

# POPULATION GEOGRAPHY

POPULATION GEOGRAPHY

Volume 34

Number 1 & 2

June-December 2012

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## SON PREFERENCE IN A PATRIARCHAL SETTING IN NORTH-WEST INDIA : SOME OBSERVATIONS FROM RURAL HARYANA

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### Abstract

The present study intends to examine the persistence of son preference in Haryana, an area in the throes of socio-economic and political change. Notwithstanding the rapidly changing political economy of the region the desire to have a son continues unabated and cuts across all strata and sections of society. Why? The state of Haryana has been chosen as the area of study for child sex ratio in the country fall in this state. Every now and then it is making headlines for all the less desirable reasons particularly in the matter pertaining to its more vulnerable section of gender. A state marred with highly skewed sex ratio, bride-purchase, honor-killings, gender-related discrimination and violence, it is an epitome of paradox representing perfect incongruity between economic development and social advancement/change. The knowledge and lived experience of this region have been substantiated with findings based upon fieldwork conducted during a period spread over three years from 2009-12 in the districts of Rohtak, Jhajjar, and Sonapat constituting a part of the National Capital Region (NCR) and in close interaction with the National Capital Territory of Delhi. Despite being one of the economically developed states of the Indian Union, low poverty ratios-both rural and urban, increased politicization of women in the panchayati raj institutions, a fair base of expanded middle-class, the transient membership of the daughter in her parental home, the pattern of inheritance and resource distribution despite changes in the inheritance rights and her real incorporation in her in-laws family only when she has given birth to a son all have a bearing on the process of socialization through which in a very subtle and complex manner women emerge as gendered subjects. The entrenched traditional preference for sons ("readiness") amidst fertility decline and the pressure caused by small family size ("squeeze") negotiates through, among others, access to modern sex selection ("ability").

*Keywords:* Patriarchal, Son preference, Child Sex Ratio, Haryana

### Introduction

It is well established that patrilocal (in residence), patrilineal (in organization) and patriarchal (in status) attitudes manifest in large parts of South Asia leading to subordinate position of woman and girls in the family. North-west India as so in its other parts, barring some communities in southwest and northeast, patriliney is the prevailing descent system. The transient

membership of the daughter in her parental home, the pattern of inheritance and resource distribution despite changes in the inheritance rights and her real incorporation in her in-laws family only when she has given birth to a son all have a bearing on the process of socialization through which in a very subtle and complex manner women emerge as gendered subjects. The gender differences that are

culturally produced are, almost invariably, interpreted as rooted in biological determinism, as part of the natural order of things.

In fact, preference for sons as a distinct feature of patrilineal family systems is found in many countries of East and South Asia. Sen (2001) refers to the preference that many south (and east) Asian families have for sons over daughters 'son preference', and others have analysed the impact of such preference on the marriage market (Edlund, 1999) and fertility (Bhat and Zavier, 2003). In China, for instance son preference is manifest in the rapid masculinization of sex ratios (Attane, 2009; Banister, 2004; Chu 2001; DasGupta, Chung, and Li, 2009; Guilмото, 2009; Hesketh, 2009) and so is the case in Vietnam (Guilмото, 2012).

Strong son preference in India is evident from the analysis of the data from National Family Health Survey (NFHS). The data on future child bearing intentions reveal that women preference for a son is evident in each state, but the proportion of ever-married women aged 15-49 who wanted more sons than daughters ranges from 5.7% in Tamil Nadu to 34.3% in Rajasthan. The all India average is 22.4 percent. The NFHS report shows a decline in share of such women in Haryana from 45.1% in 1992-93 (NFHS-I) through 37.5% in 1998-99 (NFHS-II) to 25.1% in 2005-06 (NFHS-III).

Son preference or daughter-dispreference manifests itself through various dispersed practices such as "fatal neglect", abandonment or sale of infant girls/girl children, female infanticide (George *et al.*, 1998) and pre-birth elimination of the female fetus following a sex-determination test (sex selective abortion). In the past decade, a girl child had greater chances of death by about two-fifths in the first year of her life, and more than three-fifths between 1-5 years in comparison of male children in the same age-groups. (Navaneetham and Dharmalingam (2011, p.16). Earlier Drèze and Sen (2002, p.233) had observed that the bulk of excess female mortality in childhood occurs among the older (1-4 age group) children, suggesting preferential treatment of boys

and neglect of female children. As a natural corollary, the age groups beyond that of female infanticide are more crucial for understanding the implications of daughter disadvantage and neglect. Excess female mortality continued well into 1970s. A reference to a number of plausible explanations can be found in Perwez, Jeffery and Jeffery, (2012, p.76) in the way son preference could manifest itself reflected in neglect of female children leading to their deaths in early childhood by either poor medico nutritional intake or by socio cultural biases against them, Hepatitis B virus infection, lower caloric intake by mothers, hormonal factors, father's occupation or his absence from the home, smoking, maternal dominance, time taken to conceive, and under-reporting of female births. Subsequently, there has been an improved sex ratio because of declined female mortality and better census enumeration but a drastic decline in the child sex ratio because of sex-selective abortion. In the given social and economic context furthered in milieu of historical, social acceptance of female elimination, when technology offers a chance of selecting the family composition, there is bound to be a continued threat to females.

A number of studies have emerged in the last three decades to document that the son preference is mediated through sex-selective abortions, a modern-technological expression of female infanticide (Sen, 2003: pp.1297-98; Patel, 1992; Jeffrey *et al.*, 1984) explaining the problem of missing women (Dreze and Sen, 1996; Klasen, 1994) and declining sex ratio. "The availability of modern techniques to determine the sex of the foetus... (that) has made such sex-selective abortion possible and easy" (e. g, see Agnihotri, 2003; Arnold, *et al.* 2002; Balakrishnan, 1994; Basu, 1999; Das Gupta and Bhat, 1998; Harriss-White, 1999; Klasen and Wink, 2003; Krishnaji, 2000; Patel, 2002; Premi, 2001; Sudha and Rajan, 1999). Evidence from India suggests that high son preference may not translate into sex selective abortion where such technology is not easily available, such as in the poorer states of northern India or for poorer households. The propensity to

use sex-selective abortion was found to increase with socio-economic status, such that it was strongest among urban women, women with middle school or higher education, and women living in households with a high standard of living (Retherford and Roy, 2003). Others also have concluded that while the use of sex-selection techniques was contingent on having had a previous birth but no sons (termed a "male-selection scenario"), their actual use was largely a function of greater access among higher educated and wealthier women (Bhat and Zavier, 2005). Despite enforcement in 1996 of the Pre-Natal Diagnostic Techniques (Regulation and Prevention of Misuse), further amended in 2003 legislation, the child sex ratio has become even more masculine.

The entrenched traditional preference for sons ("readiness") amidst fertility decline and the pressure caused by small family size ("squeeze") negotiates through, among others, access to modern sex selection ("ability"). Importantly, fertility decline has increased the anxiety about having male offspring and strategies are devised to ensure a male child. Prenatal sex selection appears therefore to be an effective response to a latent demand for sons, especially among women who want both to limit their offspring and to ensure the birth of a male descendant. It is apprehended that once the total fertility rate in the state has declined to below replacement levels, it could mean an increase in the proportion of childless women or that of couples with only one child. With relatively higher levels of education and access to technology, it is possible that such couples would want to ensure that the one child they have is male. And this could result in an increase in sex-selective abortions. The 'family squeeze' (more families having fewer children registered by the reduced fertility rates) does raise the possibility of enhanced gender bias.

The most common method of son-targeted fertility behavior had long been based on the "stopping rule", where the sex composition of children already born determines the subsequent fertility behavior of women (Perwez, Jeffery and

Jeffery, 2012; Basu and De Jong, 2010). Several demographic studies undertaken in the 1960s and later explored the effects of stopping behaviour on population birth rates and sex ratios (e.g., Goodman, 1961; Keyfitz, 1968; McDonald, 1973; Sheps, 1963; Weiler, 1959). We need to take more seriously discussions of "differential stopping rule behaviour" (stopping behaviour, in short) whereby couples that have accomplished their ideal composition of children simply stop reproducing. These are couples who want just one or two children and who have no further children once they have one or more sons, even without having produced a daughter and without committing either female infanticide or sex-selective abortion. It is plausible, therefore, that the squeeze on family size might be a major contributor to changing child sex ratio (CSR) even in the absence of sex selective abortion or female infanticide –neither of which were widely available to couples in the late 1970s. In a broader context, Clark (2000) has examined data from India on male preferring stopping behaviour to show that smaller families have a significantly higher proportion of sons than large families, with the highest proportions of sons, particularly noticeable among the socially and economically disadvantaged couples of north India. Stopping behaviour has been shown to have some consequences, in particular, for the sex ratio of the last-born children in the context of Nepal, where some decline in the sex ratio has been noted, but female infanticide and sex-selective abortion were considered rare (Leone *et. al.*, 2003). Arokiasamy, in particular, has lately remarked in Times of India (13 April 2011) that the imbalances in sex ratio could have been caused by the stopping behaviour in the population, "without resorting to sex-selective abortions or discrimination afterbirth" ([http://articles.timesofindia.indiatimes.com/2011-04-13/mumbai/29413076\\_1\\_male-child-girl-child-drain](http://articles.timesofindia.indiatimes.com/2011-04-13/mumbai/29413076_1_male-child-girl-child-drain)).

### The Patriarchal Demographics

Miller (2001, p.1080) calls the low sex ratio in India as "patriarchal demographics". The sex ratio is discussed almost entirely in geographical

terms, the emphasis being on identifying areas of India – regions, states and districts – where females are particularly at risk and then enquiring about the processes through which females in general, and girls in particular, are placed in jeopardy (Agnihotri 2003; Sudha and Rajan 2003). The regional pattern of sex composition of population in India shows that Haryana in north-west part of India is one such region, forming part of a large isotropic plain exhibiting low sex ratio. With a sex ratio of just 877 in 2011 as compared to the national average of 940 females/000 males (Fig.1) Haryana occupies the lowest position among major states in India.

For India as a whole also, there has been a drop in the child sex ratio (CSR measuring those in the 0-6 year range) from 945 in 1991 to an all-time low of 914 girls per 1,000 boys in 2011. This figure was 927 in 2001. Post-1991 neo-liberal period the lowered child sex ratio in India is exhibited in the economically prosperous and high literacy states. It also spans roughly a generation. This may further reduce the number of females in the coming

decades because the child (0-6 years of age) sex ratio is even more adverse to females. Taking cognizance, the 11th Five Year Plan too committed support to initiatives that raise awareness to ensure that market economy, increasing consumerism and resultant family planning practices do not enhance gender inequality leading to male child planning. The goal to increase child sex ratio to 935 by 2011-12 could not be met.

In Haryana, child sex-ratio was only 830 to 1000 males in 2011; plummeted from 910 in 1961 to 820 in 2001. Taking note of the alarming decline in the child sex ratio in 2001. Bose (2001, p.3428) named it as one of the 'DEMARU' states 'daughter eliminating male aspiring rage for ultrasound'. The drop in the child sex ratio (0-6 year range) in particular is a matter of serious social concern. A disaggregated picture shows six of the top ten worst districts having adverse sex ratio of females in the country belong to Haryana state (Table 1). It requires a contextual micro level understanding as is evident from a study conducted by a group of researchers (John *et. al.*, 2008) during 2003-05 in

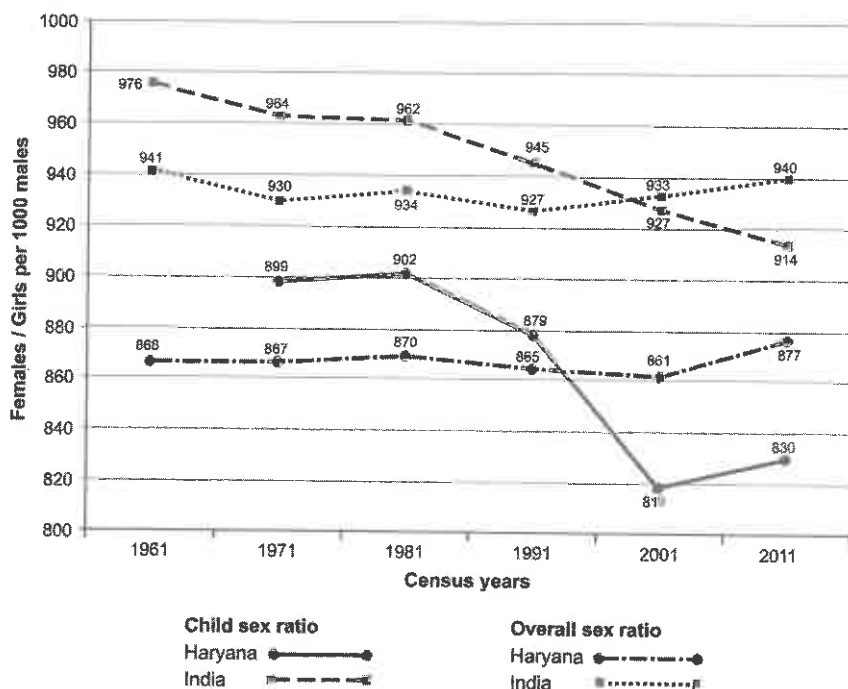


Fig.1

**Table - 1: Ten Districts with Lowest Child Sex Ratio\* in India: 2001 and 2011**

Census, 2001			Census, 2011		
District	State	CSR	District	State	CSR
Fatehgarh Sahib	Punjab	766	Mahendragarh	Haryana	775
Kurukshetra	Haryana	771	Samba	Jammu & Kashmir	779
Patiala	Punjab	777	Jhajjar	Haryana	782
Ambala	Haryana	782	Rewari	Haryana	787
Mansa	Punjab	782	Jammu	Jammu & Kashmir	795
Bathinda	Punjab	785	Sonipat	Haryana	798
Kapurthala	Punjab	785	Bid	Maharashtra	807
Sangrur	Punjab	786	Ambala	Haryana	810
Sonipat	Haryana	788	Pithoragarh	Uttarakhand	816
Gurdaspur	Punjab	789	Kurukshetra	Haryana	818

\*Age group 0-6 years

(CSR- Child Sex Ratio measuring those in the 0-6 year range)

Source: Census of India, 2001 & 2011

**Table - 2: Sex Ratio of Total Population, (1901-2011) and Child Population, (1961-2011)**

Year	INDIA		HARYANA	
	Sex Ratio	Child Sex Ratio	Sex Ratio	Child Sex Ratio
1901	972		867	
1911	964		835	
1921	955		844	
1931	950		844	
1941	945		869	
1951	946		871	
1961	941	976	868	
1971	930	964	867	899
1981	934	962	870	902
1991	927	945	865	879
2001	933	927	861	819
2011	940	914	877	830

Source: Census of India 1991 (1993: 13); Census of India 2001 (2001:92-94).

Census of India, 2011. Provisional Population Totals, Paper 1 of 2011, India, Series 1,

Registrar General & Census Commissioner, India.

**Table - 3: The Regional Divide in Child Sex Ratio (0-6 years)**

North India	2011	South India	2011	East India	2011
Punjab	846	Tamil Nadu	946	Mizoram	971
Haryana	830	Kerala	959	Meghalaya	970
Chandigarh*	867	Karnataka	943	Arunachal Pradesh	960
NCT of Delhi*	866	Andhra Pradesh	943	Assam	957

\*Union Territories

Source: Census of India, 2011. Provisional Population Totals, Paper 1 of 2011, India Series 1, Registrar General & Census Commissioner, India, p. 88.

five of the lowest CSR districts of north-west India.

It is not a new phenomenon. In India, these regional differences have held consistently since censuses were first taken in the late nineteenth century, with the highest female deficit in the northwestern region and little deficit in the south. The sex ratio for the undivided Punjab/Haryana during the last quarter of the 19th century have always remained below 900. By the time of 1901 census, the British ascribed the uneven sex-ratio to reasons like neglect of female children in earlier times (both pre-colonial and in the early years of British rule in Punjab), the high rate of mortality due to frequent child-bearing starting at a very early age, and the neglect of women of advanced age. Additionally, in the all-too-frequent famines, droughts and epidemics, the first casualties were women (Census of India, 1931: p.156). All these factors in unison enabled the persistence of a different form of femicide in order to keep the female ratio down. Not much importance was ascribed to the phenomenon of female infanticide.

Although the general sex ratio has gone up, but the child sex ratio has gone down (Table 2). The state level figures demonstrate a widening of the circle – even if the numbers are not dramatic – well beyond the so-called prosperity belt of north-west India, to the poorer states (John, p.11). There is northernisation of sex ratios in other parts of the country too, thinly becoming a pan Indian phenomenon, although there still exist a clear north-south and north-east divide (Table 3).

India has experienced a decline in total fertility rate from 5.2 in 1971 to 2.5 in 2010 (<http://www.prb.org/DataFinder/Geography/Data.aspx?loc=380>). The figures range from 5.4 to 2.8 in rural areas and 4.1 to 1.9 in urban areas during the corresponding period. But this national fertility rate masks wide disparities by state. It is noticed that fertility rates have declined in large parts of India falling to levels of between 1.7 and 3.7 children per women in 2010. Bihar has reported the highest TFR (3.7) while Tamil Nadu, the lowest (1.7) ([http://www.censusindia.gov.in/vital\\_](http://www.censusindia.gov.in/vital_)

[statistics/srs/Chap3-2010.pdf](http://www.censusindia.gov.in/vital_statistics/srs/Chap3-2010.pdf)). The state of Haryana is also slow in responding to fertility transition. In Haryana the total fertility rate has declined from 6.7 in 1971 to 2.3 in 2010. It fell from 7.3 to 2.5 in rural areas and from 4.6 to 2.0 in urban areas during the corresponding period. (Government of India, 2010). The slow response to fertility decline may be the result of the strong resistance from the local institutions to the effect of social and economic changes witnessed locally and in near-by areas. They seem to be 'locked-in' to a specific social and cultural configuration characterized by deeply ingrained patriarchal values that check social development or modernity.

Why is economic prosperity not commensurate with social change in some areas? What explains the persistence of son preference particularly in a patriarchal setting? What is the political economy of son preference? This is examined with reference to Haryana state.

### **Haryana: Economic Prosperity *sans* Social Change**

From its existence as a characteristic periphery to a more developed region before its formation in 1966, the state of Haryana has come a long way. It has emerged as one of the economically developed state of Indian Union with a per capita income of Rs. 59,221 at 2004-05 prices in 2010-11 in comparison to Rs. 35,993/- average for the country. Moreover, politicization of women, introduced since the early nineties, is also taking place through one-third reservation at the three levels of Villages, Block, District Panchayats/ Samitis/ Parishads. However, there is substantial gap in the literacy rates of males (85.38%) and females (66.77%) even in the Census of 2011, notwithstanding some convergence noticed in recent decades. Gender gap in literacy rate has narrowed down considerably over the censuses but continues to be high (18.61). The positive aspect is that female literacy rate has improved by 11.04% points as compared to 6.89% of males. The literacy



**Table - 4: Number and Percent Distribution of Employees and Percent Females in various Departments of Government of Haryana (2010)**

Percent Females	Gazetted (I+II)		Non-Gazetted (III+IV)	
	Department	No. of Employees	Department	No. of Employees
Less than 10	Panchayati Raj, Horticulture, Irrigation, P.W.D. (B &R), P.W.D. (Public Health), Fisheries, Agriculture, Forest & Wild life, Prosecution, Transport, Commissioner /Deputy Commissioner, Animal Husbandry & Dairying, Police, Panchayat, Prisons, Excise and Taxation, Industries & Commerce	4146 (18.4)	Transport, P.W.D. (Public Health), Panchayati Raj, Police, Prisons, Forest & Wild life, Irrigation, Prosecution, Horticulture, P.W.D. (B &R), Agriculture, Animal Husbandry & Dairying, Commissioner /Deputy Commissioner, Panchayat, Food & Supply, Co-operation	121489 (53.3)
10-20	Co-operation, Printing & Stationery, Welfare of Scheduled Castes and Backward classes, Town and Country Planning, Sports & Youth Welfare, Food & Supply, Treasury and Accounts, Civil Secretariat	796 (3.5)	Public Relations, Printing & Stationery, Excise and Taxation, Fisheries, Industrial Training & Vocational Education, Town and Country Planning, Treasury and Accounts, Distt. & Sessions Judges, Financial Commissioner, Technical Education, Industries and Commerce, Civil Secretariat, Labour, Sports & Youth Welfare	15963 (7.0)
20-30	Technical Education, Distt. & Sessions Judges, Industrial Training & Vocational Education, Labour, Ayush, Public Relations, Financial Commissioner, Health & Medical	4376 (19.4)	-	0 (0.0)
30-40	Education	13224 (58.7)	Education	74574 (32.7)
Above 40		0 (0.0)	Health & Medical, Welfare of Scheduled Castes and Backward classes, Ayush	15986 (7.0)

*Notes:*

- (i) It does not include (a) Adhoc, Contingency paid, work charged and Contract Basis Employees and (b) Department of Women and Child Development where Gazetted category includes 86.4% females in a total of 176 employees and Non-Gazetted Class includes 53.4% female in a total of 1401 employees.
- (ii) Figures in parentheses indicate % distribution of employees.

programmes have been able to make some difference in the progress of literacy.

According to the 'Report of the Time Use Survey', in Haryana in 1999, almost 85 per cent men who were graduates or even better qualified were working whereas this figure for women with equal qualifications was merely 20 per cent. This, however, does not mean that women in Haryana did not work or that productive activities were beyond their ken. The percentage of time spent by females in unpaid activities was highest in Haryana (86 per cent) as compared to 51% average for females for the six states namely, Haryana, Madhya Pradesh, Gujarat, Orissa, Tamil Nadu and Meghalaya) sampled for the survey (Government of India, 2000, p.45).

The percentage of female employees in Haryana Government offices with more than 500 employees indicate to a highly skewed pattern of

employment heavily inclined in favor of males (Table 4). It seems the economic prosperity has not been equitably shared.

The National Sample Survey Organisation also brings home the gender inequality. Estimated labour force participation rates (LFPR: defined as number of persons/ person-days in the labour force per thousand persons/ person days) according to usual, current weekly and current daily approaches reveals that according to usual status (ps+ss), the LFPR was 30 %. The LFPRs for persons in the rural area was about 30 %, which is about 2 % higher than that in urban areas. In the urban areas, nearly 49 % males were in the labour force compared to 3 % females. The gender differential also existed in the rural areas; nearly 50 % males were in labour force compared to 7 % females (Table 5).

In the 1970s, Haryana was among the first

few states where every village was connected with a metalled road and provided with electricity connections (assured electric supply is, however, awaited even today). Its public transport network of buses and its excellent 'tourism spots' became marvels of development. The tale of Haryana's progress continued since its formation in the 1966. The recent NSS data shows that poverty in Haryana has declined from 30.52 per cent to 14.86 per cent between the 54th Round (1993-94) and the 55th Round (1999-2000). There is a concern at the indices of social under-growth and the maladjustment of women with economic prosperity in the state. Haryana has benefited most by the Green Revolution (apart from Punjab, of course) since the 1960s but it is also the region in which socio-cultural movements have been conspicuous by their absence.

However, the state presents a picture of social transformation which is far behind of its achievements in economic development. Every now and then it is making headlines for all the less desirable reasons particularly in the matter pertaining to its more vulnerable section of gender. A state marred with highly skewed sex ratio, bride-purchase, honour-killings, gender-related discrimination and violence, it is an epitome of paradox representing perfect incongruity between economic development and social advancement/change. In fact the economic prosperity is commensurate with 'rising sons and setting daughters' situation (Agnihotri, 2003). The

rampant use of sex determination tests and sex-selective abortions has put the very existence of females at stake.

The discussion here is substantiated through findings based upon fieldwork conducted during a period spread over three years from 2009-12 in the districts of Rohtak, Jhajjar, and Sonapat (Fig.2) constituting a part of the National Capital Region (NCR) and in close interaction with the National Capital Territory of Delhi. Much of the area comprises of Rohtak district as it existed in 1931 and is a 'homeland of Jats', as observed by British administrators (Census of India, 1931). These three districts consist of 744 villages as per 2011 Census- Rohtak (144 villages), Jhajjar (262 villages) and Sonapat (338 villages). The size of household is large, ranging from 4.5 to 7.0. The sex ratio of the total population ranges from 933 to 563; in scheduled castes from 1075 to 527 and in child population (0-6 years) 1096 to 622. As such, it has undergone drastic geo-economic as well as social changes. Villages were randomly selected, resulting in unstructured interviews, with women and men of varying ages, social classes, castes and professions. Similarly, focus group discussions were held in mixed men-women groups as well as with only women and only men.

In the joint- family household case-studies, mother-in- law, daughter-in-law and her spouse were interviewed. The mothers -in- law of joint-family household together with women in the nuclear family households who were of an age at

**Table - 5: Labour Force Participation Rate (LFPR) according to Usual (ps), Usual (ps+ss), Current Weekly (cws) and Current Daily Status, 2007-08**

Status	Number of Persons/Person Days in Labor Force								
	Rural			Urban			Combined		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
us(ps)	494	18	283	492	28	282	494	21	282
us(ps+ss)	496	65	304	492	32	284	495	55	298
cws	495	64	303	492	32	284	494	55	298
cds	493	43	293	491	30	283	493	39	290

Source: Government of Haryana. 2012. *Employment and Unemployment Situation in Haryana NSS 64th Round (July 2007-June 2008) State Sample, Department of Economic & Statistical Analysis, Haryana*



Fig. 2

which they were socially recognized as no longer reproducing (they had at least one grandchild) formed the group referred to as 'mothers-in-law'. Daughters-in-law and the women of socially recognized reproductive age in the nuclear family households form the category of active reproductive mothers. The changes in attitudes towards son preference refer to difference in attitudes between these two generations. A close look into the history of a few families has resulted in an in-depth understanding of the various issues.

### Political Economy of Son Preference: Colonial Legacy and the Present Scene

Understanding the rationale behind sex preference is key to deciphering the dynamics of the sex ratio in Asia. Wilson has extensively quoted from Puranas to show that infanticide was criticised even in the scriptures (Wilson, 1860, pp.29-32). Nor did it originate with the coming of Muslims. Jonathan Duncan of Bengal Civil Service and the Resident of Benares was the first to discover in 1789 the custom of putting to death female off spring among Rajkumars (Wilson, 1860, pp.38-39). During the British rule female infanticide before the twentieth century was most notably reported in Northwest India (Caldwell and Caldwell, 2005). The British government passed the Act of 1870 to curb the menace of female infanticide (Vishwanath, 1998, p.1104). What material conditions led to the origin of this practice? Economic arguments focus on the cost and benefit of raising boys and girls. Three main factors making girls more expensive and thus less attractive to parents have been identified: dowry, the low economic value of girls for parents and agricultural labor demand.

The famine ridden *barani* region (dependent on rainfall) with its concomitant low yielding crops and chronic crop failures, supplemented by meager gains from animal husbandry made living for an overwhelming majority of landowners a hand to mouth affair. A large section of the peasants tended to be subsistence or deficit producers, because only a

comparatively large holding could be economic. For example, in Rohtak district, holding of at least twelve acres was necessary for it to be considered an economic one (Civil and Military Gazette, 1911, p.68). This meant that only about 28 per cent of landholdings fell in this category (Civil and Military Gazette, 1925, p.16). This was true for much of Haryana region where people had to toil very hard merely for survival. The landowners depended on their family labour or hired labour, if they could afford. The logic of the situation greatly reinforced, what is perhaps common to peasant economies generally, namely, a very strong desire for male progeny. A male child came to be regarded as essential as the life-giving rain. Some popular local sayings quoted in Chowdhry (1994, p.48) reflect a strong desire for male progeny, e. g., *Meehn aur bettya te koon dhappaya sai* (who can have enough of rain or sons). Moreover, in the prevailing uncertainty regarding infant survival on account of high mortality rate, one male child in a family continues to be considered neither safe nor sufficient: *Ek ankh ka ke sulakshana, ek put ka ke sapoota* (How can one eyed man be called lucky? How can a man with one son be called a father?). Two other proverbs recorded during the British days equated sons with wealth and prosperity: *Jis ke nahin put, woh kya jane maya* (one who has no sons knows not prosperity) and *Put bhae syane, dukh bhae birane* (when sons grow up, sorrows depart).

Oldenburg (quoted in Snehi, 2003) explored marriage, gender and property rights in Punjab to conclude that it was the 'masculinisation' of the economy under the British that increased the desirability of the male-child. The forms of agrarian development and revenue policies of Punjab under the British led to the establishment of private property, the reinforcement of class differentiation among rural people, the monetisation of the heavy revenue demand and timing of collection and compulsion of cultivation of indigo and opium besides other cash crops. This transformed the society of Punjab.

Accordingly, only men owning family property led to alienation of ancient right of

women in family property. Land was hence struck off from the list of *stridhan* (female folks). Further, timely payment of revenue forced the peasants to take loan and in the event of failure of crops they sunk into indebtedness. The British generated new job opportunities for 'martial races' towards defence and development. All this and the effects of recruiting in British Indian Army from the ranks of Punjabi peasants, particularly the land tilling jats, generated a demand for strong young men who would be employed with a cash wage, awards of land and eventually pensions led to a preference for a 'gender targeted family' and in these days it could only be done through selective female infanticide (Oldenburg, 2003, p.15).

It led to the emergence and strengthening of a gender bias against females in Punjab. Under such circumstances, they mourned at the birth of a daughter and rejoiced when a son was born. The daughter meant disgrace, anxiety and heavy expenditure, whereas the son increased their wealth and dignity (Panigrahi, 1972, p.13). The archival records reveal 'a tradition' of female infanticide among specific castes in Punjab, United Provinces and Rajputana so much so that the 1921 census report classified castes into two categories, namely castes having a tradition of female infanticide and castes without such a tradition. The birth of a daughter in the 1920s was considered to be the equivalent of a decree of Rs. 2000 against her father (Darling, 1925, p.8). So crushing could be the financial burden she brought that her death was considered fortunate: *chhohra mare nirbhag ka, chhohri mare bhagwan ki* (the son of an unfortunate dies, the daughter of a fortunate dies).

In order to beget the much coveted sons, women observe *hoe ka vart*, i.e. *hoe fast*. Although great value continues to be placed on sons' a girl is not made to feel unwanted all the time. The usefulness of the girls is acknowledged. What is lamented is the temporary nature of her stay at her parents' home, and being less valuable in economic terms. They are considered permanent assets only to their in-laws as they leave their parents' home before they are old enough to make a

significant contribution. The delay in their marriage was frowned upon among agricultural castes. Since the labour could rightfully be extracted from daughter-in-law, the usefulness of daughter was considerably limited. A commonly voiced proverb in Haryana (Vishishth, 1987, p.194) refers to this: *Betiyan ki maan ranni, Budhape mein bhare paani* (The proud mother of daughters, in old age fetches water).

Where would this producer and reproducer be available without a son? There are numerous local proverbs that reflect the dominant social ethos by showing marked preference for boys over girls. This trait is pan-Indian. The reasons behind such a preference and a review of literature on different regions of India has been carried out in Das Gupta (1987, pp. 77-100) and Miller (1989). Not much has changed since then, exhibited in the considerable difference in male-female sex ratio.

There was surprisingly little disagreement as to the reasons behind female infanticide (Miller, 1997, p.56). "The pride of caste, exorbitant expenditure at the marriage of the daughter, and dowry that robbed the parents off their wealth since .....the bridegroom elect requires to be paid in proportion of his dignity and condescension". Also, "presents in money, clothes, jewels, sweet meats, and what not, on at least a score prescribed occasions between the betrothal and the marriage, must be made to everyone who can claim kith or kin to the bridegroom" (Browne, 1857, p.12-13). The qualitative and quantitative data in the historical records relate sex ratio to the social status of clans, and lineages. The effects of the political-economy of colonialism on our society can still be seen. Imperial origin of dowry and its relation to changing economy are relevant even today. Demands for dowries today have grown in response to the exponential increase in the value of agricultural land and urban property (Oldenburg 2003, p.223).

The larger problem of sex selection and female neglect is to eliminate the practice of the dowry that reinforces the notion that daughters are life-long economic liabilities. Both female infanticide and sex-selective abortion are based on

calculating the 'cost' of daughters. Both take place within the "normative" and "normalising" locale of the family. The practice is not frowned upon. Both natal and marital families are conjoined in this active daughter-dispreference in so far as it takes place in a pregnant woman's marital family and, at the same time, she and her husband will constitute the natal family of their future progeny (Sangri, 2012, p.39). It is related to dowry (anticipation) for the poor and fear of fragmentation of property for the rich. A family is considered as balanced if it has one son and a daughter. The out-marrying dowry-taking daughter is compensated by the resident/stationary dowry-attracting son. The son can recover the resources spent on his education or the marriage of his sister. The dowry given to a daughter is in lieu of inheritance. Despite the enactment of law of inheritance in favor of girl-child also, dowry is given with the tacit understanding of the denial of inheritance right. The son's advantage and the daughter's disadvantage are seen as enduring and permanent.

Legally, the right to inherit land with full proprietary rights to its disposal by a woman in her capacity as a daughter, sister, wife and widow lately amended in 2005 came to exist under the 1956 Act. These rights go against the customary norms of patrilineal society like that of Haryana (as well as that of Punjab and Uttar Pradesh) where the land of the village is taken to belong to the male descendants of ancestors, who originally settled and worked on it. Reasons for the growing menace of dowry are again partly related to the patrilineal insistence upon an alternative settlement of a girl's claims/right to property. Indeed, the legal possibility of and claims of her inheritance rights meant that the violence is perpetrated on females in their infancy or in the womb itself to eliminate the root cause of property going to her. The new technology, readily available and extensively used, for determining the sex of the fetus leading to female feticide has wreaked havoc in society. Such low female figures effectively negate the progressive fallout of the inheritance enablement law on the female population.

Son preference is also deeply rooted in our culture, and the need to have at least one son is especially strong for religious, cultural and practical reasons. The preference for male offspring is widely shared by women, couples, families, and communities. Filial support of elders, continuation of the family line as patriarch and son's role in providing support in old age are some of reasons leading to persistence of son preference. The fact that parents in general and in rural areas in particular rely on sons rather on daughters for elderly care is perhaps due to the traditionally patrilocal culture, wherein daughters are expected to provide care for their in-laws. In patrilineal arrangements daughters play only a transient social and economic role in their family of origin. A son provides parents with two (his bride and himself) viable sources of support in old age. Important fallout of far reaching consequences is the 'rising sons and setting daughters' or 'missing women' phenomenon.

Son preference remains a guiding characteristic of reproductive behaviour. Young mothers of the present times are positioned amid conflicting trends of fertility decline and persistent son preference. In a scenario of considerably lowered fertility in comparison to the previous generation, the pressure to produce a son has become all the more acute as young women feel the need to give birth to a male in fewer overall attempts. How is son preference redefined in the context of falling fertility rates but women still "need" sons? How do people respond to such a situation? What is the intra-family perception? What is the reaction of the extended family?

### **Need for a son: some observations from the field**

A significant finding is that with increasing economic development and women empowerment the discrimination against girls is waning. The government has intervened in floating many schemes for the welfare of the girl child. However, the strides towards gender equality are limited by the structure of the kinship system. Haryana may

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have begun to value its daughters as much as sons on an ideological level, yet they remain unable to escape the practical implications of losing daughters to other lineages and households. Additionally, the menace of dowry has become a cause of worry for the parents.

Although the "desirable" number of children varies considerably across the Indian subcontinent in relation to various socio-economic and cultural factors, son preference remains extremely influential (Borooah and Iyer, 2005; Borooah, 2010). The norm of at least two sons and a daughter as constituting an 'ideal family' in large parts of India in 1980s (Oldenburg, 1992) has scaled down to one son, one son and a daughter or two sons but not two daughters. The son preference is certainly exercised.

The women of the surveyed households debated the necessity of having sons although conceding at the same time that in the changed environment sons are of no good. It emerged from the discussions in most of the cases that the first child, male or female, sees the light of the day and accepted. No effort is made to know previously the likely outcome of the first pregnancy. The first baby is rarely aborted fearing no conception subsequently. Interestingly, if the first child happened to be a male-child the young mothers are reluctant to produce another baby conceding that their family social obligation is over. On the other hand if the first baby is a female, the second attempt to produce a child becomes mandatory. But women in the families where the first child was a girl were constantly under pressure and also adopt measures that would lead to the birth of a male child subsequently. The pressure has become more intense with decline in fertility rate resulting in 'family squeeze' (reduction in the number of children in the family). The threat of daughter elimination is no longer confined to few castes. Irrespective of whether they own land or not indulgence in this activity is found across board, of course with varying intensity.

Women with two daughters expressed disappointment at not being able to produce a son. These women had internalized the necessity for

sons and lived with the burden of not bearing a son and did not enjoy a 'carefree life'. The relatives express pity on the women. However parents-in-law are at ease if the younger or elder brothers' wife have borne a son, reconciling that at least the family name vansh (genealogy) would continue. In case of females who could not bear sons the husbands did not express anguish but were not 'happy' either. They only offered consolation. It was certainly not the negation for the need a son. The mother themselves felt badly and demeaned. She felt incomplete and inferior to women around who had produced sons. The older generation of women (mother-in-law) opine the need of son who along with his bride would look after parents in old age, do the household duties, tend the fields, care for the livestock and manage other errands.

In Haryana, women and girls are viewed as more capable and valuable than ever before. It is also true that women in this study reported that they had internalized the societies, the local communities', and their family's expectations of having a son. Interestingly, the boundaries between individual and family and between family and village are blurred. Agency in the realm of reproduction has often been exercised at the level of families rather than individuals. Thus, despite being positioned within recent trends of comparatively lower fertility, women are still expected to produce male offspring. In practice, this means that the stakes are raised for each birth. Women in Haryana find themselves located at the point of conflict between the ideals of lowered fertility and the value of having sons. The lower the parity at which a son is born, the more quickly the family can breathe a sigh of relief. In majority of cases a large gap could be found in the age between the first and the second child. This is more so in the case of young couples.

Newly married couples downplayed the necessity of having sons, stating that girls were just as good as boys and that they did not favor one over the other. Young mothers thought differently. Women who had sons comfortably denied the importance of sons, whereas the experience of women who did not have a son was entirely

different. All of the young mothers who did not yet have sons were concerned if they would be able to give birth to a son. These young mothers without sons were the ones who had to negotiate the pressure to produce a son. The pressure to give birth to a son came from many sources- in-laws, their husbands, friends and neighbors, and also their own up-bringing.

It was also observed that while ideological or religious explanations for needing to produce a son are fading, the multigenerational family ideal remains strong. Despite their resistance to the necessity of having sons, women are unable to escape the fact that increases in the potential contributions of women to the household benefit them only through daughters-in-law, and having a son results in the acquisition of a daughter-in-law for the household. Even in case of nuclear families considerable influence is rendered by the extended family. Having an extended family household influences a couple's desire for sons. Women's verbal opposition to the higher value placed on sons in their culture ultimately did not overcome their desire for a daughter- in- law who will provide labor and care and ensure the continuation of the family. Men in the households were not less desirous of having at least a son in the house. Despite changes in gender norms and education, women's ideas and attitudes about the relative value of sons and daughters ultimately are not realized in their reproductive behavior because of limits to constructions of gender enforced by the extended family ideal. In the family a women with only daughters is given less space in comparison to those with sons. This has a bearing on the psychological, physiological and emotional being of the females. As Banerjee (1998, p.261) puts it: "in the Indian patriarchal ideology, women are regarded more as a highly flexible resource of the household rather than fully-fledged members of it". The evidence in this paper may be best understood in this light.

### Concluding Observations

Son preference is an outcome of patrilocal, patrilineal and patriarchal attitudes seen deeply

entrenched in parts of India especially the north-west. Of recent, the traditional preference for sons in traditional societies ("readiness") amidst fertility decline and the pressure caused by small family size ("squeeze") negotiates through, among others, access to modern sex selection ("ability"). In such circumstances, better statistical monitoring of excess male births through civil registration is an essential ingredient of efficient policy where vital statistics have long been incomplete. It is important to identify areas of acute deficit of females and to understand the factors behind this phenomenon. We urgently need data sets on the proportion of such families or couples with one or more sons who are either sterilised or simply avoid reproducing to ascertain the impact that they are having on the CSR of India and elsewhere currently undergoing fertility transition. In the absence of such clarity and data sets, the formulation of policies and programmes to arrest the CSR ratio could bear no results at all.

However the prospects for speedy reduction of SRBs in Northwest India would only be possible with a gradual reduction in prenatal selection in the coming decades. A weakening in the supply of sex-selection services, under the impact of direct intervention by public authorities through awareness campaigns and regulations, may also be envisaged. Several studies contend that the presence of son preference by itself is not sufficient to induce modifications to reproductive behaviour unless technologies, such as modern contraception, abortion services, and prenatal diagnostic techniques, are present to translate that preference into behavior (Banister, 2004; Bhat and Xavier, 2005; Poston, 2002; Retherford and Roy, 2003).

Action by government and civil society organizations will be a crucial element to facilitate the decline of the SRB and to alleviate the consequences of current imbalances. Governments can try to alter the gender equation with respect to son preference by extending support to girls and their families. Such policies of positive discrimination would contribute to levelling out the cost- benefit advantage of boys.

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There is also a need to strengthen the functioning of Anganwadis. The latter are village-based early childhood development centres. They were devised in the early 1970s as a baseline village health centre, their role being to: provide government-funded food supplements to pregnant women and children under five; work as an immunisation outreach agent; provide information about nutrition and balanced feeding and provide vitamin supplements; run adolescent girls' and women's groups; and monitor the growth, and promote the educational development of children in a village.

The role of media and *khap panchayats* can be profound in spreading information about gender imbalances and their consequences. One of the main recipes for resisting and reversing a tragedy of the commons lies in dispelling the "cloud of ignorance" (Hardin, 1968) and informing actors well in advance of adverse long-term consequences of their behaviour. It may be expected that the social and economic pressure for gender discrimination will diminish over time in many areas with high sex ratio at birth.

Growth in human capital and economic opportunities gives women greater autonomy and

economic self-reliance, and may undermine the foundations of a patriarchal system based on their submission and exploitation. These gains contribute to a rapid weakening of male-based tradition and customs and to the promotion of more gender-symmetrical family arrangements.

A series of activities need to be initiated to create awareness among different stakeholders-household, society, village, govt., institutional structures and community at large, about the declining sex ratio and its negative impact on the society as a whole. Spiritual leaders with mass following have to be involved to educate communities not to discriminate against girl child and stay away from practices like sex selection and female foeticide. The availability of reliable and affordable old age pensions, social security and life insurance programmes which may reduce excessive burden on parents. People should be motivated to perform rituals by daughters which are hitherto fall in the domain of son e.g. performing last rights. The state should initiate to modify the two child norm with the combination of one son and one daughter to remove imbalances in the child sex ratio.

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# DEHOMOGENISING SCHEDULED CASTE POPULATION IN INDIA

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Chandigarh, India

## Abstract

Notwithstanding the common belief, Scheduled Caste (SC) population in India is highly heterogeneous not only in socio-economic and political but also in demographic terms. Realizing the need to dehomogenise SC population in the country, the paper attempts to investigate the deep diversity in their geographical distribution, relative importance of different castes and the caste dominance at the regional and sub-regional levels, using detailed information on individual castes of SC population available from the Census of India.

Maps were prepared to depict proportional shares of SC population in total population, the first ranking castes and dominant castes by their names. The district has been adopted as the unit for data mapping and analysis.

Accounting for one-sixth of India's population, SC population is reported in 609 of 640 districts in the country at 2011 Census. Though forming the majority population only in one district, they shared at least one-fourth of population in 73 districts of the country. On the whole, SC population was highly concentrated in states falling in north Indian plains along with coastal plains in Andhra Pradesh and Tamil Nadu. However, both the centripetal and centrifugal tendencies have been observed in their distribution recently.

Within the multiplicity of castes running into more than one thousand, only sixty four castes of SCs are the first ranking castes in 537 districts of India in 2001. In more than a half of the districts they are majority castes too. Of these 64 first ranking castes, 16 were the dominating ones, where they were also the first ranking castes. The Chamar caste with a population of more than 32 million persons in 178 districts, was the first ranking caste and numerically the largest and geographically the most widespread caste of all such castes in India. The Mahar and the Madiga, respectively, followed the Chamar caste. However, a majority of the top ranking castes of SCs were regional in character, leaving the Chamar caste to dominate the wide regional as well as the national scenarios and in political mobilization and reaping the benefits from the government supported policies and programs for the welfare of SC population in the country. Obviously, geography has an important role in the arithmetic of caste based political mobilization and socio-economic transformation of these formerly deprived castes in India.

## Introduction

The Scheduled Caste population, an important segment of Indian demography, is full of variety. In the traditional Indian society, the castes at the lowest level in the caste hierarchy had to

render a variety of services to the castes higher in the social order under a contractual system having social sanction, known as the 'jajmani system'. In the process, the persons of the lower castes had to

face various kinds of deprivations and even the stigma of untouchability. Even their social presence was considered inconvenient and embarrassing when not needed to perform the specified tasks (Beteille, 2000, p.367). In Independent India, these castes have been officially designed as the Scheduled Castes. At the time of 1931 Census the term 'Scheduled Castes', chosen deliberately by the colonial government in India as a 'value neutral' term, replaced the previously used terms such as 'Exterior Castes' or 'Depressed Classes' for these castes. The term, Scheduled Castes, has given a new social and political identity to the otherwise large and highly heterogeneous castes, varying not only in demographic but also social, economic, and political terms. There is a wide regional diversity in geographical distribution of these castes and their caste combinations, social-economic status, political mobilization and process of transformation. Under the democratic system of governance based on equal voting rights for all and seats in the Indian parliament and the state assemblies reserved for the scheduled castes in proportion to their population size, the castes with higher number and geographical concentration could reap disproportionately large benefits not only in political but also economic and social terms. Castes with higher educational levels cornered not only a larger number of government jobs but also the higher positions in administration thereby increasing their decision-making power in administration along with residential and occupational mobility. Consequently, the persons belonging to such castes face a lesser degree of social stigma of untouchability now and enjoy better standards of living and higher degree of awareness against any kind of injustice and higher political mobilization. The State intervention under the affirmative action along with planned developments, social reform movements and personal efforts have further divided these castes in India, both at regional and sub-regional levels.

Currently, the category of Scheduled Castes includes the castes which never faced the stigma of untouchability. The scheduled tribes de-

notified as scheduled castes in Uttar Pradesh and in some other states of north-east India belong to this category. The professional groups such as the Nats, the Turi (genealogists), the Bazigar, the Shilpkar and the Garuda find place in the list of Scheduled Castes. In some cases, certain communities with similar names and even spelling were treated separately for their distinct cultural features and occupational diversity, such as, the Kadaiyan from Kerala and Tamil Nadu, and the Turi from Gujarat and other places. Scheduled Castes (henceforth SCs) are mainly landless labourers. However, the distribution of land among them has led to an increase in the number of land holders. At 2001 Census, about 20.0 per cent of the SC workers were cultivators. Several traditional occupations including skin and hide work, scavenging, drum-beating, playing music and signing, wherein SCs were generally engaged in, are rapidly disappearing with modernization. Persons working in some occupations like skin and hide work, scavenging etc., considered degrading, were treated as untouchables. Nevertheless, the same occupational groups were not treated identically in different regions. If fishing communities are untouchable in eastern India, it is not the case in the western coastal areas or in the south except for the Bharatar of Tamil Nadu. The potters of Madhya Pradesh or Manipur are untouchables, but not in other parts of India. The washermen in Andhra Pradesh are not untouchable, whereas in many other areas they are, and there they are notified as scheduled castes (Singh, 1993, p.9). With decline of traditional occupations SCs are now shifting to modern occupations like horticulture, animal husbandry, trade and business, small-scale industry, and wage labourers in construction activities. Moreover, there is a phenomenal increase in white-collar jobs. Of course, there are wide inter and intra-regional, urban-rural and inter-caste variations, depending on the historical developments and the efforts made by different state governments to improve their conditions. While a majority of SC communities regularly consume non-vegetarian food and occasionally take alcoholic drinks, a considerable number of

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them (nearly one-fifth) have become vegetarian and non-alcoholic under the influence of the Bhakti Movement. Interestingly, SCs in every region and at the local levels have their own hierarchy, prohibiting the acceptance and exchange of water and food. For a Mala, a Madiga is an untouchable, and for both of them a Thoti is an untouchable. For a Meghwal, a Regar and a Bhangi are untouchables (Singh, 1993, pp.11-12).

A majority of scheduled castes are Hindus by religion, but some communities follow Sikhism and Neo-Buddhism. Ideologically, Sikhism does not believe in caste system, hence a lesser degree of deprivation and untouchability is practiced against SCs in Punjab where the SC communities following Sikhism are mainly concentrated (Jodhka, 2000, pp.386-387). Numerically, they differ from several millions to a few hundred. The Chamar, a widely distributed community in north India, had a population of more than 40 million persons as compared to the Watal, a community confined to Jammu & Kashmir, which accounted for only 169 persons at 2001 Census. In about one-half of the districts in India the Chamar caste is the first ranking caste in the total SC population of these districts. On the other side of the scale in 29 districts of the country the total SC population is less than one thousand persons in each case. In their regional distribution SCs are largely concentrated in five states viz. Uttar Pradesh, West Bengal, Bihar, Tamil Nadu and Andhra Pradesh accounting for one-half of the total SC population in India. Uttar Pradesh alone has more than one-fifth of the total SC population of the country. Against this, in tribal population dominated Manipur, Mizoram, Meghalaya, and Mizoram states they make only a fraction (less than 0.1 per cent) of one per cent in the total SC population of India. In Punjab, they form roughly one-third of the total population of the state at 2011 Census. In comparison they constitute less than one-twentieth of the total population in each of the five states of Sikkim, Manipur, Goa, Meghalaya and Mizoram. Such a pattern of concentration or dispersal plays an important role in political mobilization under the democratic system of governance like ours.

Briefly, the social stratification and inequalities in income, assets and living standards among various strata of the SCs have enlarged regionally and sub-regionally on a scale never seen in pre-Independence era.

According to the list of Scheduled Castes available in the Census of India 2001, there are a total of 1221 castes in India varying from a high of 101 sub-castes in Karnataka state to a low of four each in Sikkim and Dadra & Nagar Haveli. Keeping in view the large variety of services they used to render to the society and wide variations in resource availability in different parts of our country, wide regional and local diversity of such castes is bound to be there. Notably, however, in the 2001 Census, where different castes of 'Scheduled' category of castes are listed by the states and union territories, the names of many castes occur repeatedly in the list of several states and union territories. For example, Chamar, a caste included in the Scheduled category of castes, is found in as many as twenty states and two union territories. Even if the number of castes common in the Scheduled Castes list of different states and union territories is counted only once, then also there are no less than 534 castes of Scheduled Castes (SCs) in India. This, in itself, is quite a number of castes, contradicting the generally accepted view that the 'Schedules Castes' makes a homogenous caste category. Hence, there is a need to dehomogenise the Scheduled Caste population in India to explode the general myth of their being a homogeneous caste group.

### Objectives, Data Source and Methodology

Accepting the challenge, the present paper attempts to dehomogenise the Scheduled Caste population in India, addressing the following research questions:

1. How is the scheduled caste population in India distributed at the regional and sub-regional levels with what kinds of social, political and economic implications of such a distributional pattern?

2. Which are the castes that have a higher preponderance among all the SC castes at the sub-regional or district level in India with what significance? and,
3. Which are the castes that form the majority in the total SC population at the sub-regional or district level in India and what significance is attached to such a pattern of regional or sub-regional level caste dominance?

To find answers to the above stated questions, data available from the Census of India publications were calculated, tabulated and mapped. For mapping SC population at the district level, the proportional shares of SC population in total population of individual districts were calculated from the Census of India (2011) Primary Census Abstract, Data Tables (India & States/UTs-District Level), available in excel format at the Census of India website ([www.censusindia.gov.in](http://www.censusindia.gov.in)). There were 640 districts in India at the time of 2011 Census. Of these, 31 districts had no SC population. These were in Arunachal Pradesh (16), Nagaland (11), A & N Islands (3) and Lakshadweep (1). The national average being 16.63 per cent for SC population at 2011 Census, districts were grouped into three categories (<10 per cent, 10-20 per cent and > 20 per cent) to map distributional pattern of SC population at the district level. Another map was prepared by calculating the proportional share of the first ranking caste in the total SC population of each district in India. The districts were grouped into three categories: Districts with proportional share of the first ranking caste (i) less than 25.0 per cent, (ii) between 25.0 and 50.0 per cent and (iii) more than 50.0 per cent. In a way, the 278 districts of India in the third category of districts having share of the first ranking 50.0 per cent or more in the total SC population of the respective district, were obviously the single caste majority districts too. In fact, such a position held by a single caste in a district or a group of districts carries a great significance in matters of political mobilization, control over the resources, and reaping the benefits out of the government sponsored development

programs and policies. To draw the third map for the present exercise was really a challenge, mainly because of the fact that even if we leave aside those 43 districts, where the first ranking caste had a population of less than 1000 persons (and another 13 districts, where no SC population was reported at 2001 Census), there were as many as 64 first ranking castes in the remaining 537 districts of the country at 2001 Census, for which detailed information on the demographic attributes by individual castes of the SC population is presently available. Cartographic mapping of such a large number of castes is hardly possible with clarity and correctness. Under the circumstances, it was decided to cartographically map only those sixteen castes which were having at least one million population in each case at 2001 Census and to put the remaining 48 first ranking castes in the category of 'Other First Ranking Castes'.

The discussion in the paper is organized in three sections, dealing with distributional pattern of the Scheduled Caste population at the regional (state) and sub-regional (district) levels; distribution of first ranking SC castes at the sub-regional (district) level; and the distribution of the first ranking castes in districts by the individual caste names, in a sequential order.

## I

### Scheduled Caste Population in Regional Context

According to the 2011 Census, 305.7 million or more than 25 per cent of the total population of India belonged to the scheduled population (castes and tribes). In other words, every fourth person in India belongs either to a scheduled caste or a scheduled tribe. Separately, two-thirds or 201.4 million are scheduled castes and remaining one-third or 104.3 million scheduled tribes. In a way, every sixth person in India belongs to this or that caste of the SC population.

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and Lakshadweep), Scheduled Caste population was residing in all the states and union territories of India. Earlier the 2001 Census of India reported 6,188 persons belonging to the sixteen castes of SCs in Arunachal Pradesh. It has been reliably learned that the Government of Arunachal Pradesh did not supply any list of notified SC castes to the Directorate of Census Operations in the state before the conduct of 2011 Census, hence no SC population has been recorded there. As a result, the SC population there was recorded under the general category of population during the conduct of 2011 Census in the state.

Of course, there are wide regional and sub-regional level variations in distribution of SC population in the country. In some states, SC population is highly concentrated, whereas in some others they make only a fraction of their total population. In Uttar Pradesh alone there are 41.3 million or more than one-fifth (20.5 per cent) of the total SCs in the country. Next to it, West Bengal accounts for another 21.5 million or 10.7 per cent of the total SC population in India. These two states together share roughly one-third of the India's scheduled castes population. Strikingly six states, namely, Uttar Pradesh, West Bengal, Bihar, Tamil Nadu, Andhra Pradesh and Maharashtra, each having more than 13 million persons in SC category, together have three-fifths or 60.1 per cent of the total SC population in the country. In fact in twelve states of India (Uttar Pradesh, West Bengal, Bihar, Tamil Nadu, Andhra Pradesh, Maharashtra, Rajasthan, Madhya Pradesh, Karnataka, Punjab, Odisha and Haryana), each having more than five million SC population, reside roughly nine-tenths (87.4 per cent) of the total SC population in the country. A majority of these states fall in north India. In comparative terms four southern states (Andhra Pradesh, Tamil Nadu, Karnataka and Kerala) together have only about 21.0 per cent of the total SC population in India. In comparison the share of the four northern states (Uttar Pradesh, West Bengal, Bihar and Rajasthan) is as high as 45.5 per cent. Evidently the inter-state distribution of the scheduled castes population in India is highly uneven. In general, there is a greater

concentration of these castes in the north Indian states.

The share of SC population in the total population of individual states is also highly revealing. It varies from a high of about 32.0 per cent in Punjab to a low of 0.11 per cent in Mizoram. National average being 16.63 per cent, eleven states (Punjab, Himachal Pradesh, West Bengal, Uttar Pradesh, Haryana, Tamil Nadu, Uttarakhand, Rajasthan, Tripura, Karnataka, and Odisha) and two union territories (Chandigarh and NCT Delhi) have SC population above the national average. Against this, eight states (Jammu & Kashmir, Assam, Gujarat, Sikkim, Manipur, Goa, Meghalaya, and Mizoram) and two union territories (Daman & Diu and Dadra & Nagar Haveli) had less than the national average of SC population. As already stated, there was no SC population in Arunachal Pradesh, Nagaland, Lakshadweep and A & N Islands.

In six states of Punjab, Himachal Pradesh, West Bengal, Uttar Pradesh, Haryana and Tamil Nadu SC population constitutes more than 20 per cent of the total population of respective states. In comparison, in the tribal population dominated states of Sikkim, Manipur, Meghalaya, and Mizoram the SC population forms less than five per cent of the total population. In fact, in areas dominated by the Christian, the Buddhist and the Muslim population, the SC population is conspicuously low. In the past, conversion of the low caste Hindus to Christianity, Buddhism and Islam in such areas is mainly responsible for the marginal distribution of scheduled castes in these states.

The states of Punjab, Uttar Pradesh, West Bengal, and Tamil Nadu have a much higher share of SC population in total such population of India than their respective shares in the total population of the country. For example, Punjab shared only 2.29 per cent of India's total population against 4.40 per cent share in total SC population of the country in 2011. Similarly, the respective shares of Uttar Pradesh are 16.51 per cent and 20.54 per cent; of West Bengal 7.54 per cent and 10.66 per cent; and of Tamil Nadu 5.96 per cent and 7.17 per

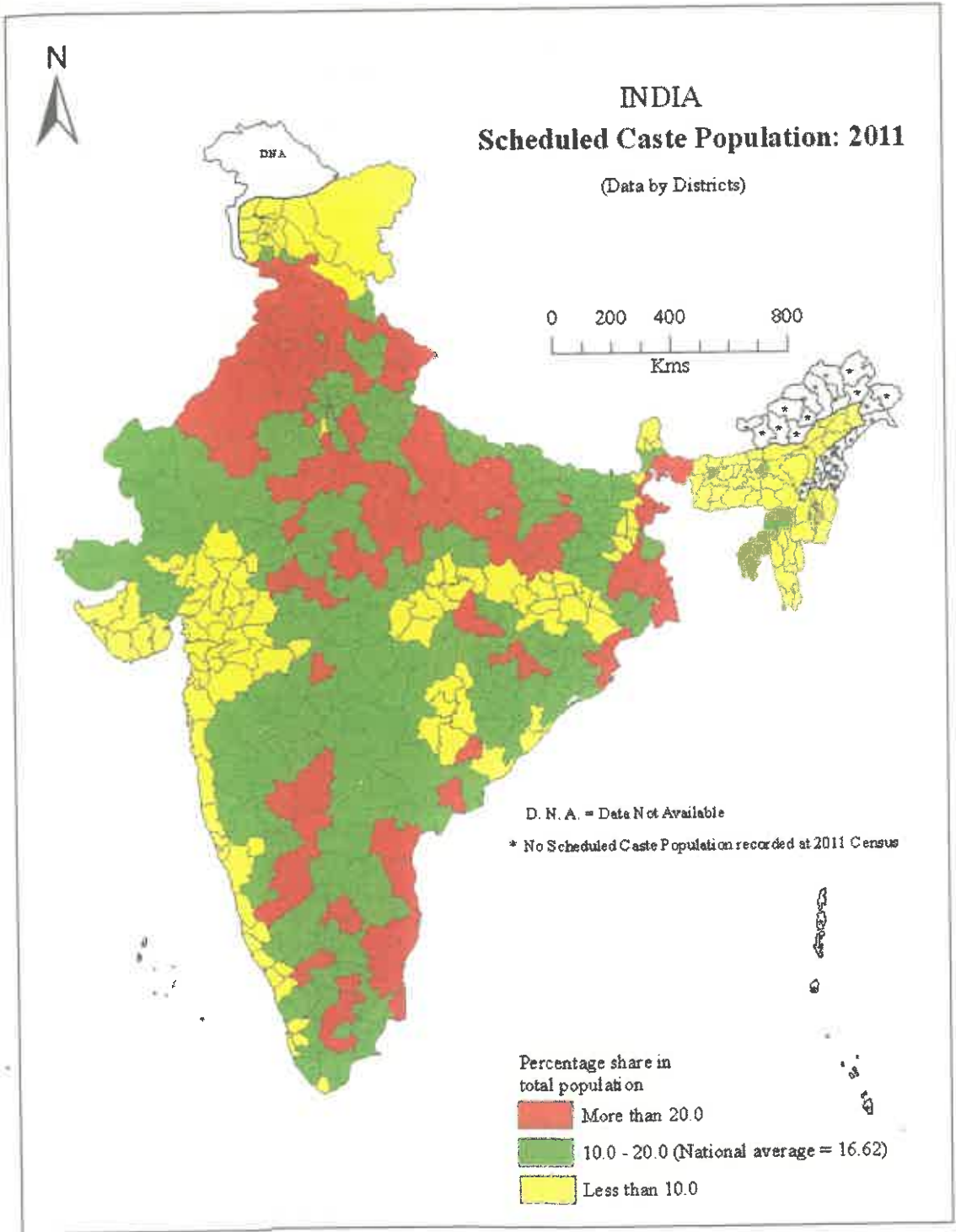
cent. Himachal Pradesh, Haryana, and Rajasthan states also have relatively higher shares of total SC population than their respective shares in total population of the country. Against this, the shares of Maharashtra and Gujarat states in total SC population of India (6.59 and 2.02 per cent, respectively) are much lower than their respective shares (9.28 and 4.99 per cent) in total population of the country. Such interstate variations in distribution of scheduled castes population are full of implications in the context of political mobilisation in a democratic setup based upon equal voting rights.

Further, even a cursory look at the state level SC population figures for 2001 and 2011 Census decades is somewhat revealing. Within the group of the five top ranking states of Uttar Pradesh, West Bengal, Bihar, Tamil Nadu and Andhra Pradesh, there has been a change of positions between Tamil Nadu and Andhra Pradesh. The former moved up to the fourth from the fifth position and Andhra Pradesh scaled down to the fifth from the fourth position between 2001 and 2011. The differential in growth rates in SC population between these two competing states is mainly responsible for this. During the decade, the compound annual growth rate of SC population in Tamil Nadu was 1.99 per cent, against 1.18 per cent in the case of Andhra Pradesh. Among the major states, Maharashtra (3.0 per cent) and Chhattisgarh (3.07 per cent) recorded a quite high annual growth rates of SC population. Other major states recording high annual growth rate of SC population than the national average (1.91 per cent) are Bihar, Punjab, Madhya Pradesh, Rajasthan, Haryana and Jharkhand. On the other hand, Andhra Pradesh, West Bengal, Uttar Pradesh and Odisha recorded a lower annual growth rates. In contrast, Kerala recorded negative growth rate (-2.70 per cent) witnessing an absolute decline of more than 84 thousand persons in SC population in the state. Proper assessment of the growth of SC population is a hazardous task for a numbers of reasons. Several new castes are added to the already enlisted list of SC castes in states. For example there were only 779 castes in the

scheduled list of castes at 1951 Census which went up to 1221 by 2001 Census affecting comparability of SC population over the Census decades. For example, the Government of Punjab has added two new castes (Mahatam Rai Sikh, and Mochi) in its list of SCs after the conduct of 2001 Census. As a result, not only the proportion of SC population in the total population of the state went up by 3.0 per cent (from 28.90 per cent in 2001 to 31.94 per cent in 2011) but also recording high annual growth rate of SC population during the decade. Secondly, in 1990 the Government of India decided to extend the benefits of reservation policy to neo-Buddhists also, who had reported themselves as SCs at the time of 1991 Census, resulting in a phenomenal increase in SC population in Maharashtra state during 1981-1991 Census decade. Neo-Buddhists are mainly concentrated in Maharashtra state. Thirdly, the way inter-state migration of SC population is reported in Indian Census also hinders the study of SC population growth.

At the district level, scheduled castes population was recorded in 609 districts out of total 640 districts in India at the time of 2011 Census. In other words, there are only 31 districts where SC population was not recorded. These include all the districts in Arunachal Pradesh (sixteen), Nagaland (eleven), A & N Islands (three districts), and Lakshadweep. Earlier, at 2001 Census, SC population was reported in all the districts of Arunachal Pradesh.

Of all the 609 districts, where SC population was recorded in 2011, scheduled castes form the majority only in one district (Koch Bihar in West Bengal). However, SCs make at least one-fourth in the total population of 73 districts in the country. Earlier in 2001, the number of such districts was only 61. In another 113 districts, they make in between one-fourth and one-fifth of the total population. A majority of these districts belong to states like Uttar Pradesh, West Bengal, Punjab, Himachal Pradesh, Haryana, Madhya Pradesh, Rajasthan, Tamil Nadu and Karnataka (Fig. 1). All the 20 districts in Punjab, 10 out of 12 in Himachal Pradesh, 40 out of 71 in Uttar Pradesh, 12 out of 19 in West Bengal, 7 out of 13 districts in



**Fig.1**

Uttaranchal, 12 out of 21 in Haryana, 16 out of 32 in Tamil Nadu, 12 out of 33 in Rajasthan, and 13 out of 30 districts in Karnataka fall in this group. On the other side of the scale, in 88 districts the scheduled castes form less than 5 per cent of the total population. Earlier in 2001, the number of such districts was 94. The smallest number (17) of SC population was recorded in Champhai of Mizoram state. Earlier at 2001 Census, the smallest number of SC population was only three persons in the Tamenglong Hills district of Manipur state. On the whole, there were 187 or about one-third districts in country, where proportional share of SC population in their total population was more 20.0 per cent or one-fifth. On the other side of the scale there were 165 districts where SC population shared less than 10.0 per cent or less than one in ten persons in total population of the respective districts. In remaining 257 districts their share in total population ranged between 10.0 and 20.0 per cent (Fig. 1).

Obviously, the scheduled caste population is highly concentrated in a few districts of the north Indian plains and coastal Tamil Nadu. Of the 20 top ranking districts in terms of the proportional share of SC population in their total population, 12 districts were in Punjab, 3 in West Bengal, 2 in Uttar Pradesh, and one each in Tamil Nadu, Rajasthan and Jharkhand states. Earlier at 2001 Census the distribution of such districts was as follows: seven in Punjab, five in Uttar Pradesh, four in West Bengal, two in Tamil Nadu and one each in Rajasthan and Jharkhand. The dominance of Punjab was strengthened further at the cost of Uttar Pradesh, West Bengal and Tamil Nadu.

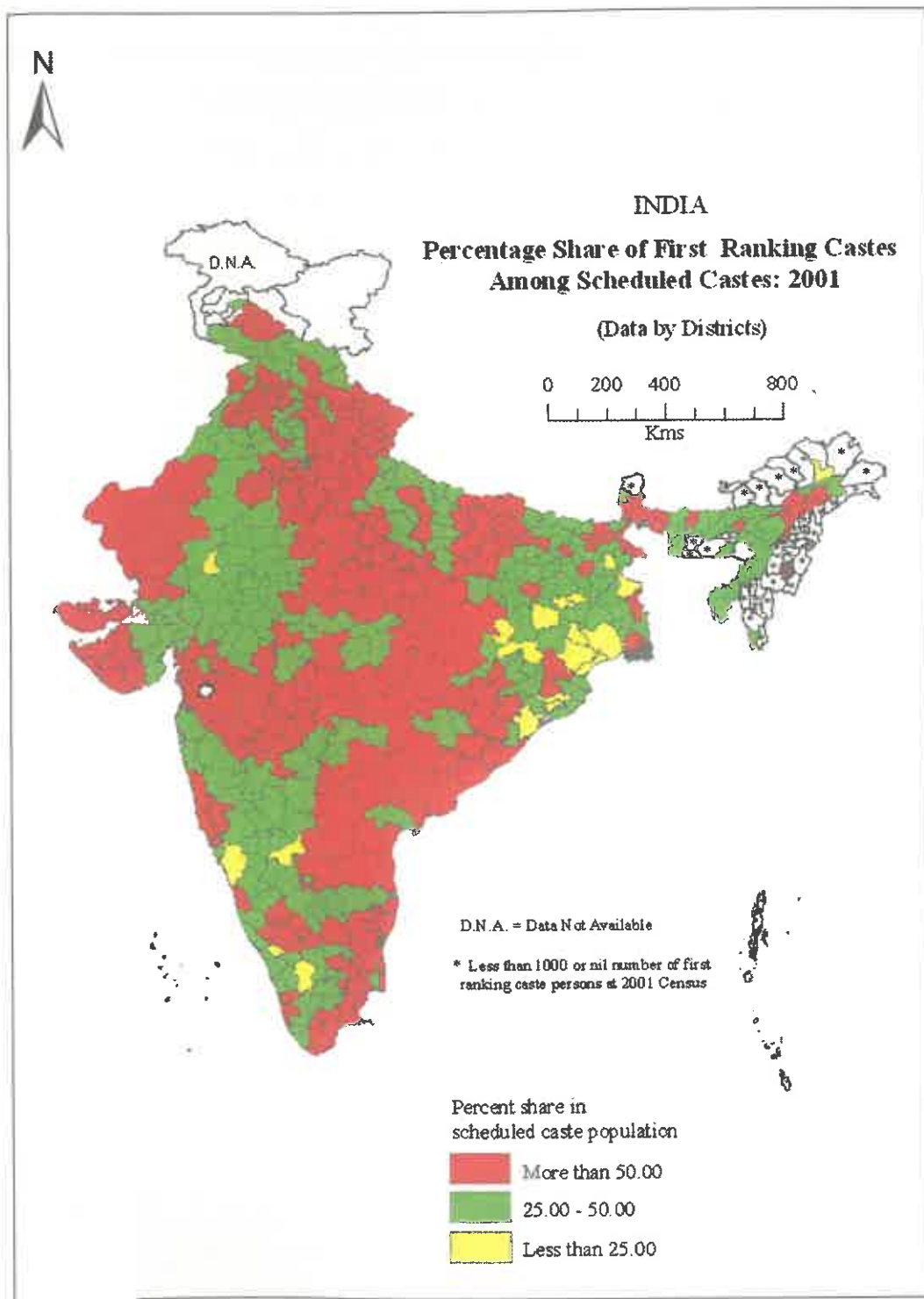
The 131 topmost districts in India, each having more than half a million population of SCs, had more than a half (51.4 per cent) of the total SC population in the country. Earlier at 2001 Census, the number of such districts was 90 and they accounted for two-fifths of the total scheduled castes population in the country. On the reverse side 91 districts in India had less than one per cent (0.76 per cent) of the total SC population in India. Earlier at 2001 Census the number of such districts was 97. All this indicates that both centripetal and

centrifugal forces are working side by side so far as the geographical distribution of SC population in India is concerned.

## II

### First Ranking Castes of SCs by Proportional Share

Discussions in this section are based on the 2001 Census, which provides detailed information on distribution of SC population by individual castes. Such information is not yet available from the 2011 Census. The proportional share of the top or first ranking caste in total SC population of individual districts in the country has been calculated. This information has been mapped by dividing districts into three categories. The districts, where the top ranking caste have a share of (i) more than 50.0 per cent population in total the SC population of the respective district, (ii) between 50.0 and 25.0 per cent, (iii) less than 25.0 per cent. The main objective behind calculating and mapping is to understand the internal composition of different castes of SC population from the regional and sub-regional perspectives. The concentration of a particular caste in a state or part of it carries great significance in political mobilization and riding the ladders of political power. The Chamars constitute between 40 to 90 per cent of all the SC castes in areas of their concentrations. Numerically, they dominate in western and eastern Uttar Pradesh, whole of Haryana, eastern Rajasthan, northern and eastern Madhya Pradesh, and northeast Punjab. Such a geographical distribution of castes has a significant role in political mobility and gaining of power. But the relation among different castes also plays an important role. The strained relation of the dominant caste in a region with other castes plays a negative role in this context. For example antagonistic relations between the Chamars and the Balimikis, the first and second ranking SC castes in western Uttar Pradesh cancel each other's political influence in the power game. Parallel examples that can be cited are of Paraiyan versus



**Fig.2**

Pallan in Tamil Nadu, Madiga versus Malas in Andhra Pradesh, and Megh versus Chamars in Rajasthan.

There were 593 districts in India at the conduct of 2001 Census. SC population was recorded in 580 districts. In 13 districts including all the eight districts of Nagaland, two districts of A & N Islands and one district each in Lakshadweep, Mizoram (Champhai), and Manipur (Ukhrul) SC population was not recorded. In another 43 districts in the country the first ranking caste had a total numerical strength of less than 1000 persons. Most of such districts were from the tribal majority states of the north-east India or the Muslim dominated state of Jammu & Kashmir, especially the Kashmir Valley region. In state-wise distribution, thirteen districts were in Arunachal Pradesh, nine in Jammu & Kashmir, seven in Mizoram, six in Meghalaya, four in Manipur, and one each in Sikkim, Pondicherry (now Puducherry), Assam and Gujarat. In this way the data analysis in the following is based on population figures from 537 districts.

In aggregate terms the first ranking castes distributed in 537 districts of the country and coming from the 64 castes of SC population had a combined population of 88.4 million persons or 53.0 per cent of the total SC population (167 million) in 2001. In 278 or one half of 537 districts included here in the study the first ranking castes were the dominant caste too as their share in total SC population of respective districts was 50.0 per cent or more. Against this in 20 districts the first ranking castes shared only less than one-fifth of the total SC population in their respective districts indicating a multi-caste composition of SC population in these districts.

In 278 or more than a half (51.5 per cent) of 537 districts included here, the proportional share of the first ranking castes in total SC population of respective districts was more than 50 per cent (Fig.2). In other words, in majority of the districts in India a single caste of SC was in majority. The proportional share ranged from just 50.0 per cent in Hoshangabad district of Madhya Pradesh to 98.6 per cent in Bageshwar district of Uttarakhand

state. In the former district the Chamar formed the majority and in the latter the Shilpkar had such a distinction. As many as 142 districts or more than a half (51.1 per cent) of such districts were from the five states of Uttar Pradesh (51), Madhya Pradesh (27), Maharashtra (25), Tamil Nadu (21) and Andhra Pradesh. Another 84 districts of this category were located in seven states viz., Punjab (13), Uttarakhand (12) Rajasthan (12), Bihar (12), Gujarat (12), Chhattisgarh (12) and Odisha (11). In addition, Haryana (9), Assam (7), Karnataka (6), Himachal Pradesh (5) also had relatively large number of districts in this category. The so called BIMARU states (Bihar, Madhya Pradesh, Uttar Pradesh and Rajasthan) together had 102 or roughly two-fifth districts of this category. On the whole, this category of districts makes a big patch on the map of India, starting from Uttarakhand and moving through western Uttar Pradesh, Madhya Pradesh, Jharkhand, Bihar, western Odisha, Chhattisgarh, and then taking an eastward turn to Maharashtra and Gujarat states. A part of the belt is spread over coastal districts of Andhra Pradesh and Tamil Nadu. In addition, Punjab-Haryana plains and western Rajasthan also fall in this belt. This kind of distribution finds association with farming activities, animal husbandry, and practice of feudalism in India. In the case of single caste dominance districts, different castes dominated in different regions. It was Chamar-Pasi combination in case of Uttar Pradesh, Chamar-Dusadh in Bihar, Chamar-Mahar in Madhya Pradesh, Chamar-Megh in Rajasthan, Chamar-Mazhabi in Punjab, Madiga-Mala in Andhra Pradesh, Pallan-Adi Dravida in Tamil Nadu, Mahar in Maharashtra, Rajbanshi in West Bengal, Shilpkar in Uttarakhand, Adi Karnataka in Karnataka, Namasudra-Kaibartha in Assam and Pulayan in Kerala.

On the other side of the scale, there were only 20 districts in the country where the top ranking caste had the proportional share of less than 25.0 per cent or one-fourth in total SC population of respective districts. The proportional share of top ranking caste ranged from a high of 24.96 per cent in Bellary district (Karnataka) to a

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low only 16.1 per cent in Murshidabad district (West Bengal). These districts were generally distributed in tribal or Muslim population dominated areas of nine states, namely, Odisha (6), Jharkhand (5), West Bengal (3), Karnataka (2), Tamil Nadu (1), Kerala (1), Chhattisgarh (1), and Rajasthan (1). A large variety of castes was found in such districts. In other words, there was a very high diversity in terms of caste composition of SC population in such districts. In such as situation mobilization of Scheduled Castes for various social, economic and political activities was expected to be the most challenging task for the community leadership.

In 239 or more than two-fifths (44.0 per cent) of the districts in India, the share of top ranking castes ranges between 25 and 50 per cent of the total SC population in respective districts. The share of top ranking caste varied from a high of 49.9 per cent in Surendranagar district (Gujarat) to a low of 25.5 per cent in Baran district (Rajasthan). In their distribution, such districts were found in almost all states of India adjoining to districts having the share of top ranking caste of more than 50.0 per cent. A large part of the states of Bihar, Rajasthan, Karnataka, Madhya Pradesh, Assam, Gujarat, Maharashtra, NCT Delhi and Kerala fall in this category. Nearly one-half or 48.0 per cent of the districts of this category fall in six states of Bihar (25), Uttar Pradesh (20), Rajasthan (19), Karnataka (19), Madhya Pradesh (18) and Assam (15). These districts make a transitional zone between the areas of single caste majority districts and the multiple caste districts of SC population.

Briefly, in majority of the districts in India the first ranking caste also made the majority caste too. In their regional distribution, such districts were generally located either in river plains, especially the Sutlej & the Ganga-Yamuna plains, and the eastern Coastal plains. Other kind included the areas associated with animal husbandry and livestock farming. Against this, districts where the first ranking castes were having a low proportional share in total SC population of respective districts, were located either in the tribal or Muslim population dominated districts of their states.

### III

#### Top Ranking Castes by Name

After examining the regional and sub-regional distributional pattern of the first ranking castes in districts by their proportional share, we examine here the first ranking castes by their names. The number of such castes was as high as 64, not possible to map with clarity. Alternatively, we selected 16 top ranking castes, each having more than a million persons for mapping them individually and putting the remaining 48 top ranking castes under one category of "Others". The sixteen top ranking castes in order of their numerical strength are; Chamar, Mahar, Madiga, Adi Dravida, Pasi, Rajbanshi, Mala, Namasudra, Bagdi, Megh, Dusadh, Adi Karnataka, Pasi, Rajbanshi, Mala, Namasudra, Bagdi, Megh, Dusadh, Adi Karnataka, Mazhabi, Pallan, Pod, and Mahyavansi. Besides, there were at least 12 first ranking castes that had a numerical strength between less than one million (9.9 lakh) and half a million (5.0 lakh). These include Musahar, Bauri, Ad Dharmi, Bhuiya, Pulayan, Paraiyan, Balahi, Shilpkar, Pan Pano, Dom, Ganda, and Bhambi. Some of these castes were highly localized while some others had a comparatively larger areal coverage. The Musahar caste was important in parts of Bihar, the Bauri in Odisha and West Bengal, the Ad Dharmi only in three districts of Punjab, the Bhuiya in a few districts of Jharkhand, the Pulayan in more than a half of the districts of Kerala, the Paraiyan in some districts of Tamil Nadu, the Balahi in parts of Madhya Pradesh, the Shilpkar in ten out of thirteen districts of Uttarakhand, the Pan Pano and the Dom together nearly in one-half of the districts of Odisha, the Ganda in Odisha and adjoining parts of Chhattisgarh, and Bhambi in parts of Karnataka, Gujarat and Maharashtra states.

In aggregate terms, the top sixteen of the 64 first ranking castes in 537 districts of the country and each having a million or more population accounted for 74.18 million or about 84.0 per cent of the total population (88.4 million) of such castes in 2001. They were first ranking caste in 376 out of



537 districts (Fig.3). The Chamar formed the most widely spread and numerically the largest first ranking caste of SCs followed by the Mahar, and the Madiga. Among them, there were castes such as the Mahyavansi (ranked sixteenth) and the Namasudra (ranked eighth) which were relatively less in numerical strength but with wide regional coverage. Of these, the Pod was a highly localized first ranking caste, having this distinction only in one district of South Twenty Four Parganas (West Bengal). In the following paragraphs their regional distribution has been discussed in brief.

The Chamar is the most dominant caste among all the castes in the SC category of population in India. With its 32.5 million population in 178 districts, where it was the first ranking caste, its share varied from a high of 87.6 per cent in Bilaspur district (Chhattisgarh) to 20.1 per cent in Sahibganj district (Jharkhand). It was in absolute majority (more than 50.0 per cent) in 107 districts. Of these 107 districts, as many as 48 districts were in Uttar Pradesh, 20 in Madhya Pradesh, ten in Chhattisgarh, nine in Haryana and six each in Bihar and Rajasthan. This kind of distributional pattern speaks a lot for the reasons Bahujan Samaj Party (BSP) under Mayawati's leadership, who herself comes from the Chamar caste, making early inroads in power politics in these states and finally succeeding in gaining political power in Uttar Pradesh. In 22 districts of the country the Chamar caste had more than three-fourths share in their total SC population.

The Mahar, the second most dominant caste in this group, were first ranking in 42 districts with total population of 6.1 million persons. The share of Mahar caste in these districts ranged from a high of 89.2 per cent in Bhandara to 32.7 per cent in Mumbai Suburban district, both in Maharashtra. In 30 out of 42 districts the Mahar caste formed the majority caste of SCs. In eleven districts of Maharashtra the Mahar caste constituted more than three-fourths of SC population. In thirty districts of the state the Mahar caste was also the first ranking caste. In addition, in four districts of Madhya Pradesh, two of Goa and one of Chhattisgarh, the Mahar caste was the first ranking

caste. Madiga caste, with its main base in Andhra Pradesh makes top ranking caste in 19 districts, 15 from Andhra and four from Karnataka.

The Mala, another important SC category caste with its base in Andhra Pradesh, was the first ranking caste in eight districts of Andhra Pradesh and had a total population of 2.4 million in these eight districts. The share of the Mala caste varied from a high of 68.2 per cent in Srikakulam district to a low of 46.9 per cent in Chittoor district, both in Andhra Pradesh. The Mala is the seventh largest first ranking caste in India. The Mala and the Madiga castes are politically opposed to each other in state politics canceling out each other's influence. Adi Dravida, a caste having its main base in Tamil Nadu, makes the first ranking caste in 12 districts covering Tamil Nadu (10), Puducherry (1) and Karnataka (1). With 5.1 million persons in 12 districts, where it makes the top ranking caste, it is the fourth largest top ranking caste in India.

The Pasi caste, with a population of 3.4 million persons in ten districts of eastern Uttar Pradesh where it formed the first ranking caste, is the fifth largest first ranking caste in India. The Rajbanshi caste, with a population 2.66 million population in five districts of West Bengal, where it was the first ranking caste, was the sixth top ranking caste in India. Koch Bihar district, where the Rajbanshi caste shared 78.3 per cent of all the SC castes in the district, is the only SC population dominated district in the whole country. The numerical dominance of the Rajbanshi caste there speaks of its dominance in resource sharing and of political clout. Namasudra, the eighth dominating caste of SC population in India, is the first ranking caste in 18 districts located in Assam (11), West Bengal (3), Tripura (2) and one each in Meghalaya and Odisha. In these 18 districts the Namasudra caste, as the top ranking caste, has a combined population of 2.3 million persons. Its share was the highest (72.6 per cent) in Malkangiri district (Odisha) and the lowest (29.7 per cent) in West Garo Hills district (Meghalaya). The Namasudra caste was in absolute majority only in four districts, two from Assam and one each from Odisha and West Bengal.



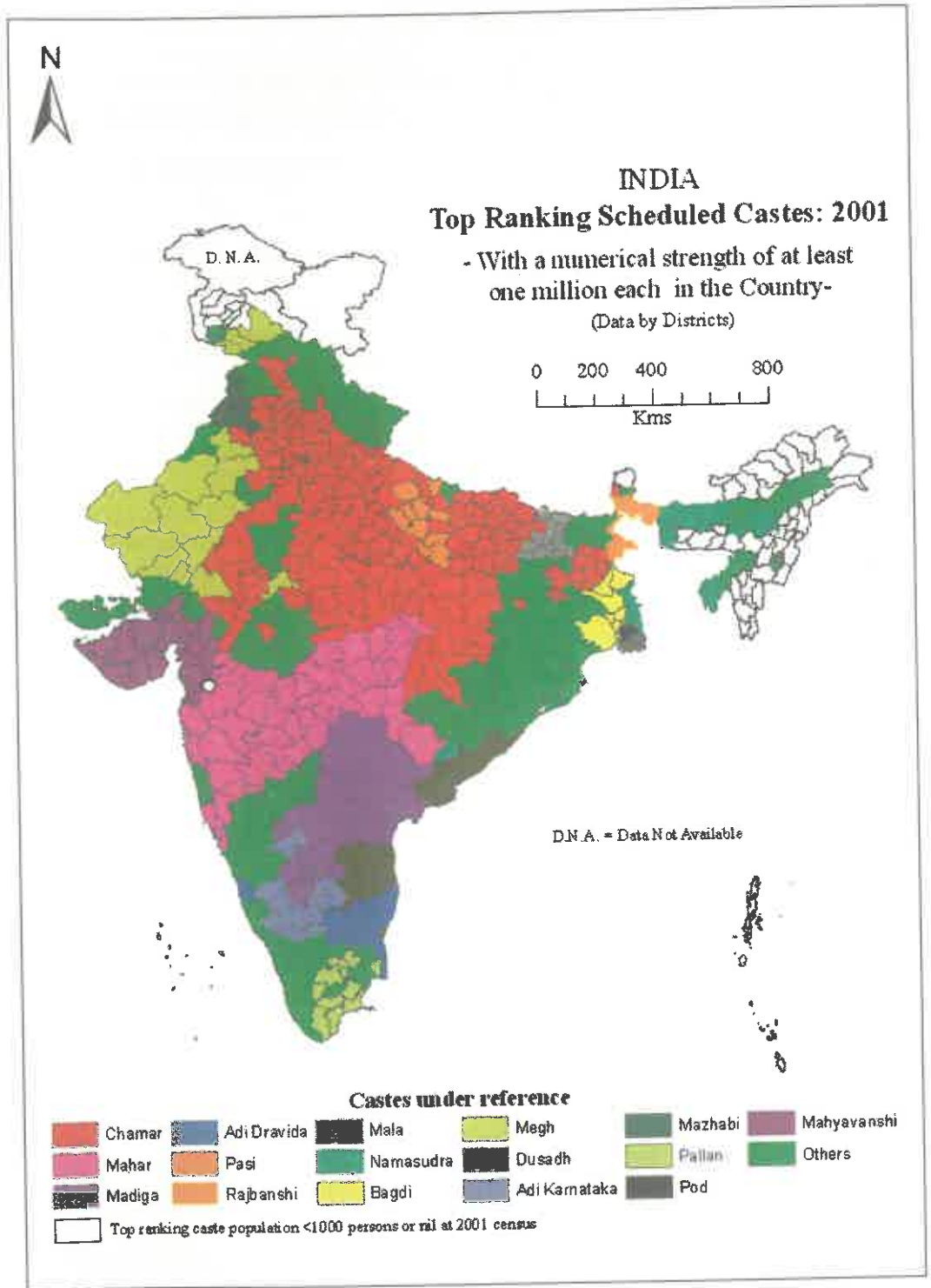


Fig.3

The Bagdi caste with 2.10 million persons was the first ranking caste only in six districts of West Bengal, but formed the single largest caste in none of these six districts. The Megh caste with 2.0 million persons ranked tenth among the sixteen top ranking castes, but had a wide regional coverage. It made the first ranking caste in 12 districts of western Rajasthan and three districts of Jammu & Kashmir state. Also, it formed the single majority caste in six districts. The Dusadh caste, which ranked eleventh among the sixteen top ranking castes with 1.95 million persons, was the first ranking caste in 12 districts of Bihar state. Also, it formed the majority caste in two districts of Vaishali and Begusaria. With a population of 1.92 million persons, the Adi Karnataka formed the first ranking caste in ten out of 27 districts in the state of Karnataka and was the majority caste in five districts. In Chamarajanagar district, the Adi Karnataka caste accounted for 77.3 per cent in the total SC population. In Karnataka state which has the largest number (101) of castes included in its SC list, such a dominant position of a caste in any district of the state carries significant implications in social and political mobilization and distribution of benefits accruing from the government run programs and policies. With a population of 1.71 million persons, the Mazhabi caste was mainly confined to seven districts of Punjab as the first ranking caste. Also, they made the majority caste in five districts and near majority in one more district. In Amritsar district the Mazhabi caste formed 82.0 per cent of its total SC population. The Mazhabis are Sikh by religion and mostly engaged as agricultural and general laborers. The Pallan caste with a population of 1.63 million persons was the first ranking caste in ten districts of Tamil Nadu. Also, they formed the majority caste in six districts. The Adi Dravida, which is fourth largest caste in the group of the sixteen top ranking castes, competes with the Pallan and Paraiyan in different spheres of life including political, social and economic. The traditional political rivalry between Pallan and Paraiyan castes in Tamil Nadu politics is quite well known. The peculiar kind of geographical distribution in different parts of the

state is one of the factors behind this. The Mahyavansi, ranking at the bottom of the sixteen numerically top ranking of SC castes with a population of only 0.39 million persons, has a wide geographical coverage. It was the first ranking caste in nineteen out of 25 districts in Gujarat state and in one of the two districts of Daman & Diu (UT). The Pod, with a population of 1.40 million persons ranked fifteenth within the group of the sixteen top ranking castes, is the most localized of all such castes. It formed the first ranking caste only in one district of South Twenty Four Parganas (West Bengal).

Briefly, the sixteen castes numerically at the top in list of the 64 castes of SCs forming the first ranking castes in 537 districts of the country accounted for 74.2 million or about 84.0 per cent of the total population (88.4 million) of such castes in 2001. They made first ranking caste in 376 of 537 districts. The Chamar makes the most widely spread and numerically the largest first ranking caste of SCs followed by the Mahar and the Madiga. Such castes as the Mahyavansi (ranked sixteenth) and Namasudra (ranked eighth) though relatively less in terms of numerical strength had a wide regional coverage. Against this, the Pod was a highly localized first ranking caste being the first ranking caste only in one district of South Twenty Four Parganas (West Bengal). On the whole a majority of first ranking castes were regional in character and thus their clout to influence political, economic and social scenarios too was regionally confined. The Chamar caste due to its geographical spread and numerical strength was in a position to influence the political, social and economic scenario in a large number of states in north India and also at the national level. However, in some parts, especially in western Uttar Pradesh and Haryana state, the Chamar caste faces political and social rivalry from the Balmiki caste and in Bihar from the Dusadh caste. The same is almost true for Madiga and Mala in Andhra Pradesh, Paraiyan and Pallan in Tamil Nadu, the Dom, the Ganda and the Pan Pano in Odisha. In comparison, the Mahar caste in Maharashtra, the Mahyavansi caste in Gujarat, the Namasudra in Assam and the Megh in

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Rajasthan have a clear edge over the other SC castes there. The large numerical heterogeneity of castes in the SC list along with wide diversity in geographical distribution of different castes in Karnataka and Odisha constrains the socio-economic and political mobilization of SC castes there. Obviously, geography has an important role to play when it comes to the arithmetic of caste based political mobilization and socio-economic transformation of these formerly downtrodden and deprived castes of Indian society.

### Conclusions

Against the generally accepted belief that the Scheduled Caste population is a homogenous caste category there is a wide socio-economic, political and distributional variety at regional and sub-regional levels in SC population. There were as many as 1221 castes of Scheduled Castes in India, varying from a high of 101 sub-castes in Karnataka state to a low of four each in Sikkim and Dadra & Nagar Haveli. Even after the common caste names repeatedly occurring in the lists of castes prepared by different states and union territories in India are deleted, there remain no less than 534 castes of SCs in India.

The exercise done to dehomogenise the Scheduled Caste population in India reveals that 64 castes of SCs, accounting for 88.4 million persons or 53.0 per cent of the total SC population of 167 million persons at 2001 Census, make the first ranking castes in 537 districts of India, ranging from a high of 98.2 per cent in Bageshwar district (Uttarakhand) to a low of only 16.0 per cent in Murshidabad district (West Bengal). In 278 or one half of 537 districts, the first ranking castes were the dominant caste too as their share in total SC population of respective districts was 50.0 per cent or more. Against this, in 20 districts the first ranking castes shared only less than one-fifth of the total SC population in respective districts, indicating a multi-caste composition of SC population in such districts. In their regional distribution, the districts where the first ranking also made the majority caste too were generally

located either in the river plains, especially the Sutlej and the Ganga-Yamuna plains and the eastern Coastal plains. Other kinds of areas include those associated with animal husbandry and livestock farming. Against this, districts where the first ranking castes, having a low proportional share in total SC population there were located either in the tribal, Christian or Muslim population dominated areas of states of their location.

The sixteen castes, numerically at the top in the list of 64 castes of SCs forming the first ranking castes in 537 districts of the country in 2001 comprised 74.2 million or about 84.0 per cent of the total population (88.4 million) of such castes in 2001. They formed first ranking caste in 376 out of 537 districts. Among these, the Chamar has the widest geographical coverage and the largest numerical strength followed by the Mahar, and the Madiga. The castes such as the Mahyavanhi (ranked sixteenth) and Namasudra (ranked eighth) were, though relatively less in terms of numerical strength had wide regional spread. Against this, the Pod was the highly localized first ranking caste only in one district of South Twenty Four Parganas (West Bengal). On the whole, the dominant majority of the first ranking castes were regional in character, which is expected in a country with wide variations in regional resource base and long socio-historical process. Therefore their clout to influence political, economic and social scenarios too was regionally confined. The Chamar caste, for its wide geographical spread and numerical strength was in a position to influence the political, social and economic scenario in a large number of states in north India and also at the national level. However, in some parts the Chamar caste faces political and social rivalry from second ranking castes, such as the Balmiki caste in western Uttar Pradesh and Haryana state and from the Dusadh caste in Bihar and other states. The same is almost true for Madiga and Mala in Andhra Pradesh, Paraiyan and Pallan in Tamil Nadu, the Dom, the Ganda and the Pan Pano in Odisha. Against this, the Mahar caste in Maharashtra, the Mahyavansi caste in Gujarat, the Namasudra in Assam and the Megh in western Rajasthan have a

clear edge over other SC castes there. Large numerical heterogeneity in SC list along with wide diversity in geographical distribution of different SC castes in Karnataka and Odisha constrain the socio-economic and political mobilization of the SC castes there. Obviously, geography has an important role to play when it comes to the arithmetic of caste based political mobilization and socio-economic transformation of these formerly downtrodden and deprived castes of Indian society.

### Acknowledgement

The author expresses his gratitude to Ms. Satwant Kaur and Mr. Harpreet Singh, the two fellows, working with me in the U.G.C., New Delhi sponsored project entitled "Socio-economic Transformation of Scheduled Population in India with reference to North-Western States" for their generous help rendered for calculating, tabulating and mapping the tremendous amount of data/information required to prepare the paper.

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## PUNJAB AND KERALA: A COMPARATIVE STUDY OF MATERNAL MORTALITY AMONG SCHEDULED AND NON-SCHEDULED CASTE POPULATION

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### Abstract

An attempt has been made in comparative terms to find the gap between the scheduled and non-scheduled castes in terms of maternal mortality in Punjab and Kerala and thereby infer the status of health care provision in the two states. The choice of these two states was guided by the differing nature of development path adopted by them; with a priority to economic development in Punjab and to social development in Kerala. Data made available by the District Level Household and Facility Survey-3 conducted under the aegis of the Ministry of Health & Family Welfare, Government of India was put in service. Kerala scored higher than Punjab on all counts of maternal health care. In terms of antenatal care, scheduled caste women in Punjab lagged behind non-scheduled caste women by 12 per cent points whereas Kerala portrayed a fair degree of equity on this count. On natal care front, hospital based deliveries among scheduled caste women were far less in Punjab than in Kerala. On the count of post natal care, 82 per cent of the non-scheduled caste women in Kerala had sought treatment for post delivery complications vis-à-vis 88 per cent scheduled caste women. In Punjab the scheduled castes lagged behind the non-scheduled castes by a big margin. The comparative models of development show that economic development per se does not guarantee the desired level of health care while a thrust on social development is more effective in this case. Annual audits of antenatal care service and promotion of institutional deliveries among scheduled castes in Punjab emerge as vital areas of concern for policy makers.

### Introduction

At global level, there were an estimated 287,000 maternal deaths in 2010, yielding a maternal mortality ratio of 210 maternal deaths per 100,000 live births. The developing region of the world accounted for 99 per cent (284,000) of the estimated global maternal deaths in 2010. Discrepancy between the developed and developing countries is much greater for maternal deaths than for most other health problems. The MMR in developing regions was 15 times higher than in developed regions. Within the developing region Sub-Saharan Africa region alone accounted

for 56 per cent (162,000) of these maternal deaths. Almost one-third of the estimated maternal deaths of the world occurred in South Asia. Within south Asia, the estimated 56,000 maternal deaths in India in 2010, almost one-fifths of the world's total, portrays a grim picture. The maternal mortality ratio, the proportion of maternal deaths per 100,000 live births due to causes related to pregnancy or within 42 days of termination of pregnancy, was highest in developing region (240) in stark contrast to the developed region (16). At the country level, the range is as wide as 1,100 in

Somalia & Chad and 890 in Sierra Leone to 3 in Greece and 4 in Italy, Austria and Sweden.

Broadly speaking, there is an inverse relationship between maternal mortality and level of economic development. Countries such as Japan, Germany and United States of America, with high economies have very low maternal mortality level whereas the low-income economies of Somalia, Chad, Burundi and Sierra Leone are noted for exceptional high mortality rates. Of course, there are exceptions. China and Sri Lanka in the low-income category have mortality rates similar to that of middle-income countries; and the maternal mortality of India at 212 is almost equal to that of the world average of 210 but is more than that of even Mauritius (60), Malaysia (29), Iraq (73) and Nepal (170) (WHO, 2012).

The experience at global level has demonstrated that quality obstetric care with efficient antenatal care services including prevention and treatment of anemia, safe natal care and postnatal services has reduced the incidence of maternal deaths. Attendance by a professional trained person at the time of delivery has been found to be a critical factor in this regard. At the global level, 66 per cent of the women received skilled attendance. The proportion of births attended by skilled health personnel was 99 per cent in the developed region as against 63 per cent in the developing region. The situation on this count was not very encouraging in South Asian countries where only 41 per cent of the births received skilled attendance at birth which was even lower than it was in Sub-Saharan Africa (46 per cent). South Asian countries, thus, lacked health care interventions to reduce maternal deaths. (WHO, UNICEF, UNFPA and World Bank, 2012).

The scenario as regards the maternal deaths during the last two decades or so has improved. MMR at the global level decreased from 400 maternal deaths in 1990 to 210 in 2010 representing an average annual decline of 3.1 per cent. However despite these improvements, the target of reducing the MMR by three-quarters

between 1990 and 2015 at the global level is still short of the 5.5 per cent annual decline needed to meet MDG target. During the same period MMR declined from 26 to 16 in the developed region and from 440 to 210 in the developing region. MMR in the South Asia declined from 620 maternal deaths in 1990 to 220 in 2010 at an average annual decline of 5.0 per cent. Within this, MMR in India declined from 600 in 1990 to 200 in 2010 at an average decline of 5.2 per cent. The national average of MMR in itself is very high compared to the neighbouring countries like Thailand (48) and Sri Lanka (35)

Inter-state disparities at state level in India are more evident. Notwithstanding some deficiency in the quality of data on maternal mortality, one can discern striking differences among the different states on this demographic parameter (Table 1). Against the national average of 212, Assam (390), Uttar Pradesh (359), Rajasthan (318), Madhya Pradesh (269), Bihar (261) and Orissa (258) are noted for higher maternal mortality ratios. By contrast Kerala (81) and Tamil Nadu (97) display lower maternal mortality ratios. Punjab (172) is not that comfortably placed in comparison to Kerala (81) on this count.

MMR in India declined from 453 in 1995 to 212 in 2009 at an average annual decline of 5.3 per cent. Tamil Nadu with an average annual decline of 9.2 per cent was noted for highest decrease during the same period followed by Andhra Pradesh and Maharashtra. MMR in Kerala declined marginally at an annual decline of 0.5 per cent during the last 14 years. In fact MMR in Kerala at 87 was lowest among all the states in 1995. Even though MMR in Punjab decreased at an annual decline of 5.3 per cent during the same period its MMR at 172 was double that of Kerala.

Maternal mortality is not merely a health disadvantage but it is a matter of social injustice. Wide differences on this count existed between the rich and poor and between rural and urban areas. Furthermore, there are variations between the scheduled castes (SCs) and Non-Scheduled castes (Non-SCs) on this count. SCs are deprived section

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**Table - 1: Maternal Mortality Ratio and Lifetime Risk in Selected States, India 1995-2009**

Major States	1995* (UNICEF)	1997** (RGI)	2004-06*** (RGI)	2007-09**** (RGI)	Life time risk *** (%)	Average annual decline (in per cent) during 1995-2009
Assam	544	401	480	390	1.0	-2.35
Uttar Pradesh	624	707	440	359	1.4	-3.87
Rajasthan	550	677	388	318	1.2	-3.84
Madhya Pradesh	711	498	335	269	1.0	-6.71
Bihar	470	451	312	261	1.0	-4.11
Orissa	738	361	303	258	0.7	-7.23
<b>All India</b>	<b>453</b>	<b>408</b>	<b>254</b>	<b>212</b>	<b>0.6</b>	<b>-5.28</b>
Karnataka	450	195	213	178	0.4	-6.41
<b>Punjab</b>	<b>369</b>	<b>196</b>	<b>192</b>	<b>172</b>	<b>0.4</b>	<b>-5.31</b>
Haryana	436	105	186	153	0.5	-7.21
Gujarat	389	29	160	148	0.4	-6.67
Andhra Pradesh	436	154	154	134	0.3	-8.08
West Bengal	389	264	141	145	0.3	-6.81
Maharashtra	336	135	130	104	0.2	-8.04
Tamil Nadu	376	76	111	97	0.2	-9.22
<b>Kerala</b>	<b>87</b>	<b>195</b>	<b>95</b>	<b>81</b>	<b>0.1</b>	<b>-0.51</b>

Source: \*UNICEF: *The Progress of Indian States, 1995*, India Country Office, New Delhi quoted in Rattan, V. (1997): *Women and Child Development and Sustainable Development, Vol. 1*, New Delhi

\*\*Registrar General of India, *Compendium of India's Fertility and Mortality Indicators, 1971-1997*, New Delhi

\*\*\*Registrar General of India, *Special Bulletin on Maternal Mortality in India 2004-06*, SRS Bulletin, April 2009

\*\*\*\*Registrar General of India, *Special Bulletin on Maternal Mortality in India 2007-00*, SRS Bulletin, June 2011

Note: Lifetime risk - Here it is calculated as the probability that at least one woman of reproductive age (15-49) will die due to child birth or puerperium.

of society who generally lack in economic resources, social status, and personal motivation in accessing reproductive health care services, and are exposed to higher rates of morbidity and mortality.

A number of studies have pointed out that the SCs have traditionally been a disadvantaged group in Indian society. Roy (2004) while studying the inequalities in health and nutrition in selected states found that the differentials between the scheduled castes and other castes were due to the disparities in their socio-economic conditions. Keefer (2004) found that within village inequality in health and education access and achievement is significant among people belonging to different

castes.

Achievements are quite high among the people belonging to privileged castes while the utilization is quite low among deprived castes in the same village. Srinivasan (2004) established that the state of abject deprivation and moderate deprivation was higher among the scheduled caste section of the society as compared to other castes even though there is a substantial decline in the deprivation index level in both caste categories. Mishra (2006) had a sad observation on the enduring inequities in Indian society and the deprivation caused by the market economy that disadvantaged social groups suffer from poor health conditions. As access to resources gets

**Table - 2: Characteristics of Population in Punjab, Kerala and India**

Characteristics	Punjab	Kerala	India
Proportion of scheduled caste population to total population (2011)*			
Total	31.9	9.1	16.6
Rural	37.5	10.4	18.5
Urban	22.7	7.7	12.6
Female literacy rate (in per cent) *	70.7	92.1	64.6
Sex ratio (number of females per 1,000 males) *	895	1084	943
Sex ratio (0-6 years) *	846	964	919
Birth rate ***	16.2	15.2	21.8
Death rate ***	6.8	7.0	7.1
Infant mortality rate ***	30	12	44
Under 5 mortality rate (2010) <sup>§</sup>	43	15	59
Life Expectancy at birth (in years) <sup>§</sup>	72.6	75.8	65.5
Total fertility rate (2010) <sup>§</sup>	1.8	1.8	2.5
Urban population (in per cent) *	37.5	47.7	31.2
Percentage of women with anaemia <sup>§</sup>	38.0	32.8	55.3
Incidence of poverty**			
Total	15.9	12.0	29.8
Rural	14.9	12.0	33.8
Urban	18.1	12.1	20.9
Per capita income (Rs.) at current prices 2009-10 <sup>#</sup>	61805	60226	46249

Source: \* Primary Census Abstract, Census of India, 2011, Registrar General of India, New Delhi

\*\* Poverty Estimates, 2009-10, Planning Commission, Government of India, March 2012

\*\*\* Sample Registration System, SRS Bulletin, Registrar General of India, October 2012

§ Government of India website <http://data.gov.in> accessed on 12 June 2013

# Statistical Abstract of Punjab, 2012, Punjab State Planning Board, Chandigarh

curtailed and purchasing power increasingly determines one's well being, women belonging to the disadvantaged social groups are likely to suffer from moderate and severe anaemia. Scheduled caste women had poor health status due to lower affordability and restricted access to health care services. Bajpai and Goyal (2004) while examining the wide disparities in poverty, health and education outcomes across different sections of society found that caste and class were systematically associated with disparate well-being outcomes. Despite the fact that the government of India has pursued an affirmative policy in favour of scheduled castes, the caste divide continues to mark the social landscape even after 50 years since independence. Poverty is concentrated in areas with a greater presence of backward castes and marked by low female literacy levels. Caste, thus, has remained a salient

social feature and people belonging to scheduled caste community lag behind in terms of health care services due to their social and economic discrimination that has disadvantaged them in terms of access to resources and basic needs including health services.

Large inequities in health and access to reproductive health services continue to persist despite India's impressive economic performance since 1990s. In fact these have even widened across states, between rural and urban areas, and across different castes. Regional disparities in health and population are quite distinctly visible across different states in the country. Table 2 displays selected characteristics of socio-economic development in the states of Punjab, Kerala and at the national level. In terms of sex ratio, child sex ratio (0-6 years), birth rate, infant mortality and under five mortality Punjab was far

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ahead of all-India average but lagged behind Kerala. The female literacy in Kerala was higher than Punjab by 22 per cent points, sex ratio by 189 points and child sex ratio by 118 points. The infant mortality in Punjab was 2.5 times higher than in Kerala.

Evidently social development in Kerala was far ahead than in Punjab. The development experience of the state of Kerala powerfully shows how even relatively economically poorer states could transform the lives of its people and attain high level of social development. The state is ranked at the top in terms of human development index, social development index and gender development index. On the contrary, the state of Punjab despite its impressive economic development till recently lagged behind on social development index.

### Objectives

The present study is geared to find out the differentials between the scheduled castes and non-scheduled castes in maternal mortality through the factor of various parameters of provisions of health care access in the states of Punjab and Kerala. Maternal mortality has been linked to access to health care services among the women belonging to both communities. An attempt is made to identify specific parameters on which these two communities differ on the count

of the status of access to reproductive health services particularly on antenatal, natal and postnatal care services which determines the maternal mortality rates.

### Methodology

The database for the study was drawn from the District Level Household and Facility Survey, 2007-08, conducted under the aegis of Ministry of Health and Family Welfare, Government of India, New Delhi. International Institute for Population Sciences was the nodal agency for coordinating the survey. The paper is based on a sample of 9065 ever married women; 5,739 women in Punjab and 3,326 in Kerala. The scheduled castes formed 40 per cent of the sample in Punjab and 9 per cent in Kerala. As per the Census of India, 2011, scheduled castes comprised 32 per cent of the total population of Punjab and 9.1 per cent of the total population of Kerala.

Discussion in the paper is organized into three sections: antenatal care, natal care and postnatal care, which forms the three successive chronological phases of pregnancy. For safe delivery, access to different kinds of preventive and curative services in each stage is imperative. The parameters discussed on antenatal care include status of tetanus toxoid injections, iron and folic acid tablets and advice on institutional delivery by the female multipurpose health

**Table - 3: Women by Status of Antenatal Checkup in Punjab and Kerala**

State	Caste	Any antenatal check-up	Place of antenatal check-up			Number of women
			Government health facility	Private health facility	Community based services (NGO/Trust Hospital/Clinic)	
Punjab	SC	76.1	57.27	40.96	1.78	2302
	Non-SC	87.8	39.13	59.33	1.53	3437
	Difference	11.7	-18.14	18.37	-0.27	
Kerala	SC	99.7	59.65	33.72	6.63	292
	Non-SC	99.8	35.72	59.29	4.99	3034
	Difference	0.1	-23.93	25.57	-1.64	

Source: District Level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

Note: Figures are in percentages

workers. Place of delivery, assistance at the time of delivery, and use of disposable kits during the home deliveries are the parameters in the case of natal care, while postnatal care includes checkup within 48 hours of delivery and health ailments reported after delivery. Promoting breastfeeding practices also form a part of postnatal care. Enhanced status of antenatal, natal and postnatal care services would ensure that there are fewer neonatal and infant deaths and hence, lesser chances of maternal deaths.

### Antenatal Care

The antenatal period, from conception to the onset of the labour, constitutes three trimesters of pregnancy. During this period, pre-existing factors precipitating high risk need to be identified and managed for the pregnancy to culminate in safe delivery. Timely referral to an institution for professional care is imperative. Antenatal care services have been studied in terms of (i) place of antenatal checkup (ii) administration of the two doses of tetanus toxoide (iii) supply of an additional supplementation of iron and folic acid tablets and (iv) provision of different components of check-ups.

**Place of antenatal check-up:** Table 3 indicates almost universal access to antenatal care services by all women irrespective of caste in Kerala whereas in case of Punjab the scheduled caste women lagged behind their non-scheduled caste counterparts by almost 12 per cent points. Here 76 per cent of scheduled caste women had availed these services as compared to 88 per cent by non-scheduled castes.

Preference for private sector by non-scheduled caste women as compared to their counterparts for availing ANC services was apparent in both states. About 60 per cent of the non-scheduled caste women in both states had utilized the services offered by private sector institutions. However, one important difference between the women in these two states as regards the access to ANC services was that of utilization of community based services. Access to such

services was higher among women in Kerala than in Punjab. Almost seven per cent of the scheduled caste women in Kerala had availed community based ANC services as compared to two per cent in Punjab. The figures for non-scheduled caste women were 5 and 1.5 per cent respectively. Within both states, utilization of community based services was higher among scheduled caste women than among non-scheduled caste ones. The non-governmental organizations seemed to have played a key role in the state of Kerala as compared to Punjab in providing access to antenatal care services enabling women to have lesser exposure to pregnancy risk at initial stage only.

As stated above the coverage of ANC services was almost universal in Kerala so reasons for not availing ANC services were almost negligible in the state. Interestingly, 53 per cent of the non-scheduled caste women and 44 per cent of scheduled caste in Punjab did not consider it necessary to use antenatal care services. Further, higher cost involved in availing antenatal care services was cited to be another reason for not accessing such services by the women belonging to both castes in Punjab (Table 4). It was higher among the scheduled caste women than their non-scheduled caste counterparts by almost ten per cent points. Lack of knowledge about the importance of ANC services and denial by the family members to avail these services kept a higher proportion of scheduled caste women out of the ambit of having access to such services exposing them to higher risks.

**TT injection:** TT injections help fight infections and thereby lowering the incidence of maternal mortality. There was an equitable distribution of two doses of TT injection in Kerala among the women belonging to both communities (Table 5). Rather, it was slightly higher among the scheduled caste women than among the non-scheduled caste ones in Kerala. On the contrary, the scheduled caste women in Punjab were a disadvantageous group in this regard. Here 85 per cent of the non-scheduled caste women had received at least two doses of TT injection as compared to 73 per cent among the scheduled castes; a differential of 12 per

**Table - 4: Women by Reasons for Not Availing Antenatal Checkup in Punjab and Kerala**

State	Caste	Not necessary	Not customary	Cost too much	Too far/ no transport	Family did not allow	Lack of knowledge	No time to go	Other	Total
Punjab	SC	43.96	4.57	31.85	1.88	4.57	8.20	3.76	1.21	551
	Non-SC	53.18	4.10	22.76	2.05	3.73	5.97	6.90	1.31	419
	Difference	9.22	-0.47	-9.09	0.17	-0.84	-2.23	3.14	0.1	
Kerala	SC	100.0	100.0	0.0	100.0	0.0	100.0	100.0	100.0	1
	Non-SC	20.0	100.0	40.0	100.0	40.0	0.0	100.0	100.0	5
	Difference	-80	0	40	0	40	-100	0	0	

Source: District Level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

Note: Figures are in percentages

**Table - 5: Women by Status of TT injections in Punjab and Kerala**

State	Caste	No TT	1	2+	Do not know	Total
Punjab	SC	24.98	2.04	72.94	0.04	2302
	Non-SC	12.89	1.72	85.34	0.06	3437
	Difference	-12.09	-0.32	12.4	0.02	
Kerala	SC	1.03	3.77	93.15	2.05	292
	Non-SC	1.58	3.86	92.58	1.98	3034
	Difference	0.55	0.09	-0.57	-0.07	

Source: District level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

Note: Figures are in percentages

**Table - 6: Women by Status of Iron and Folic Acid Tablets/Syrups in Punjab and Kerala**

State	Caste	Received IFA tablets/syrup	Did not receive IFA tablets/syrup	Total
Punjab	SC	36.4	63.6	2302
	Non-SC	32.4	67.6	3437
	Difference	-4.0	4.0	
Kerala	SC	67.4	32.6	292
	Non-SC	74.1	25.9	3034
	Difference	6.7	-6.7	

Source: District Level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

Note: Figures are in percentages

cent points in favour of non-scheduled castes.

The incidence of non-vaccination against tetanus toxoide was almost double among the scheduled caste women (25 per cent) than the non-scheduled caste ones (13 per cent) in Punjab where it was about one per cent among both the communities in Kerala.

**Iron and Folic Acid Tablets:** The consumption of

IFA controls anaemia during pregnancy. Administration of IFA tablets/syrup among the women belonging to both communities was twice higher in Kerala than in Punjab (Table 6). Interestingly, a little higher proportion of scheduled caste women had received IFA tablets/syrup as compared to their non-scheduled caste counterparts in Punjab. While in Kerala the

**Table - 7: Women by Status of Components of Antenatal Checkup in Punjab and Kerala**

State	Caste	Weight Measured	Height Measured	Blood Pressure checked	Blood Tested	Urine tested	Abdomen Examined	Breast Examined	Sonography/ Ultrasound	Delivery advice	Nutrition Advice	N
Punjab	SC	48.8	12.9	59.7	65.3	67.0	56.1	18.5	38.8	49.0	56.7	2302
	Non-SC	67.0	21.1	75.5	81.2	82.7	71.5	32.7	61.6	65.4	72.0	3437
	Diff	18.2	8.2	15.8	15.9	15.7	15.4	14.2	22.8	16.4	15.3	
Kerala	SC	98.63	50.00	98.29	97.26	97.60	96.58	86.64	91.10	91.10	93.49	292
	Non-SC	96.64	45.45	98.48	98.88	99.01	98.29	86.85	93.47	91.03	94.53	3034
	Diff	-1.99	-4.55	0.19	1.62	1.41	1.71	0.21	2.37	-0.07	1.04	

Source: District Level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

Note: Figures are in percentages

situation was more in favour of non-scheduled caste women. Here 75 per cent of the non-scheduled caste women had received IFA tablets/syrup as compared to 67 per cent scheduled caste women.

**Components of Antenatal Check-up:** Women in general in Kerala had received better antenatal care services than their counterparts in Punjab. The difference in administration of different components of antenatal checkup between non-scheduled caste and scheduled caste communities was quite much visible in Punjab. In fact non-scheduled caste women in Punjab were better placed than scheduled castes on all counts of different components of antenatal checkup including their measurements of height, weight, blood pressure, their examination of urine, blood, abdomen, breast, and advice imparted on delivery care. The differential in the practice of sonography/ultrasound followed by measurement of weight was quite wide in Punjab (Table 7). A higher proportion of non-scheduled caste women (62 per cent) had undergone ultrasound test as compared to scheduled caste women (39 per cent). Delivery care related advice in Punjab was imparted to a higher proportion of non-scheduled caste women (66 per cent) as compared to their scheduled caste counterparts (49 per cent). Thus, the scheduled caste women in Punjab were ignored while providing the quality antenatal care services.

On the other hand, caste based differentials between these two communities were almost

negligible in Kerala as regards the provision of antenatal care services is concerned. In fact the scheduled caste women in Kerala were better placed than their non-scheduled caste counterparts in terms of height and weight measurements. Women, in general, in Kerala had received high quality of antenatal care services irrespective of their caste.

**Full Antenatal Care:** Full antenatal care includes antenatal check-up, at least one TT injection received and 100+ IFA tablets/syrup consumed. Women, irrespective of caste, in Punjab lagged much behind than their counterparts in Kerala in terms of full ANC received by pregnant women (Table 8). In Kerala 66 per cent of the scheduled caste women had received full antenatal checkup which was 6.6 times higher than their counterparts in Punjab (Fig. 1). In case of non-scheduled caste women it was higher by 4.2 times. Not only the proportion on this count was better in Kerala as compared to Punjab but also the caste based differentials between two communities were relatively narrower in Kerala than in Punjab.

The utilization of check-up on any of the components of ANC services availed and the TT injection was almost universal in Kerala whereas scheduled caste women lagged behind the non-scheduled caste women in Punjab. On the count of iron and folic acid tablets/syrup received scheduled caste women in Kerala lagged behind the non-scheduled caste ones. The situation was reverse in Punjab. Here scheduled caste women

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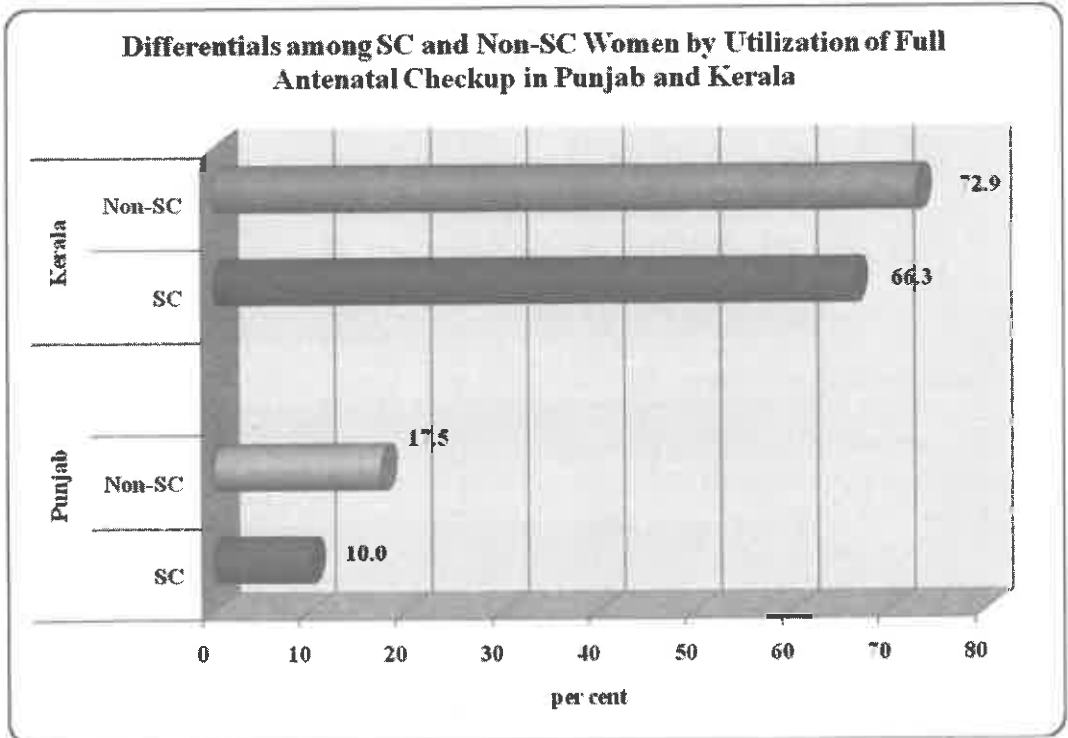
**Table - 8: Women by Status of Full Antenatal Check-up in Punjab and Kerala**

State	Caste	Yes	No	Total
Punjab	SC	10.0	90.0	2302
	Non-SC	17.5	82.5	3437
	Difference	7.5	-7.5	
Kerala	SC	66.3	33.7	292
	Non-SC	72.9	27.1	3034
	Difference	6.6	-6.6	

Source: District level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009  
 Note: Figures are in percentages

were little ahead of non-scheduled caste women in receiving iron and folic acid tablets/syrup. Quality of care received on different components of ANC parameters including weight, height measures, blood pressure checked, blood and urine tested, advice on nutrition and delivery was far better among both the communities in Kerala than their counterparts in Punjab. The situation for scheduled castes was worrisome in Punjab. Here they lacked

access to quality care services as compared to their counterparts. On the whole the scenario on full utilization of antenatal care services was in favour of non-scheduled caste women in both states. The antenatal care services had provided a good platform for safe deliveries among the women belonging to both communities in Kerala and non-scheduled caste women in Punjab. This was a case of a fair degree of inequity in Punjab.



**Fig.1**

**Table - 9: Women by place of delivery in Punjab and Kerala**

State	Caste	Public Sector	NGO	Private Sector	Home	Total
Punjab	SC	17.8	0.1	29.1	53.0	2302
	Non-SC	20.6	0.1	53.3	26.0	3437
	Difference	2.8	0	24.2	-27	
Kerala	SC	64.8	0.3	33.2	1.7	292
	Non-SC	32.7	1.0	65.7	0.6	3034
	Difference	-32.1	0.7	32.5	-1.1	

Source: District level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

Note: Figures are in percentages

### Natal Care

Clinically, the natal period extends from the onset of labour till delivery is complete. Conduct of delivery at home was a traditional practice followed in many states in India particularly in Punjab. Here, it was viewed as a natural process, not requiring any medical assistance. The presence of the family members made the women feel more comfortable. There are several risks associated

with the delivery of a child. Deliveries conducted in a hospital are definitely safer, yet in case of it not being possible, the next best option is to get assistance of a trained person at the time of delivery. It is also imperative to provide hygienic conditions during home deliveries to protect both the mother and child against infections. Natal care services have been studied in terms of (i) place of delivery (ii) assistance at the time of delivery (iii)

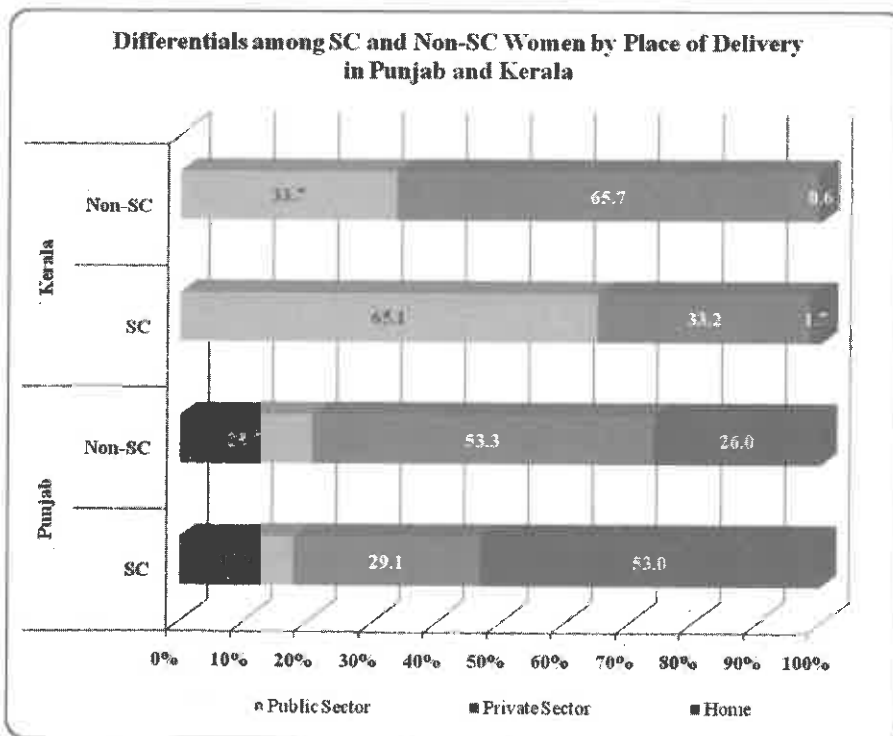


Fig.2

**Table - 10: Women by Reasons for Not Opting for Institutional Delivery in Punjab and Kerala**

State	Caste	Cost too much	Poor quality service	Too far/ no transport	No time to go	Not necessary	Not customary	Better care at home	Family did not allow	Lack of knowledge	Total (N)
Punjab	SC	28.90	1.29	3.99	9.73	22.89	8.60	18.22	3.82	2.55	1220
	Non-SC	19.64	1.70	3.71	13.92	27.17	8.35	19.48	4.41	1.62	895
	Difference	-9.26	0.41	-0.28	4.19	4.28	-0.25	1.26	0.59	-0.93	
Kerala	SC	20.00	20.00	0.00	20.00	0.00	40.00	0.00	0.00	0.00	5
	Non-SC	7.41	31.48	3.70	12.96	1.85	31.48	1.85	7.41	1.85	17
	Difference	12.59	11.48	3.7	-7.04	1.85	-8.52	1.85	7.41	1.85	

Source: District level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

Note: Figures are in percentages

hygiene at the time of home delivery (use of DDKs) (iv) type of delivery and (v) delivery cost.

**Place of Delivery:** For reducing the MMR by three quarters up to 2015, the Government of India is focusing on increasing proportion of institutional deliveries. However, preference for home deliveries was found to be persisting more in Punjab than in Kerala. More than half of the scheduled caste women in Punjab had delivered baby at home as compared to about 2 per cent in Kerala (Table 9). The corresponding figures for non-scheduled caste were 26 and 0.6 per cent respectively (Fig. 2). Thus, women in general in Punjab were exposed to greater risks during pregnancy than women in Kerala. On the other hand, a higher proportion of women belonging to both communities in Kerala had opted for institutional deliveries which are considered as safe.

Scheduled caste women in Kerala had preferred to deliver baby at public sector institutions. While private nursing homes were quite popular in both states, more so among the non-scheduled castes, thereby indicating their higher paying capacity in both states. The preference for the private sector is explained by their easy accessibility and availability, personal attention, availability of doctors round the clock and affordability. This tendency could be attributed to the factors of much valued privacy,

female sex of the doctor, and more effective personal treatment.

**Reason for opting for institutional delivery:** Why were institutional deliveries not so popular particularly in Punjab? The reasons are important to understand to sensitize the policy makers on developing strategies and to bring about a change in the mindset of women. High cost of delivery involved at health institutions was the major reason for not opting for institutional deliveries particularly among the scheduled castes women in both states (Table 10). About one-fifth of women belonging to both communities in Punjab did not find it necessary to deliver at health institutions and thought that it was convenient to deliver at home.

About one out of every ten women in Punjab irrespective of caste stated that it was not customary to deliver the baby at health institutions. Lack of time to deliver at health institutions was another reason cited for delivering at home

**Assistance at the time of delivery:** The deliveries conducted at the health facilities and involvement of trained staff at the time of home deliveries is considered a safe delivery. The Government of India has set a target of 100 per cent safe deliveries to be conducted by trained personnel for reducing the MMR by three quarters up to 2015. Scheduled caste women were exposed to greater risks at the time of delivery than the non-scheduled caste ones



**Table - 11: Assistance Received at the Time of Delivery in Punjab and Kerala**

State	Caste	Home deliveries by trained staff	Institutional deliveries	Safe deliveries	Number of women
Punjab	SC	17.94	46.92	<b>64.86</b>	2302
	Non-SC	11.03	73.84	<b>84.87</b>	3437
	Difference	-6.91	26.92	<b>20.01</b>	
Kerala	SC	0.00	98.20	<b>98.20</b>	292
	Non-SC	0.03	99.50	<b>99.53</b>	3034
	Difference	0.03	1.3	<b>1.33</b>	

Source: District Level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

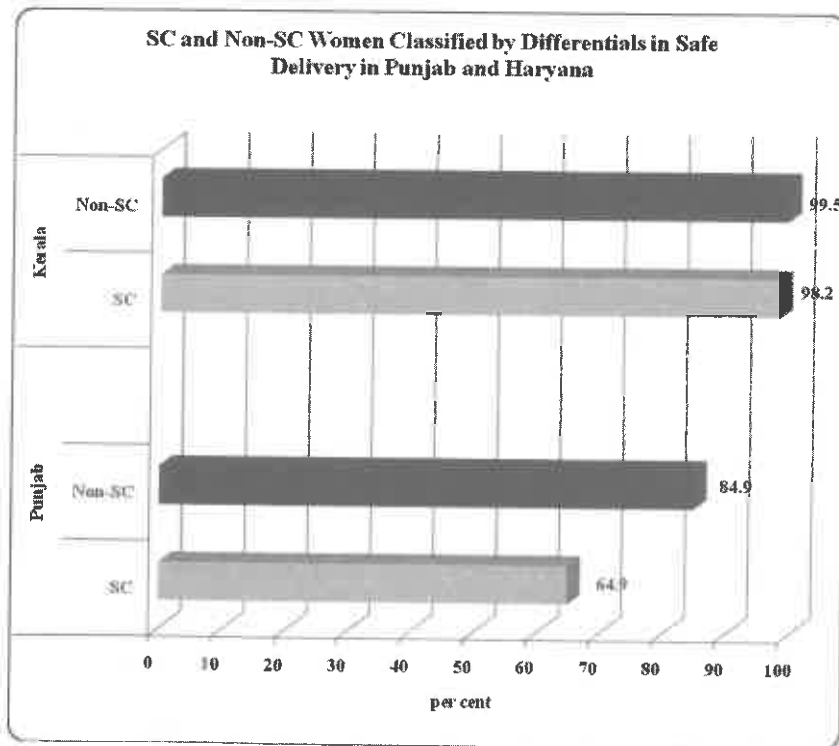
Note: Figures are in percentages

in Punjab. This is revealed by the fact that 85 per cent of the non-scheduled caste women in the state had safe deliveries as compared to 65 per cent among the scheduled castes, a differential of 20 per cent points in favour of non-scheduled caste women (Table 11). Interestingly, a higher proportion of home deliveries among the scheduled caste women as compared to non-scheduled caste ones were conducted by the

trained staff in the state.

However, in Kerala the gap among the scheduled caste and non-scheduled caste women as regards safe deliveries was negligible (Fig. 3). Almost all deliveries irrespective of caste in the state were considered as safe deliveries.

**Use of disposable delivery kits:** Besides ensuring trained assistance, it is imperative to use disposable delivery kit in order to ensure a

**Fig.3**



**Table - 12: Women by Use of Disposable Delivery Kits during Home Deliveries in Punjab and Kerala**

State	Caste	DDK Used	Wiped and wrapped	New/ Sterilized blade used	Total
Punjab	SC	47.5	76.0	86.9	1220
	Non-SC	52.6	74.5	87.6	895
	Difference	5.1	-1.5	0.7	
Kerala	SC	0.0	20.0	20.0	5
	Non-SC	11.8	47.1	70.6	17
	Difference	11.8	27.1	50.6	

Source: District level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

Note: Figures are in percentages

**Table - 13: Women by Type of Delivery in Punjab and Kerala**

State	Caste	Normal	Caesarean	By instrument or assisted	Total
Punjab	SC	88.4	9.3	2.3	2302
	Non-SC	79.7	17.2	3.1	3437
	Difference	-8.7	7.9	0.8	
Kerala	SC	68.8	30.5	0.7	292
	Non-SC	68.5	31.1	0.4	3034
	Difference	-0.3	0.6	0.3	

Source: District level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

Note: Figures are in percentages

hygienic delivery at home. Under the directions of Ministry of Health and Family Welfare, Government of India every trained *dai* and accredited social health activist in the village has to be regularly supplied with a disposable delivery kit (DDK). The use of this kit and use of new/sterilized blade at home deliveries was higher among the non-scheduled caste women than their scheduled caste counterparts in both states. The proportion of home deliveries was quite negligible in Kerala. Non-scheduled caste women in Punjab had an edge over scheduled castes in terms of DDK used, newborns wiped and wrapped and usage of new/sterilized blades in Kerala. DDK was used in 53 per cent of home deliveries among the non-scheduled caste women as compared to 47 per cent among the scheduled caste ones (Table 12). The baby was wiped and wrapped in a cloth in Punjab

in about 75 per cent of deliveries taking place among the women belonging to both castes. New-sterilized blade was used in 90 per cent of home deliveries. This is indicative of the fact that a higher proportion of the home deliveries irrespective of the caste were being conducted under hygienic conditions in Punjab.

**Type of Delivery:** The incidence of Caesarean-section deliveries was higher in Kerala than in Punjab. About 30 per cent of deliveries among the scheduled castes in Kerala were Caesarean-section deliveries as compared to 9 per cent in Punjab (Table 13). The corresponding figures for non-scheduled castes were 31 per cent and 17 per cent.

Within the states, a higher proportion of non-scheduled women had Caesarean-section deliveries as compared to scheduled caste ones. In Punjab, 9 per cent of the scheduled caste women

**Table - 14: Assistance Received at the Time of Delivery in Punjab and Kerala**

State	Caste	Mean transport cost (in Rs.)	Mean delivery cost (in Rs.)	Borrowed money/ sold property/ jewellery (in per cent)	Receipt of govt. assistance (in per cent)	Total
Punjab	SC	245	2598	40.14	2.6	2302
	Non-SC	252	4178	22.03	2.2	3437
	Difference	7	1580	-18.11	-0.4	
Kerala	SC	235	5875	62.0	27.1	292
	Non-SC	205	7589	38.6	9.5	3034
	Difference	-30	1714	-23.4	-17.6	

Source: District level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

had Caesarean-section deliveries as compared to 17 per cent among the non-scheduled castes. This difference was quite negligible in Kerala.

**Transportation and Delivery Cost:** Since cost emerged as one of the main reasons for not opting for institutional delivery it is interesting to study the cost of delivery along with cost of transportation involved in this. The differentials in cost of delivery among both castes were wide in Kerala than in Punjab. Cost of delivery was higher among the non-scheduled castes than the scheduled caste ones in both states even though its degree varied. Cost of delivery among the non-scheduled castes was 1.6 times higher than the scheduled castes in Punjab while it was 1.3 times higher in Kerala (Table 14). The cost of delivery among the scheduled caste women in Kerala was 2.3 times higher than their counterparts in Punjab. Among non-scheduled castes this proportion in Kerala was 1.8 times higher than among the non-scheduled castes in Punjab.

The average transport cost involved in delivering a baby was higher among the women belonging to both communities in Punjab than in Kerala. The non-scheduled caste women on an average in Punjab were spending 252 rupees as compared to 245 rupees by the scheduled caste women; a differential of 7 rupees. In Kerala the corresponding figures were 205 and 235 rupees. Here scheduled caste women on an average were spending 30 rupees more than the non-scheduled caste women.

The event of a delivery was considered a costly affair more so among the scheduled caste families which was much beyond their paying capacity. This is indicated by the fact that a higher proportion of scheduled caste women (40 per cent) than the non-scheduled caste ones (22 per cent) had either borrowed money or sold their property/jewellery for meeting the expenses on delivery in Punjab. Such a situation was graver among the scheduled caste women in Kerala. Here 62 per cent of scheduled caste women had borrowed money/sold property/jewellery as compared to 38 per cent of non-scheduled caste ones. The differential among both castes as regards borrowing money/selling property/jewellery was narrower in Punjab (18 per cent points) than in Kerala (23 per cent points).

The government in realization of such a situation has offered assistance in the form of incentives at the time of delivery. Little more than one-fourth of the scheduled caste women in Kerala were beneficiary of such an incentive as compared to about 3 per cent scheduled caste women in Punjab. The corresponding figures for non-scheduled castes were 9.5 and 2.2 per cent. The differentials among both the communities in terms of receipt of government assistance were narrower in Punjab than in Kerala. But the proportion of women belonging to both castes receiving such an incentive was on lower side in Punjab than in Kerala.

Home deliveries irrespective of the caste

were higher in Punjab than in Kerala. The proportion of home deliveries among the non-scheduled caste women in Punjab was twice higher than the scheduled castes. The scheduled caste women in Punjab were more prone to maternal deaths due to higher proportion of home deliveries. The proportion of home deliveries among the scheduled castes in Punjab was 31 times higher than their counterparts in Kerala. In fact, the event of delivery was a costly affair more so among the scheduled castes women much beyond their paying capacity. A higher proportion of scheduled caste women in both states had to either borrow money or had to sell property/jewellery to meet the expenses involved in conducting a delivery. Such differentials among both the communities were wider in Kerala than in Punjab. This was due to the fact that almost all deliveries in Kerala were conducted at health institutions requiring more money whereas in Punjab almost half the deliveries were conducted at home requiring less amount of money. Even though a higher proportion of deliveries among the scheduled caste and non-

scheduled caste women were being conducted under hygienic conditions but the fact that a lower proportion of deliveries among the scheduled castes were safe delivery adds to the seriousness of the situation. This has made the scheduled caste women more susceptible to infection and subsequent ailments for mother and child both.

### Postnatal Care

Technically, the postnatal period starts from delivery of placenta and continues for 42 days thereafter. Once the baby is born, the prime concern is to provide postnatal care services to both the mother and the child, so as to ensure their survival and a healthy life. During this period mothers are vulnerable to a new set of health risks in addition to the responsibility of child care. A number of health complications arise after delivery, as detailed in this section. It is necessary that women during this period undergo regular checkup to identify danger signs. Erstwhile Punjab followed the practice of seclusion not allowing the women and her child to go out of the house for the

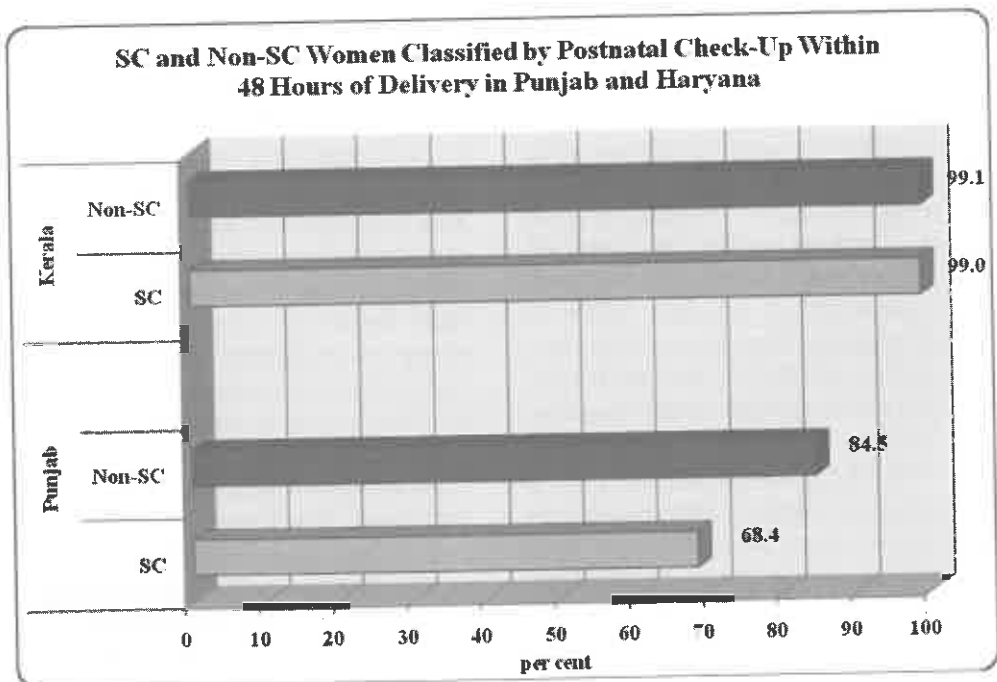


Fig.4

**Table - 15: Women by Postnatal Checkup in Punjab and Kerala**

State	Caste	Check up within 48 hours	Place of check-up with 48 hrs.					Total
			Public sector	NGO	Private sector	Home	Other	
Punjab	SC	68.4	24.6	0.1	40.7	28.0	6.7	1574
	Non-SC	84.5	23.5	0.1	60.3	13.4	2.7	2905
	Difference	16.1	-1.1	0	19.6	-14.6	-4	
Kerala	SC	99.0	65.4	0.3	34.3	0.0	0.0	289
	Non-SC	99.1	32.5	1.0	66.5	0.0	0.0	3007
	Difference	0.1	-32.9	0.7	32.2	0	0	

Source: District level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

first 42 days for the fear of infection and the evil eye. This inhibited complete health care of both, as their requirement, and underlying health problems are not personally communicated to the health staff and remained undiagnosed and untreated. Every five minutes a woman dies as a result of complication attributable to pregnancy and child birth.

**PNC Check-up within 48 hours:** A larger proportion of maternal and neonatal deaths occur during 48 hours after the delivery. Safe motherhood programmes have increasingly emphasized the importance of postnatal care recommending that all women receive a check on their health within two days of delivery. The situation on this count was far better in Kerala than in Punjab among the women belonging to both communities. Check-up within 48 hours of delivery was almost universal in Kerala among all the women irrespective of the caste. While in Punjab the situation was more favorable for non-scheduled caste women. Here 85 per cent of non-scheduled caste women had got a check-up within 48 hours of delivery as compared to 68 per cent among the scheduled caste ones (Fig. 4).

As regards the place of getting postnatal checkup within 48 hours Table 15 reveals that private sector was the prime source for getting the postnatal checkup services within 48 hours of delivery irrespective of the caste in Punjab. Here 60 per cent of the non-scheduled caste women and

40 per cent of the scheduled caste ones got these services from the private sector. The situation was a bit different in Kerala as two-thirds of non-scheduled caste women got these services from private sector and almost an equal proportion of scheduled caste women got these from public sector.

While no women got these services at home in Kerala, 28 per cent of scheduled caste women and 13 per cent of the non-scheduled caste women got these services at home in Punjab. This was due to the fact that in Kerala almost all deliveries were conducted at health institutions and in Punjab the proportion of home deliveries was quite high. Thus, the quality of postnatal care services was better in Kerala than in Punjab.

**Post Delivery Complications:** Lack of adequate care during the antenatal, natal and postnatal period can lead women to short and long term health deficits. A comparison was worked out amongst the scheduled caste and non-scheduled caste women to understand the implications of improper care and its resultant problems. A higher number of scheduled caste women than the non-scheduled caste ones had reported health ailments immediately after delivery in both states.

A higher proportion of non-scheduled caste women in Punjab had sought treatment (86 per cent) for post delivery complications than the scheduled caste ones despite the fact that a little higher proportion of scheduled caste women

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**Table - 16: Women by Post Delivery Complications in Punjab and Kerala**

State	Caste	Who had post delivery complication (in per cent)	Total	Sought treatment for post delivery complication (in per cent)	Total
Punjab	SC	22.37	2302	80.00	515
	Non-SC	21.15	3437	86.24	727
	Difference	-1.22		6.24	
Kerala	SC	25.34	292	87.8	74
	Non-SC	21.09	3034	82.5	640
	Difference	-4.25		-5.3	

Source: District Level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

**Table - 17: Women by Type of Post Delivery Complications in Punjab and Kerala**

Nature of post delivery complications	Punjab			Kerala		
	SC	NSC	Difference	SC	NSC	Difference
High fever	32.24	32.25	0.01	32.4	31.02	-1.38
Lower abdomen pain	30.66	30.17	-0.49	30.55	28.71	-1.84
Foul smelling vaginal discharge	6.11	6.25	0.14	0.96	3.95	2.99
Excessive bleeding	12.44	13.75	1.31	9.25	8.37	-0.88
Convulsions	2.94	3	0.06	3.7	5.65	1.95
Severe headache	14.82	13.83	-0.99	20.34	20.75	0.41
Others	0.79	0.75	-0.04	2.81	1.56	-1.25
Total (N)	515	727		74	640	

Source: District level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

Note: Figures are in percentages

(22.37 per cent) had experienced post delivery complications (Table 16). In Kerala a higher proportion of scheduled caste women (88 per cent) had sought treatment for post delivery complications as compared to non-scheduled caste women (82 per cent). It seems that higher costs involved in availing the treatment had forced scheduled caste women to go without getting proper treatment in Punjab.

**Nature of Post Delivery Complications:** The nature of post delivery complications did not differ much between the two communities in both states. High fever, lower abdomen pain and severe headache were the major ailments suffered by majority of women in both states (Table 17).

A slightly higher proportion of non-scheduled caste women had availed of treatment

for the post delivery complications as compared to scheduled castes in Punjab. While in Kerala a higher proportion of scheduled caste women had sought treatment for post natal complications than the non-scheduled caste ones. As regards the place for getting treatment for PNC complications, a preference for availing treatment from private sector clinics was typical on the part of non-scheduled castes in Punjab. On the contrary, scheduled castes preferred public sector for getting treatment for postnatal complications.

**Breastfeeding:** Timely and adequate breastfeeding is the best guard against malnourishment and susceptibility to infections. A newborn must be put to breastfeeding immediately after birth so as to provide immunological and physiological benefits of colostrums.

**Table - 18: Breastfeeding Practices in Punjab and Kerala**

State	Caste	Children received colostrums/ <i>Khees</i>	Percentage of women started breastfeeding		
			Within one hour of birth	Within 24 hours of birth	After 24 hrs of birth
Punjab	SC	87.8	45.1	77.7	22.3
	Non-SC	91.5	45.0	80.9	19.1
	Difference	3.7	-0.1	3.2	-3.2
Kerala	SC	95.4	66.0	95.8	4.2
	Non-SC	96.8	44.2	96.3	3.7
	Difference	1.4	-21.8	0.5	-0.5

Source: District level Household and Facility Survey, 2007-08, IIPS, Mumbai, 2009

Note: Figures are in percentages

The proportion of women belonging to both communities who gave colostrums to the baby was higher in Kerala than their counterparts in Punjab (Table 18). As regards the differentials between these communities, these were wide in Punjab in favour of non-scheduled caste (4 per cent points) than in Kerala (1.4 per cent points)

There was no difference between two communities in Punjab as regards proportion of women who started breastfeeding within one hour of birth. About 45 per cent of scheduled caste women as well non-scheduled caste women started breastfeeding within one hour of birth. This scenario was different in Kerala. Here 66 per cent of the scheduled caste women had started breastfeeding within one hour of birth as compared to 44 per cent of the non-scheduled caste women. On the other side, about one-fifth of the scheduled caste and non-scheduled caste women in Punjab had started breastfeeding their child after 24 hours of birth as compared to four per cent in Kerala. Breastfeeding within 24 hours was almost universal in Kerala among both the caste groups. On the whole, the breastfeeding practices were better in Kerala than in Punjab.

Irrespective of the caste almost all women in Kerala had received postnatal checkup within 48 hours of the delivery whereas differentials were quite wide in Punjab among both the community groups. Almost one-third of the scheduled caste women in Punjab did not get any checkup within 48 hours of the delivery as compared to 15 per cent

among the non-scheduled caste ones. A higher proportion of scheduled caste women in Punjab had sought treatment of delivery complications as compared to their non-scheduled caste counterparts whereas the scenario was a bit different in Kerala. Here the situation was slightly more in favour of scheduled caste women. The nature of post delivery complications did not differ much in both states among women belonging to both communities. The breastfeeding practices on the whole were better in Kerala than in Punjab among both the communities. Within both states, the breastfeeding practices were slightly better among the scheduled caste women than the non-scheduled caste ones.

## Conclusions

Any analysis of difference between two social groups, such as scheduled castes and non-scheduled castes in India, in respect of reproductive health care and associated maternal mortality, brings the issue of inequity into focus. An examination of the gap between scheduled castes and non-scheduled castes populations in Punjab and Kerala on various parameters of reproductive health care is a case in point. Punjab lags behind Kerala on this count. While only 10.0 per cent of scheduled castes women and 17.7 per cent of their non-scheduled caste counterparts received full antenatal care, the respective figures for Kerala were 66.3 per cent and 72.9 per cent. On

natal care practices, particularly in terms of safe deliveries, scheduled caste women in Punjab lagged behind the non-scheduled caste ones by 20 per cent points while in Kerala these were almost universal among both communities. On the postnatal care front too, while 99 per cent of non-scheduled caste and scheduled caste women in Kerala had a postnatal checkup within 48 hours of delivery, the comparative figures for Punjab were distinctly low in both cases.

Cost as a factor in accessing reproductive health services is a critical issue for scheduled castes in both Punjab and Kerala. Two-fifths of the scheduled caste women in Punjab and three-fifths in Kerala had to either borrow money or had to sell property/jewellery to meet the expenses on delivery. In relative terms, private nursing homes were quite popular among the scheduled castes in

Punjab and public sector institutions in Kerala. NGO hospitals/clinics provided reproductive health services to much greater extent in Kerala than in Punjab.

What explains the commendable degree of equity between the non-scheduled castes and scheduled castes in their access to the reproductive health services in Kerala than in Punjab? This is the product of the respective path of development followed by the two states. Punjab gave priority to economic development and Kerala to social development. A comparative analysis of the two models in this case shows that economic development *per se* may not guarantee immediate social development but social development does promise a faster overall development in Indian context.

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## REGIONAL DISPARITIES IN DEMOGRAPHIC VARIABLES IN POST REFORM INDIA

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### Abstract

The debate on the existing inequalities between the developed and underdeveloped countries in general and between different regions within these countries in particular, has once again been ignited, since the early nineties, when new economic policies were initiated in developing countries the world over. It becomes more important to study these disparities in case of a developing country like India as the new economic policies have further widened the gap between the prosperous and the deprived regions. The study presented here intends to analyze the patterns of the regional disparities in the demographic variables in India in 2001. Four indicators have been selected to identify the patterns of regional disparities in India at district level. Economic well being of the people is represented by population above poverty line, social development is reflected by female literacy, rural development is shown by the proportion of rural non-agricultural workers and urban population is taken as a proxy for the modernization of society. The technique used for working out the deprivations score of each district and to convert it into a development score is taken following the style of the Human Development Report. Each district's composite development index is calculated by summing up the development scores of each district on all the four indicators. The development map of India in 2001 shows a persistence of backward mainland and developed periphery. The already developed areas are attracting large private investments at the cost of backward areas. This is likely to generate social and political areas which have been left behind.

### Introduction

Time and again, it is being proved that in a large economy, different regions with varying resource bases and endowments support dissimilar growth paths over time (Williamson, 1965). Not being any exception, India is also facing and resolving the issue of regional disparities since its independence. Centralized planning was advocated and adopted to manage these disparities, but despite numerous efforts the situation remained unsettled. The emergence of naxalite 'red corridor' in poverty stricken areas of the country is a manifestation of the consequences which tend to flow from persistent backwardness experienced in different regions of India.

The New Economic Policy, which was implemented in the early 1990's and gave a broad based boost to the Indian economy, is being questioned now for the deepening inequalities in different spheres. A number of recent studies (Kant, 1999; Nagaraj, *et al.*, 1998; Rao, *et al.*, 1999; Shand and Bhide, 2000; Ahluwalia, 2000 and 2002; Krishan, 2001; Deaton and Dreze, 2002; Singh, *et al.*, 2003; Dholakia, 2003; Ghosh and Narayana, 2005; Kumar, 2005; Mazumdar, 2005; Nayyar, 2005; Ghosh, 2006; Balakrishnan, 2007; Jayadev *et al.*, 2007; Kar and Sakthivel, 2007; and Singh, 2005 and 2009) have brought forth the observation that regional disparity in India

widened during the 1990's, causing serious concern. The states like Maharashtra, Gujarat, Tamil Nadu, West Bengal, Karnataka and Delhi, having better infrastructure, received higher investments and the regional disparities situation aggravated further (Kant, 1999).

The prime objective of the present study is to analyze the issue of regional disparities in India through various demographic variables in the post reform period. To represent various dimensions of development encompassing the economic, social and other parameters, the present study selected four indicators to identify spatial patterns of regional disparities in India. These are population above poverty line, female literacy rate, population of non-agricultural rural workers, and degree of urbanization. Amongst these indicators, population above poverty line represents the economic well being of the people, female literacy reflects the status of women in society and its level of social development, proportion of rural non-agricultural workers represents the diversification of rural economy which indicates the level of rural

development and percentage of urban population is taken as a proxy for the modernization of society. These indicators have been selected to represent the economic, social, rural as well as modernization dimensions of development in India at the district level in 2001. All requisite census data for a study of present nature is yet not available for the year 2011. Hence this study had to contend with this constraint.

This study is divided into four parts. The indicators have been discussed and mapped in the first, followed by methodology adopted in the second. Patterns of regional disparities have been analyzed in detail in the third part and the main findings have been summed up in the last.

## I

### Indicators

**Population above Poverty Line:** The indicator of population below poverty line represents the backwardness of a region. Thus, population above

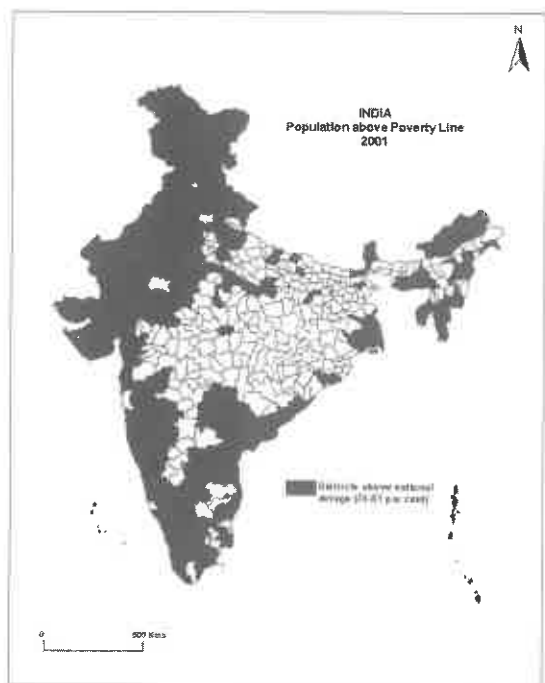


Fig. 1

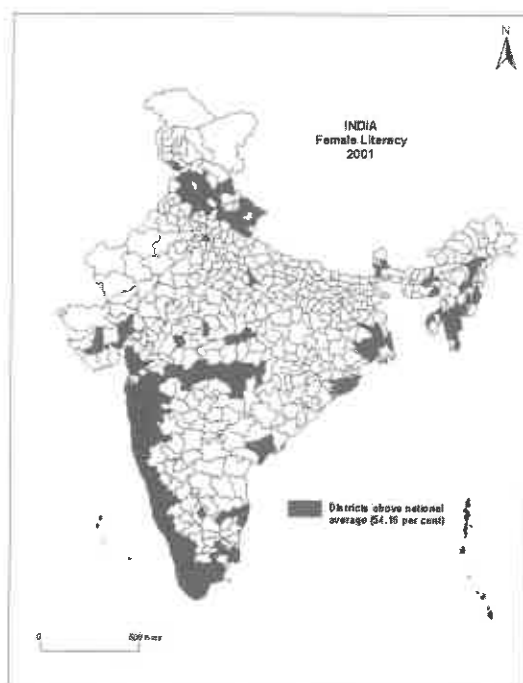


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poverty line can be taken as an indicator of development. In 2001, 342 districts out of the 593 districts in India recorded at least 74.01 per cent (national average) of their population to be above the poverty line. Fig. 1 shows the distribution of these districts. Most of these are located in the Northwest India, the Western Coastal region, parts of Eastern Coastal region, the Ganga delta, and parts of the Northeastern region. Comparatively most districts located in the Ganga plain, North-eastern peninsula and Assam recorded a figure below the national average. About 48 per cent of India's poor are concentrated in three states i.e. Uttar Pradesh (including Uttaranchal), Bihar (including Jharkhand) and Madhya Pradesh (including Chhatisgarh). Maharashtra, West Bengal and Orissa account for another 22.5 per cent. Collectively, more than 70 per cent of India's poor reside in these six states (Mehta and Shah, 2004).

Some districts in Nagaland, Andaman & Nicobar Islands and Jammu & Kashmir have the entire population above the poverty line. By contrast Koraput, Bolangir and Kalahandi districts of Orissa recorded not even one fifth of their population to be above the poverty line. Majority of the districts in the eastern states of Orissa, Bihar; Jharkhand, Chhattisgarh, West Bengal and Assam as also in the central states of Uttar Pradesh and Madhya Pradesh are placed below the national average on this count.

**Female Literacy:** The Census of India 2001 recorded 65.40 per cent of the country's population in the 7+ age group as literate. A wide gap between the male literacy rate (75.65 per cent) and female literacy rate (54.16 per cent) was observed. This pattern is typical of all societies having a strong patriarchal base where progress of the females is a more sensitive index of social change.

At the state level, female literacy rates were recorded as the highest in the coastal regions of Gujarat, Maharashtra, Goa, Kerala, Tamil Nadu and North-Eastern India. On the other hand, Jammu & Kashmir, Rajasthan, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Bihar and Jharkhand had low female literacy rates. At the

district level, Nainital (91 per cent) in Uttaranchal recorded the highest female literacy rate while the lowest rate was recorded in Kishanganj district (15 per cent) of Bihar.

Fig. 2 shows that only 159 out of 593 districts of the country recorded a female literacy rate higher than the national average. Such districts are concentrated in the coastal belt, northwest and northeast India in addition to the major urban concentrations of Kolkata, Delhi, Kanpur and Chennai. The centrally administered union territories of Pondicherry, Chandigarh, Daman and Diu, Andaman and Nicobar Islands and Lakshadweep noted relatively higher female literacy rates.

All districts along the western coast, covering large parts of Gujarat, Maharashtra, Goa, Karnataka and Kerala, and its extension in Tamil Nadu make a compact zone of high female literacy rates. These were areas of early progress of female education (Gosal, 1979). In North India, Himachal Pradesh, Punjab, Eastern Haryana, Upper Ganga-Yamuna Doab and Uttaranchal make for another contiguous zone of high female literacy rate. These were the areas where a tradition of army service and the Green Revolution based agricultural development led to higher levels of general literacy, including female literacy.

High female literacy rate is also observed in the Christian majority states of Mizoram, Nagaland, and Meghalaya in the North-East Region. In the east, Calcutta (Kolkata) conurbation and the Orissa Coastal Plain also display high female literacy rates.

In contrast, the whole of Bihar, Jharkhand, Chhattisgarh, Andhra Pradesh, Eastern Uttar Pradesh, Western Rajasthan, Jammu & Kashmir (except Jammu district), Arunachal Pradesh and Assam recorded low levels of female literacy. Extreme poverty, non-Christian tribal concentrations, desert conditions or hilly terrain were constraints to the progress of literacy, especially of the females. Most of these areas commonly identified as lagging behind the rest of the country in terms of demographic transition, are low on economic development, and slow on

diversification of rural economy (Singh, 1998). Central India, noted for low female literacy rates, has some relatively urbanized districts like Bhopal, Indore, Ujjain, Jabalpur, and Hoshangabad which display comparatively high literacy rates.

**Rural Non-Agricultural Workers:** In a developing country like India, rural areas and agriculture are synonymous to each other. Agricultural development promotes diversification of the rural economy toward secondary and tertiary sectors. Further, diversification of the rural economy leads to an overall rural development, both economically and socially. It is for this reason that the percentage of rural non-agricultural workers, which represents diversification of rural economy, has been taken as an indicator of rural development in the present study.

In 2001, 28.76 per cent of India's rural workforce was engaged in non-agricultural pursuits. There were, of course, vast variations in this proportion from cent per cent in the case of

Lakshdweep to zero in entirely urban districts.

In all, 272 districts out of 593 in India recorded a proportion of rural non-agricultural workers higher than the national average. Fig. 3 depicts the distribution of such districts. Most of these districts are located in Northwest India, Western Uttar Pradesh and Uttaranchal. The districts along the Delhi-Jaipur-Mumbai National highway (NH - 8) display high levels of diversification of rural economy. This belt moves further along the entire Western Coastal Region, and extends to the Tamil Nadu coastal plain. In the North-East, Sikkim, Darjeeling Duars, Lower Brahmaputra Valley, Tripura, and hill districts of Manipur, Mizoram, Nagaland, Meghalaya and Arunachal Pradesh are also marked for high percentage of non-agricultural workers owing to the hilly terrain and large scale flooding. Rural economy persists through subsistence agriculture, with a degree of diversification. Most extensive areas defining this feature include the Middle Ganga Plain, large parts of Central India,

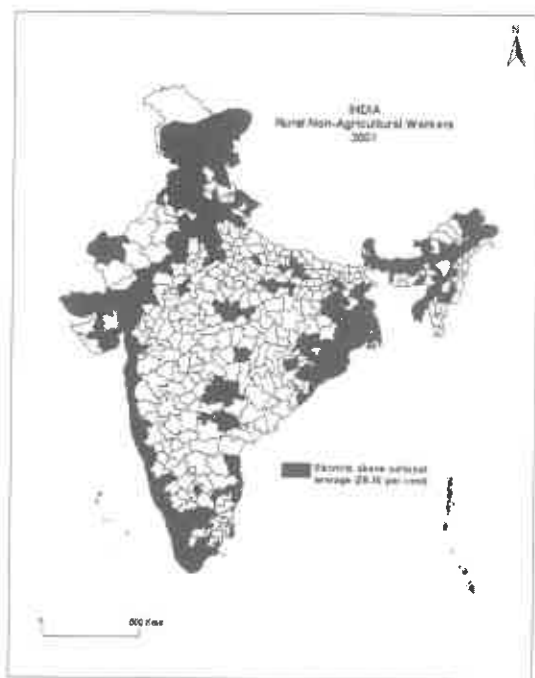


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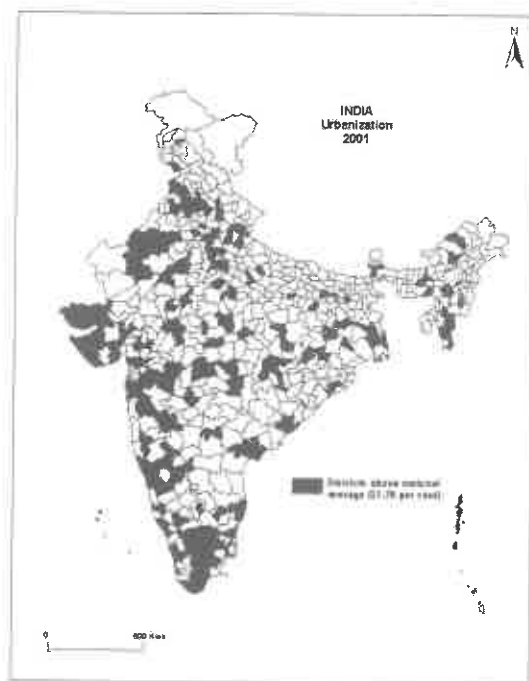


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Rajasthan desert and interior peninsula. Most represent difficult terrain or arid conditions or concentration of tribal population, and in the case of favorable physical conditions, there is a dense concentration of rural slums.

**Urbanization:** Among different indicators of modernization and socio-economic change urbanization holds a prime position. It represents the transformation of a society from agricultural to an industrial and a service one. Practically every developed country such as US, UK, Germany, and Japan have shown more than 80 per cent of their population as urban. The Census of India designates any settlement having a municipal status, such as municipal committee, municipal corporation or cantonment board as a town. In addition any settlement, without such a statutory status, is also defined as town if it has a population of at least 5000, carries a population density of at least 400 persons per square kilometer, and has at least 75 per cent of male work force outside agriculture. As per the Census of India 2001, 27.78 per cent of India's population is urban, distributed among 5161 urban settlements. This gives an absolute figure of no less than 286 million. Over two-thirds of urban population is concentrated in 393 cities, each with a population of at least 100,000. Among these 35 are metropolitan cities having a population of at least one million each.

There are wide variations in the urbanization level of different parts of India. The districts of Delhi, Kolkatta, Mumbai, Hyderabad, Chennai, Yanam and Mahe are entirely urban while the districts of Lahaul & Spiti, Kinnaur, Upper Siang, Senapati, Tamenglong, Churachandpur, Ukhrul, Lawangtlai, The Dangs and Nicobars are entirely rural. Goa is the most urbanized state, with virtually one half of its population living in towns. Himachal Pradesh is least urbanized at 9.79 per cent only. A large segment of the urban population is concentrated in six of the most urbanized states of Maharashtra, Gujarat, Tamil Nadu, Karnataka, Punjab and West Bengal. Only 170 districts among 593 in India have an urbanization level higher than the national average (Fig. 4). There is a distinct West-East

divide on the urbanization map of India. If a rough line is drawn straight from the Coromandal Coast joining up to the eastern border of Uttaranchal, a large majority of such districts find a location to the west of it.

Two corridors of urbanization can be observed along the western coastal districts of Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu and the other along the national highways joining Ahmadabad and Mumbai with Kolkata. Apart from these, million city districts of Kanpur, Lucknow, Patna, Hyderabad, Vishakhapatnam and other regional centres also represent high levels of urbanization. Most districts of Mizoram, the Imphal valley in Manipur, Kamrup and North Cachar Hills districts of Assam, Papum pare and Upper Subansari districts of Arunachal Pradesh and the East Khasi Hills district of Meghalaya in the Northeastern hill states are also relatively urbanized.

## II

### Methodology

Using the four indicators of population above poverty line, female literacy rate, population of non-agricultural rural workers, and degree of urbanization, the development level of each district was identified. Following the style of the Human Development Report, the technique used in this paper is a two step exercise: first, to work out the deprivations score of each district and secondly to convert these into a development score. The development scores of each district on four indicators are summed up to arrive at the district's composite development index.

Deprivation score of a district on a specific indicator was computed by using the following formula:

$$\text{Deprivation score} = \frac{\text{Statistic for the first ranking district} - \text{Statistic for the specific district}}{\text{Statistic for the first ranking district} - \text{Statistic for the district at the bottom}}$$

Development score = 1 – Deprivation score  
Composite index = Summation of development scores on the four indicators divided by four

The case of Chandigarh illustrates the working of the technique:

For the indicator of population above poverty line, deprivation and development scores were:

$$\text{Deprivation score} = \frac{100 - 97.1}{100 - 19.9} = 0.036$$

Here 100 is the highest statistic for any district of India (Anantnag), 19.9 per cent for the district at the bottom (Malkangiri district) and 97.1 per cent for Chandigarh.

$$\text{Development score} = 1 - 0.036 = 0.96$$

For the indicator of female literacy, deprivation and development scores were:

$$\text{Deprivation score} = \frac{90.57 - 66.18}{90.57 - 14.47} = 0.320$$

Here 90.57 is the highest statistic for any district of India (Nainital), 14.47 per cent for the district at the bottom (Kishanganj district) and 66.18 per cent for Chandigarh.

$$\text{Development score} = 1 - 0.320 = 0.68$$

For rural non-agricultural workers, deprivation and development scores were:

$$\text{Deprivation score} = \frac{100 - 96.27}{100 - 0} = 0.036$$

Here 100 is the highest statistic for any district of India (Lakshdweep), Zero per cent for the district at the bottom (Yanam district) and 96.27 per cent for Chandigarh.

$$\text{Development score} = 1 - 0.036 = 0.96$$

For the indicator of Urbanization, deprivation and development scores were:

$$\text{Deprivation score} = \frac{100 - 89.77}{100 - 0} = 0.102$$

Here 100 is the highest statistic for any district of India (New Delhi), Zero per cent for the district at the bottom (Tamenglong district) and 89.77 per cent for Chandigarh.

$$\text{Development score} = 1 - 0.102 = 0.89$$

Composite index = Summation of 0.96, 0.68, 0.96 and 0.89 divided by 4 = 0.87

The composite index for Chandigarh is 0.87, the second highest for any district in India. The district of East Delhi has the highest composite score of 0.90 and Malkangiri the lowest of 0.06 only. The figure for India was 0.46. To afford comparability of the districts all the districts were normalized with the national average as 100. The composite index of India (0.46) was given the score of 100 and all other districts were normalized with respect to this figure. Thus, final scores for East Delhi and Malkangiri were worked out as 180 and 12 respectively and for Chandigarh this score was 175.

### III

#### Patterns of Regional Disparities in India in 2001

The spatial contours of regional disparities can be discerned from Fig. 5, representing the composite index of development level. The number of districts having values above the national average was 159 for female literacy, 170 for urbanization, 272 for rural non-agricultural workers and 342 for population above poverty line (Table 1). It signifies that the distribution of the female literacy rate is most skewed, followed by degree of urbanization, among the four indicators of development.

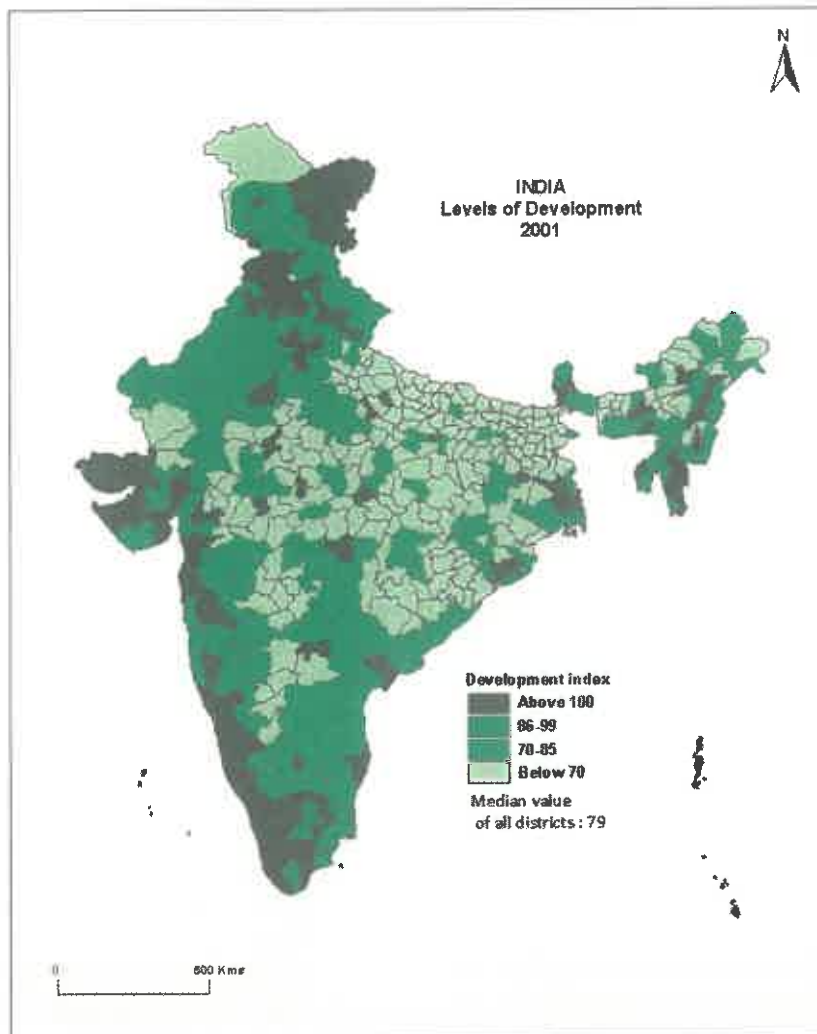
At the district level, the highest development index of 180 is noted for East Delhi, followed by Chandigarh and West Delhi at 175 each. Against this, Malkangiri district of Orissa records a score of 12 only with Nabarangpur (14) and Rayagada (22) positioned at second and third from the bottom. These three districts were carved out from Koraput district, which in itself is a part of the most backward KBK (Koraput, Balangir and Kalahandi) region of Orissa.

On the development map of India, 151 districts are noted for a high level of development, with a composite score of 100 or more in each case. These districts form clusters in four corners of

**Table - 1: India: Districts above National Average on Select Indicators (2001)**

Indicator	National average (per cent)	Districts above national average	Per cent in total
Female literacy	54.16	159	26.81
Urbanization	27.78	170	28.67
Rural non-agricultural workers	28.76	272	45.87
Population above poverty line	74.01	342	57.67

Source: Census of India, 2001.



**Fig. 5**

India (Fig. 5). In the north-west, most of the districts of Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, and Uttaranchal, along with the union territories of Delhi and Chandigarh, have development levels significantly above the national average. This part of India is noted for its agricultural and agro-industrial advancement. The southern cluster covers Kerala and Tamil Nadu, with their offshoots in the adjoining state of Karnataka. Social indicators of development are strong in this case. In the west, coastal Gujarat and Maharashtra emerge prominently due to an extensive industrial base. In the east, the Calcutta (Kolkata) conurbation takes place of pride. This apart, Mizoram and other Christian majority areas in the North-East attract attention for their social development.

The north-west cluster of districts is the most extensive zone of development in India. Among the top ten districts on level of development, eight are found here. The union territories of Delhi and Chandigarh; the Amritsar-Ambala corridor in Punjab; the eastern belt of districts in Haryana; districts of Srinagar, Jammu and Leh (Ladakh) in Jammu & Kashmir; Shimla, Solan and Kangra in Himachal Pradesh and Dehradun, Haridwar and Nainital in Uttaranchal are the most developed in this zone. Delhi and Chandigarh are predominantly urban, Punjab benefited from the Green Revolution and its agro-based industry, Haryana reaped the spread effects of Delhi, and Himachal Pradesh, Uttaranchal and Jammu & Kashmir made strides in power generation, horticulture and tourism respectively (Krishan, 1999). Irrigation, electrification, tourism and road connectivity are markedly prominent features of this cluster.

The western cluster comprises the coastal districts of Gujarat, Maharashtra and the union territory of Daman & Diu. A high level of industrialization and urbanization is a marked feature of this belt. The entire Gujarat sector had trade relations with the Arab, East African and Mediterranean countries for centuries and the Maharashtra sector came into prominence in international trade during the colonial days

(Government of India, 1973). Under the British, the Gujarat plain and Maharashtra coastal region were part of the same Bombay province, and contributed to each other's trade and industry. The process of overall development gained momentum after Independence (Rothermund et al., 1993). Emigration was another notable feature of this area.

The southern cluster covers Kerala, Tamil Nadu and Goa. It also includes the coastal districts of Karnataka, and union territories of Lakshadweep, Pondicherry and Andaman & Nicobar Islands. These are again coastal territories noted for a higher level of social development. In particular, Kerala has the distinction of being the most literate state in respect of female literacy. Tamil Nadu has a decentralized pattern of industrialization and urbanization. Goa is famous for tourism. The entire cluster displays an urban-rural continuum (Bose, 1978). Lakshadweep is also strong in indicators of social development and tourism is emerging as a lucrative industry of these islands. Andaman & Nicobar Islands, located in the heart of the Bay of Bengal, enjoy a strategic location. The Government of India is investing heavily for the development of these islands (National Institute of Public Finance and Policy, 2006).

The developed districts in the east and north-east do not make a contiguous cluster. These are rather scattered group formations of districts. Kolkata conurbation is the most prominent and massive sprawl of urbanization (Dutt, 1989). Aizawl and its adjoining districts also rank high on development in association with urbanization, literacy and income level (Gogoi, 1976). The Imphal valley of Manipur, Kohima-Dimapur tract of Nagaland, Shillong area of Meghalaya and Agartala tract of Tripura are also among the developed parts of the North-East (Singh, 1988). None of the districts of Assam, however, belong to this category.

In addition to the four clusters discussed above, some districts containing million cities also find a place among the developed areas. These include, for instance, the districts of Lucknow,

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Kanpur and Allahabad in Uttar Pradesh; Bhopal, Indore and Jabalpur in Madhya Pradesh; Nagpur in Maharashtra; and Hyderabad-Rangareddy in Andhra Pradesh. These are located amidst areas of extensive rural backwardness all around.

One in every six districts in India is at a relatively high level of development. These are located on the immediate periphery of the developed districts (Fig. 5). The districts in this category make an extensive zone in the northwest, are in elongated belts along the eastern coastal region and are adjacent to the western coastal region. These emerge as a transition between the modern, developed, high-speed India and the traditional, backward, low-speed India (Chapman, 1992).

Among 593 districts in the country, 140 are at a relatively low level of development. The frequency of such districts is higher in the states of Andhra Pradesh, Karnataka, Uttar Pradesh, Madhya Pradesh, Rajasthan and Maharashtra. All these states are large in size and their peripheral areas have been victims of administrative neglect in development (Krishan, 1999). About 200 districts, that is, no less than one in every three in India, are at a distinctly low level of development. These make an extensive compact zone in eastern Uttar Pradesh (45 districts), Bihar (36 districts out of 37 districts), Jharkhand (12 districts out of 18 districts), Chhattisgarh (12 districts out of 16 districts), and Orissa (19 districts). The Middle Ganga Plain and the northeastern parts of the Peninsular Plateau together constitute the most backward part of the country (Singh, 1971). Among the 100 most backward districts of India, 80 are located herein. In detail, these two zones mark a contrast to each other. For example, the Middle Ganga Plain is a highly densely populated region, with overwhelmingly rural and agricultural population, and marked by a gross resource-population imbalance. Historically it suffered not only because of the feudalistic system of revenue realization imposed on it, but also because of the backwash effects of Calcutta metropolis during the colonial rule (Dubey, 1992). A fate of underdevelopment was a natural corollary of the

migration of its youthful workers, skill and capital to Calcutta for at least two centuries.

By comparison, the northeastern segment of the Indian Peninsula owes its backwardness to other factors. Comprising Chhota Nagpur Plateau and Rajmahal hills in the north, Maikala Range and Mahadeo Hills in the northwest and the west, Eastern Ghats in the east and Dandkarnaya in the south, this region spreads over the whole or part of the states of Jharkhand, Chhattisgarh, Orissa and Madhya Pradesh and has a significant proportion of its population as tribal. Ironically, this is one of the richest parts of India in natural resource base but grossly lacks in human resource. Literacy rates are very low, urbanization is sporadic, and infrastructure lacking in most cases. In many districts, more than 80 per cent of the population is below the poverty line. Administrative capacity in the provision of basic services and maintenance of law and order leaves much to be desired. No wonder that the naxalite movement was successful in spreading its tentacles here.

Other backward regions include firstly, the chronic drought prone areas of the Thar desert in Rajasthan, Marathwada in Maharashtra, Talengana plateau in Andhra Pradesh; secondly, the remote, isolated tribal areas in the North-East; thirdly, the rugged topography tracts of Vindhyaachal and Satpura hills; and finally the flood prone areas of Assam. The role of inhospitable physical conditions comes to the forefront in all these areas (Krishan, 1992).

It follows that the development map of India is characterized by some developed districts and many backward ones. The developed districts form clusters in the northwest, west, deep south and certain pockets in the east of the country. Relatively developed districts are on the immediate periphery of the highly developed ones. A large part of the mainland, in particular, the Middle Ganga Plain, Northeastern Peninsula, the interior of the Deccan and the Rajasthan desert are low on the development level.

Backward districts suffer either resource population imbalance or physical constraints of

topography, climate and isolation or administrative neglect. At the national level, the development levels found their strongest association with female literacy (0.823), followed by population above poverty line (0.729), urbanization (0.712) and rural non-agricultural workers (0.688). This relationship, however, differs from region to region. Female literacy in the case of South India, urbanization in Western India and economic well being in Northwestern India are dominant factors influencing the development levels. Most of central and eastern India is low on all the indicators of development with few exceptions.

#### IV

### Conclusions

The development map of India in 2001 shows a persistence of backward mainland and developed periphery, contrary to expectations. The peripheral location of developed districts is manifest in development clusters occupying various corners of India. The north-western cluster covers districts of Punjab, Haryana, Delhi, Chandigarh, and also some parts of Himachal Pradesh and Jammu and Kashmir. Agricultural development after the success of Green Revolution in this part has raised the overall level of development in this region. Irrigation,

electrification, road connectivity and tourism development are the main planks of higher development. The southern cluster of developed districts includes the states of Kerala and Tamil Nadu and their offshoots in the adjoining state of Karnataka, where the social indicators of development are very strong. The western cluster has Gujarat and Maharashtra in its ambit, where industrialization diffused its spread effect. Kolkata-Haora conurbation and the Christianity dominated districts of Mizoram form the eastern cluster of the higher level of development in India. Colonial legacy of Kolkata and the spread of literacy in the Christian belts lead to the high level of education and development in these pockets. As we move away from these clusters, more and more backwardness is prevalent.

In brief, wide regional disparities concurrent with a low development level in general are the noticeable features of the development map of India. An emerging concern here is that the already developed areas, favoured by their locational advantages, favourable infrastructure and better law and order situation are attracting large private investments at the cost of backward areas. This is likely to generate social and political areas which have been left behind. The emergence of red corridor in the eastern half of India is a manifestation of such upcoming problems.

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## NEW MAP SERIES : 2

# INDIA: DEMOGRAPHIC VARIABLES AS INDICATORS OF SOCIAL, ECONOMIC AND POLITICAL REALITY

**GOPAL KRISHAN**  
Chandigarh, India

Over the decades since World War II, the primary concern of demographers has been to affirm the identity of their discipline, establish its credentials as a social science, align the contents of its subject matter to the evolving situations, expound the eternal theme of demographic transition, devise ever more authentic techniques for data analysis, and contribute to the domain of population policy. They underline that demography is a kind of bio-social book keeping (Wolfe, 1948, p. 85). Its materials are censuses, vital statistics and increasingly sample surveys (Kirk, 1968, pp. 342-343). All said and done, they have shown greater fascination for the concrete rather than theory (Caldwell, 1996, pp. 310-312). Probably that may explain the lack of enthusiasm on their part to use demographic variables as indicators. These are often treated as hard facts and are subjected to rigorous analysis in their own structure and substance.

The present attempt is in response to an observation of such a gap. It makes a rudimentary attempt to capture some select parameters of the social, economic and political reality of India by way of constructing indicators for the purpose. The data made available by the Census of India 2011 by individual states and union territories have been put in service. A map-based description of each indicator, as devised, follows.

### Cost of Population Growth (Map 1)

Let us begin with a parody of the demographic transition model, which adheres to a procedure of working out birth

rate minus death rate

- Here we are led to the concept of turn over rate of population, that is birth rate plus death rate. It is meant to be a surrogate of the cost of population growth.
- Turn over rate of India's population in 2010 was 22.1 (birth rate) plus 7.2 (death rate) = 29.3. A century ago in 1910, it was 49.2 (birth rate plus 42.6 (death rate) = 91.8. The implication is that though the rate of population growth was very low in the beginning of the 20th century, its cost was very high.
- The heartland of India, an elongated poverty trough, bears the heaviest cost of population growth.
- Cost of population growth in Uttar Pradesh is two times of that in Goa.
- The northwestern, northeastern, southwestern and southeastern peripheries of the country are low on this count.
- Chandigarh is at par with Goa, in fact below Kerala, on this tally.
- Punjab and Himachal Pradesh are also at equally low on this reckoning.
- Birth rate more than death rate is a critical determinant of this cost.
- A field survey is required to estimate the actual expenses incurred on per birth or death in different parts of India. Psychological or social costs will be difficult to measure.
- Relationship between the cost of population growth and incidence of joint family system may also be examined.

### Joint Family System (Map 2)

- Only one-fifth (21.6%) of all households were recorded as joint at the 2011 Census of India, defying the popular description of India as a land of joint families
- Uttar Pradesh carried the highest figure (29.7 percent) and Nagaland the lowest (4.6 percent) on this parameter.
- Broadly speaking the incidence of joint family system declines from west to east and further northeast, and from north to south; that is from the Aryan north to tribal northeast to Dravidian south.
- National Capital Territory carries a figure higher than the national average; for Chandigarh, it is lower, comparable to that for Goa. Union territories are mostly low in this regard.
- Joint family system is relatively stronger in the western hill states than in the eastern ones; likewise western coastal states carry higher scores than their eastern counterpart.
- It will be worthwhile to examine the relationship between incidence of joint family system and the status of women, as inferred from representative indicators.

### Status Of Women (Map 3)

- A non-conventional way of measuring the relative status of women is to take into account the female friendly provisions within the home rather than female literacy rate as it is often done. Herein these include in-house availability of separate kitchen/ bathroom/ latrine.
- On this parameter, Kerala is on the top, Bihar at the bottom. Christian North-East is well placed.
- Virtually all union territories are noted for relatively high scores. Chandigarh, however, is below Delhi.
- Punjab is better placed than Himachal Pradesh, which in its own turn ranks higher than Haryana.
- The heart of India emerges as a wide sinkhole

on this assessment.

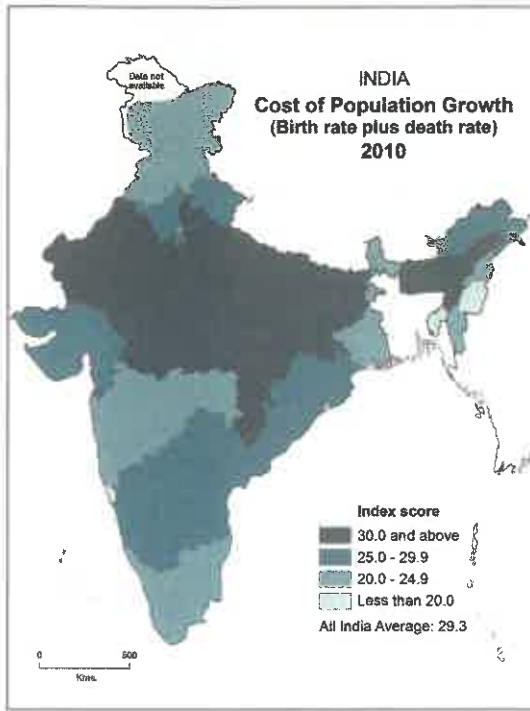
- Status of women doesn't display any consistent association with the joint family system.

### Pro-gender Cooking (Map 4)

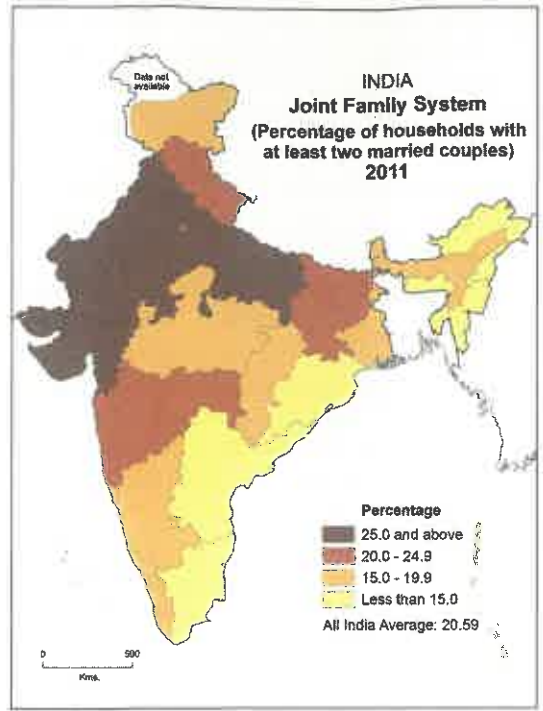
- Research affirms the use of LPG as fuel for cooking as the strongest determinant of quality of living space in Indian homes.
- In India, about 29 percent of the households have the facility of LPG for cooking, 49 percent depend on firewood, 9 percent on crop residue, 8 percent on cow dung cake, and the remaining on others, like kerosene and electricity.
- LPG is largely an urban privilege where two in every three households are its beneficiary; the comparable ratio for rural areas is one in every nine households.
- Regional variations are equally striking. National Capital Territory of Delhi tops with 90 percent. Among states, Goa is first ranking with 73 percent. Bihar is at the bottom with 8 percent.
- The incidence of LPG use is high in western coastal districts, in metropolitan cities in general, and in hill/tribal districts where use of LPG is encouraged through a provision of special subsidy.
- LPG is in scarce use over large parts of Ganga Plain, Central India, North-East and interior parts of peninsular India.
- Income level, urbanisation status, transport facility, special state subsidy, and proximity to a refinery are observed as the main determinants of LPG use. Poverty keeps its door tightly closed for potential LPG users.

### The Have-nots (Map 5)

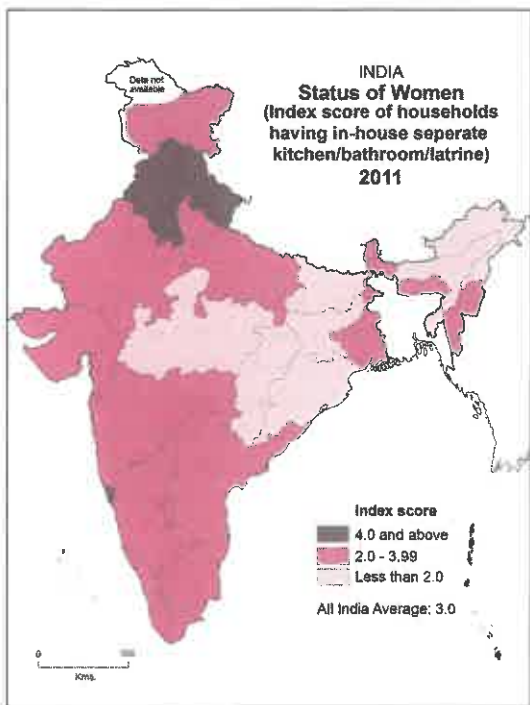
- About one in every five households in India is without any assets like radio, transistor, television, telephone, mobile, computer/laptop, bicycle, scooter and car that could connect one with or facilitate access to outer world.



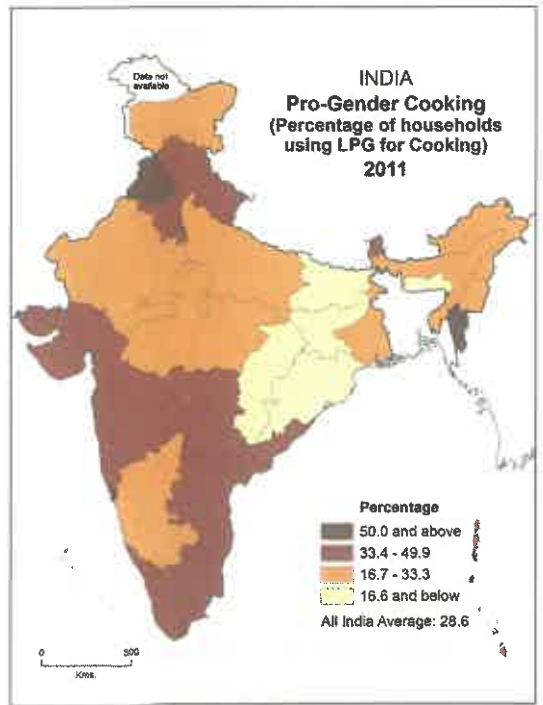
Map 1



Map 2



Map 3



Map 4

- Who could be such cases - primitive tribes inhabiting remote areas, far flung mountain dwellers, destitute migrants, electricity-deprived populace and very poor anywhere.
- Lakshadweep is a blessed territory where hardly any household is without these assets.
- All other union territories, Northwest region, and Kerala-Goa belt are also comfortably placed on this parameter. For Chandigarh, the figure is just 2.3 percent, for Punjab 4.4 percent and for Kerala 4.8 percent.
- By contrast, a wide, elongated west-east belt coinciding with the middle crest of the country is noted for a relatively high proportion of such households. Quite some of these areas are tribal territories or are marked by acute poverty.
- Let us move on to an understanding of the distributional pattern of those households who are to do without any mode of personalised transport, such as bicycle/scooter/motorcycle/moped and car/jeep/van.

### The Pedestrian World (Map 6)

- Nearly half of the households in India have no specified personalised mode of transport, like bicycle, scooter or car. They have to depend essentially either on legs or public transport for mobility.
- Sikkim is noted for the highest percentage (89.2 percent) of households of this kind. Other hill states, especially those with high percentage of tribal population, tend to follow this pattern.
- Lakshadweep (10.9 percent) lies on the other extreme. Punjab (18.7 percent) and Chandigarh (15.4 percent) are also in the same category.
- Kerala (59.6 percent), Andhra Pradesh (55.1 percent) and Maharashtra (54.3 percent) emerge as surprise cases with a majority of households without any personalised transport mode. The figure for the National Capital Territory at 37.1 percent is also to be

reckoned as high.

- Uttar Pradesh (26 percent) is much better placed than its all neighbours, including Haryana and National Capital Territory, in this regard. Gujarat (45.1 percent) and Bihar (47.9 percent) are almost at the same level.
- Bicycle in predominantly rural areas reduces and public transport in highly urbanised states increases the proportion of households without any personalised mode of transport.
- Let us move on to an understanding of high speed personalised mobility locations.

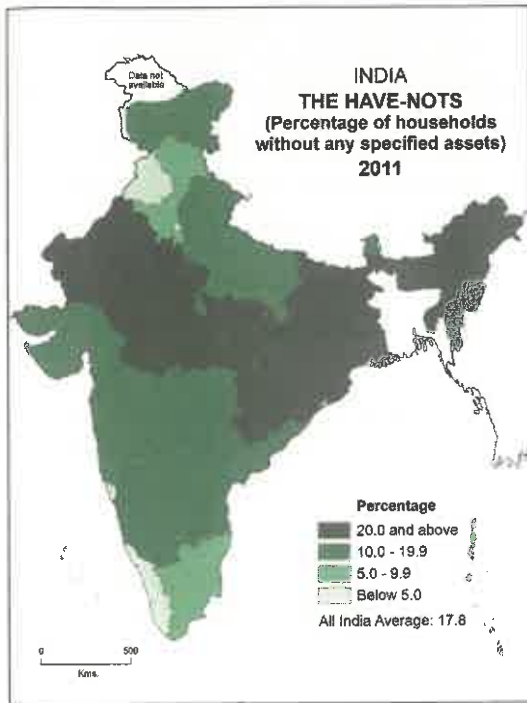
### Personalised Kinetic Mobility (Map 7)

- Kinetic mobility is characteristic of those households who have a mechanized mode of transport at personal level.
- India is a sluggish mobility case. Only 4.7 percent of the households have car/jeep/van and 21 percent scooter/motorcycle/moped.
- The western India is more mobile than the east; the south more than the north. On the whole the periphery is more mobile than the geographic heartland.
- In Chandigarh, 25.7 percent of the households have car etc. and 46.7 percent scooter etc. Figures for Delhi are 20.7 and 38.9 percent respectively, and for Goa 24.6 and 56.9 percent respectively.
- Punjab-Haryana plain, Kerala-Goa belt and metropolitan cities at large are high on this count.
- Notably West Bengal scores low in this regard whereas several hill states, such as Himachal Pradesh, Uttarakhand, and Mizoram are relatively better placed.
- India is a composite of three mobility worlds: a vast pedestrian realm, an extensive bicycle zone, and a sporadically dispersed kinetic mobility locales.

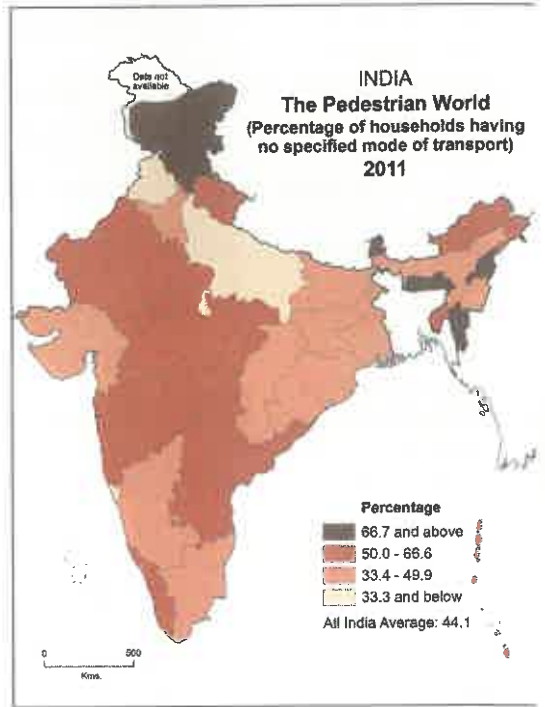
### To Nature On Nature's Call (Map 8)

- Defecation in the open is an all-India phenomenon in varying degree.
- Almost half the households in India are made

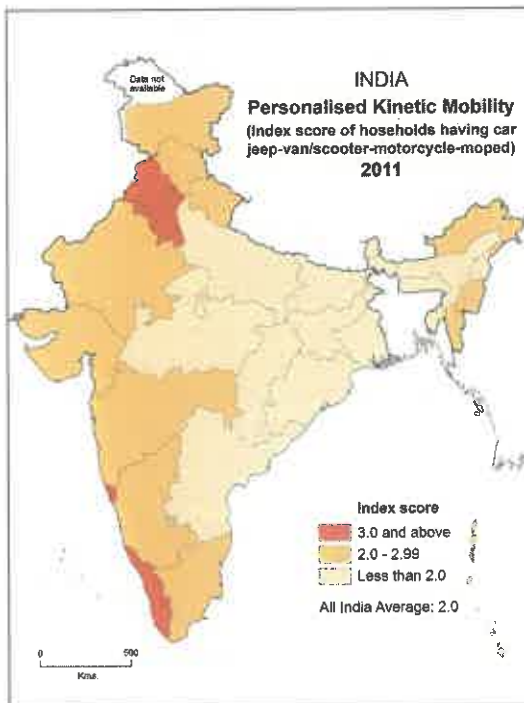




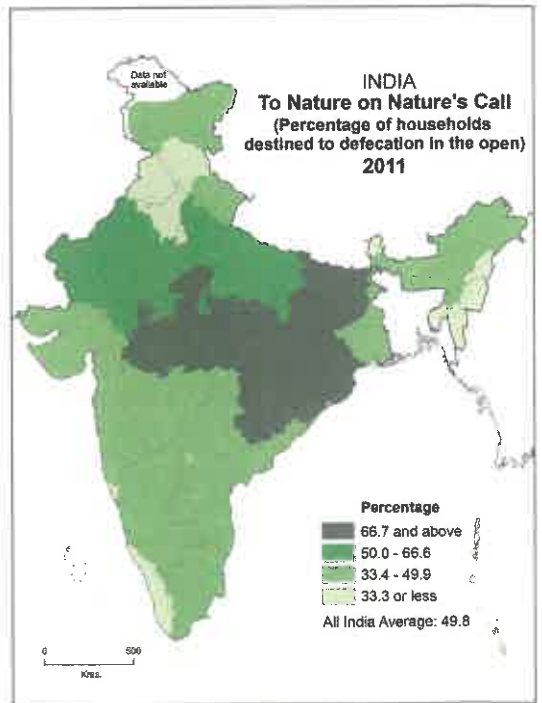
Map 5



Map 6



Map 7



Map 8

to go by this practice; two-thirds in rural areas and one-eighth in the urban.

- Incidence of this practice is very high in central and north India; relatively low in northwest India and the lowest in Kerala-Goa belt, all the union territories, and parts of North-East.
- Chandigarh is one of the neatest places on this parameter.
- The above spatial pattern finds a broad association with life style regions and development level.
- A significant role of the varying seriousness with which the sanitation schemes of Government of India were implemented in different states is observed.

### Quality Of Living Space (Map 9)

- Involved here are households beneficiary of pucca house/ treated water supply/ flush latrine. A pucca house is the one with a roof built of concrete, burnt brick or machine made tiles.
- Here is where Chandigarh emerges on the top. Assam lies at the bottom. Most of the union territories are in the mode of Chandigarh, at lower level though.
- Kerala loses its pre-eminence on this parameter.
- The vast Central India to North-East stretch makes a zone of low quality of living space. States like Mizoram, Meghalaya, Sikkim and West Bengal make a kind of some departure.
- By contrast, Northwestern India presents itself as a zone of high quality of living space.
- A strong association between the quality of living space and status of women is observed.

### Visible Economic Wellbeing (Map 10)

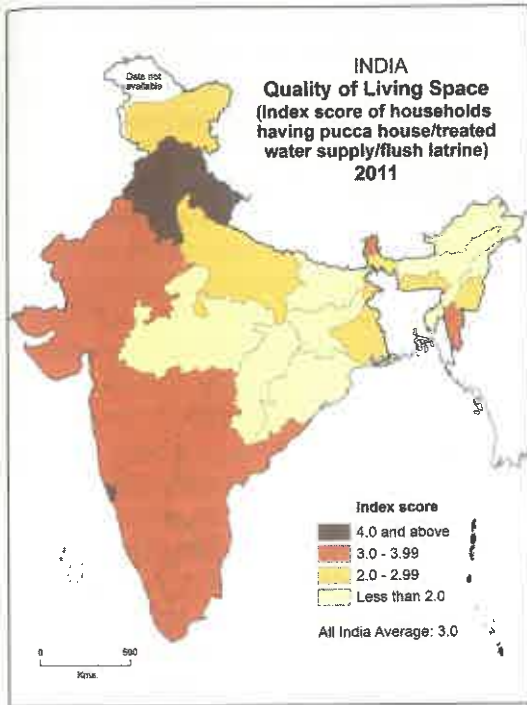
- A pucca house is a top priority of an Indian household for reasons of stability, dignity and perhaps immortality too. It is most conspicuous indicator of economic wellbeing as an element of overall landscape. Historical palaces and palatial buildings

remain a great attraction for masses.

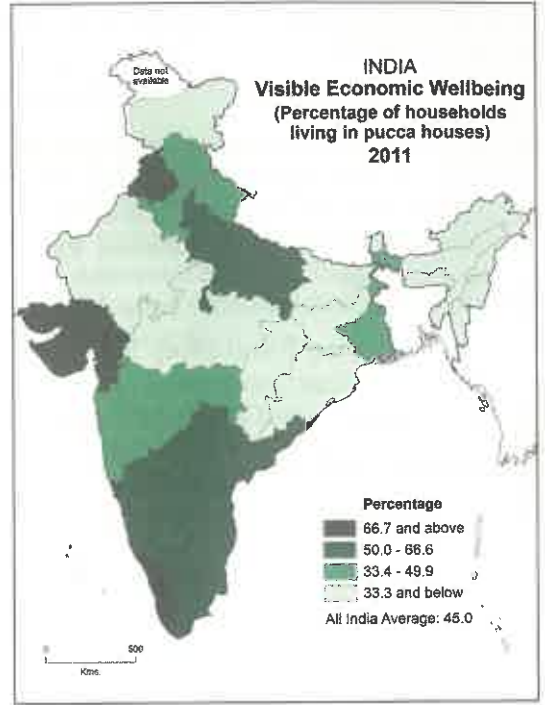
- In India, 45 percent of the households live in pucca houses but the regional variations are astounding.
- Almost the entire western coastal region, the Punjab-Haryana plain with extensions toward the east, Krishna- Godavari delta, large parts of Tamil Nadu and metropolitan cities in general are marked for at least two-thirds of the households living in pucca houses.
- By contrast, the Central India, Northeastern peninsula along with peninsular interior and the North-East record less than one-third of the households living in pucca houses.
- As expected, the percentage of pucca houses at regional level finds an explanation in the per capita income, urbanisation level, and infrastructure index. At its own level, it exercises a strong influence on the percentage of households having the facility of electricity, treated tap water, separate bathroom, and LPG for cooking.
- The percentage of pucca houses is a reliable proxy for the share of middle and upper class population in any spatial unit, be it an individual settlement, district or state.

### Socio-economic Connectivity (Map 11)

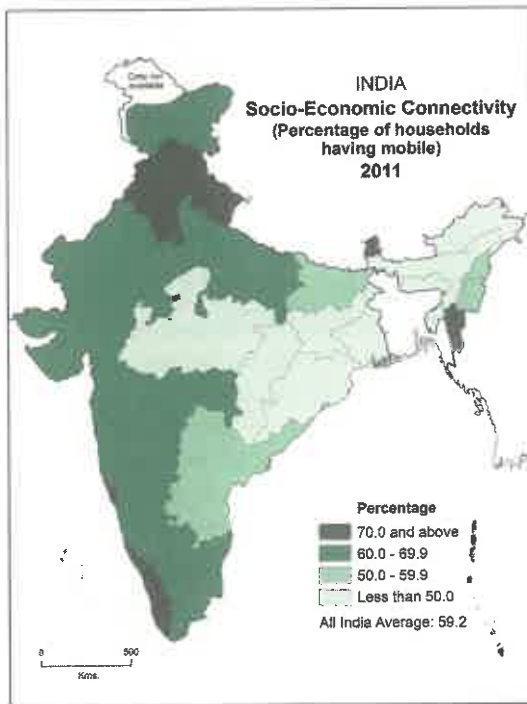
- Used as a means of instantaneous social and economic transactions, mobile has made fastest entry in Indian homes.
- Already 59.2 percent households carry this facility. Even in rural areas a majority (51.2 percent) is availing of it. In urban areas, the comparable share (76 percent) is three in every four households.
- The first five positions on this count are captured by union territories. Delhi tops, followed by Lakshadweep and Chandigarh.
- Among states, Kerala (78.1 percent) ranks first, followed by Goa (77.1 percent) and Punjab (75.5 percent).
- Broadly speaking, the western half of India is more interconnected socio-economically



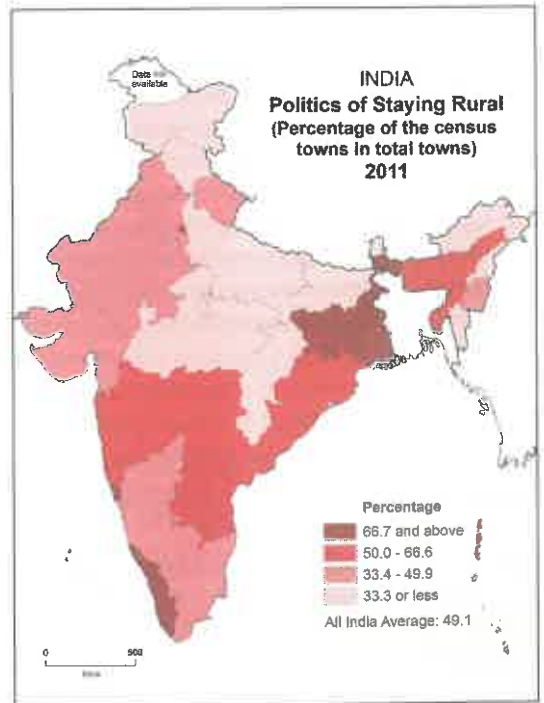
Map 9



Map 10



Map 11



Map 12

than its eastern counterpart. Northwest region and Kerala-Goa belt stand out in the western half; Mizoram and Sikkim in the eastern half.

- The red corridor, or the extremist affected belt, is very weakly connected within.
- By and large, this map is a more dense and brighter copy of the personalised kinetic mobility map.

### Politics Of Staying Rural (Map 12)

- Amazing is it that most of the census towns in India are not treated as statutory towns by state governments and these remain rural for official purposes. Bokaro Steel City, defying its nomenclature, remains a village in official parlance notwithstanding half-a-million as its population count. It is designated as a census town.
- The 2011 Census of India recorded 7933 towns in the country; 4041 statutory towns and 3892 census towns.
- Census towns marked a big jump in their tally from 1362 in 2001 to 3892 in 2011. A large part of this increase is attributed to a definitional change under which the growers of five plantation crops, namely coconut, tea, coffee, rubber and betelnut, were recorded as non-agricultural workers at the 2011 census. Earlier these fell under the category of agricultural workers, and thereby suppressed the percentage of non-agricultural workers in settlements otherwise eligible for categorization as census towns.

- Hence all the coastal (e.g. 99 to 461 in Kerala during 2001-11) and inland plantation crop states (e.g. 45 to 126 in Assam during 2001-11) are noted for a sharp rise in the number of census towns.
- Some census towns, new or already existing, have also been a product of overspill from major metropolitan cities or are associated with emergence of dispersed growth centres at nodal locations.
- Hill states are noted for small number of census towns. Here even dynamic growth centres take a long time in acquiring a population of 5000.
- Non-declaration of census towns as statutory towns is essentially a political issue, essentially a mix of considerations involved in either staying rural on the part of the people (to keep enjoying special benefits reserved for rural areas by the government) or keeping rural on the part of the government (to escape or postpone the responsibility of providing urban services on an equal footing).

Evidently the variety of data provided by the Census of India tempts one to indulge in indicatorsmithy. The above exercise is just an illustration. Likewise indicators representing social transformation, socio-cultural pluralism, population pressure, area backwardness, rural-urban relations, and what not can be constructed by an imaginative use of census data. Herein lies a fascinating new territory for colonization by population geographers.

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## BOOK REVIEW

**K. D. Sharma, H. S. Mangat, K. Surjit Singh (Eds.) (2013) *Readings in Population, Environment and Spatial Planning* ( Felicitation Volume in honour of Dr. R. C. Chandna, former Professor, Geography Department, Panjab University, Chandigarh), Institute for Spatial Planning and Environment Research, C-1, Amravati Enclave, Panchkula, Haryana (ISPER), pp. i-xxxiv+434. Price Rs. 3000/- (Rs. 1800/- after 40% discount for teachers and libraries) including cost of delivery. (ISBN 978-81-927014-0-0).**

Reviewing a festschrift i.e. a felicitation volume is a daunting task. Invariably, felicitation volumes tend to be voluminous with disparate themes explored with multiple methodologies and perspectives; collection of articles with single/joint/multiple authorships; a mix of short communications and long essays, some well researched, others compiled in haste. The volume under review has it all.

One can imagine the formidable efforts of the editors of this volume in inviting papers, persuading the authors to meet the deadlines (which often get extended) and organizing articles to fit into different sections. The editors of this book deserve accolades for accomplishing this task admirably. Not only have they carried out the assignment with painstaking care, each one of them has enriched the book with their articles too.

*Readings in Population, Environment and Spatial Planning* spans over 434 pages. It is organized into three parts each devoted to the title sub-themes. Part I on Population contains as many as 20 papers. The thematic range is impressive: population change, seasonal mobility, development and density of settlements, demographic transition and disease transition, sex-ratio, socio-spatial patterns, fertility and age at marriage, literacy differentials, tribal societies, population ageing, health services, landholdings by social groups, mortality patterns etc. etc. There are papers in this section which may seem quite uncomfortable for the readers as to how these have been clubbed together. Some of these are otherwise philosophically very exciting (e.g. planned colonization, place and relevance of humanities in education, resource perception and technology, world religion's approach to nature and preservation of environmental values, nursing education etc. etc.). Readers would be happy to note that scholars exploring population in contemporary research are going far beyond 'decimal points' and are penetrating into the various interfaces population has with other dimensions of society. The departure from the traditional population studies of the fifties and sixties of the last century is clear. The latest researches have made a bold entry into the twenty first century with an all encompassing perspective of population. Apart from the thematic richness this part of the book is also characterized by studies at different spatial scales: from the micro to meso, macro to global. Many articles will provide a window to the reader to the experiences elsewhere in India and abroad (Carpathian Basin in Europe, Maharashtra, Rajasthan, Punjab, Haryana, Himachal Pradesh, West Bengal, Arunachal Pradesh etc.). The panoramic view these studies provide is fascinating indeed.

Part II of the book is devoted to Environment. It carries 10 articles. There are explorations, both philosophical and methodological into the issues of sustainable development capturing the on-going debate (which perhaps is leading us nowhere as yet) on the environmental challenges, sustainability of development paths and their trajectories. We are acquainted, briefly though, with the Korean experiment with *Pungshu* system; experiment with regeneration of tourism in historical cities (case study of Malacca,

Malaysia), Indian perspective on the laws of nature and policies of development; role of urban community in the management of biodegradable waste (case study of an eastern suburb of Mumbai metropolis); environmental impact of dredging in port development in Konkan; disaster management (Kullu district of Himachal Pradesh); environmental management, sustainable development and mitigation of natural disasters in the Himalayas. There is ample material in this section to read with joy, understand the contemporary and prepare for the times ahead.

Part III titled Spatial Planning contains nine papers. Thematic range here is amazing, once again. There is a research based article on the crucial place of water in sustainable planning of human settlements (case study of Chandigarh); another one follows focusing on the magnitude of loss both of human and economic resources with faulty road planning in Punjab; pros and cons of 'Green Building' in U. K.; short comings of spatial/urban planning in Suhareka, Kosovo; growth and spatial distribution of secondary cities in six administrative division of Maharashtra; dynamics of urban-rural relations in the Interstate Chandigarh Region; Social Impact Analysis (SIA) of development projects in Malaysia; a vision of sustainable urban planning and development of India through JNNURM. The last article of this section is on the dynamics of informal manufacturing which traces the evolution of bi-polar patterns as also the huge social costs of relocating industries in Mumbai.

While going through the volume under review I felt that commenting on each and every article would be neither feasible nor desirable. Let the readers have the freedom to delve into papers of their interest and make their own assessments.

This volume is welcome not only for the most befitting felicitation to Dr. R. C. Chandna, a reputed fellow geographer and a colleague but also for the initiative taken by the Institute for Spatial Planning and Environment Research (ISPER) in bringing out this publication. ISPER has been regularly organizing seminars on challenging and relevant themes. A large number of articles in the present volume had been presented as such or their drafts in ISPER seminars. And this fact could have been acknowledged in the footnotes. Similarly, some papers included in the book may be parts of on-going or completed projects which also needed a mention. Doing so in no way impacts on the quality of academic contributions.

The Key-Note addresses by Dr. R. C. Chandna also carry the details of when and where these were delivered. His profile sketched in the introductory section is very inspiring. Though there is reference to his research publications, a comprehensive list of the same could be added for the benefit of the readers, especially young researchers.

A valuable publication and a rich academic feast like the present one, priced at Rs. 3000/- (with 40 per cent discount for teachers and libraries), is not asking for too much. All the best wishes to the felicitated scholar, the erudite editorial team, the contributors (54 in all) to the volume and to the enterprising ISPER.

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