 distribution of household with principal source of drinking water for central, state and pooled sample

District Name	Safe water			RSE of safe water			Unsafe water			RSE of unsafe water		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	1000	956	966	0.00	4.19	6.27	0	44	34	0.00	90.83	1.06
Mokokchung	984	1000	985	1.25	0.00	2.06	16	0	15	76.55	0.00	1.00
Zunheboto	981	354	759	2.01	67.50	72.15	19	646	241	105.12	36.99	3.50
Wokha	1000	954	981	0.00	5.05	6.10	0	46	19	0.00	105.23	4.51
Dimapur	389	916	843	65.52	1.94	18.52	611	84	157	41.64	21.10	181.73
Phek	636	930	862	42.15	5.77	21.11	364	70	138	73.60	76.59	73.20
Tuensang	863	850	860	11.17	14.76	12.42	137	150	140	70.47	83.36	21.28
Longleng	891	1000	941	8.46	0.00	5.63	109	0	59	68.96	0.00	21.72
Kiphire	1000	1000	1000	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00
Kohima	1000	1000	1000	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00
Peren	1000	1000	1000	0.00	0.00	0.00	0	0	0	0.00	0.00	0.00
All	918	905	913	2.80	3.41	4.10	82	95	87	31.52	32.55	5.32

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table-1.1c (U): District wise per 1000 distribution of household with principal source of drinking water for central, state and pooled sample

District Name	Safe water			RSE of safe water			Unsafe water			RSE of unsafe water		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	891	998	942	12.71	0.21	6.39	109	2	58	104.29	89.58	95.40
Mokokchung	702	994	826	28.93	0.64	11.29	298	6	174	68.19	101.16	196.27
Zunheboto	1000	861	931	0.00	4.35	1.62	0	139	69	0.00	26.88	24.54
Wokha	1000	990	995	0.00	1.04	0.34	0	10	5	0.00	100.68	344.14
Dimapur	813	498	653	6.56	49.91	26.62	187	502	347	28.57	49.51	29.04
Phek	992	984	988	0.80	1.54	0.72	8	16	12	104.53	92.85	98.55
Tuensang	888	991	935	2.21	0.91	1.06	112	9	65	17.50	102.63	495.74
Longleng	954	929	941	0.20	3.65	1.62	46	71	59	4.06	48.11	52.54
Kiphire	811	1000	891	24.93	0.00	11.30	189	0	109	106.74	0.00	99.87
Kohima	341	915	639	116.60	9.22	27.78	659	85	361	60.26	99.85	111.07
Peren	1000	991	995	0.00	0.91	0.70	0	9	5	0.00	98.43	4.41
All	914	928	921	2.12	1.84	1.34	86	72	79	22.64	23.78	29.55

State: Nagaland Sector: RURAL [SCHEDULE 1.2] Parametric Test

Table-1.6a (R) District wise test of per 1000 distribution differences of households with principal sources of drinking water (safe and unsafe) for pool samples $Z_{0.005} = 2.575$ [one sided test] reject if absolute value $z - \text{value} > z_{0.005}$

District Name	District Name	Safe drinking water		Unsafe drinking water	
		Z –value	Accept	Z –value	Accept
Mon	Mon	0.071814489	Y	1.100957833	Y
Mokokchung	Mokokchung	1.300813008	Y	1.306335728	Y
Zunheboto	Zunheboto	0.043506828	Y	1.057423683	Y
Wokha	Wokha	0.696964106	Y	0.950299344	Y
Dimapur	Dimapur	2.390359728	Y	2.401536984	Y
Phek	Phek	0.569996479	Y	0.590630314	Y
Tuensang	Tuensang	0.410772252	Y	0.616319815	Y
Longleng	Longleng	1.366435567	Y	1.37029311	Y
Kiphire	Kiphire	0	N	0	N
Kohima	Kohima	0	N	0	N
Peren	Peren	0	N	0	N

State: Nagaland Sector: RURAL [SCHEDULE 1.2] Parametric Test

Table-1.6a (U) District wise test of per 1000 distribution differences of households with principal sources of drinking water (safe and unsafe) for pool samples $Z_{0.005} = 2.575$ [one sided test] reject if absolute value $z - \text{value} > z_{0.005}$

District Name	District Name	Safe drinking water		Unsafe drinking water	
		Z –value	Accept	Z –value	Accept
Mon	Mon	0.865278415	Y	0.450572269	Y
Mokokchung	Mokokchung	0.167377534	Y	0.086615057	Y
Zunheboto	Zunheboto	18.06239737	N	3.720238095	N
Wokha	Wokha	57.93885602	N	0.993245928	Y
Dimapur	Dimapur	0.117374151	Y	0.593338602	Y
Phek	Phek	47.76245314	N	1.055143051	Y
Tuensang	Tuensang	22.36745691	N	0.77904628	Y
Longleng	Longleng	4.860512875	N	1.575008522	Y
Kiphire	Kiphire	0.331384102	Y	0.371768219	Y
Kohima	Kohima	1.433734149	Y	1.442001835	Y
Peren	Peren	3.750127845	N	1.015950422	Y

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.9a (R) District wise per 1000 distribution of households by nature of access to the principal sources of drinking water {(1) exclusive use of the household (2) common use of the households in the building (3) neighbour's source, (4) community use and (5) others } for central, state and pooled sample

District Name	Exclusive use			Common use			Neighbour's Source			Community use		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	801	361	467	53	43	45	8	3	4	122	586	480
Mokokchung	235	39	228	25	57	26	0	0	0	678	787	682
Zunheboto	643	810	702	72	61	68	6	0	4	109	129	116
Wokha	264	722	456	331	69	221	126	0	73	25	209	102
Dimapur	507	831	786	0	34	29	47	71	67	193	49	69
Phek	601	880	815	8	88	70	18	18	18	18	15	16
Tuensang	27	16	24	15	243	73	0	125	32	174	615	285
Longleng	445	216	339	0	264	122	0	0	0	482	520	499
Kiphire	598	798	682	0	77	32	2	0	1	12	125	60
Kohima	706	99	434	0	1	1	69	152	106	147	749	416
Peren	0	27	12	0	0	0	16	0	9	526	973	732
All	294	600	423	32	86	55	9	36	20	408	272	350

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.9a (U) District wise per 1000 distribution of households by nature of access to the principal sources of drinking water {(1) exclusive use of the household (2) common use of the households in the building (3) neighbour's source, (4) community use and (5) others } for central, state and pooled sample

District Name	Exclusive use			Common use			Neighbour's Source			Community use		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	828	800	814	13	123	66	144	0	75	15	77	45
Mokokchung	703	337	547	0	38	16	163	0	94	43	624	290
Zunheboto	827	631	730	157	292	224	13	17	15	4	60	31
Wokha	651	516	582	46	474	263	0	0	0	0	11	6
Dimapur	668	456	560	50	24	37	0	22	11	144	309	228
Phek	527	584	559	374	364	369	41	48	45	58	4	27
Tuensang	501	566	531	302	328	314	79	41	62	22	66	42
Longleng	672	748	711	203	178	190	0	21	11	125	54	88
Kiphire	715	862	778	173	68	128	113	0	65	0	70	30
Kohima	341	545	447	0	133	69	0	0	0	659	322	484
Peren	617	706	664	0	24	13	0	0	0	314	270	291
All	627	602	614	208	261	235	52	27	40	62	95	78

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.9a (R) District wise per 1000 distribution of households by nature of access to the principal sources of drinking water {(1) exclusive use of the household (2) common use of the households in the building (3) neighbour's source, (4) community use and (5) others } for central, state and pooled sample

District Name	Others			Estimated households (00)			Sample households		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	15	0	4	129	442	286	72	84	156
Mokokchung	62	117	64	1694	60	877	84	48	132
Zunheboto	170	0	110	242	133	188	48	48	96
Wokha	253	0	147	103	74	88	48	48	96
Dimapur	254	16	49	82	509	295	48	60	108
Phek	355	0	82	261	875	568	48	72	120
Tuensang	689	0	515	731	247	489	60	48	108
Longleng	74	0	39	151	130	140	48	48	96
Kiphire	387	0	224	38	28	33	24	24	48
Kohima	78	0	43	92	75	83	24	24	48
Peren	458	0	247	75	64	69	24	24	48
All	238	6	140	3598	2635	3117	528	528	1056

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.9a (U) District wise per 1000 distribution of households by nature of access to the principal sources of drinking water {(1) exclusive use of the household (2) common use of the households in the building (3) neighbour's source, (4) community use and (5) others } for central, state and pooled sample

District Name	Others			Estimated households (00)			Sample households		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	0	0	0	49	45	47	24	72	96
Mokokchung	91	0	52	45	33	39	24	72	96
Zunheboto	0	0	0	124	121	122	48	144	192
Wokha	303	0	150	39	40	40	24	72	96
Dimapur	0	188	95	64	66	65	24	72	96
Phek	0	0	0	207	265	236	48	144	192
Tuensang	95	0	52	188	157	172	48	144	192
Longleng	0	0	0	59	62	61	24	72	96
Kiphire	0	0	0	46	34	40	24	72	96
Kohima	0	0	0	14	15	14	24	72	96
Peren	69	0	33	27	29	28	24	72	96
All	41	14	28	862	869	865	336	1008	1344

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.9b (R) District wise per RSE distribution of households by nature of access to the principal sources of drinking water {(1) exclusive use of the household (2) common use of the households in the building (3) neighbour's source, (4) community use and (5) others } for central, state and pooled sample

District Name	Exclusive use			Common use			Neighbour's Source			Community use		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	39.19	7.82	24.67	100.27	78.35	24.58	106.32	126.13	0.87	82.65	9.64	154.48
Mokokchung	39.39	92.73	16.67	109.71	66.90	3.85	0.00	0.00	0.00	18.49	13.67	120.41
Zunheboto	10.77	15.80	16.31	78.30	95.49	10.72	105.27	0.00	1.79	98.98	67.81	119.63
Wokha	79.45	20.19	31.93	67.11	105.23	29.43	70.23	0.00	21.80	67.33	99.53	182.75
Dimapur	61.91	3.07	22.82	0.00	17.40	4.23	98.36	14.37	9.82	102.00	35.17	112.31
Phek	39.87	8.07	19.40	108.29	75.77	16.24	103.09	56.28	7.09	121.57	107.58	21.77
Tuensang	113.58	66.46	2.40	121.49	41.42	19.45	0.00	97.19	99.58	36.30	31.62	146.30
Longleng	8.31	43.13	7.48	0.00	30.14	23.00	0.00	0.00	0.00	6.29	5.87	31.57
Kiphire	65.78	20.60	50.27	0.00	51.11	4.75	98.02	0.00	0.61	98.02	100.00	127.88
Kohima	44.83	104.67	48.27	0.00	108.00	0.22	107.48	108.00	22.13	107.48	35.82	274.13
Peren	0.00	26.28	0.78	0.00	0.00	0.00	112.37	0.00	3.07	72.77	0.72	303.40
All	14.00	9.77	7.24	46.34	33.20	4.90	42.28	50.66	5.26	35.83	52.87	125.96

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.9b (U) District wise per RSE distribution of households by nature of access to the principal sources of drinking water {(1) exclusive use of the household (2) common use of the households in the building (3) neighbour's source, (4) community use and (5) others } for central, state and pooled sample

District Name	Exclusive use			Common use			Neighbour's Source			Community use		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	13.80	9.84	7.83	95.71	37.40	21.42	76.96	0.00	0.00	104.29	40.57	42.21
Mokokchung	8.56	98.84	18.80	0.00	66.07	12.55	97.13	0.00	0.00	102.87	57.45	290.97
Zunheboto	3.59	0.19	1.98	18.75	7.85	7.74	28.11	29.53	38.81	105.22	27.85	13.65
Wokha	34.09	3.31	11.78	110.08	1.31	46.38	0.00	0.00	0.00	0.00	99.32	7.23
Dimapur	25.03	51.19	17.59	111.11	110.50	20.80	0.00	2.54	0.78	69.40	67.65	184.89
Phek	23.35	10.61	9.12	5.29	21.76	21.71	104.53	28.93	39.52	104.53	92.85	52.25
Tuensang	19.97	8.88	5.94	58.60	15.26	158.55	74.56	28.88	0.00	113.52	18.20	25.04
Longleng	17.54	21.99	11.08	22.15	59.80	66.41	0.00	104.80	0.00	58.39	67.46	57.98
Kiphire	37.18	5.69	15.10	93.26	63.67	82.70	93.26	0.00	1317.30	0.00	8.47	5.79
Kohima	116.60	23.43	28.53	0.00	11.43	4.18	0.00	0.00	0.00	60.26	44.29	330.99
Peren	26.16	5.61	13.25	0.00	101.57	3.31	0.00	0.00	0.00	68.80	5.60	196.02
All	6.78	5.39	3.21	18.20	9.92	15.60	40.53	19.60	51.74	34.20	21.41	24.80

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.9b (R) District wise per RSE distribution of households by nature of access to the principal sources of drinking water {(1) exclusive use of the household (2) common use of the households in the building (3) neighbour's source, (4) community use and (5) others } for central, state and pooled sample

District Name	Others			Estimated households (00)		
	Central	State	Pooled	Central	State	Pooled
Mon	106.32	0.00	2.39	6.75	76.16	58.87
Mokokchung	53.83	98.91	20.21	45.69	7.40	44.13
Zunheboto	73.13	0.00	13.94	7.18	32.59	12.42
Wokha	101.19	0.00	32.00	5.55	22.13	9.86
Dimapur	94.38	97.98	17.41	6.28	83.91	72.40
Phek	78.83	0.00	21.73	22.28	56.10	43.51
Tuensang	20.75	0.00	10.57	70.42	5.71	52.65
Longleng	12.04	0.00	0.66	9.51	6.68	5.99
Kiphire	98.02	0.00	44.73	1.98	0.00	1.14
Kohima	107.48	0.00	12.15	7.48	8.00	5.50
Peren	87.63	0.00	44.20	12.37	8.03	7.69
All	59.82	52.87	14.38	7.62	6.95	5.29

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.9b (U) District wise RSE distribution of households by nature of access to the principal sources of drinking water {(1) exclusive use of the household (2) common use of the households in the building (3) neighbour's source, (4) community use and (5) others } for central, state and pooled sample

District Name	Others			Estimated households (00)		
	Central	State	Pooled	Central	State	Pooled
Mon	0.00	0.00	0.00	4.29	10.42	5.47
Mokokchung	59.60	0.00	3.01	2.87	1.16	1.73
Zunheboto	0.00	0.00	0.00	5.22	1.19	2.72
Wokha	89.92	0.00	14.42	10.08	0.68	4.93
Dimapur	0.00	1.34	0.15	11.11	10.50	7.64
Phek	0.00	0.00	0.00	4.53	7.15	4.48
Tuensang	45.27	0.00	2.28	13.52	2.63	7.49
Longleng	0.00	0.00	0.00	9.79	4.80	5.33
Kiphire	0.00	0.00	0.00	6.74	5.33	4.49
Kohima	0.00	0.00	0.00	16.60	12.85	10.78
Peren	78.79	0.00	4.34	21.21	1.57	10.26
All	42.99	11.30	1.06	3.53	2.48	2.16

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.19a (R) District wise Per 1000 distribution of households by facility of bathroom{ (1) attached(2) detached (3) no bathroom } for central, state pooled sample

District Name	Attached			Detached			No Bathroom		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	228	190	199	715	810	788	58	0	13
Mokokchung	86	75	85	831	925	834	84	0	81
Zunheboto	209	191	203	527	809	627	264	0	170
Wokha	36	207	108	658	793	714	307	0	178
Dimapur	129	422	382	792	544	579	80	34	40
Phek	147	258	232	829	742	762	25	0	6
Tuensang	216	558	302	549	442	522	235	0	176
Longleng	289	35	172	659	965	801	52	0	28
Kiphire	16	75	41	497	925	677	486	0	281
Kohima	145	59	106	855	941	894	0	0	0
Peren	99	99	99	760	901	825	141	0	76
All	139	275	197	731	719	726	130	6	78

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.19a (U) District wise Per 1000 distribution of households by facility of bathroom{ (1) attached(2) detached (3) no bathroom } for central, state pooled sample

District Name	Attached			Detached			No Bathroom		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	228	322	347	715	678	642	58	0	10
Mokokchung	86	199	264	831	801	736	84	0	0
Zunheboto	209	436	454	527	564	538	264	0	8
Wokha	36	458	427	658	542	573	307	0	0
Dimapur	129	369	325	792	631	668	80	0	7
Phek	147	451	490	829	549	481	25	0	29
Tuensang	216	480	368	549	520	632	235	0	0
Longleng	289	437	408	959	563	592	52	0	0
Kiphire	16	73	169	497	927	825	486	0	6
Kohima	145	372	236	855	581	734	0	47	30
Peren	99	242	288	760	758	694	141	0	19
All	139	408	396	731	591	593	130	1	11

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.19b (R) District wise RSE distribution of households by facility of bathroom{ (1) attached (2) detached (3) no bathroom } for central, state pooled sample

District Name	Attached			Detached			No Bathroom		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	31.66	15.73	11.73	17.55	3.69	50.39	106.32	0.00	5.73
Mokokchung	53.32	32.49	8.71	14.70	2.63	10.21	97.10	0.00	44.82
Zunheboto	64.28	52.71	18.82	42.71	12.42	32.60	95.14	0.00	71.36
Wokha	64.89	63.90	16.79	20.54	16.72	23.85	42.62	0.00	32.23
Dimapur	84.95	11.56	8.73	17.22	10.25	105.24	78.95	17.40	13.16
Phek	96.26	51.09	15.01	17.44	17.73	47.22	79.49	0.00	6.67
Tuensang	18.61	36.27	15.26	10.79	45.72	40.04	24.51	0.00	47.21
Longleng	25.21	75.31	5.78	16.46	2.74	32.27	71.71	0.00	11.95
Kiphire	101.98	100.00	9.05	92.53	8.15	56.28	98.02	0.00	147.03
Kohima	44.44	46.77	10.16	7.51	2.94	14.04	0.00	0.00	0.00
Peren	23.35	60.23	7.04	19.34	6.63	31.36	87.63	0.00	21.09
All	37.07	28.63	9.50	14.28	11.76	20.48	45.88	100.72	16.93

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.19b (U) District wise RSE distribution of households by facility of bathroom{ (1) attached (2) detached (3) no bathroom } for central, state pooled sample

District Name	Attached			Detached			No Bathroom		
	Central	State	Pooled	Central	State	Pooled	Central	State	Pooled
Mon	11.76	26.08	5.34	1914.669	12.38	1914.669	95.71	0	91.60404
Mokokchung	67.85	62.18	13.62	15001.02	15.43	15001.02	0	0	0
Zunheboto	22.27	0.38	6.98	2792.612	0.3	2792.612	5.22	0	0.19687
Wokha	29.69	22.64	8.28	6119.447	19.15	6119.447	0	0	0
Dimapur	61.71	24.91	11.96	10921.71	14.57	10921.71	111.11	0	60.49262
Phek	7.61	16.04	5.51	1497	13.2	1497	104.53	0	1154.114
Tuensang	5.37	34	8.70	6723.251	31.41	6723.251	0	0	0
Longleng	44.25	10.62	9.48	7470.921	8.24	7470.921	0	0	0
Kiphire	21.55	13.68	2.95	959.1244	1.08	959.1244	93.26	0	21.74357
Kohima	116.6	40.72	12.54	6698.742	19.72	6698.742	116.6	79.04	393.9524
Peren	50.58	24.95	14.46	4728.747	7.99	4728.747	121.21	0	558.6581
All	7.62	9.66	2.95	579.3509	6.65	579.3509	72.53	91.71	63.86354

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.21a (R) District wise Per 1000 distribution of households by access to latrine { (1) exclusive use of household (2) common use of households in building (3) others (4) No Latrine} for central, state pooled sample

District Name	Exclusive use			Common use		
	Central	State	Pooled	Central	State	Pooled
Mon	864	989	960	47	0	11
Mokokchung	1000	864	995	0	90	3
Zunheboto	996	956	982	4	44	18
Wokha	954	535	778	46	465	222
Dimapur	991	991	991	0	0	0
Phek	923	938	934	8	37	30
Tuensang	929	863	912	71	116	82
Longleng	965	712	848	5	288	136
Kiphire	975	690	855	25	310	145
Kohima	1000	940	973	0	19	9
Peren	1000	1000	1000	0	0	0
All	972	925	952	19	59	36

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.21a (U) District wise Per 1000 distribution of households by access to latrine { (1) exclusive use of household (2) common use of households in building (3) others (4) No Latrine} for central, state pooled sample

District Name	Exclusive use			Common use		
	Central	State	Pooled	Central	State	Pooled
Mon	980	915	949	20	85	51
Mokokchung	915	451	717	85	534	277
Zunheboto	920	503	714	80	497	286
Wokha	775	418	594	225	582	406
Dimapur	950	917	933	50	30	40
Phek	655	690	675	324	233	273
Tuensang	611	649	629	389	351	371
Longleng	931	820	874	69	168	120
Kiphire	980	930	959	20	70	41
Kohima	708	707	708	292	191	239
Peren	1000	976	987	0	24	13
All	791	693	742	204	277	241

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.21a (R) District wise Per 1000 distribution of households by access to latrine { (1) exclusive use of household (2) common use of households in building (3) others (4) No Latrine} for central, state pooled sample

District Name	Others			No latrine		
	Central	State	Pooled	Central	State	Pooled
Mon	89	11	29	0	0	0
Mokokchung	0	46	2	0	0	0
Zunheboto	0	0	0	0	0	0
Wokha	0	0	0	0	0	0
Dimapur	9	9	9	0	0	0
Phek	64	25	34	5	0	1
Tuensang	0	21	5	0	0	0
Longleng	30	0	16	0	0	0
Kiphire	0	0	0	0	0	0
Kohima	0	41	18	0	0	0
Peren	0	0	0	0	0	0
All	9	16	12	0	0	0

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.21a (U) District wise Per 1000 distribution of households by access to latrine { (1) exclusive use of household (2) common use of households in building (3) others (4) No Latrine} for central, state pooled sample

District Name	Others			No latrine		
	Central	State	Pooled	Central	State	Pooled
Mon	0	0	0	0	0	0
Mokokchung	0	15	6	0	0	0
Zunheboto	0	0	0	0	0	0
Wokha	0	0	0	0	0	0
Dimapur	0	52	27	0	0	0
Phek	21	77	52	0	0	0
Tuensang	0	0	0	0	0	0
Longleng	0	12	6	0	0	0
Kiphire	0	0	0	0	0	0
Kohima	0	103	53	0	0	0
Peren	0	0	0	0	0	0
All	5	31	18	0	0	0

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.21b (R) District wise RSE distribution of households by access to latrine { (1) exclusive use of household (2) common use of households in building (3) others (4) No Latrine} for central, state pooled sample

District Name	Exclusive use			Common use		
	Central	State	Pooled	Central	State	Pooled
Mon	15.34	1.42	20.01	87.92	0	16.14
Mokokchung	0	16.02	23.22	109.71	101.62	7.50
Zunheboto	0.41	4.68	5.04	95.14	101.7	5.94
Wokha	4.81	30.39	21.12	99.11	34.97	21.27
Dimapur	0.89	1.23	1.09	0	0	0.00
Phek	9.37	3.95	7.30	108.29	115.13	10.50
Tuensang	9.28	11.08	9.52	121.49	67.4	22.13
Longleng	3.41	23.51	12.73	94.31	58.02	48.31
Kiphire	2.46	44.91	36.65	98.02	100	37.56
Kohima	0	6.88	9.37	0	108	4.12
Peren	0	0	0.00	0	0	0.00
All	1.68	1.77	2.34	77.72	32.02	3.66

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.21b (U) District wise RSE distribution of households by access to latrine { (1) exclusive use of household (2) common use of households in building (3) others (4) No Latrine} for central, state pooled sample

District Name	Exclusive use			Common use		
	Central	State	Pooled	Central	State	Pooled
Mon	1.92	4.5	2.55	95.71	48.46	19.92
Mokokchung	9.62	20.49	7.09	102.87	20.09	69.20
Zunheboto	7.32	14.97	6.73	84.25	15.13	20.95
Wokha	31.92	34.45	15.14	110.08	24.75	260.47
Dimapur	5.85	9.97	6.56	111.11	110.5	21.86
Phek	0.39	2.04	0.95	7.59	24.54	16.55
Tuensang	12.65	14.48	6.46	19.89	26.82	105.05
Longleng	8.16	3.52	4.45	109.79	9.56	44.51
Kiphire	1.88	4.85	2.72	93.26	64.07	24.05
Kohima	34.31	15.82	18.27	83.4	39.38	70.02
Peren	0	2.51	1.95	0	101.57	3.31
All	2.79	3.48	1.96	11.27	10.53	12.63

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.19b (R) District wise RSE distribution of households by access to latrine { (1) exclusive use of household (2) common use of households in building (3) others (4) No Latrine} for central, state pooled sample

District Name	Others			No Latrine		
	Central	State	Pooled	Central	State	Pooled
Mon	89	11	29	0	0	0
Mokokchung	0	46	2	0	0	0
Zunheboto	0	0	0	0	0	0
Wokha	0	0	0	0	0	0
Dimapur	9	9	9	0	0	0
Phek	64	25	34	5	0	1
Tuensang	0	21	5	0	0	0
Longleng	30	0	16	0	0	0
Kiphire	0	0	0	0	0	0
Kohima	0	41	18	0	0	0
Peren	0	0	0	0	0	0
All	9	16	12	0	0	0

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.21b (U) District wise RSE distribution of households by access to latrine { (1) exclusive use of household (2) common use of households in building (3) others (4) No Latrine} for central, state pooled sample

District Name	Others			No Latrine		
	Central	State	Pooled	Central	State	Pooled
Mon	0	0	0	0	0	0
Mokokchung	0	15	6	0	0	0
Zunheboto	0	0	0	0	0	0
Wokha	0	0	0	0	0	0
Dimapur	0	52	27	0	0	0
Phek	21	77	52	0	0	0
Tuensang	0	0	0	0	0	0
Longleng	0	12	6	0	0	0
Kiphire	0	0	0	0	0	0
Kohima	0	103	53	0	0	0
Peren	0	0	0	0	0	0
All	5	31	18	0	0	0

State: Nagaland Sector: RURAL [SCHEDULE 1.2] Pooling Method: MATCHING RATIO

Table 1.22a (R) District wise Per 1000 distribution of households having access to latrine by type of latrine{ (1) Flush to septic tank/pit (2) flush to elsewhere (3) other latrine (4) not used } for central, state pooled sample

District Name	Flush to Septic Tank/pit			Flush to else where		
	Central	State	Pooled	Central	State	Pooled
Mon	983	986	985	0	0	0
Mokokchung	982	444	963	1	107	4
Zunheboto	702	988	803	0	0	0
Wokha	1000	1000	1000	0	0	0
Dimapur	843	854	852	11	3	4
Phek	776	870	849	10	105	83
Tuensang	911	888	905	0	0	0
Longleng	981	788	730	5	0	3
Kiphire	571	1000	752	0	0	0
Kohima	798	318	584	0	152	68
Peren	978	829	910	0	0	0
All	909	869	892	1	42	19

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.22a (U) District wise Per 1000 distribution of households having access to latrine by type of latrine{ (1) Flush to septic tank/pit (2) flush to elsewhere (3) other latrine (4) not used } for central, state pooled sample

District Name	Flush to Septic Tank/pit			Flush to else where		
	Central	State	Pooled	Central	State	Pooled
Mon	1000	1000	1000	0	0	0
Mokokchung	881	956	913	0	23	10
Zunheboto	1000	997	999	0	0	0
Wokha	1000	1000	1000	0	0	0
Dimapur	1000	361	676	0	12	6
Phek	971	960	965	0	11	6
Tuensang	965	995	978	35	0	19
Longleng	854	1000	929	0	0	0
Kiphire	1000	1000	1000	0	0	0
Kohima	1000	874	934	0	3	2
Peren	1000	1000	1000	0	0	0
All	969	934	952	8	5	7

State: Nagaland Sector: RURAL [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.22a (R) District wise Per 1000 distribution of households having access to latrine by type of latrine{ (1) Flush to septic tank/pit (2) flush to elsewhere (3) other latrine (4) not used } for central, state pooled sample

District Name	Other Latrine			Not used		
	Central	State	Pooled	Central	State	Pooled
Mon	17	14	15	0	0	0
Mokokchung	17	450	32	0	0	0
Zunheboto	298	12	197	0	0	0
Wokha	0	0	0	0	0	0
Dimapur	98	143	137	0	0	0
Phek	215	25	68	0	0	0
Tuensang	89	112	95	0	0	0
Longleng	315	212	267	0	0	0
Kiphire	429	0	248	0	0	0
Kohima	202	530	349	0	0	0
Peren	22	171	90	0	0	0
All	88	89	89	0	0	0

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.22a (U) District wise Per 1000 distribution of households having access to latrine by type of latrine{ (1) Flush to septic tank/pit (2) flush to elsewhere (3) other latrine (4) not used } for central, state pooled sample

District Name	Other Latrine			Note used		
	Central	State	Pooled	Central	State	Pooled
Mon	0	0	0	0	0	0
Mokokchung	119	21	78	0	0	0
Zunheboto	0	3	1	0	0	0
Wokha	0	0	0	0	0	0
Dimapur	0	627	318	0	0	0
Phek	29	28	29	0	0	0
Tuensang	0	5	2	0	0	0
Longleng	146	0	71	0	0	0
Kiphire	0	0	0	0	0	0
Kohima	0	120	62	0	3	2
Peren	0	0	0	0	0	0
All	23	60	42	0	0	0

State: Nagaland Sector: RURAL [SCHEDULE 1.2] Pooling Method: MATCHING RATIO

Table 1.22b (R) District wise RSE distribution of households having access to latrine by type of latrine{ (1) Flush to septic tank/pit (2) flush to elsewhere (3) other latrine (4) not used } for central, state pooled sample

District Name	Flush to Septic Tank/pit			Flush to else where		
	Central	State	Pooled	Central	State	Pooled
Mon	1.82	1.54	3.52	0.00	0.00	0.00
Mokokchung	1.64	19.63	14.87	109.80	101.62	8.91
Zunheboto	34.11	1.24	26.88	0.00	0.00	0.00
Wokha	0.00	0.00	0.00	0.00	0.00	0.00
Dimapur	6.22	8.88	6.68	73.51	131.86	6.43
Phek	14.07	6.53	9.56	78.25	55.85	14.29
Tuensang	10.42	11.16	10.15	0.00	0.00	0.00
Longleng	11.14	24.47	15.46	94.31	0.00	1.36
Kiphire	73.70	0.00	49.63	0.00	0.00	0.00
Kohima	27.14	96.65	54.49	0.00	108.00	32.96
Peren	1.36	10.56	9.75	0.00	0.00	0.00
All	2.86	3.61	4.12	54.97	83.40	5.34

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.22b (U) District wise RSE distribution of households having access to latrine by type of latrine{ (1) Flush to septic tank/pit (2) flush to elsewhere (3) other latrine (4) not used } for central, state pooled sample

District Name	Flush to Septic Tank/pit			Flush to else where		
	Central	State	Pooled	Central	State	Pooled
Mon	0.00	0.00	0.00	0.00	0.00	0.00
Mokokchung	9.50	0.21	4.65	0.00	98.84	11.37
Zunheboto	0.00	0.28	0.19	0.00	0.00	0.00
Wokha	0.00	0.00	0.00	0.00	0.00	0.00
Dimapur	0.00	31.52	6.97	0.00	89.50	3.63
Phek	3.14	1.61	2.26	0.00	92.85	2.72
Tuensang	3.17	0.50	1.65	86.48	0.00	26.09
Longleng	15.39	0.00	7.20	0.00	0.00	0.00
Kiphire	0.00	0.00	0.00	0.00	0.00	0.00
Kohima	0.00	7.67	4.58	0.00	87.15	0.72
Peren	0.00	0.00	0.00	0.00	0.00	0.00
All	1.51	0.64	0.95	97.08	66.76	2.88

State: Nagaland Sector: RURAL [SCHEDULE 1.2] Pooling Method: MATCHING RATIO

Table 1.22b (R) District wise RSE distribution of households having access to latrine by type of latrine{ (1) Flush to septic tank/pit (2) flush to elsewhere (3) other latrine (4) not used } for central, state pooled sample

District Name	Other Latrine			Not used		
	Central	State	Pooled	Central	State	Pooled
Mon	106.32	107.45	2.19	0.00	0.00	0.00
Mokokchung	94.49	33.08	82.27	0.00	0.00	0.00
Zunheboto	80.47	104.05	68.22	0.00	0.00	0.00
Wokha	0.00	0.00	0.00	0.00	0.00	0.00
Dimapur	106.02	50.78	26.30	0.00	0.00	0.00
Phek	54.22	114.19	40.27	0.00	0.00	0.00
Tuensang	106.74	88.65	112.64	0.00	0.00	0.00
Longleng	25.29	90.90	66.83	0.00	0.00	0.00
Kiphire	98.02	0.00	129.79	0.00	0.00	0.00
Kohima	107.48	88.93	63.75	0.00	0.00	0.00
Peren	61.38	51.35	15.16	0.00	0.00	0.00
All	29.83	31.25	10.80	0.00	0.00	0.00

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.22b (U) District wise RSE distribution of households having access to latrine by type of latrine{ (1) Flush to septic tank/pit (2) flush to elsewhere (3) other latrine (4) not used } for central, state pooled sample

District Name	Other Latrine			Note used		
	Central	State	Pooled	Central	State	Pooled
Mon	0.00	0.00	0	0.00	0.00	0.00
Mokokchung	70.01	101.16	1848.041	0.00	0.00	0.00
Zunheboto	0.00	101.19	2.303869	0.00	0.00	0.00
Wokha	0.00	0.00	0	0.00	0.00	0.00
Dimapur	0.00	19.91	3895.988	0.00	0.00	0.00
Phek	104.53	17.29	235.5894	0.00	0.00	0.00
Tuensang	0.00	97.37	5.925573	0.00	0.00	0.00
Longleng	90.21	0.00	4336.657	0.00	0.00	0.00
Kiphire	0.00	0.00	0	0.00	0.00	0.00
Kohima	0.00	51.00	936.36	0.00	87.15	2.05
Peren	0.00	0.00	0	0.00	0.00	0.00
All	55.66	8.78	47.90948	0.00	99.81	0.00

State: Nagaland Sector: RURAL [SCHEDULE 1.2] Pooling Method: MATCHING RATIO

Table 1.27a (R) District wise per 1000 distribution of households by type of structure of the households Average floor area of the dwelling { (1) pucca (2) semi-pucca (3) katcha (4) average floor area(0.00 sq. mt) } for central, state pooled sample

District Name	Pucca			Semi-pucca		
	Central	State	Pooled	Central	State	Pooled
Mon	269	352	333	565	0	128
Mokokchung	300	242	298	625	198	610
Zunheboto	382	564	446	546	72	378
Wokha	337	485	400	615	96	397
Dimapur	539	714	690	441	10	70
Phek	343	733	644	488	124	207
Tuensang	648	760	676	352	0	263
Longleng	698	638	670	291	37	173
Kiphire	174	767	424	715	0	414
Kohima	512	138	345	384	81	249
Peren	694	172	454	181	337	253
All	414	607	495	519	66	328

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.27a (U) District wise per 1000 distribution of households by type of structure of the households Average floor area of the dwelling { (1) pucca (2) semi-pucca (3) katcha (4) average floor area(0.00 sq. mt) } for central, state pooled sample

District Name	Pucca			Semi-pucca		
	Central	State	Pooled	Central	State	Pooled
Mon	896	875	886	104	125	114
Mokokchung	831	993	900	169	7	100
Zunheboto	770	731	751	230	252	241
Wokha	965	925	945	35	75	55
Dimapur	874	760	816	61	233	148
Phek	743	765	755	257	134	188
Tuensang	931	956	942	69	44	58
Longleng	852	970	913	148	30	87
Kiphire	882	913	895	118	79	101
Kohima	851	621	732	149	212	182
Peren	920	363	627	80	628	368
All	843	821	177	152	142	65.03

State: Nagaland Sector: RURAL [SCHEDULE 1.2] Pooling Method: MATCHING RATIO

Table 1.27a (R) District wise per 1000 distribution of households by type of structure of the households Average floor area of the dwelling { (1) pucca (2) semi-pucca (3) katcha (4) average floor area(0.00 sq. mt) } for central, state pooled sample

District Name	Katcha			Average floor area (0.00 sq. mt.)		
	Central	State	Pooled	Central	State	Pooled
Mon	166	648	538	59.38	30.97	37.41
Mokokchung	75	559	91	68.78	63.33	68.60
Zunheboto	75	364	176	62.71	49.54	58.05
Wokha	48	418	203	58.80	54.75	57.10
Dimapur	20	276	241	67.11	91.34	87.98
Phek	169	143	149	57.92	63.82	62.46
Tuensang	0	240	61	75.26	53.98	69.88
Longleng	11	325	156	67.20	69.22	68.14
Kiphire	111	233	162	53.44	43.1	49.09
Kohima	104	780	407	61.54	50.93	56.79
Peren	125	491	293	72.31	52.24	63.09
All	67	327	177	67.90	61.12	65.03

State: Nagaland Sector: URBAN [SCHEDULE 1.2] pooling method: MATCHING RATIO

Table 1.27a (U) District wise per 1000 distribution of households by type of structure of the households Average floor area of the dwelling { (1) pucca (2) semi-pucca (3) katcha (4) average floor area(0.00 sq. mt) } for central, state pooled sample

District Name	Katcha			Average floor area (0.00 sq. mt.)		
	Central	State	Pooled	Central	State	Pooled
Mon	0	0	0	55.16	26.62	41.53
Mokokchung	0	0	0	66.39	56.23	62.07
Zunheboto	0	17	8	66.22	59.96	63.13
Wokha	0	0	0	86.96	64.37	75.52
Dimapur	65	7	36	50.6	74.38	62.66
Phek	0	101	57	60.25	56.48	58.13
Tuensang	0	0	0	47.21	65.03	55.33
Longleng	0	0	0	80.94	60.39	70.35
Kiphire	0	8	4	58.16	41.79	51.18
Kohima	0	166	86	76.72	51.72	63.74
Peren	0	10	5	60.29	50.68	55.24
All	5	37	21	60.36	58.11	59.23



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