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Indirect Estimation of Selected Measures of Fertility and Marital Fertility from Information on CWR (0-9): An Application to India /States /Districts

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ABSTRACT

Fertility is one of the important components of population change, the other two being mortality and migration. When vital statistical data on number of births is readily available it is estimated directly using various direct measures of fertility such as the crude birth rate (CBR). When the information on number of births is not directly available, fertility is measured using the census information on child woman ratios (CWR) of various types. CWR has several limitations, but gained importance with the attempts made by Rele in 1963, and followed by several other researchers such as Hauer and his co-authors in 2013 deriving TFR from it. In the present study yet another attempt is made to use CWRs to derive not only TFR but also other summary indicators such as the TMFR. A set of simple mathematical formula have been used to estimate the fertility and marital fertility using the CWR of the ages 0-9. The 2011 census age-sex data of districts in India was used to derive a set of fertility estimates for total, rural and urban areas of all districts. Further, these estimates of 2011 have been compared with the estimates of 2011 earlier made by Guilmoto and Rajan to analyse the robustness of the estimates.

Keywords: Fertility, Child Women Ratio, Indirect Estimation, Age-sex data, TFR, TMFR, India.

1. INTRODUCTION

The commonly used measures such as rates, ratios, percentages and probabilities in mathematics and statistics also play a great role in understanding various demographic phenomenon's such as fertility. Fertility is one of the important components of population change, the other two being mortality and migration. When vital statistical data on number of births is readily available it is estimated directly using various direct measures of fertility such as the crude birth rate (CBR). When the information on number of births not directly available fertility is measured using the census information on child woman ratios (CWR) of various types. CWR has its own merits and demerits. When using the child woman ratio (Children 0-4/ Women 15-49) as an indicator of fertility we assume that children enumerated by the time of the census in the age group 0-4 are the actual number of children born 5 years ago and those surviving. The logic behind is that it is assumed that mortality is negligible on the Children 0-4 and the Women 15-49, and also assume that no migration during the last five years of the census enumeration date; then the children 0-4

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enumerated at the census date equals to those born 5 years ago and surviving till today and thus, nothing but the number of births taken place during the past five years. When a child women ratio is constructed using this data then the CWR0-4 refers to 2.5 years before the census date as C0-4 here refers to the average number of births during the five year period before the census. If there is considerable amount of the impact of mortality and migration on the child women ratio, one has to adjust the measure for the above. Experience shows that one may use the child women ratio as a rough indicator of fertility without much problem, assuming a negligible impact of mortality and migration.

Rele (1976, 1987) suggested use of various types of child woman ratios (CWRs) to estimate more sophisticated indicators such as TFR and GRR indirectly. Recently, Hauer et al. (2013) suggested another simple method to estimate TFR from the information on CWR. When the infant mortality is comparatively insignificant, and also no migration among the women and dependent children the method suggested by them is observed to give plausible estimates of TFR. Smith (1992) suggested various measures of fertility simply by means of exploiting the interrelationships existing among different measures. Inspired by the above works namely by Hauer et al. (2013); Smith (1992); and Rele (1976, 1987), this paper makes an attempt to suggest a new methodology which does not require serious assumptions, not much input data but gives robust estimates of various measures of fertility even for sub-national populations in the absence of essential information on number of births but just by using the CWRs.

The data required for estimation of various measures of fertility and mortality is traditionally collected from three important sources namely: Censuses, Civil Registration System, Special surveys such as Sample Registration System (SRS) in India. All the above three sources have their own merits and demerits. Census and special surveys provide the information on children and women also and so following Rele (1976) one may compute a variety of child women ratios as per the need such as CWR_{0-4}(C0-4/W15-49), CWR_{5-9}(C5-9/W20-54), CWR_{0-9}(C0-9/W15-54), where C stands for Children, W stands for Women. The advantage of this method is that it is possible to derive fertility measures even for the smallest area like village as CWR available at the local level.

Growing importance for decentralized planning in India and other countries over time made the governments and many a researcher to search for alternative ways of obtaining reliable estimates of fertility and mortality at below state level units such as districts, natural regions of a state,

selected cities, etc. Recent special surveys of India namely National Family Health Survey (NFHS), District Level Household Survey (DLHS), Annual Health Survey (AHS) and others are best examples for such an alternative ways. Like the traditional sources, the above alternative sources of information also have their merits and demerits.

Indirect estimation of fertility and mortality using different alternative data sources, alternative methodologies and mixed methods/data sources thus started playing an important role in many of both developed and developing countries. A review of existing literature on indirect estimation of fertility and mortality carried out by several scholars in India and abroad clearly indicates that there is still a need for the development of new procedures and use of new data sources: (1) for a better understanding of the fertility and mortality processes at sub-state level units such as districts in India, (2) for a better evaluation of data gathered on fertility and mortality from various newly developed data sources such as SRS, NFHS, DLHS, etc., (3) for better assisting the various governments in their needs for the decentralized planning and policy implementation. However, most of the sophisticated indirect techniques suggested so far require stringent assumptions, huge amount of input data and thus make them not much applicable to derive estimates for below the state level such as the districts, towns, villages in India.

Further, to the knowledge of the present researchers (1) no researcher tried to make use of the marital status distribution data of India especially of the 2011 census in deriving indirectly the fertility measures like CBR, TFR, GMFR and TMFR (2) no attempt was made by any researcher to provide the above indirect estimates for the rural and urban areas of various districts. Thus the present study aims (1) to provide a new, simple and also innovative thought provoking approach for the derivation of various fertility measures/formulae which no one tried before; (2) to make use of the marital status distribution of age-sex data of 2011 census data to derive a new set of fertility indicators for districts in India. To be specific, the objectives of this study are (1) to develop a simple indirect technique for estimating CBR, TFR and TMFR and other related fertility measures from the information on the age-sex and marital status distribution of the population; (2) to derive plausible estimates of the above measures for districts/States/UTs in India using 2011 census age-sex marital status distribution data; and (3) to provide above estimates even for Rural and Urban areas of all districts in India.

In the following sections the paper presents the details of the data sources, methodological details and analysis of the results.

2. DATA AND METHODOLOGY

2.1. Data

The data required for the present study on children of ages 0-9 years and women (or females) of ages 15 to 54 years, is collected from the marital status data by age-sex distribution of the 2011 census of the Registrar General of Indi (RGI). Soft copy of the 2011 census age-sex marital status distribution of data of various States/UTs/Districts in India was downloaded from the site http://www.censusindia.go.in. The quality of age-sex data of 2011 census seems to be good and has been improved over the period due to increasing literacy among women and a great exposure to mass media such as televisions, mobiles, etc.

2.2. Methodology

The methodology suggested in this study is explained as below:

In simple terms, to derive various fertility measures indirectly let us define at first that

C0-9 = Child population of ages 0 to 9

TP = Total population of both sexes

TFP15-54 = Total female population of the ages 15 to 54

MFP15-54 = Married female population of ages 15-54

CBR = Crude birth rate

GFR = General fertility rate

TFR = Total fertility rate

GRR = Gross reproduction rate

GMFR = General marital fertility rate

TMFR = Total marital fertility rate

Then, one can derive various fertility measures indirectly using the following formulae:

$$CBR = ((C0\text{-}9/10)/TP) \times 1000$$

$$GFR = ((C0\text{-}9/10)/TFP15\text{-}54) \times 1000$$

$$TFR = (GFR/1000) \times 35$$

$$GRR = TFR \times (1/(1+ SRB)) = (TFR/2.05)\ ;\ SRB = \text{Sex Ratio at Birth}$$

$$GMFR = ((C0\text{-}9/10)/MFP15\text{-}54) \times 1000$$

$$TMFR = (GMFR/1000) \times 40$$

The present methodology involved using various types of child/women or child/population ratios. The results obtained using the above formulae may be affected by some of the assumptions made by the researchers.

In the above formulae of CBR, 10 represents the number of years and refer to the fact that children of ages 0 to 9 years were born 10 years before the census date. Following Hauer et al. (2013) dividing C0-9 by 10 leads to an indirect estimate of the number of births, assuming that the impact of mortality and migration is very negligible. Similar is the explanation in case of other measures. GFR is normally derived using TFP aged 15-49. Here in deriving GFR we considered TFP15-54, as its numerator consists of C0-9 and taking TFP15-54 is meaningful.

The formula given here for GRR calculation is generally considered as an indirect estimation procedure. This approach is mostly used by demographers as normally this formula also lead to a good estimate of GRR. In the GRR formulae, the factor 2.05 is obtained by considering 105 male births for 100 female births. When sex ratio at birth is available one may us the actual sex ratios at birth. But the above assumption of 1.05 SRB is acceptable in general.

Following Smith (1992) it is also suggested here to use the figures 35 and 40 in the formulae of TFR and TMFR respectively; and they are merely the assumed values of the reproductive life time of a typical woman of any developing country such as India. One may use in fact 35 in case of TMFR also (instead of 40) but on the safer side it is assumed here that the currently married women on an average may take some more time than the other in completing their fertility time period, especially in the developing countries of Asia and Africa.

All the fertility estimates provided here for districts in India were derived using the 2011 census data, however refer to the year 2006.5 or approximately the year 2007. Because as a matter of fact all the fertility estimates we derive using children 0-9 that refer to the births centered between 0-9 years before the census date.

It is assumed that the input data was not affected (or affected negligibly) by infant mortality and migration factors in the previous 10 years. This assumption we may make to be realized sometimes may not be applicable to areas such as Jammu and Kashmir where continuous disturbances are existing and the input data also affected. So, one should be cautious while interpreting the results for such areas as JK and its sub-regions.

3. RESULTS AND DISCUSSION

3.1. Testing the Validity of the Estimates

Validity of the derived estimates of CBR and TFR is made by comparing them with that of the indirect estimates of CBR and TFR earlier derived by Guilmoto and Rajan (2013). Guilmoto and

Rajan (2013) used a modified version of the reverse survival method (MRSM) earlier suggested by Bhat (1996).

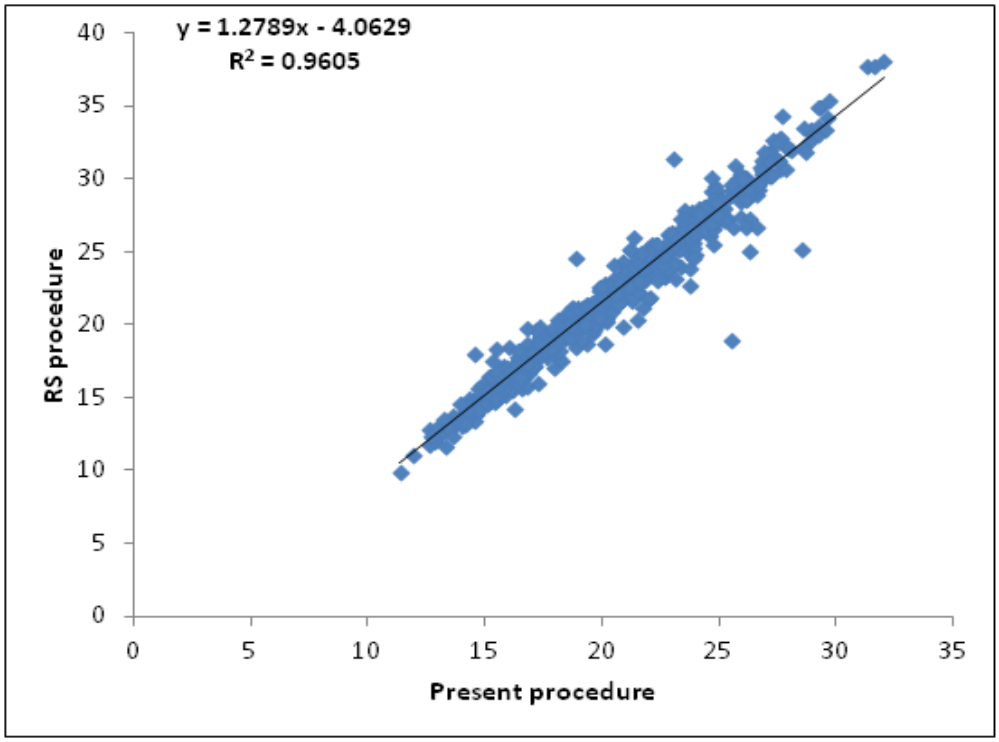

Figure 1. Comparison of estimates of CBR from MRSM with the present procedure.

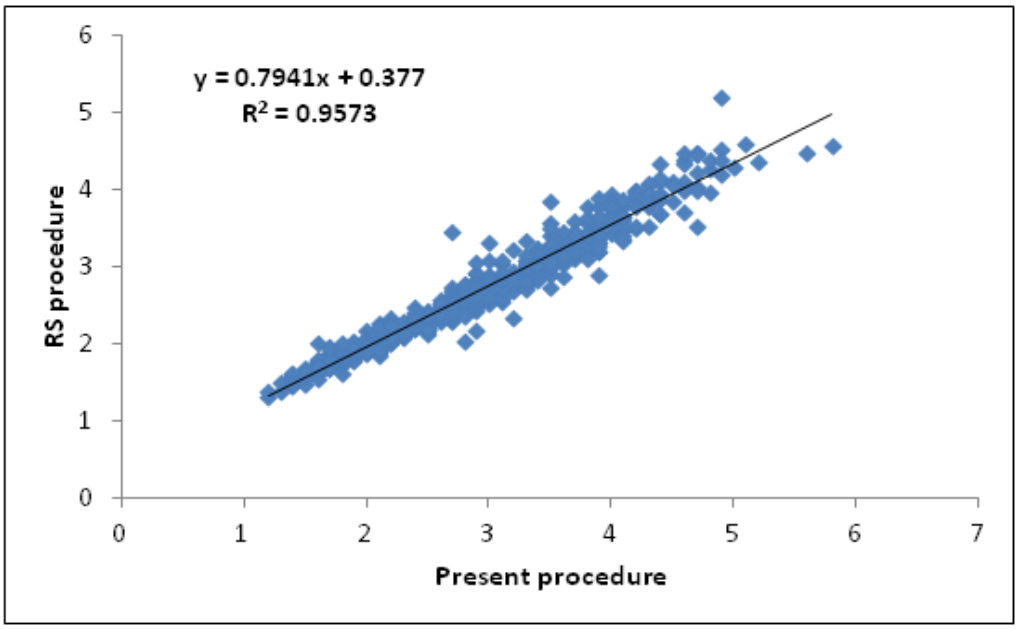

Figure 2. Comparison of the estimates of TFR from MRSM using the present procedure.

Comparison of the regression lines fitted between TFR and CBR made by the two indirect estimation procedures (See Figs 1 and 2) clearly indicates that CBR and TFR estimates derived by using the present methodology are quite comparable. The percent variation explained by the simple linear regression model i.e., R^2 is observed to be very high (0.96) in both cases. Thus, other derived measures may also be considered acceptable for all practical purposes. Appendix (Table 1) provides CBR, TFR and TMFR estimates indirectly derived by the present methodology for the total, rural and urban of all India, States and Districts for the time period 2007 derived using the CWR(0-9) values of the 2011 census. TFR and CBR values used in the figures 1 and 2 are taken from the same table.

3.2. Analysis of the Results

For convenience state level estimates were provided graphically in Figures 3, 4 and 5 for the indicators of CBR (per 1000 population), TFR (per woman) and TMFR (per woman) for total, rural and urban areas. Results in the diagrams are as expected and are self-explanatory.

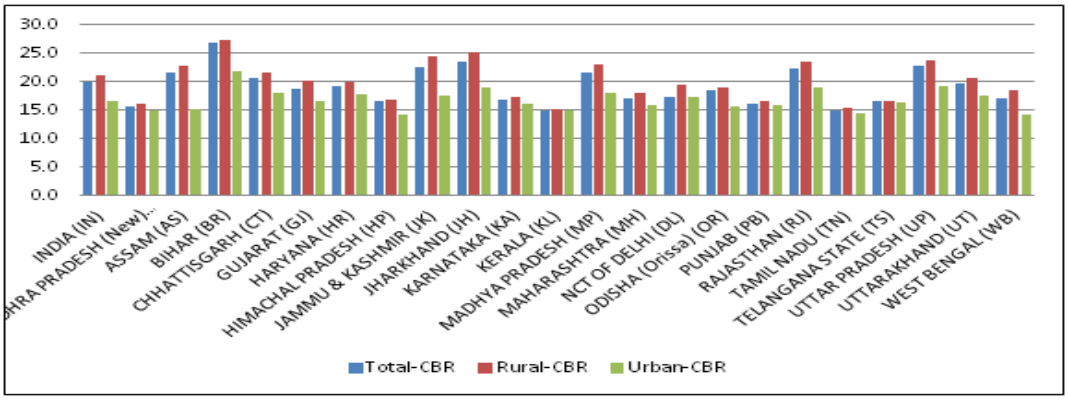

Figure 3. Indirect estimates of CBR - India and selected states-2007.

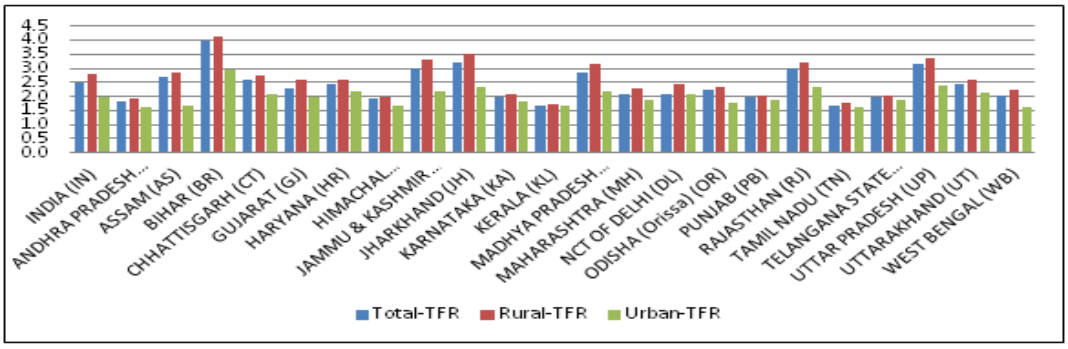

Figure 4. Indirect estimates of TFR -India and selected states-2007.

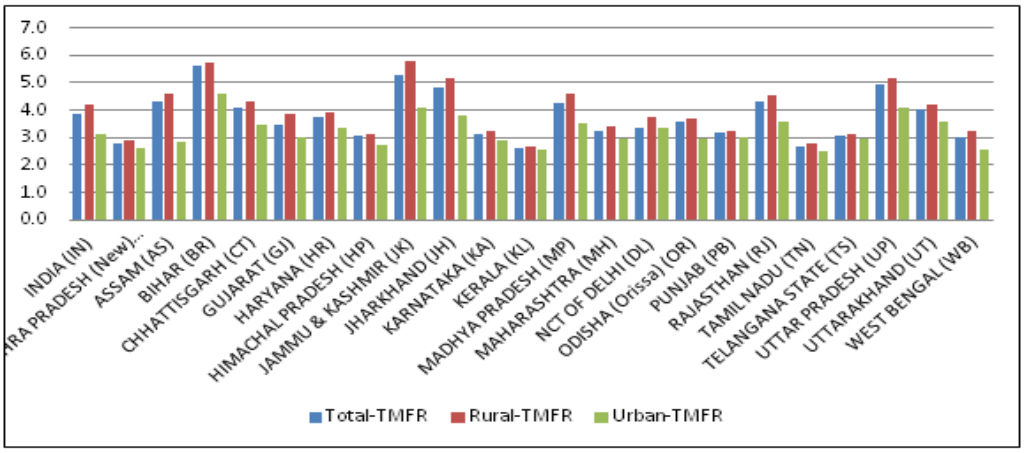

Figure 5. Indirect estimates of TMFR -India and selected states-2007.

Important conclusions that we may arrive at are: (1) whatever indicator you may consider, urban fertility is always observed to be less than the rural fertility. Interestingly, in case of Kerala for both rural and urban areas fertility remain to be the same due to obvious reasons. (2) States of north India especially Bihar, Jharkhand, Madhya Pradesh, Rajasthan and Uttar Pradesh always showed high fertility when compared to other states in India, irrespective of the fertility indicator you may consider. 3) A special mention has to be made here in case of the state of Jammu and Kashmir (JK). Guilmoto and Rajan (2013) also obtained almost similar results as observed here. While interpreting the result for JK the above authors pointed out that the reported age distribution of JK is not acceptable for fertility estimation due to obvious reason of low data quality. Thus to state, JK results at the state and district level provided here may also be accepted with a caution.

4. CONCLUSION

This study suggested a new and innovative methodology to estimate TFR and related measures using a simple ratio that is Child Women Ratio of ages 0-9. Using the age-sex marital status distribution of India data of 2011 census it provided the TFR, TMFR and related indirect estimates for India / States /UTs /Districts. Various estimates obviously refer to the year 2007, instead 2011 census year. A comparison of the estimates arrived at here, with that of Guilmoto and Rajan (2013) estimates of CBR and TFR derived using the 2011 age-sex distribution data indicates that they are quite comparable. As expected, urban fertility is observed to be lower than

the rural fertility, among all districts in India. It is to conclude that the simple and innovative indirect method suggested here even it depends on few meaningful assumptions, may succeed in providing plausible estimates even for sub-state units, rural-urban regions, and religious groups, etc. if data permits. Thus the simple methodology presented here which use a simple ratio has wide implications and seems to be experimented further for its proper use and importance. The present methodology may be applicable to other developing countries in the world like that of Ethiopia, if (1) data permits and (2) the assumptions made also acceptable to some extent. The present method firstly allows estimation of fertility indicators even for the smallest units of analysis, secondly allows to test the accuracy of estimates arrived at by other methodologies, and thus seems to serve as a useful indirect technique for fertility analysis.

5. ACKNOWLEDGEMENTS

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Appendix Table 1 : Indirect estimates of CBR,TFR &TMFR -Total, Rural and Urban areas-India/States/UTs/Districts-2007

	TOTAL - 2007			RURAL - 2007			URBAN - 2007		
India/States/Uts/Districts	CBR	TFR	TMFR	CBR	TFR	TMFR	CBR	TFR	TMFR
INDIA (IN)	***19.8***	***2.5***	***3.9***	***21.2***	***2.8***	***4.2***	***16.7***	***2.0***	***3.1***
JAMMU & KASHMIR (JK)	***22.5***	***3.0***	***5.3***	***24.4***	***3.3***	***5.8***	***17.5***	***2.2***	***4.1***
Kupwara (JK)	30.0	4.9	9.3	30.5	4.9	9.2	26.5	5.0	9.6
Badgam (JK)	28.4	4.1	8.2	29.5	4.3	8.7	20.7	2.9	5.6
Leh(Ladakh)(JK)	12.9	1.8	3.5	14.7	1.9	3.7	9.6	1.6	3.0
Kargil (JK)	20.1	2.7	5.3	20.9	2.8	5.4	14.1	2.0	4.1
Punch (JK)	24.8	3.5	5.6	25.5	3.6	5.7	16.8	2.3	4.0
Rajouri (JK)	23.7	3.3	5.2	24.6	3.4	5.3	13.5	2.2	3.7
Kathua (JK)	19.8	2.5	4.0	20.4	2.6	4.1	15.8	1.9	3.1
Baramula (JK)	22.9	3.1	5.9	24.1	3.3	6.3	17.1	2.3	4.4
Bandipore (JK)	22.7	3.1	6.0	23.7	3.2	6.3	17.7	2.2	4.5
Srinagar (JK)	17.8	2.1	4.2	20.0	2.4	4.6	17.8	2.1	4.2
Ganderbal (JK)	24.2	3.4	6.3	24.2	3.4	6.3	24.2	3.3	6.1
Pulwama (JK)	22.8	2.9	5.6	22.9	2.9	5.6	21.9	3.0	6.0
Shupiyan (JK)	22.1	2.8	5.2	22.4	2.8	5.2	16.7	2.2	4.3
Anantnag (JK)	26.6	3.7	7.0	27.8	3.9	7.4	23.2	3.0	6.1
Kulgam (JK)	23.1	2.9	5.5	23.8	3.1	5.7	19.9	2.5	4.6
Doda (JK)	24.3	3.3	5.3	24.9	3.4	5.5	18.1	2.4	4.1
Ramban (JK)	26.9	3.9	6.2	27.4	4.0	6.3	15.9	2.1	3.6
Kishtwar (JK)	24.2	3.3	5.5	24.8	3.4	5.6	16.0	2.0	3.8
Udhampur (JK)	21.7	2.9	4.4	23.3	3.1	4.7	14.9	2.0	3.2
Reasi (JK)	24.9	3.5	5.6	25.6	3.7	5.7	17.6	2.2	3.7
Jammu (JK)	15.9	1.9	3.1	17.8	2.1	3.5	14.0	1.7	2.7
Samba (JK)	17.6	2.1	3.4	18.0	2.2	3.5	15.8	1.9	3.2
HIMACHAL PRADESH (HP)	***16.6***	***1.9***	***3.1***	***16.8***	***2.0***	***3.1***	***14.2***	***1.6***	***2.7***
Chamba (HP)	19.7	2.4	3.9	20.1	2.4	4.0	14.3	1.7	3.0
Kangra (HP)	15.9	1.8	2.9	16.0	1.8	2.9	14.2	1.6	2.8
Lahul & Spiti (HP)	14.6	1.8	3.3	14.6	1.8	3.3	NA	NA	NA
Kullu (HP)	16.8	2.0	3.2	17.0	2.0	3.2	14.5	1.7	2.7
Mandi (HP)	16.5	1.9	2.9	16.7	1.9	2.9	13.3	1.5	2.4
Hamirpur (HP)	15.7	1.8	2.7	15.8	1.8	2.7	13.8	1.5	2.5
Una (HP)	16.6	2.0	3.2	16.7	2.0	3.2	15.8	1.9	3.1
Bilaspur (HP)	15.8	1.9	2.9	15.9	1.9	2.9	14.7	1.7	2.7
Solan (HP)	17.0	2.1	3.2	17.3	2.1	3.2	15.5	2.0	3.1
Sirmaur (HP)	19.1	2.4	3.9	19.5	2.4	4.0	15.9	1.8	3.0
Shimla (HP)	14.9	1.7	2.8	15.6	1.8	2.9	12.9	1.4	2.5
Kinnaur (HP)	14.4	1.9	3.1	14.4	1.9	3.1	NA	NA	NA
PUNJAB (PB)	***16.2***	***2.0***	***3.2***	***16.5***	***2.0***	***3.3***	***15.8***	***1.9***	***3.0***
Gurdaspur (PB)	16.3	2.0	3.3	17.0	2.1	3.4	14.5	1.7	2.9
Kapurthala (PB)	15.7	1.9	3.1	16.0	1.9	3.2	15.0	1.8	2.9
Jalandhar (PB)	15.2	1.8	3.0	15.2	1.8	3.1	15.2	1.8	2.9
Hoshiarpur (PB)	15.7	1.8	3.1	15.9	1.9	3.1	15.0	1.7	2.9
Shahid Bhagat Singh Nagar (PB)	15.1	1.8	3.0	15.0	1.8	3.0	15.6	1.8	3.0
Fatehgarh Sahib (PB)	15.4	1.9	3.0	15.1	1.8	2.9	16.0	1.9	3.1
Ludhiana (PB)	16.1	1.9	3.1	15.4	1.9	3.1	16.5	2.0	3.1
Moga (PB)	15.9	2.0	3.2	15.9	2.0	3.3	15.9	1.9	3.1
Firozpur (PB)	17.8	2.2	3.5	18.3	2.3	3.6	16.5	2.0	3.2
Muktsar (PB)	16.7	2.1	3.2	16.7	2.1	3.2	16.9	2.0	3.2
Faridkot (PB)	16.4	2.0	3.2	16.4	2.0	3.2	16.3	2.0	3.1
Bathinda (PB)	15.8	1.9	3.0	15.5	1.9	3.0	16.3	1.9	3.0
Mansa (PB)	16.2	2.1	3.2	16.2	2.1	3.3	16.1	1.9	3.1
Patiala (PB)	16.3	2.0	3.1	17.2	2.1	3.3	14.9	1.7	2.8
Amritsar (PB)	16.5	2.0	3.2	18.0	2.2	3.6	15.2	1.8	2.9
Tarn Taran (PB)	18.0	2.3	3.6	18.1	2.3	3.7	16.9	2.1	3.4
Rupnagar (PB)	15.6	1.9	3.0	15.9	1.9	3.1	14.7	1.7	2.8
Sahibzada Ajit Singh Nagar (PB)	16.8	2.0	3.1	17.1	2.1	3.2	16.5	1.9	3.0
Sangrur (PB)	16.0	2.0	3.1	15.7	2.0	3.1	16.6	2.0	3.2
Barnala (PB)	16.1	2.0	3.1	15.7	2.0	3.1	16.9	2.1	3.2
CHANDIGARH (CH)	***16.4***	***2.0***	***3.2***	***20.5***	***2.9***	***4.1***	***16.3***	***2.0***	***3.2***
Chandigarh (CH)	16.4	2.0	3.2	20.5	2.9	4.1	16.3	2.0	3.2
UTTARAKHAND (UT)	***19.7***	***2.4***	***4.0***	***20.6***	***2.6***	***4.2***	***17.6***	***2.1***	***3.6***
Uttarkashi (UT)	20.7	2.7	4.2	21.1	2.7	4.3	16.7	2.0	3.3
Chamoli (UT)	19.4	2.4	3.9	19.8	2.4	3.9	17.5	2.3	3.7
Rudraprayag (UT)	19.6	2.3	3.7	19.8	2.3	3.7	16.1	2.2	3.5
Tehri Garhwal (UT)	20.2	2.5	4.0	20.6	2.5	4.0	17.3	2.1	3.4
Dehradun (UT)	17.4	2.1	3.5	19.3	2.4	4.0	15.8	1.9	3.1
Garhwal (UT)	18.1	2.2	3.5	18.4	2.2	3.6	17.0	2.0	3.3

Pithoragarh (UT)	19.1	2.3	3.6	19.3	2.4	3.6	18.3	2.1	3.4
Bageshwar (UT)	19.8	2.4	3.7	20.0	2.4	3.8	16.7	1.9	3.3
Almora (UT)	18.9	2.3	3.7	19.5	2.3	3.8	13.8	1.6	2.9
Champawat (UT)	21.1	2.7	4.3	21.6	2.8	4.4	18.5	2.2	3.8
Nainital (UT)	18.9	2.3	3.9	19.8	2.5	4.1	17.6	2.1	3.6

Appendix Table 1: Indirect estimates of CBR,TFR &TMFR -Total, Rural and Urban areas-India/States/UTs/Districts-2007

	TOTAL - 2007			RURAL - 2007			URBAN - 2007		
India/States/Uts/Districts	CBR	TFR	TMFR	CBR	TFR	TMFR	CBR	TFR	TMFR
Udham Singh Nagar (UT)	20.5	2.6	4.3	20.8	2.7	4.4	19.9	2.4	4.2
Hardwar (UT)	21.8	2.9	4.8	23.8	3.3	5.4	18.4	2.3	3.8
HARYANA (HR)	***19.2***	***2.4***	***3.7***	***19.9***	***2.6***	***3.9***	***17.9***	***2.2***	***3.4***
Panchkula (HR)	17.2	2.1	3.3	18.7	2.4	3.7	16.0	1.9	3.0
Ambala (HR)	16.3	2.0	3.1	17.1	2.1	3.3	15.4	1.8	2.9
Yamunanagar (HR)	17.5	2.2	3.4	18.3	2.3	3.6	16.2	1.9	3.1
Kurukshetra (HR)	17.4	2.1	3.4	18.1	2.2	3.5	15.5	1.8	3.0
Kaithal (HR)	18.6	2.4	3.7	18.9	2.5	3.8	17.7	2.2	3.4
Karnal (HR)	18.7	2.3	3.6	19.4	2.5	3.8	17.0	2.0	3.2
Panipat (HR)	20.2	2.6	3.9	20.8	2.7	4.2	19.4	2.4	3.7
Sonipat (HR)	18.7	2.4	3.7	19.0	2.5	3.8	18.0	2.2	3.4
Jind (HR)	18.4	2.4	3.6	18.7	2.5	3.7	17.6	2.1	3.3
Fatehabad (HR)	18.6	2.4	3.7	18.9	2.4	3.7	17.5	2.1	3.4
Sirsa (HR)	17.7	2.2	3.4	17.9	2.3	3.5	16.9	2.0	3.2
Hisar (HR)	18.0	2.3	3.5	18.5	2.4	3.6	16.9	2.1	3.2
Bhiwani (HR)	18.8	2.4	3.6	19.0	2.5	3.7	17.8	2.2	3.4
Rohtak (HR)	17.7	2.2	3.5	18.3	2.4	3.7	16.7	2.0	3.2
Jhajjar (HR)	17.9	2.3	3.4	17.9	2.3	3.5	17.9	2.2	3.3
Mahendragarh (HR)	17.6	2.2	3.3	17.6	2.2	3.3	17.4	2.1	3.2
Rewari (HR)	18.1	2.2	3.3	18.0	2.3	3.3	18.3	2.2	3.4
Gurgaon (HR)	18.9	2.3	3.5	20.2	2.6	3.8	18.3	2.2	3.3
Mewat (HR)	32.0	5.2	7.5	32.7	5.4	7.7	26.7	3.8	5.7
Faridabad (HR)	20.0	2.5	3.8	23.3	3.1	4.7	19.2	2.3	3.5
Palwal (HR)	24.3	3.4	5.0	25.3	3.7	5.3	20.6	2.6	4.1
NCT OF DELHI (DL)	***17.4***	***2.1***	***3.4***	***19.5***	***2.4***	***3.8***	***17.3***	***2.1***	***3.4***
North West (DL)	17.9	2.2	3.5	19.7	2.5	3.9	17.8	2.2	3.5
North (DL)	16.9	2.0	3.4	20.2	2.5	3.8	16.9	2.0	3.4
North East (DL)	19.5	2.4	3.9	22.8	3.0	4.5	19.5	2.4	3.9
East (DL)	16.5	1.9	3.1	14.9	1.7	2.7	16.5	1.9	3.2
New Delhi (DL)	13.3	1.5	2.6	NA	NA	NA	13.3	1.5	2.6
Central (DL)	15.5	1.8	3.3	NA	NA	NA	15.5	1.8	3.3
West (DL)	16.4	2.0	3.2	20.2	2.5	3.7	16.4	2.0	3.2
South West (DL)	16.8	2.0	3.1	18.6	2.3	3.4	16.7	2.0	3.1
South (DL)	17.6	2.1	3.4	20.8	2.8	4.4	17.6	2.1	3.4
RAJASTHAN (RJ)	***22.4***	***3.0***	***4.3***	***23.5***	***3.2***	***4.6***	***19.0***	***2.3***	***3.6***
Ganganagar (RJ)	19.0	2.4	3.7	19.7	2.5	3.8	17.3	2.1	3.3
Hanumangarh (RJ)	19.3	2.5	3.6	19.6	2.5	3.6	18.2	2.2	3.4
Bikaner (RJ)	24.4	3.4	4.8	26.9	4.0	5.5	19.6	2.5	3.7
Churu (RJ)	22.6	3.0	4.3	23.1	3.2	4.4	21.2	2.7	4.0
Jhunjhunun (RJ)	19.7	2.5	3.7	19.6	2.5	3.7	19.7	2.5	3.8
Alwar (RJ)	22.9	3.1	4.4	23.8	3.3	4.6	18.9	2.3	3.6
Bharatpur (RJ)	24.3	3.5	5.1	25.4	3.7	5.3	19.9	2.5	4.0
Dhaulpur (RJ)	25.8	3.9	5.7	26.7	4.1	5.9	22.4	3.0	4.8
Karauli (RJ)	23.8	3.5	4.9	24.1	3.6	5.0	22.2	3.0	4.5
Sawai Madhopur (RJ)	22.0	3.0	4.2	22.6	3.1	4.3	19.8	2.5	3.8
Dausa (RJ)	22.9	3.2	4.6	23.4	3.3	4.7	19.5	2.5	3.8
Jaipur (RJ)	20.4	2.6	3.8	22.3	3.0	4.2	18.7	2.2	3.5
Sikar (RJ)	20.6	2.6	3.9	20.8	2.7	3.9	20.3	2.5	3.9
Nagaur (RJ)	22.3	2.9	4.2	22.5	3.0	4.2	21.6	2.7	4.1
Jodhpur (RJ)	23.7	3.3	4.7	26.2	3.8	5.3	19.0	2.3	3.5
Jaisalmer (RJ)	27.6	4.3	5.9	28.6	4.5	6.2	21.2	2.9	4.1
Barmer (RJ)	27.3	4.2	5.9	27.8	4.3	6.1	20.9	2.7	4.0
Jalor (RJ)	24.9	3.5	5.1	25.2	3.6	5.2	21.6	2.9	4.3
Sirohi (RJ)	23.9	3.2	4.8	25.2	3.5	5.2	18.4	2.3	3.6
Pali (RJ)	21.2	2.8	4.2	21.7	2.9	4.4	19.5	2.4	3.7
Ajmer (RJ)	21.1	2.7	3.9	23.4	3.1	4.3	17.8	2.1	3.3
Tonk (RJ)	20.9	2.7	3.8	21.2	2.8	3.8	19.7	2.3	3.9
Bundi (RJ)	20.8	2.7	3.8	21.4	2.8	3.9	18.5	2.2	3.5
Bhilwara (RJ)	21.6	2.8	3.8	22.3	2.9	4.0	19.2	2.3	3.3
Rajsamand (RJ)	22.0	2.9	4.0	22.6	3.0	4.2	18.4	2.2	3.3
Dungarpur (RJ)	24.8	3.3	5.0	25.3	3.4	5.1	18.2	2.1	3.3
Banswara (RJ)	25.7	3.5	5.1	26.3	3.6	5.3	18.0	2.1	3.0

Chittaurgarh (RJ)	19.9	2.5	3.4	20.3	2.6	3.5	18.1	2.1	3.2
Kota (RJ)	18.8	2.3	3.5	20.2	2.6	3.9	17.8	2.1	3.3
Baran (RJ)	21.5	2.8	4.1	22.0	3.0	4.3	19.4	2.4	3.7
Jhalawar (RJ)	21.4	2.8	3.9	21.7	2.9	3.9	19.4	2.4	3.6
Udaipur (RJ)	23.6	3.1	4.5	25.4	3.5	4.9	16.1	1.9	2.9
Pratapgarh (RJ)	24.7	3.3	4.7	25.3	3.4	4.9	17.7	2.1	3.2
UTTAR PRADESH (UP)	***22.7***	***3.1***	***4.9***	***23.8***	***3.4***	***5.2***	***19.1***	***2.4***	***4.1***
Saharanpur (UP)	21.8	2.9	4.9	22.7	3.1	5.2	19.8	2.5	4.4
Muzaffarnagar (UP)	22.7	3.1	5.1	23.3	3.3	5.3	21.4	2.8	4.7
Bijnor (UP)	22.5	3.0	5.2	22.8	3.1	5.3	21.5	2.8	5.2

Appendix Table 1: Indirect estimates of CBR,TFR & TMFR -Total, Rural and Urban areas-India/States/UTs/Districts-2007

	TOTAL - 2007			RURAL - 2007			URBAN - 2007		
India/States/Uts/Districts	CBR	TFR	TMFR	CBR	TFR	TMFR	CBR	TFR	TMFR
Moradabad (UP)	24.1	3.4	5.8	25.7	3.8	6.2	20.8	2.7	4.8
Rampur (UP)	24.0	3.4	5.8	25.2	3.7	6.1	20.4	2.6	4.9
Jyotiba Phule Nagar (UP)	23.9	3.3	5.4	24.5	3.5	5.5	22.0	2.8	5.0
Meerut (UP)	21.0	2.8	4.5	22.6	3.1	5.1	19.5	2.4	4.1
Baghpat (UP)	21.7	3.0	4.8	21.7	3.1	4.9	21.5	2.8	4.6
Ghaziabad (UP)	20.9	2.7	4.4	23.3	3.3	5.3	19.8	2.5	3.9
Gautam Buddha Nagar (UP)	21.4	2.9	4.3	23.0	3.3	4.9	20.3	2.6	3.9
Bulandshahr (UP)	22.6	3.1	5.0	23.0	3.2	5.1	21.2	2.7	4.6
Aligarh (UP)	22.8	3.2	5.0	23.8	3.5	5.3	20.7	2.7	4.5
Mahamaya Nagar (UP)	23.0	3.3	5.1	23.5	3.4	5.2	21.0	2.8	4.5
Mathura (UP)	23.0	3.4	5.1	24.2	3.7	5.5	20.0	2.7	4.2
Agra (UP)	22.3	3.0	4.8	24.8	3.6	5.4	19.3	2.4	4.0
Firozabad (UP)	22.6	3.2	5.0	23.5	3.4	5.3	21.0	2.8	4.6
Mainpuri (UP)	22.5	3.2	5.1	22.9	3.3	5.2	20.1	2.5	4.3
Budaun (UP)	26.1	4.0	6.2	26.9	4.3	6.4	22.7	3.1	5.3
Bareilly (UP)	23.2	3.3	5.4	25.2	3.8	6.0	19.6	2.6	4.5
Pilibhit (UP)	22.4	3.1	5.1	23.2	3.3	5.2	19.0	2.4	4.3
Shahjahanpur (UP)	24.6	3.6	5.6	25.8	4.0	5.9	19.5	2.5	4.4
Kheri (UP)	24.3	3.5	5.4	24.9	3.7	5.5	19.7	2.5	4.2
Sitapur (UP)	24.4	3.6	5.5	24.9	3.8	5.6	20.3	2.6	4.6
Hardoi (UP)	23.5	3.5	5.4	24.1	3.7	5.5	20.0	2.6	4.4
Unnao (UP)	20.9	2.9	4.7	21.4	3.1	4.9	18.3	2.3	3.9
Lucknow (UP)	17.7	2.2	3.7	21.5	3.0	4.9	15.7	1.8	3.2
Rae Bareli (UP)	21.2	2.8	4.6	21.7	2.9	4.7	17.0	2.0	3.5
Farrukhabad (UP)	23.3	3.3	5.3	24.5	3.6	5.6	19.3	2.4	4.2
Kannauj (UP)	22.9	3.3	5.4	23.2	3.4	5.5	21.3	2.8	4.9
Etawah (UP)	21.0	2.9	4.5	21.9	3.1	4.8	18.0	2.2	3.7
Auraiya (UP)	21.4	3.0	4.7	21.9	3.1	4.9	19.2	2.4	4.0
Kanpur Dehat (UP)	20.5	2.9	4.6	20.7	2.9	4.7	19.2	2.5	4.1
Kanpur Nagar (UP)	16.7	2.1	3.5	20.2	2.8	4.6	14.9	1.8	3.1
Jalaun (UP)	20.0	2.7	4.1	20.6	2.9	4.2	18.2	2.3	3.7
Jhansi (UP)	18.9	2.4	3.6	20.3	2.7	3.8	17.0	2.1	3.3
Lalitpur (UP)	24.9	3.6	4.9	25.8	3.8	5.1	19.2	2.4	3.7
Hamirpur (UP)	20.8	3.0	4.5	21.3	3.1	4.6	18.8	2.4	3.9
Mahoba (UP)	21.8	3.2	4.7	22.3	3.3	4.8	19.8	2.7	4.2
Banda (UP)	24.0	3.6	5.3	24.8	3.9	5.6	19.4	2.5	4.1
Chitrakoot (UP)	25.7	3.9	5.7	26.2	4.1	5.9	20.5	2.7	4.4
Fatehpur (UP)	22.1	3.1	4.9	22.5	3.2	5.1	18.8	2.3	4.0
Pratapgarh (UP)	21.6	2.8	4.4	21.8	2.8	4.5	18.6	2.3	3.9
Kaushambi (UP)	25.1	3.8	5.9	25.4	3.8	6.0	22.0	3.0	5.0
Allahabad (UP)	22.1	3.0	4.8	24.0	3.4	5.2	16.4	2.0	3.5
Bara Banki (UP)	23.5	3.4	5.4	23.8	3.5	5.5	20.3	2.7	4.7
Faizabad (UP)	21.8	2.9	4.6	22.6	3.0	4.8	16.9	2.1	3.8
Ambedkar Nagar (UP)	21.5	2.8	4.7	21.7	2.9	4.7	20.1	2.6	4.7
Sultanpur (UP)	22.3	3.0	4.6	22.5	3.0	4.6	18.3	2.2	3.8
Bahraich (UP)	27.1	4.1	5.9	27.7	4.2	6.0	21.0	2.7	4.7
Shrawasti (UP)	27.3	4.1	5.5	27.4	4.1	5.6	22.5	3.0	4.9
Balrampur (UP)	27.1	4.0	5.9	27.5	4.1	6.0	21.5	2.8	4.9
Gonda (UP)	24.8	3.5	5.2	25.2	3.6	5.3	19.1	2.4	4.1
Siddharthnagar (UP)	27.5	4.0	5.9	27.8	4.0	6.0	23.4	3.1	5.2
Basti (UP)	23.7	3.2	5.1	24.1	3.3	5.1	17.8	2.2	3.7
Sant Kabir Nagar (UP)	24.6	3.4	5.4	24.8	3.5	5.4	21.9	2.9	4.8
Mahrajganj (UP)	23.8	3.3	4.8	24.0	3.4	4.9	19.7	2.5	4.1
Gorakhpur (UP)	21.3	2.8	4.4	22.4	3.0	4.6	16.5	2.0	3.4
Kushinagar (UP)	23.9	3.3	5.1	24.1	3.4	5.1	20.2	2.7	4.4
Deoria (UP)	22.6	2.9	4.6	23.0	3.0	4.7	19.6	2.5	4.1
Azamgarh (UP)	23.1	3.0	4.8	23.2	3.0	4.8	21.6	2.8	5.0

Mau (UP)	23.4	3.2	5.2	23.4	3.2	5.0	23.3	3.1	5.7
Ballia (UP)	22.1	3.0	4.7	22.3	3.1	4.7	19.8	2.6	4.2
Jaunpur (UP)	22.7	3.0	4.6	22.9	3.0	4.6	20.3	2.5	4.4
Ghazipur (UP)	23.1	3.2	4.9	23.3	3.3	5.0	20.7	2.7	4.6
Chandauli (UP)	23.4	3.3	4.8	23.8	3.4	4.8	20.5	2.6	4.4
Varanasi (UP)	20.3	2.7	4.2	22.1	3.0	4.5	17.9	2.2	3.8
Sant Rvidas Nagar (Bhadohi) (UP)	24.0	3.2	4.8	24.3	3.3	4.8	22.4	3.0	4.9
Mirzapur (UP)	23.8	3.4	5.0	24.5	3.5	5.1	19.8	2.6	4.2
Sonbhadra (UP)	25.2	3.6	5.1	26.6	3.9	5.5	18.3	2.2	3.5
Etah (UP)	23.6	3.4	5.3	24.1	3.5	5.4	20.5	2.6	4.4
Kanshiram Nagar (UP)	24.9	3.7	5.7	25.7	3.9	5.9	21.9	2.9	5.0
BIHAR (BR)	***26.7***	***4.0***	***5.6***	***27.3***	***4.1***	***5.7***	***21.9***	***2.9***	***4.6***
Pashchim Champaran (BR)	28.6	4.4	6.1	29.1	4.5	6.2	23.9	3.3	5.1
Purba Champaran (BR)	28.9	4.5	6.1	29.2	4.6	6.2	25.0	3.6	5.3

Appendix Table 1: Indirect estimates of CBR,TFR &TMFR -Total, Rural and Urban areas-India/States/UTs/Districts-2007

	TOTAL - 2007			RURAL - 2007			URBAN - 2007		
India/States/Uts/Districts	CBR	TFR	TMFR	CBR	TFR	TMFR	CBR	TFR	TMFR
Sheohar (BR)	28.1	4.5	6.1	28.1	4.5	6.1	27.8	4.3	6.0
Sitamarhi (BR)	27.9	4.3	6.0	28.2	4.4	6.0	23.4	3.3	4.9
Madhubani (BR)	26.6	3.9	5.4	26.7	4.0	5.4	23.3	3.2	4.8
Supaul (BR)	28.7	4.3	5.8	28.9	4.4	5.8	24.4	3.5	5.0
Araria (BR)	29.6	4.5	6.3	30.0	4.6	6.3	24.3	3.4	5.1
Kishanganj (BR)	29.3	4.4	6.8	29.9	4.5	7.0	24.1	3.3	5.2
Purnia (BR)	28.8	4.4	6.3	29.6	4.6	6.5	22.6	3.1	4.8
Katihar (BR)	28.9	4.4	6.3	29.6	4.5	6.5	21.5	2.8	4.5
Madhepura (BR)	29.3	4.5	6.0	29.5	4.5	6.0	23.7	3.2	4.8
Saharsa (BR)	29.3	4.5	6.0	29.7	4.6	6.1	23.8	3.3	4.8
Darbhanga (BR)	26.7	4.0	5.6	27.2	4.1	5.7	21.8	2.9	4.5
Muzaffarpur (BR)	25.5	3.8	5.4	26.1	3.9	5.5	19.7	2.5	4.0
Gopalganj (BR)	25.9	3.6	5.3	26.1	3.6	5.4	23.7	3.2	5.0
Siwan (BR)	24.6	3.4	5.3	24.8	3.5	5.3	20.8	2.7	4.6
Saran (BR)	25.3	3.7	5.5	25.6	3.7	5.5	22.4	3.1	4.8
Vaishali (BR)	24.8	3.8	5.2	25.0	3.8	5.3	22.2	3.1	4.7
Samastipur (BR)	27.1	4.1	5.6	27.3	4.2	5.7	21.0	2.8	4.3
Begusarai (BR)	26.8	4.1	5.6	27.4	4.2	5.7	24.6	3.5	5.1
Khagaria (BR)	29.2	4.6	6.2	29.5	4.7	6.3	23.6	3.3	5.1
Bhagalpur (BR)	26.1	3.9	5.7	27.2	4.2	5.9	21.6	2.9	4.7
Banka (BR)	26.7	4.0	5.4	26.8	4.0	5.4	23.5	3.3	4.9
Munger (BR)	24.4	3.5	5.1	25.9	3.9	5.5	20.4	2.7	4.3
Lakhisarai (BR)	27.2	4.1	5.6	27.6	4.2	5.7	24.4	3.4	5.1
Sheikhpura (BR)	27.6	4.1	5.8	28.2	4.3	5.8	25.2	3.6	5.3
Nalanda (BR)	26.3	3.9	5.4	26.8	4.0	5.5	23.3	3.2	5.0
Patna (BR)	23.5	3.3	4.9	26.7	4.0	5.6	19.4	2.5	4.0
Bhojpur (BR)	24.7	3.6	5.2	25.3	3.7	5.2	21.6	2.9	4.7
Buxar (BR)	25.2	3.7	5.3	25.6	3.8	5.4	21.5	2.9	4.6
Kaimur (Bhabua) (BR)	26.8	4.0	5.6	27.0	4.1	5.7	22.2	3.1	4.7
Rohtas (BR)	25.2	3.6	5.2	25.7	3.8	5.3	21.9	3.0	4.8
Aurangabad (BR)	26.1	3.8	5.4	26.4	3.9	5.5	23.1	3.1	5.0
Gaya (BR)	26.0	3.8	5.4	26.8	4.0	5.5	20.3	2.7	4.4
Nawada (BR)	26.3	3.8	5.3	26.7	3.9	5.3	23.0	3.1	4.9
Jamui (BR)	26.6	3.9	5.2	26.9	3.9	5.3	23.4	3.2	4.8
Jehanabad (BR)	25.9	3.8	5.3	26.3	3.9	5.3	22.7	3.1	4.7
Arwal (BR)	26.3	3.9	5.4	26.4	3.9	5.4	25.4	3.7	5.4
SIKKIM (SK)	16.2	1.9	3.4	16.7	2.1	3.6	14.6	1.6	2.8
North District (SK)	16.6	2.2	3.9	16.2	2.2	3.8	19.9	2.4	4.4
West District (SK)	18.0	2.2	3.8	18.1	2.2	3.8	15.9	1.8	3.3
South District (SK)	16.8	2.0	3.5	17.2	2.1	3.6	14.8	1.6	2.8
East District (SK)	15.0	1.7	3.1	15.5	1.9	3.3	14.4	1.6	2.8
ARUNACHAL PRADESH (AR)	***22.7***	***2.9***	***5.0***	***23.8***	***3.1***	***5.3***	***18.9***	***2.2***	***3.9***
Tawang (AR)	17.3	2.5	4.9	19.7	2.7	5.3	9.0	1.9	3.3
West Kameng (AR)	20.2	2.7	4.4	20.9	2.9	4.6	17.5	2.0	3.5
East Kameng (AR)	27.9	3.7	6.0	28.1	3.7	6.0	27.1	3.6	6.1
Papum Pare (AR)	21.1	2.4	4.3	23.4	2.9	5.0	19.3	2.1	3.8
Upper Subansiri (AR)	22.8	2.7	4.9	23.2	2.8	5.0	20.6	2.5	4.5
West Siang (AR)	20.1	2.5	4.4	20.9	2.7	4.7	17.5	2.1	3.6
East Siang (AR)	19.4	2.3	4.2	20.0	2.4	4.5	17.9	2.0	3.5
Upper Siang (AR)	20.9	2.9	4.9	20.9	3.0	5.1	20.9	2.5	4.3
Changlang (AR)	24.9	3.3	5.4	26.0	3.5	5.7	17.4	2.1	3.5
Tirap (AR)	26.2	3.6	6.1	27.7	4.0	6.6	19.5	2.4	4.2

Lower Subansiri (AR)	19.2	2.2	4.4	19.5	2.2	4.5	17.2	1.8	3.7
Kurung Kumey (AR)	27.7	3.5	6.0	27.7	3.5	6.0	28.3	3.9	6.7
Dibang Valley (AR)	20.0	2.6	4.9	20.6	2.8	5.1	18.8	2.4	4.6
Lower Dibang Valley (AR)	22.0	2.7	4.7	23.5	3.0	5.0	16.3	1.9	3.5
Lohit (AR)	23.8	3.1	5.0	25.1	3.4	5.4	19.5	2.3	4.0
Anjaw (AR)	24.0	3.6	5.9	24.6	3.6	5.9	11.3	2.1	4.5
NAGALAND (NL)	***21.8***	***2.7***	***5.6***	***22.8***	***2.9***	***5.9***	***19.2***	***2.2***	***4.7***
Mon (NL)	23.8	3.2	6.4	24.0	3.2	6.5	22.4	2.8	5.7
Mokokchung (NL)	16.3	1.9	4.2	16.5	2.0	4.3	15.5	1.9	3.9
Zunheboto (NL)	21.5	2.7	5.7	21.9	2.7	5.7	20.1	2.5	5.8
Wokha (NL)	18.3	2.1	4.7	18.9	2.2	4.8	16.1	1.8	4.2
Dimapur (NL)	19.8	2.3	4.5	21.4	2.6	5.1	18.4	2.1	4.0
Phek (NL)	24.8	3.2	6.5	25.5	3.3	6.6	20.9	2.7	5.5
Tuensang (NL)	26.6	3.6	7.2	27.5	3.8	7.4	23.0	2.9	6.2
Longleng (NL)	25.6	3.4	6.3	25.9	3.5	6.3	23.8	3.1	5.9
Kiphire (NL)	28.6	3.9	7.0	29.1	4.0	6.9	26.5	3.5	7.1
Kohima (NL)	20.1	2.4	5.5	21.4	2.7	6.1	18.5	2.1	4.8
Peren (NL)	23.8	3.1	6.1	23.7	3.1	6.1	24.2	3.0	6.1
MANIPUR (MN)	***19.2***	***2.3***	***4.3***	***19.9***	***2.4***	***4.6***	***17.5***	***2.0***	***3.7***
Senapati (MN)	20.0	2.4	5.3	20.0	2.4	5.3	19.7	2.2	4.5

Appendix Table 1: Indirect estimates of CBR,TFR &TMFR -Total, Rural and Urban areas-India/States/UTs/Districts-2007

	TOTAL - 2007			RURAL - 2007			URBAN - 2007		
India/States/Uts/Districts	CBR	TFR	TMFR	CBR	TFR	TMFR	CBR	TFR	TMFR
Tamenglong (MN)	20.2	2.4	5.1	20.1	2.4	5.1	20.8	2.5	5.0
Churachandpur (MN)	19.7	2.3	4.6	19.9	2.4	4.7	16.8	1.9	3.8
Bishnupur (MN)	19.1	2.3	4.0	19.5	2.3	4.1	18.5	2.2	3.9
Thoubal (MN)	20.9	2.5	4.4	21.6	2.6	4.5	19.7	2.3	4.1
Imphal West (MN)	17.1	1.9	3.5	18.7	2.2	3.8	16.1	1.8	3.4
Imphal East (MN)	18.9	2.2	4.0	20.3	2.4	4.3	16.8	1.8	3.5
Ukhrul (MN)	19.7	2.4	5.3	19.8	2.5	5.3	19.0	2.3	5.1
Chandel (MN)	17.7	2.0	4.0	17.1	1.9	3.9	21.6	2.7	5.1
MIZORAM (MZ)	***21.8***	***2.6***	***5.1***	***25.1***	***3.3***	***5.8***	***18.7***	***2.1***	***4.5***
Mamit (MZ)	25.0	3.3	5.8	25.7	3.4	5.9	21.8	2.7	5.2
Kolasib (MZ)	22.6	2.8	5.4	25.1	3.3	5.9	20.7	2.5	5.0
Aizawl (MZ)	18.6	2.1	4.4	21.9	2.8	5.3	17.7	1.9	4.2
Champhai (MZ)	23.3	2.9	5.6	24.4	3.2	5.8	21.6	2.6	5.2
Serchhip (MZ)	20.6	2.5	5.2	22.4	2.8	5.7	18.8	2.2	4.7
Lunglei (MZ)	22.3	2.8	5.2	25.7	3.4	5.9	17.8	2.1	4.3
Lawngtlai (MZ)	26.8	3.5	5.9	28.0	3.8	6.0	20.9	2.5	5.1
Saiha (MZ)	23.9	3.0	5.7	26.0	3.5	6.0	21.3	2.5	5.3
TRIPURA (TR)	***18.0***	***2.1***	***3.3***	***19.3***	***2.3***	***3.6***	***14.1***	***1.5***	***2.4***
West Tripura (TR)	16.0	1.8	2.8	17.4	2.0	3.2	13.8	1.5	2.4
South Tripura (TR)	18.5	2.2	3.3	19.3	2.3	3.5	14.0	1.5	2.3
Dhalai (TR)	21.4	2.7	4.2	22.0	2.8	4.3	16.2	1.8	2.9
North Tripura (TR)	20.3	2.4	4.1	21.3	2.6	4.3	15.3	1.7	2.9
MEGHALAYA (ML)	***26.8***	***3.5***	***6.5***	***28.8***	***4.0***	***7.0***	***18.8***	***2.1***	***4.6***
West Garo Hills (ML)	24.9	3.2	5.5	25.9	3.4	5.7	17.3	1.9	3.9
East Garo Hills (ML)	25.9	3.3	5.8	26.8	3.5	5.9	20.5	2.4	4.9
South Garo Hills (ML)	27.1	3.7	6.4	27.4	3.8	6.4	23.6	3.0	5.7
West Khasi Hills (ML)	31.3	4.6	8.3	31.6	4.7	8.3	29.1	3.9	8.1
Ribhoi (ML)	28.6	4.0	7.1	29.2	4.0	7.2	23.3	3.2	6.3
East Khasi Hills (ML)	23.6	2.9	6.0	28.8	3.9	7.7	17.2	1.9	4.1
Jaintia Hills (ML)	31.6	4.5	8.3	32.5	4.7	8.5	19.7	2.2	5.0
ASSAM (AS)	***21.7***	***2.7***	***4.3***	***22.7***	***2.9***	***4.6***	***15.1***	***1.7***	***2.8***
Kokrajhar (AS)	22.4	2.8	4.4	22.9	2.9	4.5	14.7	1.6	2.7
Dhubri (AS)	26.9	3.7	5.3	28.1	3.9	5.6	16.5	1.9	3.2
Goalpara (AS)	24.4	3.1	4.8	25.0	3.3	5.0	20.4	2.4	3.9
Barpeta (AS)	24.7	3.3	4.8	25.6	3.5	5.0	14.6	1.6	2.8
Morigaon (AS)	24.9	3.3	5.0	25.5	3.4	5.2	17.4	2.0	3.2
Nagaon (AS)	23.7	3.1	4.8	24.9	3.3	5.1	15.7	1.8	3.0
Sonitpur (AS)	21.2	2.6	4.2	21.8	2.7	4.4	14.4	1.6	2.7
Lakhimpur (AS)	21.9	2.7	4.3	22.4	2.8	4.5	17.0	1.9	3.1
Dhemaji (AS)	22.3	2.8	4.4	22.6	2.9	4.5	18.0	2.1	3.4
Tinsukia (AS)	20.2	2.4	4.0	21.5	2.6	4.4	14.9	1.7	2.8
Dibrugarh (AS)	18.2	2.1	3.5	19.1	2.2	3.8	13.9	1.5	2.6
Sivasagar (AS)	18.0	2.1	3.4	18.3	2.1	3.5	14.9	1.7	2.7
Jorhat (AS)	16.9	1.9	3.2	17.5	2.0	3.4	14.2	1.6	2.6
Golaghat (AS)	18.7	2.2	3.6	19.1	2.3	3.7	14.6	1.6	2.7
Karbi Anglong (AS)	23.1	2.9	4.9	23.8	3.0	5.1	17.4	1.9	3.5
Dima Hasao (AS)	21.8	2.7	4.9	23.7	3.0	5.5	17.3	2.0	3.6

Cachar (AS)	21.3	2.6	4.5	22.5	2.8	4.9	15.9	1.8	3.1
Karimganj (AS)	24.6	3.2	5.5	25.5	3.4	5.8	15.6	1.7	3.2
Hailakandi (AS)	24.4	3.2	5.5	25.1	3.3	5.7	14.5	1.6	2.9
Bongaigaon (AS)	22.8	2.9	4.4	24.2	3.1	4.7	14.9	1.6	2.7
Chirang (AS)	22.4	2.8	4.4	22.8	2.8	4.5	17.1	2.0	3.2
Kamrup (AS)	19.5	2.4	3.8	20.0	2.5	3.9	14.0	1.5	2.7
Kamrup Metropolitan (AS)	14.7	1.6	2.7	18.6	2.2	3.6	13.9	1.5	2.5
Nalbari (AS)	18.2	2.2	3.6	18.7	2.3	3.7	13.8	1.5	2.6
Baksa (AS)	19.3	2.3	3.7	19.3	2.3	3.7	18.2	2.2	3.4
Darrang (AS)	24.6	3.2	4.9	25.2	3.4	5.0	15.1	1.7	2.8
Udalguri (AS)	20.2	2.4	4.0	20.5	2.5	4.1	14.6	1.6	2.7
WEST BENGAL (WB)	***17.1***	***2.0***	***3.0***	***18.5***	***2.2***	***3.3***	***14.1***	***1.6***	***2.5***
Darjiling (WB)	15.9	1.8	3.0	17.0	1.9	3.3	14.1	1.5	2.6
Jalpaiguri (WB)	17.6	2.0	3.3	18.3	2.1	3.5	15.5	1.8	2.8
Koch Bihar (WB)	17.9	2.2	3.2	18.5	2.2	3.3	13.0	1.4	2.3
Uttar Dinajpur (WB)	23.9	3.2	4.9	24.7	3.4	5.2	18.1	2.2	3.5
Dakshin Dinajpur (WB)	17.0	2.0	3.0	17.8	2.1	3.1	12.4	1.4	2.1
Maldah (WB)	22.3	2.9	4.3	22.7	3.0	4.4	20.0	2.5	3.8
Murshidabad (WB)	20.9	2.6	3.8	20.9	2.6	3.8	20.9	2.6	4.1
Birbhum (WB)	18.6	2.2	3.2	19.1	2.3	3.3	15.5	1.7	2.7
Barddhaman (WB)	15.8	1.8	2.7	16.2	1.9	2.7	15.3	1.7	2.7
Nadia (WB)	15.2	1.8	2.6	16.2	1.9	2.8	12.4	1.4	2.1
North 24 Parganas (WB)	14.3	1.6	2.5	17.0	2.0	2.9	12.3	1.4	2.1
Hugli (WB)	14.2	1.6	2.4	15.1	1.7	2.5	12.9	1.5	2.3
Bankura (WB)	17.0	2.1	3.0	17.3	2.1	3.0	13.3	1.5	2.3

Appendix Table 1: Indirect estimates of CBR,TFR &TMFR -Total, Rural and Urban areas-India/States/UTs/Districts-2007

	TOTAL - 2007			RURAL - 2007			URBAN - 2007		
India/States/Uts/Districts	CBR	TFR	TMFR	CBR	TFR	TMFR	CBR	TFR	TMFR
Puruliya (WB)	20.2	2.6	3.8	20.6	2.7	3.9	17.6	2.1	3.3
Haora (WB)	15.7	1.8	2.8	16.8	2.0	2.9	15.1	1.7	2.7
Kolkata (WB)	11.4	1.3	2.2	NA	NA	NA	11.4	1.3	2.2
South 24 Parganas (WB)	18.5	2.2	3.2	19.5	2.4	3.4	15.4	1.7	2.6
Paschim Medinipur (WB)	17.0	2.0	2.9	17.4	2.1	3.0	13.9	1.5	2.5
Purba Medinipur (WB)	17.0	2.0	2.9	17.1	2.0	2.9	15.8	1.8	2.8
JHARKHAND (JH)	***23.6***	***3.2***	***4.8***	***25.1***	***3.5***	***5.1***	***18.9***	***2.3***	***3.8***
Garhwa (JH)	26.3	4.0	5.5	26.6	4.0	5.6	21.8	3.0	4.5
Chatra (JH)	27.2	3.9	5.5	27.5	4.0	5.6	21.9	3.0	4.8
Kodarma (JH)	26.3	3.7	5.2	27.2	3.9	5.3	22.8	3.1	4.5
Giridih (JH)	26.9	3.9	5.2	27.3	4.0	5.3	22.0	2.8	4.5
Deoghar (JH)	25.5	3.6	4.9	26.7	3.9	5.2	19.7	2.5	3.9
Godda (JH)	26.2	3.8	5.3	26.5	3.8	5.3	21.3	2.8	4.2
Sahibganj (JH)	27.5	3.9	5.7	28.3	4.1	5.8	22.6	3.1	4.8
Pakur (JH)	27.9	3.8	5.6	28.2	3.9	5.7	24.0	3.2	5.1
Dhanbad (JH)	20.4	2.7	4.2	22.3	3.0	4.5	19.1	2.4	4.0
Bokaro (JH)	20.9	2.7	4.1	22.9	3.1	4.5	18.6	2.3	3.7
Lohardaga (JH)	24.8	3.4	5.5	25.5	3.6	5.7	20.1	2.5	4.4
Purbi Singhbhum (JH)	18.7	2.2	3.6	20.7	2.6	4.1	17.0	2.0	3.3
Palamu (JH)	24.9	3.6	5.2	25.5	3.8	5.3	20.5	2.7	4.3
Latehar (JH)	27.2	3.9	6.0	27.6	4.0	6.1	21.8	2.9	4.7
Hazaribagh (JH)	23.7	3.2	4.7	24.6	3.4	4.9	18.9	2.3	3.9
Ramgarh (JH)	20.8	2.7	4.2	22.0	2.9	4.4	19.2	2.4	3.9
Dumka (JH)	23.7	3.2	4.6	24.1	3.2	4.6	18.8	2.4	3.7
Jamtara (JH)	23.7	3.2	4.6	24.2	3.3	4.7	18.8	2.4	3.7
Ranchi (JH)	20.2	2.6	4.2	22.3	3.0	4.8	17.5	2.1	3.6
Khunti (JH)	23.3	3.1	5.1	23.8	3.2	5.2	19.0	2.3	4.0
Gumla (JH)	24.7	3.4	5.7	25.0	3.5	5.7	19.6	2.4	4.4
Simdega (JH)	22.6	3.0	5.2	22.8	3.1	5.3	19.0	2.3	4.4
Pashchimi Singhbhum (JH)	24.9	3.2	5.6	26.1	3.5	5.9	18.4	2.2	3.9
Saraikela-Kharsawan (JH)	21.6	2.8	4.5	21.9	2.9	4.7	20.7	2.5	4.0
ODISHA (Orissa) (OR)	***18.4***	***2.2***	***3.6***	***19.0***	***2.3***	***3.7***	***15.7***	***1.8***	***2.9***
Bargarh (OR)	15.6	1.8	3.0	15.6	1.8	3.0	16.0	1.8	3.0
Jharsuguda (OR)	16.1	1.9	3.2	15.5	1.8	3.2	17.1	2.0	3.3
Sambalpur (OR)	16.4	1.9	3.3	16.7	2.0	3.4	15.7	1.7	2.9
Debagarh (OR)	18.4	2.2	3.6	18.5	2.3	3.7	17.0	2.0	3.4
Sundargarh (OR)	18.5	2.2	3.7	19.8	2.4	4.1	16.2	1.8	3.1
Kendujhar (OR)	20.8	2.6	4.1	21.1	2.6	4.2	19.2	2.3	3.8
Mayurbhanj (OR)	20.7	2.6	4.1	21.1	2.7	4.2	15.0	1.7	2.8
Baleshwar (OR)	18.3	2.2	3.4	18.6	2.3	3.5	16.2	1.8	2.9
Bhadrak (OR)	17.8	2.1	3.5	17.7	2.1	3.5	18.0	2.1	3.6
Kendrapara (OR)	16.4	1.9	3.2	16.4	2.0	3.2	16.0	1.9	3.2

Jagatsinghapur (OR)	14.3	1.7	2.7	14.2	1.7	2.7	15.3	1.7	2.8
Cuttack (OR)	15.1	1.8	2.9	15.6	1.9	3.0	13.8	1.5	2.6
Jajapur (OR)	17.1	2.0	3.4	17.1	2.0	3.4	17.5	2.0	3.3
Dhenkanal (OR)	17.0	2.0	3.2	17.2	2.1	3.3	14.8	1.7	2.8
Anugul (OR)	17.5	2.1	3.3	17.8	2.2	3.4	15.5	1.7	2.8
Nayagarh (OR)	16.4	2.1	3.0	16.5	2.1	3.0	14.9	1.8	2.7
Khordha (OR)	15.6	1.8	2.9	16.5	2.0	3.1	14.6	1.6	2.6
Puri (OR)	15.2	1.8	2.9	15.3	1.8	3.0	14.3	1.6	2.7
Ganjam (OR)	17.8	2.2	3.4	18.6	2.3	3.6	14.9	1.7	2.9
Gajapati (OR)	22.6	2.8	4.6	23.5	3.0	4.8	15.6	1.8	3.0
Kandhamal (OR)	22.6	2.9	4.8	23.2	3.0	4.9	16.8	1.9	3.3
Baudh (OR)	20.3	2.6	4.1	20.5	2.6	4.1	15.5	1.8	3.1
Subarnapur (OR)	17.5	2.2	3.6	17.6	2.2	3.7	15.9	1.9	3.1
Balangir (OR)	18.7	2.4	3.8	19.1	2.4	3.9	15.9	1.8	3.0
Nuapada (OR)	20.9	2.7	4.1	21.0	2.7	4.2	18.2	2.1	3.5
Kalahandi (OR)	20.5	2.6	4.0	20.9	2.7	4.0	16.8	1.9	3.2
Rayagada (OR)	23.3	2.9	4.7	24.5	3.1	5.1	16.3	1.8	3.0
Nabarangapur (OR)	24.8	3.3	4.8	25.3	3.4	4.9	18.4	2.2	3.6
Koraput (OR)	23.9	3.1	4.7	25.3	3.3	5.0	17.1	1.9	3.2
Malkangiri (OR)	26.0	3.5	5.3	26.5	3.6	5.4	20.1	2.5	4.1
CHHATTISGARH (CT)	***20.7***	***2.6***	***4.1***	***21.6***	***2.7***	***4.3***	***17.9***	***2.1***	***3.5***
Koriya (CT)	20.8	2.6	4.0	22.8	2.9	4.4	16.6	1.9	3.2
Surguja (CT)	23.2	3.1	4.6	23.8	3.2	4.7	18.5	2.2	3.6
Jashpur (CT)	20.5	2.6	4.1	20.6	2.6	4.2	18.7	2.2	3.9
Raigarh (CT)	18.9	2.3	3.6	19.1	2.4	3.7	18.0	2.1	3.5
Korba (CT)	20.4	2.5	4.0	21.7	2.8	4.3	18.1	2.1	3.4
Janjgir - Champa (CT)	20.2	2.6	4.3	20.4	2.7	4.3	18.7	2.2	3.8
Bilaspur (CT)	22.1	2.9	4.5	23.5	3.1	4.8	18.2	2.1	3.6
Kabeerdham (CT)	24.7	3.3	4.8	25.1	3.3	4.8	21.1	2.6	4.1
Rajnandgaon (CT)	19.9	2.4	3.9	20.5	2.5	4.0	17.0	2.0	3.4

Appendix Table 1: Indirect estimates of CBR,TFR &TMFR -Total, Rural and Urban areas-India/States/UTs/Districts-2007

	TOTAL - 2007			RURAL - 2007			URBAN - 2007		
India/States/Uts/Districts	CBR	TFR	TMFR	CBR	TFR	TMFR	CBR	TFR	TMFR
Durg (CT)	18.7	2.2	3.6	19.9	2.5	3.8	16.7	1.9	3.1
Raipur (CT)	20.5	2.5	4.0	21.4	2.7	4.3	18.9	2.2	3.6
Mahasamund (CT)	18.7	2.3	3.6	18.7	2.3	3.6	18.1	2.1	3.6
Dhamtari (CT)	18.5	2.2	3.6	18.8	2.3	3.6	17.0	1.9	3.3
Uttar Bastar Kanker (CT)	19.6	2.4	4.0	20.0	2.4	4.0	16.6	1.8	3.3
Bastar (CT)	22.3	2.7	4.5	23.2	2.9	4.7	16.8	1.9	3.4
Narayanpur (CT)	25.6	3.3	5.8	27.0	3.6	6.1	17.9	2.1	4.0
Dakshin Bastar Dantewada (CT)	23.1	2.8	4.8	23.9	2.9	5.0	19.8	2.4	4.0
Bijapur (CT)	26.3	3.3	5.6	26.8	3.4	5.7	21.9	2.7	4.8
MADHYA PRADESH (MP)	***21.7***	***2.9***	***4.3***	***23.0***	***3.1***	***4.6***	***18.1***	***2.2***	***3.5***
Sheopur (MP)	24.3	3.4	4.8	25.0	3.5	4.9	21.0	2.7	4.3
Morena (MP)	22.3	3.1	4.5	22.9	3.3	4.7	20.3	2.6	4.0
Bhind (MP)	21.0	2.9	4.3	21.4	3.1	4.4	19.8	2.6	3.9
Gwalior (MP)	18.9	2.4	3.7	22.3	3.1	4.6	16.8	2.0	3.3
Datia (MP)	20.5	2.8	4.0	21.0	2.9	4.1	18.9	2.4	3.8
Shivpuri (MP)	24.1	3.5	4.9	25.0	3.7	5.1	19.9	2.5	4.0
Tikamgarh (MP)	23.0	3.2	4.4	23.6	3.3	4.5	20.2	2.6	4.0
Chhatarpur (MP)	23.4	3.4	4.9	24.5	3.7	5.2	19.8	2.6	4.1
Panna (MP)	23.5	3.4	5.0	24.2	3.5	5.1	19.0	2.4	4.0
Sagar (MP)	21.7	3.0	4.5	23.1	3.3	4.8	18.6	2.3	3.9
Damoh (MP)	22.1	3.0	4.4	23.0	3.2	4.5	18.4	2.3	3.8
Satna (MP)	21.9	2.9	4.4	22.8	3.1	4.6	18.7	2.3	3.7
Rewa (MP)	21.8	2.9	4.4	22.5	3.1	4.6	18.2	2.2	3.6
Umaria (MP)	23.2	3.0	4.5	24.2	3.2	4.7	18.1	2.1	3.5
Neemuch (MP)	19.3	2.4	3.5	20.0	2.5	3.5	17.6	2.1	3.3
Mandsaur (MP)	19.7	2.5	3.5	20.3	2.6	3.6	17.5	2.1	3.2
Ratlam (MP)	21.8	2.8	4.1	23.7	3.2	4.5	17.5	2.1	3.3
Ujjain (MP)	20.0	2.5	3.7	21.7	2.9	4.0	17.2	2.1	3.2
Shajapur (MP)	21.4	2.9	4.0	21.8	3.0	4.1	19.7	2.5	3.7
Dewas (MP)	21.4	2.8	4.0	22.4	3.0	4.3	18.8	2.3	3.5
Dhar (MP)	23.9	3.1	4.6	24.6	3.3	4.8	20.9	2.6	3.9
Indore (MP)	18.5	2.2	3.4	21.2	2.7	3.9	17.6	2.1	3.2
Khargone (West Nimar) (MP)	23.4	3.1	4.7	24.2	3.3	4.8	18.8	2.3	3.7
Barwani (MP)	27.6	3.9	5.6	28.9	4.2	5.9	20.1	2.5	4.0
Rajgarh (MP)	22.1	3.0	4.2	22.5	3.1	4.3	20.7	2.6	4.1
Vidisha (MP)	23.9	3.4	5.1	24.9	3.8	5.4	20.4	2.6	4.1
Bhopal (MP)	18.6	2.3	3.6	23.7	3.3	5.0	17.4	2.1	3.3

Sehore (MP)	22.0	3.0	4.4	22.7	3.2	4.6	19.1	2.4	3.8
Raisen (MP)	22.8	3.2	4.7	23.3	3.3	4.9	20.9	2.7	4.2
Betul (MP)	19.6	2.4	4.0	20.6	2.6	4.2	15.6	1.7	3.0
Harda (MP)	21.4	2.8	4.2	22.3	3.0	4.4	18.1	2.2	3.6
Hoshangabad (MP)	19.4	2.5	3.9	20.7	2.8	4.2	16.4	1.9	3.3
Katni (MP)	21.9	2.8	4.2	23.0	3.1	4.5	17.5	2.1	3.4
Jabalpur (MP)	17.5	2.1	3.4	20.1	2.6	3.8	15.6	1.8	3.0
Narsimhapur (MP)	19.0	2.4	3.6	19.5	2.5	3.7	16.5	2.0	3.2
Dindori (MP)	22.4	2.8	4.2	22.6	2.8	4.2	18.4	2.1	3.5
Mandla (MP)	20.5	2.5	3.9	21.2	2.6	4.0	15.9	1.8	3.2
Chhindwara (MP)	19.1	2.3	3.9	20.1	2.5	4.1	15.8	1.8	3.2
Seoni (MP)	19.3	2.4	3.8	19.8	2.4	3.9	16.0	1.8	3.2
Balaghat (MP)	18.5	2.2	3.6	18.9	2.2	3.7	15.9	1.8	3.1
Guna (MP)	24.4	3.4	4.9	25.5	3.7	5.1	21.1	2.7	4.1
Ashoknagar (MP)	24.1	3.4	4.8	24.8	3.6	5.0	21.1	2.7	4.2
Shahdol (MP)	21.6	2.7	4.0	22.8	2.9	4.2	17.1	2.0	3.3
Anuppur (MP)	20.4	2.5	3.8	21.6	2.7	4.0	17.3	2.0	3.3
Sidhi (MP)	24.9	3.4	5.0	25.3	3.5	5.1	20.7	2.6	4.1
Singrauli (MP)	25.5	3.6	5.2	26.8	3.9	5.5	20.1	2.5	3.9
Jhabua (MP)	29.7	4.3	6.1	30.6	4.5	6.3	20.8	2.5	4.0
Alirajpur (MP)	29.5	4.2	6.5	30.2	4.4	6.7	21.3	2.6	4.3
Khandwa (East Nimar) (MP)	23.0	3.1	4.7	24.1	3.3	4.9	18.6	2.3	3.8
Burhanpur (MP)	23.2	3.1	4.7	25.2	3.5	5.1	19.2	2.4	3.9
GUJARAT (GJ)	***18.7***	***2.3***	***3.5***	***20.2***	***2.6***	***3.8***	***16.7***	***2.0***	***3.0***
Kachchh (GJ)	21.7	2.8	4.3	23.2	3.1	4.7	18.9	2.3	3.5
Banas Kantha (GJ)	23.8	3.1	4.6	24.5	3.3	4.8	19.4	2.3	3.6
Patan (GJ)	20.2	2.6	3.8	21.1	2.7	4.0	16.8	2.0	3.1
Mahesana (GJ)	17.2	2.1	3.1	17.8	2.2	3.2	15.6	1.8	2.7
Sabar Kantha (GJ)	20.3	2.6	3.8	20.8	2.6	3.9	17.7	2.1	3.2
Gandhinagar (GJ)	17.4	2.1	3.0	18.3	2.2	3.2	16.3	1.9	2.8
Ahmadabad (GJ)	16.9	2.0	3.0	20.3	2.6	3.7	16.2	1.9	2.9
Surendranagar (GJ)	20.0	2.6	3.9	21.3	2.8	4.2	16.6	2.0	3.1
Rajkot (GJ)	16.8	2.0	3.0	17.6	2.2	3.3	16.2	1.9	2.8
Jamnagar (GJ)	18.0	2.2	3.5	18.8	2.4	3.7	17.0	2.0	3.1
Porbandar (GJ)	16.9	2.1	3.2	17.9	2.2	3.4	15.9	1.9	3.0

Appendix Table 1: Indirect estimates of CBR,TFR & TMFR-Total, Rural and Urban areas-India/States/UTs/Districts-2007

	TOTAL - 2007			RURAL - 2007			URBAN - 2007		
India/States/Uts/Districts	CBR	TFR	TMFR	CBR	TFR	TMFR	CBR	TFR	TMFR
Junagadh (GJ)	17.1	2.1	3.4	17.6	2.2	3.5	16.2	1.9	3.1
Amreli (GJ)	17.0	2.1	3.4	17.3	2.2	3.5	16.2	1.9	3.1
Bhavnagar (GJ)	19.5	2.4	3.9	20.9	2.7	4.3	17.5	2.1	3.3
Anand (GJ)	17.6	2.2	3.2	18.3	2.3	3.3	16.1	1.9	2.9
Kheda (GJ)	18.4	2.3	3.3	18.9	2.4	3.4	16.5	2.0	3.1
Panch Mahals (GJ)	21.7	2.8	4.2	22.2	2.9	4.3	18.6	2.2	3.4
Dohad (GJ)	27.5	3.8	5.6	28.1	3.9	5.8	20.6	2.5	3.9
Vadodara (GJ)	17.4	2.1	3.1	19.9	2.5	3.6	15.0	1.7	2.6
Narmada (GJ)	19.4	2.4	3.7	19.9	2.5	3.8	14.8	1.7	2.8
Bharuch (GJ)	17.1	2.1	3.2	17.6	2.2	3.4	16.2	1.9	2.9
The Dangs (GJ)	26.1	3.4	5.1	27.2	3.7	5.2	17.1	2.0	3.8
Navsari (GJ)	14.9	1.7	2.7	14.8	1.7	2.7	15.0	1.7	2.7
Valsad (GJ)	18.4	2.3	3.4	19.5	2.4	3.6	16.7	2.0	3.1
Surat (GJ)	17.3	2.2	3.2	16.6	2.0	3.1	17.5	2.2	3.2
Tapi (GJ)	16.3	1.9	2.9	16.3	1.9	2.9	16.4	1.9	3.0
DAMAN & DIU (DD)	***15.5***	***2.3***	***3.5***	***18.1***	***2.3***	***3.9***	***14.6***	***2.3***	***3.4***
Diu (DD)	18.7	2.2	4.1	21.5	2.7	5.0	15.5	1.7	3.1
Daman (DD)	14.6	2.3	3.3	15.2	2.0	3.0	14.5	2.4	3.4
DADRA & NAGAR HAVELI (DN)	***21.2***	***2.9***	***4.3***	***22.7***	***3.1***	***4.8***	***19.4***	***2.7***	***3.7***
Dadra & Nagar Haveli (DN)	21.2	2.9	4.3	22.7	3.1	4.8	19.4	2.7	3.7
MAHARASHTRA (MH)	***17.1***	***2.1***	***3.2***	***18.0***	***2.3***	***3.4***	***16.0***	***1.9***	***3.0***
Nandurbar (MH)	21.6	2.8	4.3	22.4	2.9	4.4	17.7	2.2	3.6
Dhule (MH)	19.5	2.5	3.8	20.4	2.7	4.0	17.2	2.1	3.4
Jalgaon (MH)	18.1	2.3	3.5	18.7	2.4	3.6	16.9	2.0	3.2
Buldana (MH)	18.3	2.3	3.5	18.4	2.4	3.5	17.6	2.1	3.4
Akola (MH)	16.8	2.1	3.3	17.0	2.1	3.3	16.5	1.9	3.2
Washim (MH)	18.3	2.4	3.6	18.4	2.4	3.6	18.3	2.3	3.6
Amravati (MH)	15.7	1.9	3.1	16.1	2.0	3.2	15.0	1.7	2.9
Wardha (MH)	14.4	1.7	2.8	14.6	1.8	2.8	14.0	1.6	2.6
Nagpur (MH)	15.3	1.8	2.9	15.9	1.9	3.1	15.1	1.7	2.8
Bhandara (MH)	15.3	1.8	3.0	15.6	1.9	3.0	14.3	1.6	2.8
Gondiya (MH)	15.7	1.8	3.0	15.9	1.9	3.0	14.8	1.7	2.8

Gadchiroli (MH)	16.7	2.0	3.2	16.9	2.0	3.2	14.8	1.6	2.8
Chandrapur (MH)	15.2	1.8	2.8	15.6	1.9	2.9	14.5	1.6	2.6
Yavatmal (MH)	17.2	2.1	3.3	17.5	2.2	3.4	15.8	1.8	3.0
Nanded (MH)	19.8	2.6	3.9	20.1	2.7	3.9	19.0	2.3	3.7
Hingoli (MH)	20.2	2.7	3.9	20.3	2.7	3.9	19.7	2.5	3.9
Parbhani (MH)	20.0	2.7	3.9	20.2	2.7	3.9	19.7	2.5	3.9
Jalna (MH)	20.7	2.8	4.1	20.9	2.9	4.1	19.9	2.5	3.8
Aurangabad (MH)	20.4	2.6	3.8	20.8	2.8	4.0	19.8	2.4	3.6
Nashik (MH)	19.4	2.4	3.6	20.2	2.6	3.8	18.2	2.2	3.4
Thane (MH)	17.3	2.1	3.2	20.7	2.6	3.9	16.2	1.9	2.9
Mumbai Suburban (MH)	14.4	1.7	2.8	NA	NA	NA	14.4	1.7	2.8
Mumbai (MH)	12.9	1.6	2.7	NA	NA	NA	12.9	1.6	2.7
Raigarh (MH)	16.5	1.9	3.0	16.5	2.0	3.1	16.5	1.9	2.8
Pune (MH)	16.5	1.9	2.9	16.9	2.1	3.1	16.1	1.9	2.9
Ahmadnagar (MH)	17.6	2.2	3.2	17.8	2.3	3.3	16.7	2.0	3.0
Bid (MH)	19.5	2.6	3.8	19.5	2.7	3.8	19.4	2.4	3.7
Latur (MH)	18.8	2.5	3.8	18.8	2.6	3.8	18.7	2.3	3.6
Osmanabad (MH)	17.8	2.4	3.6	17.7	2.4	3.6	18.4	2.3	3.6
Solapur (MH)	17.9	2.2	3.4	18.4	2.4	3.5	16.8	2.0	3.2
Satara (MH)	15.4	1.9	2.8	15.4	1.9	2.9	15.4	1.8	2.8
Ratnagiri (MH))	14.5	1.7	2.8	14.5	1.7	2.8	14.9	1.7	2.7
Sindhudurg (MH)	12.7	1.5	2.5	12.6	1.5	2.5	13.3	1.5	2.5
Kolhapur (MH)	15.3	1.8	2.7	15.3	1.9	2.8	15.2	1.7	2.7
Sangli (MH)	15.8	1.9	2.9	15.9	2.0	2.9	15.5	1.8	2.8
ANDHRA PRADESH (OLD)(AP+TS)	***16.1***	***1.9***	***2.9***	***16.3***	***2.0***	***3.0***	***15.6***	***1.7***	***2.8***
TELANGANA STATE (TS)	***16.5***	***2.0***	***3.0***	***16.6***	***2.0***	***3.1***	***16.4***	***1.9***	***3.0***
Adilabad (TS)	17.0	2.1	3.3	17.8	2.2	3.4	14.9	1.7	2.8
Nizamabad (TS)	16.6	2.0	3.1	16.4	2.0	3.0	17.1	2.0	3.3
Karimnagar (TS)	13.6	1.6	2.5	13.3	1.6	2.5	14.4	1.6	2.6
Medak (TS)	17.8	2.2	3.3	17.9	2.2	3.4	17.5	2.0	3.1
Hyderabad (TS)	17.3	2.0	3.3	NA	NA	NA	17.3	2.0	3.3
Rangareddy (TS)	17.2	2.0	3.0	18.0	2.3	3.5	16.8	1.9	2.9
Mahbubnagar (TS)	19.3	2.4	3.6	19.7	2.5	3.7	17.3	2.0	3.3
Nalgonda (TS)	15.9	1.9	2.9	16.0	2.0	2.9	15.4	1.7	2.8
Warangal (TS)	14.8	1.8	2.7	15.0	1.8	2.8	14.3	1.6	2.6
Khammam (TS)	15.2	1.7	2.7	15.4	1.8	2.8	14.6	1.6	2.5
ANDHRA PRADESH (New) (AP)	***15.7***	***1.8***	***2.8***	***16.1***	***1.9***	***2.9***	***14.9***	***1.6***	***2.6***
Srikakulam (AP)	15.7	1.8	2.9	15.8	1.9	2.9	14.7	1.6	2.6
Vizianagaram (AP)	15.5	1.8	2.8	15.8	1.9	2.9	14.2	1.6	2.5

Appendix Table 1: Indirect estimates of CBR,TFR & TMFR -Total, Rural and Urban areas-India/States/UTs/Districts-2007

	TOTAL - 2007			RURAL - 2007			URBAN - 2007		
India/States/Uts/Districts	CBR	TFR	TMFR	CBR	TFR	TMFR	CBR	TFR	TMFR
Visakhapatnam (AP)	15.6	1.8	2.7	17.1	2.0	3.1	14.0	1.5	2.4
East Godavari (AP)	15.1	1.7	2.7	15.4	1.8	2.7	14.4	1.5	2.5
West Godavari (AP)	14.6	1.7	2.6	14.8	1.7	2.6	13.7	1.5	2.4
Krishna (AP)	14.3	1.6	2.5	14.4	1.7	2.6	14.1	1.5	2.5
Guntur (AP)	15.1	1.7	2.6	15.3	1.8	2.7	14.7	1.6	2.6
Prakasam (AP)	16.6	2.0	2.9	17.0	2.1	3.0	15.1	1.7	2.6
Sri Potti Sriramulu Nellore (AP)	15.3	1.7	2.7	15.8	1.8	2.8	13.9	1.5	2.5
Y.S.R. (AP)	17.0	2.0	3.1	17.2	2.1	3.1	16.7	1.9	3.0
Kurnool (AP)	18.6	2.2	3.4	19.1	2.4	3.5	17.4	2.0	3.2
Anantapur (AP)	16.2	1.9	2.9	16.4	2.0	3.0	15.9	1.8	2.9
Chittoor (AP)	15.7	1.9	2.9	16.0	1.9	2.9	14.9	1.7	2.7
KARNATAKA (KA)	***16.8***	***2.0***	***3.1***	***17.3***	***2.1***	***3.3***	***16.1***	***1.8***	***2.9***
Belgaum (KA)	18.7	2.3	3.5	19.4	2.5	3.7	16.6	1.9	3.0
Bagalkot (KA)	20.6	2.6	4.0	21.4	2.7	4.1	18.9	2.2	3.6
Bijapur (KA)	20.9	2.7	4.1	21.4	2.8	4.2	19.3	2.3	3.7
Bidar (KA)	19.3	2.5	4.0	19.3	2.6	4.1	19.5	2.4	3.9
Raichur (KA)	21.1	2.6	4.1	21.8	2.7	4.2	19.1	2.2	3.7
Koppal (KA)	20.8	2.6	4.2	21.1	2.7	4.2	19.2	2.3	3.7
Gadag (KA)	17.7	2.1	3.4	18.0	2.2	3.5	17.1	2.0	3.3
Dharwad (KA)	17.0	2.0	3.2	17.9	2.2	3.4	16.4	1.9	3.1
Uttara Kannada (KA)	15.1	1.8	2.9	15.2	1.8	2.9	15.0	1.7	2.9
Haveri (KA)	17.5	2.1	3.4	17.4	2.1	3.4	17.7	2.1	3.5
Bellary (KA)	20.0	2.4	3.8	20.7	2.6	4.0	18.8	2.2	3.4
Chitradurga (KA)	16.0	1.9	2.9	16.0	1.9	2.9	15.6	1.7	2.8
Davanagere (KA)	16.2	1.9	3.0	16.2	1.9	3.0	16.3	1.8	2.9
Shimoga (KA)	15.3	1.7	2.8	15.5	1.8	2.8	14.8	1.6	2.7
Udupi (KA)	12.7	1.4	2.4	12.8	1.4	2.4	12.5	1.4	2.3

Chikmagalur (KA)	13.6	1.5	2.4	13.5	1.5	2.4	14.3	1.5	2.6
Tumkur (KA)	14.4	1.7	2.6	14.2	1.7	2.6	15.2	1.7	2.7
Bangalore (KA)	15.4	1.7	2.6	16.1	1.9	2.8	15.3	1.7	2.6
Mandya (KA)	14.0	1.6	2.5	13.7	1.6	2.4	15.0	1.6	2.6
Hassan (KA)	13.7	1.6	2.4	13.4	1.5	2.3	14.8	1.6	2.6
Dakshina Kannada (KA)	14.5	1.6	2.8	14.8	1.6	2.9	14.2	1.5	2.7
Kodagu (KA)	14.7	1.7	2.7	14.7	1.7	2.7	14.6	1.6	2.7
Mysore (KA)	14.8	1.7	2.6	15.2	1.8	2.7	14.3	1.5	2.5
Chamarajanagar (KA)	14.3	1.6	2.5	14.2	1.6	2.5	15.0	1.6	2.7
Gulbarga (KA)	20.6	2.6	4.2	21.2	2.8	4.4	19.3	2.3	3.8
Yadgir (KA)	23.2	3.0	4.8	23.7	3.2	4.9	21.1	2.6	4.4
Kolar (KA)	16.2	1.9	3.0	16.0	1.9	3.0	16.5	1.9	3.1
Chikkaballapura (KA)	15.4	1.8	2.7	15.0	1.8	2.7	16.8	1.9	3.0
Bangalore Rural (KA)	15.4	1.8	2.8	15.2	1.8	2.8	15.9	1.8	2.8
Ramanagara (KA)	14.4	1.7	2.7	13.7	1.6	2.6	16.5	1.9	3.1
GOA (GA)	***14.2***	***1.6***	***2.7***	***14.0***	***1.6***	***2.7***	***14.3***	***1.7***	***2.8***
North Goa (GA)	13.6	1.6	2.6	13.5	1.6	2.6	13.7	1.6	2.6
South Goa (GA)	15.0	1.7	2.9	14.7	1.7	2.9	15.1	1.7	2.9
LAKSHADWEEP (LD)	***16.2***	***1.9***	***3.2***	***18.5***	***2.3***	***3.7***	***15.6***	***1.8***	***3.1***
Lakshadweep (LD)	16.2	1.9	3.2	18.5	2.3	3.7	15.6	1.8	3.1
KERALA (KL)	***15.0***	***1.7***	***2.6***	***15.1***	***1.7***	***2.7***	***14.9***	***1.7***	***2.6***
Kasaragod (KL)	16.9	1.9	3.1	16.4	1.8	3.0	17.6	1.9	3.1
Kannur (KL)	15.3	1.7	2.6	15.2	1.7	2.7	15.4	1.7	2.6
Wayanad (KL)	16.5	1.9	2.9	16.5	1.9	2.9	16.5	1.8	2.8
Kozhikode (KL)	15.7	1.7	2.6	16.2	1.8	2.7	15.4	1.7	2.6
Malappuram (KL)	19.9	2.2	3.4	19.9	2.2	3.4	19.9	2.2	3.4
Palakkad (KL)	15.4	1.8	2.8	15.6	1.8	2.8	15.0	1.7	2.7
Thrissur (KL)	14.0	1.6	2.5	14.2	1.6	2.5	14.0	1.6	2.4
Ernakulam (KL)	13.4	1.6	2.4	13.0	1.6	2.4	13.6	1.6	2.4
Idukki (KL)	14.0	1.6	2.5	14.0	1.6	2.5	14.7	1.7	2.7
Kottayam (KL)	13.1	1.6	2.5	13.1	1.6	2.5	13.0	1.5	2.5
Alappuzha (KL)	13.2	1.5	2.3	13.3	1.5	2.3	13.1	1.5	2.3
Pathanamthitta (KL)	12.0	1.4	2.2	12.0	1.4	2.2	12.1	1.4	2.2
Kollam (KL)	14.1	1.6	2.4	13.9	1.5	2.4	14.3	1.6	2.4
Thiruvananthapuram (KL)	13.4	1.5	2.3	14.0	1.5	2.4	13.0	1.5	2.3
TAMIL NADU (TN)	***15.0***	***1.7***	***2.7***	***15.4***	***1.8***	***2.8***	***14.5***	***1.6***	***2.5***
Thiruvallur (TN)	15.5	1.7	2.6	15.7	1.8	2.8	15.3	1.7	2.5
Chennai (TN)	14.0	1.5	2.4	NA	NA	NA	14.0	1.5	2.4
Kancheepuram (TN)	15.2	1.7	2.7	15.6	1.7	2.8	15.0	1.6	2.5
Vellore (TN)	16.0	1.8	2.9	16.2	1.9	3.0	15.6	1.7	2.9
Tiruvannamalai (TN)	16.1	1.9	2.9	16.3	1.9	3.0	15.3	1.7	2.8
Viluppuram (TN)	17.1	2.0	3.1	17.3	2.0	3.2	15.9	1.8	2.8
Salem (TN)	14.7	1.7	2.6	15.1	1.8	2.7	14.3	1.6	2.5
Namakkal (TN)	13.0	1.5	2.3	12.8	1.5	2.4	13.1	1.5	2.3
Erode (TN)	12.7	1.4	2.2	12.5	1.4	2.2	13.0	1.4	2.2

Appendix Table 1: Indirect estimates of CBR,TFR &TMFR -Total, Rural and Urban areas-India/States/UTs/Districts-2007

	TOTAL - 2007			RURAL - 2007			URBAN - 2007		
India/States/Uts/Districts	CBR	TFR	TMFR	CBR	TFR	TMFR	CBR	TFR	TMFR
The Nilgiris (TN)	13.6	1.5	2.4	13.2	1.4	2.3	14.0	1.5	2.5
Dindigul (TN)	14.7	1.7	2.6	14.8	1.7	2.6	14.4	1.6	2.5
Karur (TN)	14.2	1.6	2.5	14.3	1.7	2.6	14.0	1.5	2.4
Tiruchirappalli (TN)	14.7	1.7	2.7	15.5	1.8	2.9	13.9	1.5	2.5
Perambalur (TN)	15.8	1.8	2.8	15.8	1.8	2.8	15.7	1.7	2.7
Ariyalur (TN)	16.1	1.9	2.9	16.2	1.9	3.0	15.4	1.7	2.8
Cuddalore (TN)	15.8	1.8	2.8	16.5	1.9	3.0	14.6	1.6	2.6
Nagapattinam (TN)	15.1	1.7	2.8	15.1	1.7	2.8	15.0	1.7	2.7
Thiruvarur (TN)	14.3	1.6	2.6	14.2	1.6	2.6	14.4	1.6	2.5
Thanjavur (TN)	14.7	1.6	2.7	15.0	1.7	2.8	14.2	1.5	2.5
Pudukkottai (TN)	16.4	1.9	3.0	16.6	1.9	3.1	15.7	1.7	2.8
Sivaganga (TN)	15.2	1.7	2.7	15.2	1.8	2.8	15.0	1.7	2.6
Madurai (TN)	15.1	1.7	2.7	15.9	1.8	2.9	14.7	1.6	2.5
Theni (TN)	14.3	1.6	2.5	14.5	1.7	2.6	14.0	1.6	2.4
Virudhunagar (TN)	15.1	1.7	2.7	15.6	1.8	2.9	14.6	1.6	2.5
Ramanathapuram (TN)	15.4	1.8	2.7	15.2	1.8	2.7	15.8	1.8	2.8
Thoothukkudi (TN)	15.5	1.8	3.0	15.5	1.8	3.1	15.6	1.8	2.8
Tirunelveli (TN)	15.4	1.8	2.9	15.9	1.9	3.0	15.0	1.7	2.7
Kanniyakumari (TN)	14.2	1.6	2.6	14.6	1.7	2.7	14.1	1.6	2.6
Dharmapuri (TN)	16.3	1.9	2.9	16.5	2.0	2.9	15.2	1.7	2.7
Krishnagiri (TN)	16.8	2.0	3.0	16.7	2.0	3.0	17.1	1.9	2.9
Coimbatore (TN)	13.3	1.5	2.2	12.3	1.4	2.1	13.6	1.5	2.3

Tiruppur (TN)	13.9	1.5	2.3	12.2	1.4	2.1	15.0	1.6	2.4
PUDUCHERRY (PY)	***15.4***	***1.7***	***2.8***	***16.3***	***1.8***	***3.0***	***15.0***	***1.6***	***2.7***
Yanam (PY)	16.8	1.9	3.1	NA	NA	NA	16.8	1.9	3.1
Puducherry (PY)	15.2	1.7	2.8	16.4	1.8	3.0	14.7	1.6	2.6
Mahe (PY)	15.5	1.7	2.6	NA	NA	NA	15.5	1.7	2.6
Karaikal (PY)	16.0	1.8	3.0	16.2	1.8	3.1	15.8	1.8	2.9
ANDAMAN & NICOBAR ISLANDS (AN)	***15.6***	***1.8***	***2.9***	***16.0***	***1.9***	***3.0***	***14.8***	***1.7***	***2.6***
Nicobars (AN)	15.8	2.0	3.5	15.8	2.0	3.5	NA	NA	NA
North & Middle Andaman (AN)	16.5	1.9	3.0	16.6	2.0	3.1	13.3	1.4	2.4
South Andaman (AN)	15.1	1.7	2.7	15.5	1.8	2.8	14.9	1.7	2.6

Source: Estimates prepared by the researchers; NA: Not Available; UTs: Union Territories