

Rural Sanitation Disparities in India: An Inter-State Analysis

*Anilkumar S H, **S.B.Nari

* ICSSR Doctoral Fellow, Department of studies in Economics, Karnataka University Dharwad-580003. E-mail: anilshphd0282@gmail.com Mobile No-9731330282

**Associate Professor, Department of studies in Economics Karnatak University, Dharwad

Abstract - The global sanitation crisis is one of the most urgent developmental challenges of the 21st century. In the end of 2011 there were 2.5 billion people, over one third of the world's population living without safe adequate sanitation and hygiene. The lack of access to this essential service holds back social and economic development through its negative impacts on health, education and livelihoods. It is the principal cause of diarrhoea, the second biggest killer of children worldwide, and it contributes significantly to malnutrition, stunting and the overall global burden of disease (World toilet day advocacy report). Hence, providing basic facilities to the people is one of the important responsibilities of the Government of India as well as state Governments. In 1980s, rural sanitation was part of rural development activities steered by DRDA, Thereafter, the government concentrated on initiating exclusive activities for rural sanitation. According to the UN estimates, 600 million people or 55 per cent of Indian openly defecate even after 60 years of Independence. It was Mahatma Gandhi who first talked of the responsible disposal of human waste. The latest census enumeration throws some important findings which were officially released on 1st May 2013. Total population of the country is 1.21 billion, which is an increase of 181.96 million persons during the decade 2001-2011. Census 2011 says that 833.5 million persons live in rural area and 377.1 million persons live in urban area. Thus, more than 2/3rd of the total population of India lives in rural areas. As per census 2011, number of literates is 763.5 million, as against 560.7 million in 2001. Hence, present paper intends to highlight the inter-state disparity in coverage of sanitation facilities in rural India and to offer policy suggestion on the improvement of rural sanitation facilities in rural India. The present study is completely based on the secondary data, using 2001 and 2011 Indian population census. In this study simple statistical tools like percentage, compound annual growth rate and coefficient of variation were used for the analysing the data.

Keywords: Rural Sanitation, Inter-state Disparities, Latrine facilities, and Rural India.

I. INTRODUCTION

The global sanitation crisis is one of the most urgent developmental challenges of the 21st century. By the end of 2011 there were 2.5 billion people, over one third of the world's population living without safe adequate sanitation and hygiene. The lack of access to this essential service holds back social and economic development through its negative impacts on health, education and livelihoods. Sanitation is the primary need for public health and good sanitation facility is the important indicator of socio-economic development in India. According to recent UNICEF report, in India 54 per cent of the households group, defecating in the open area, as against only 7 per cent recorded in both Brazil and Bangladesh. Open defecation is one of the main causes of diarrhoea, which results in the deaths of more than 750,000 children every

year, under age of 5 years. In every year, children lose 272 million school days due to diarrhoea (WHO/UNICEF. Economic impact: World Bank 2015).

In July 2010, the United Nations (UN) General Assembly passed a resolution affirming water and sanitation as fundamental human rights (Pankaj-2016). Sanitation facility is one of the basic determinants of quality of life and human development index. Good sanitary practices prevent contamination of water and soil, thereby prevents diseases.

The concept of sanitation was therefore expanded to include personal hygiene, home sanitation, safe water, garbage disposal, excreta disposal and waste water disposal. But globally, sanitation is primarily used for safe disposal of human excreta (used by UNICEF-WHO Joint Monitoring Program) recently the Prime Minister of India launched the

Swachh Bharat Mission (SBM) on 2nd October, 2014 which aims to achieve Swachh Bharat by 2019, as a fitting tribute to the 150th Birth Anniversary of Mahatma Gandhi. The main objective of this programme is removing the bottlenecks that were hindering the progress during the previous programs such as Total Sanitation Campaign (TSC) and Nirmal Bharat Abhiyan (NBA) and focusing on critical issues affecting outcomes of these programmes. In India, Central and Karnataka state governments are more concentrated to facilitate latrines to the every household in the country. Recent researches on this ground have found that sanitation interventions can be effective in reducing a range of important health outcomes, including diarrhoeal diseases and soil-transmitted health infections.

II. REVIEW OF LITERATURE

Review of recent literature helps to understand the concepts, problems and identifying the important determinants of the variables, in this connection some recent related works done by the researchers having been reviewed as under, in the paper 'current status of drinking water supply and sanitation in rural Madhya Pradesh', Das Keshabin-2012, studied and found that the participation in the local community is also important while deciding upon the appropriate hardware technology for the toilets and found that a very low level of awareness prevails regarding solid and liquid waste disposal in the villages and even TSC has not given due emphasis to the same. Further, Tiwari and Nayak in 2013 studied the inter-regional disparity in coverage of drinking water and sanitation services in Uttar Pradesh and identified that the important variables they are, male literacy rate, female literacy rate and per capita income as independent variables on sanitation. The study found that the female literacy plays a significant role in improving access to sanitation facilities. Homi Katrak (2014), this article focuses on the overall shortage of household sanitation in their rural areas and the likelihood of sanitation-related inequalities. This article find out that inter-state comparisons showed that the state that had the highest (lowest) percentage of households without sanitation were also those that had the highest (lowest) incidence of women's illiteracy. Moreover, within each state the lack of sanitation was found mainly in those households whose women were illiterate. In a study conducted in the year 2015 by Manisha examined the current situation of sanitation in India, and its impact on health and other societal factors. Study revealed that low political priority, lack of properly designed, penetrated awareness programs, poor delivery mechanism, beneficiary participation, lack of research and innovation are prime barriers towards to achieve total sanitation. India has far higher open defecation rates than others, developing regions, where people are poorer, literacy rates are lower, and water is relatively more scarce (Coffy,et.al-2017). And Jeffrey and Dean (2016), over a billion people worldwide defecate in the open, with important consequences for

early-life health and human capital accumulation in developing countries. India designed to identify an effect of village sanitation on average child height, an outcome of increasing importance to economists.

After reviewing the recent related literature, present study finds that in practice, government programs in rural India have paid little attention in understanding question of 'why so many rural Indian households and social groups households of the society, defecating in the open area rather than use affordable pit latrines?', in this connection the present study finds there is a need to study the sanitation facilities accessed by the social groups households. Hence, the present study was undertaken to draw meaningful conclusions.

III. SPECIFIC OBJECTIVES OF THE STUDY

- 1). To analyse the latrine facilities in the households among the different social groups in rural India.
- 2). To offer policy suggestion on the improvement of rural sanitation facilities in rural India.

IV. METHODOLOGY

The present study is completely based on the secondary data, using 2001 and 2011 Indian population census. The data collected from the office of the Registrar General & Census Commissioner, Ministry of Home Affairs, Government of India and Swachh Bharat Mission (Garmin) Annual Reports. Present study is undertaken to analyse the latrine facilities available for the different social groups in the rural India. Latrine facilities in the social groups in the rural-India like SCs and STs and others are analysed with different States, out of 30 states selected 26 states only because of data availability. In this study simple statistical tools like percentage, compound annual growth rate and coefficient of variation were used for analyse the data to draw meaningful conclusion.

V. RESULTS AND DISCUSSION

Keeping in view of the objectives, data relevant to the present study elicited from various sources were analysed through appropriate tools and techniques. Results obtained from the analysis of the data are presented as following. To understand the sanitation facilities in the social groups in the society like SCs and STs and others are analysed with different states. Results obtained from the data are analysed under.

There existed wide variations in total latrine facility across states during 2001 and 2011 census period. Percentage of highest latrine facility in Kerala (81.33), followed by Mizoram (79.74), Tripura (77.93). Manipur (77.5) Assam (59.57) and Sikkim (59.35) had highest IHHLs facility in that order in 2001 census period. States like Orissa (4.43),

Chhattisgarh (4.65), Jharkhand (4.85), and Madhya Pradesh (5.83) had least in percentage so total 13 states comes under below the 20 percentage of IHHLs facility categorisation groups. The performance of states like Goa, Daman & Diu and only 6 states having 20 to 50 percentages of IHHLs facilities in rural India.

It was clear from the table-1 that the level of disparities reduced among the different Indian states calculated coefficient of variance (C.V) for the percentage number of households having latrine facilities among the different states was declined to 59.60 in 2011 from 74.26 in 2001. Values of compound annual growth rate shows that growth in the number of households having latrine facilities was highest in Chhattisgarh (10.86 percent) followed by Himachal Pradesh (9.16 percent) and found negative in Jammu and Kashmir (-7.8 percent).

Table: 1 State-wise Total No. of Households having latrine facility in Rural India in 2001 and 2011 Census

State/Uts	Total Latrine Facility in Percentage		
	2001	2011	CAGR
Jammu & Kashmir	41.80	38.65	-0.78
Himachal Pradesh	27.72	66.58	9.16
Uttarakhand	31.60	54.06	5.51
Chhattisgarh	5.18	14.53	10.86
Uttar Pradesh	19.23	21.77	1.25
Bihar	13.91	17.60	2.38
Sikkim	59.35	84.11	3.55
Manipur	77.50	85.99	1.05
Mizoram	79.74	84.58	0.59
Tripura	77.93	81.45	0.44
Meghalaya	40.10	53.88	3.00
Assam	59.57	59.57	0.00
West Bengal	26.93	46.74	5.67
Jharkhand	6.57	7.62	1.50
Orissa	7.71	14.08	6.20
Madhya Pradesh	8.94	13.12	3.91
Gujarat	21.65	33.04	4.32
Daman & Diu	32.02	51.37	4.84
Dadra & Nagar Haveli	17.32	26.52	4.35
Maharashtra	18.21	38.00	7.63
Andhra Pradesh	18.15	32.19	5.90
Karnataka	17.40	28.41	5.03
Goa	48.21	70.92	3.94
Kerala	81.33	93.23	1.37
Tamil Nadu	14.36	23.22	4.93
Rajasthan	14.61	19.65	3.01
Average	33.35	44.65	2.96
All India	21.92	30.73	3.44
S.DEV	24.76	26.61	0.72
C.V.	74.26	59.60	-2.18

Results presented in table-2, shows that variation among the different states in case of number of scheduled caste households having latrine facilities. It was observed that there is slight decline in the coefficient of variance (C.V)

value from 86.77 to 73.83. Calculated compounded annual growth rate (CAGR) of number of households having latrine facilities among the SCs found highest in Dadra & Nagar Haveli (12.45 percent) followed by Daman & Diu (10.84 percent), Himachal Pradesh (10.45 percent).

Table: 2 State-wise Scheduled Caste No. of Households having latrine facility in Rural India in 2001 and 2011 Census

State/Uts	SC Households Latrine Facility in Percentage		
	2001	2011	CAGR
Jammu & Kashmir	18.97	13.33	-3.47
Himachal Pradesh	22.75	61.18	10.40
Uttarakhand	21.35	33.53	4.62
Chhattisgarh	4.65	10.85	8.83
Uttar Pradesh	13.31	13.28	-0.02
Bihar	5.68	7.67	3.05
Sikkim	49.91	78.69	4.66
Manipur	82.22	83.10	0.11
Mizoram	86.77	88.78	0.23
Tripura	88.14	94.05	0.65
Meghalaya	57.13	56.10	-0.18
Assam	57.72	60.49	0.47
West Bengal	21.05	40.14	6.67
Jharkhand	4.85	4.33	-1.14
Orissa	4.43	8.69	6.98
Madhya Pradesh	5.83	8.56	3.91
Gujarat	15.32	30.05	6.97
Daman & Diu	23.89	66.87	10.84
Dadra & Nagar Haveli	23.23	75.13	12.45
Maharashtra	17.39	32.60	6.48
Andhra Pradesh	10.15	21.40	7.74
Karnataka	9.99	16.39	5.07
Goa	46.07	66.97	3.81
Kerala	66.38	83.32	2.30
Tamil Nadu	10.19	12.76	2.27
Rajasthan	12.98	17.30	2.91
Average	50.53	3.83	-22.74
All India	15.09	22.85	4.23
S.DEV	43.85	2.83	-23.97
C.V.	86.77	73.83	-1.60

Table: 3 State-wise Scheduled Tribe No. of Households having latrine facility in Rural India in 2001 and 2011 Census

State/Uts	ST Households Latrine Facility in Percentage		
	2001	2011	CAGR
Jammu & Kashmir	38.13	23.01	-4.93
Himachal Pradesh	28.78	59.64	7.56
Uttarakhand	24.30	35.65	3.91

Chhattisgarh	2.54	12.52	17.32
Uttar Pradesh	24.73	16.34	-4.06
Bihar	7.92	9.32	1.64
Sikkim	60.93	83.10	3.15
Manipur	64.02	80.32	2.29
Mizoram	79.64	84.63	0.61
Tripura	56.54	62.05	0.93
Meghalaya	38.39	53.68	3.41
Assam	33.48	38.83	1.49
West Bengal	10.72	18.32	5.50
Jharkhand	2.97	3.74	2.33
Orissa	2.09	5.34	9.86
Madhya Pradesh	3.19	5.27	5.17
Gujarat	5.92	14.92	9.68
Daman & Diu	5.06	20.01	14.73
Dadra & Nagar Haveli	3.39	10.28	11.72
Maharashtra	11.72	21.09	6.05
Andhra Pradesh	6.13	10.32	5.34
Karnataka	9.68	15.64	4.91
Goa	41.72	53.36	2.49
Kerala	49.98	67.38	3.03
Tamil Nadu	11.88	13.70	1.44
Rajasthan	3.22	3.53	0.92
Average	30.01	41.75	3.36
All India	11.08	15.90	3.68
S.DEV	27.17	30.45	1.15
C.V.	90.53	72.93	-2.14

Manipur	90.50	91.34	0.09
Mizoram	82.39	78.56	-0.48
Tripura	90.92	94.96	0.44
Meghalaya	55.26	55.41	0.03
Assam	65.02	63.65	-0.21
West Bengal	31.76	53.44	5.34
Jharkhand	9.32	10.81	1.49
Orissa	11.52	19.94	5.64
Madhya Pradesh	12.56	18.14	3.75
Gujarat	27.21	39.18	3.71
Daman & Diu	35.47	55.22	4.53
Dadra & Nagar Haveli	61.27	81.81	2.93
Maharashtra	19.78	42.41	7.93
Andhra Pradesh	21.75	38.06	5.75
Karnataka	20.31	33.24	5.05
Goa	48.31	74.49	4.43
Kerala	84.19	95.35	1.25
Tamil Nadu	15.96	27.21	5.48
Rajasthan	18.11	24.96	3.26
Average	59.58	4.10	-23.48
All India	25.76	32.66	2.40
S.DEV	64.05	4.03	-24.16
C.V.	107.51	98.29	-0.89

It was observed from the table-3 that among ST households having latrine facilities in different states declined tremendously, calculated CV value declined from 90.53 to 72.93. Number of households having latrine facilities among the ST categories has shown a growth trend in different states. In Chhattisgarh it was highest (17.32 percent) followed by Daman & Diu (14.73 percent), and Jammu & Kashmir and Uttara Pradesh recorded negative growth trends in the country.

Table: 4 State-wise No. of Other Households having latrine facility in Rural India in 2001 and 2011 Census

State/Uts	ST Households Latrine Facility in Percentage		
	2001	2011	CAGR
Jammu & Kashmir	45.83	45.77	-0.01
Himachal Pradesh	29.57	69.30	8.89
Uttarakhand	34.90	60.58	5.67
Chhattisgarh	7.37	17.09	8.77
Uttar Pradesh	21.41	24.86	1.50
Bihar	15.98	20.02	2.28
Sikkim	59.64	85.37	3.65

It was clear from the table -4 that the in case of the other categories calculated coefficient of variance (C.V) value declined from the 107.51 to 98.29 among different states. In case of growth in the number of households having latrine facilities among the other categories in the country the state of Himachal Pradesh was recorded the highest growth (8.89 percent) among the all states followed by Chhattisgarh (8.77 percent).

Chart: 1 No of States having Percentage of Latrine Facilities among Social Groups in 2001 Census

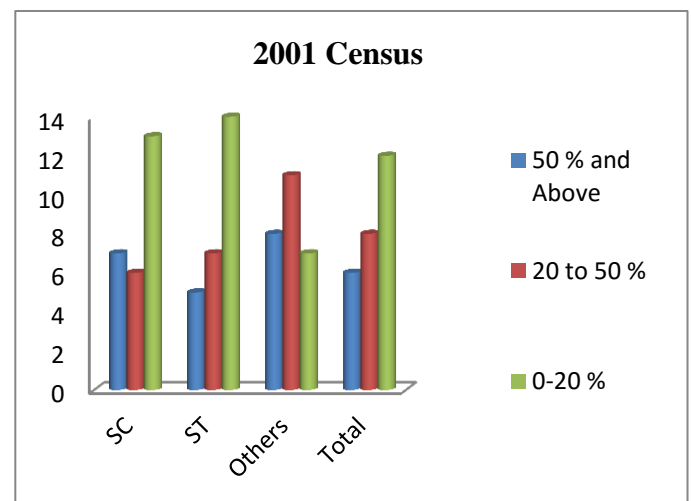


Chart: 2 No of States having Percentage of Latrine Facilities among Social Groups in 2011 Census

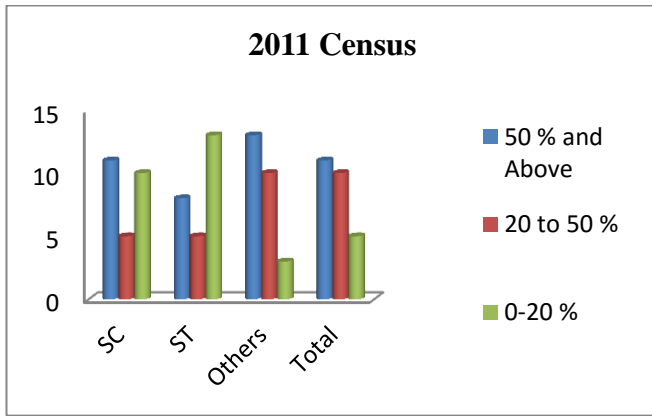
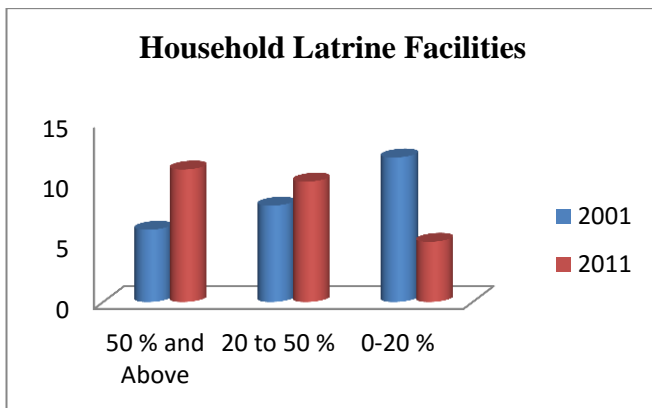


Chart: 3 Summary of Household having Latrine Facilities in Rural India



It was clear from the charts -1 that in 2001 total number of states comes below 20% latrine facility available households is larger while that of above 50% latrine facility having states are less in every category except others in case of others larger number of states come in the range of 20% to 50% households having latrine facility. But in 2011 it was changed that more number of states comes under the states having latrine facility above 50% and comes in the range of 20% to 50% that was shown in the chart-2.

As a summary in 2001 more number of states comes in the states having latrine facility only 20% and below 20% and but the number of states declined in 2011 which are having 20% and below simultaneously number of states having latrine facility more than 50% is increased in the year 2011.

VI. CONCLUSIONS AND POLICY IMPLICATION

Study revealed that the levels of variability in accessing basic sanitation facility in rural India are found to be deplorably high but shows declining trend as compared to the previous census year. There is no contesting the fact that the developmental policies of the government, especially from 2001 to 2011, have helped in improving the rural households access to latrine facility within the premises across Indian states, has been improved in India over the last two decades; it may not still have reached the point of satisfaction for we have not been able to ensure

guaranteed sanitation facilities to one and all. Some states like Bihar, Chhattisgarh, Orissa, and Madhya Pradesh were found to have slow rate of improvement in access to basic sanitation facility during 2001 to 2011 among the IHHLs Latrine and all the social groups in rural India. But share of the social groups has become declining during 2001 and 2011. There are wide spread variations in coverage of sanitation across the different States of the country. Thus, peoples' attitude towards sanitation and lack of knowledge about the benefits of sanitation are the major reasons for under coverage of sanitation. And study feels that government has to provide water facility good drainage connectivity, as supporting facilities to improve latrine facility among the different social groups. The sanitation improvement programs should be aligned properly with the society to provide adequate benefits. Private public partnership, strong and well-designed policy, a sustainable framework with strong political commitment are must bring the change.

Drawing on new data, a study points out that widespread open defecation in rural India is on account of beliefs, values, and norms about purity, pollution, caste, and untouchability that cause people to reject affordable latrine, hence even though provision / availability of latrine facilities people are not using them. Future rural sanitation programs must address villagers' ideas about pollution, pit-emptying, and should do so in ways that accelerates progress towards social equality for Dalit's rather than delay it.

REFERENCE

- [1] Diane Coffey et.al (2017), Understanding Open Defecation in Rural India Untouchability, Pollution, and Latrine Pits, Economic and Political Weekly, Vol-LII, No-1, January 2017, pp-59-66.
- [2] Das Keshab (2012), 'Drinking water and Sanitation in Rural Madhya Pradesh: issue and Challenges for policy, Journal of Rural Development, Vol, 31, No.3, July-September; 2012.
- [3] Kumar, Arjun (2016), 'Regional Variations in Access to Basic Amenities in India' Journal of Man and Development, Vol, 37, No- 2, June-2016, pp-51-78.
- [4] Manisha Manjari (2015), Multidimensional impact of Inadequate Sanitation in India: Situation analysis, International Research Journal of Social Sciences, Vol-4 (6), pp-21-30, June - 2015.
- [5] Prabhuswamy P (2014), Status of Basic Amenities in Karnataka: An Inter-District Analysis. Journal on Rural Development, Vol, 32, No.1, July-September; 2014.
- [6] Tiwari and Nayak (2013), Drinking water and Sanitation in Uttar Pradesh: A Regional Analysis, Journal of Rural Development, Vol, 32, No.1, January-March; 2013.
- [7] Homi Katrak (2014), Socio-Economic Inequities and Households Sanitation in Rural India: A Comparative Analysis for Three States, Social Change Vol.44 (3), Pp .413-421.
- [8] Hamera Jeffrey and Dean Spearsa (2016) "Village sanitation and child health: Effects and external validity in a randomized field experiment in rural India" Journal of Health Economics" Vol-48, April-, Pp.135-148.