

Trend and Growth of Individual Household Latrines in India

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Abstract

Human dignity and sanitation are related in terms of being able to access a safe, hygienic as well as easy toilet facility. The study examines the trend and growth of availability and type of latrine facility in India in 2001 and 2011 and growth of Individual Household Latrines during the period 2013-14 to 2016-17 in India.

The objectives of the present study are:

1. To study the need and importance of sanitation and latrine-use.
2. To find out the availability and type of latrine facility in India in 2001 and 2011
3. To evaluate the growth of Individual Household Latrines during the period 2013-14 to 2016-17 in India and
4. To assess the trend and growth of availability and type of latrine facility in India in 2001 and 2011 and growth of Individual Household Latrines during the period 2013-14 to 2016-17 in India.

In order to analyse the trend and growth of availability and type of latrine facility in India in 2001 and 2011 and growth of Individual Household Latrines during the period 2013-14 to 2016-17 in India, percentage methods, co-efficient of variations, linear trend and compound growth rate have used. The secondary data collected through the internet, books, newspaper, journals records and brochures from 2013-14 to 2016-17.

It is inferred that the trend coefficient was found to be statistically significant for availability and type of latrine facility and growth of Individual Household Latrines in India. It indicates, on average, it had increased by 8.1 percent for availability and type of latrine facility and 7.7 percent for Individual Household Latrines per annum. The growth rates are found to be 7.214 percent, and 4.811 percent for availability and type of latrine facility and growth of Individual Household Latrines in India. The value of R² indicates that the availability and type of latrine facility (0.635), and Individual Household Latrines (0.554) explain variations independent variables to the extent of 64 percent, and 55 percent respectively.

Keywords: Economic Development, Hygiene Practices; Improved sanitation; Latrine Facility; Open Defecation.

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Introduction

Toilets are essential for clean and healthy societies and contribute to the social and economic development of India. Right to use a toilet is neither the same as its hygiene practices. Improved Sanitation brought multiple economic benefits, which include direct economic benefits of avoiding illness. These indirect economic decrease in work days lost due to illness and a longer life time because these benefit enabled people to work more and non-health benefits such as time.

Methodology

In order to analyse the trend and growth of availability and type of latrine facility in India in 2001 and 2011 and growth of Individual Household Latrines during the period 2013-14 to 2016-17 in India, percentage methods, co-efficient of variations, linear trend and compound growth rate have used. The secondary data collected through the internet, books, newspaper, journals records and brochures from 2013-14 to 2016-17.

Need and Importance of Sanitation and Latrine-Use

The seventh Millennium Development Goals (MDG) focuses on environmental sustainability, and one of its three targets is to decrease by half, the number of people without sustainable drinking water, latrines and basic sanitation. On the other hand, WHO's burden of disease analysis shows that reduced

access to water, sanitation, latrines and hygiene is the third most significant risk factor for ill-health in developing countries .

Availability, design and place of public and community toilets affect how people use and move through these public places, so can affect their involvement in social and economic life. Frequently, when a families' income is limited, priority is given to basic needs like food, and it cannot be easy to persuade people to part with their hard-earned cash to install a latrine. However, the census report findings have complicated substances further and present an alarming development with an 11% decline in households having toilets. The percentage had gone down to 53 from 64 in 2011.

In contrast to other Millennium Development Goals, sanitation and latrine coverage remains low, with 2.5 billion people still lacking access to sanitation and latrine. Only 6% of rural residents in India have access to improved sanitation, and about 69% practice open defecation. Many households rely on dirty, unsafe latrines or shared toilet facilities.

For the 2.6 billion people who have to defecate behind bushes, in plastic bags or buckets, along railway tracks or in roadside ditches, human dignity is under daily assault. Around 260 crores people do not have access to improved sanitation facilities and latrines; this will probably increase to 2.7 billion people in 2015.

Also, the world's 1.1 billion people who practise open defecation are daily faced with threats to their privacy, health and safety. As a result, improvement in sanitation and toilet coverage has been targeted by the United Nations Millennium Development Goals because of its secure link to issues of environmental and public health, economy, and human dignity.

Availability and Type of Latrine Facility in India

The Census of India also enumerated the household facilities including latrines in household's availability. The Census Report shows that 53.1 per cent (63.6 per cent in 2001) of the families in India do not have a toilet, with the percentage existence as 69.3 per cent (78.1 per cent in 2001) in rural areas and 18.6 per cent (26.3 per cent in 2001) in urban areas.

Manual scavenging is still widespread in India. Around 25 lakh households, nearly 12 lakh in rural areas and 13 lakh in urban areas hinge on manual scavengers to remove night soil from the toilets . In Jammu and Kashmir, 8.9% of families still have

their toilets emptied by manual scavengers.

The statistics of 2001 and 2011 revealed that in India still 63.6% and 53.1% of households are without toilet facility and the state-wise statistics is shown as under table 1. The comparative types of latrines which are possessed by the households in India in 2001 and 2011 are presented in Table 1.

From Table 1, it is understood that in India, there are 191,963,935 households as a whole in the year 2001. Households of Lakshadweep (9240) are found at the bottom of the list among the States. Uttar Pradesh (25,760,601) has the highest proportion of households, followed by Maharashtra (19,063,149) in the year 2001. Similarly, there are 246,692,667 households as a whole in the year 2011 in India. Households of Lakshadweep (10,703) are found at the bottom of the list among the States. Uttar Pradesh (32,924,266) has the highest proportion of households, followed by Maharashtra (23,830,580) in the year 2011.

From Table 1, it is also understood that the availability of latrine facility services across states is also marked with a significant amount of variation. The states of Chhattisgarh (14.2 percent), Odisha (14.9 percent), Jharkhand (19.7 percent), Bihar (19.2 percent), Madhya Pradesh (24 percent), and Rajasthan (29 percent) are extremely deprived off in terms of the availability of latrines during the year 2001. As against this, the eastern states viz. Lakshadweep (97.8 percent), Kerala (95.2 percent), Mizoram (92 percent), NCT of Delhi (89.6 percent), Manipur (89.2 percent), Chandigarh (87.7 percent), Sikkim (87.2 percent) and Tripura (86 percent) are the first eight leading states in India during the year 2001. The state of Daman and Diu which occupied the low position in 2001 (43.9 percent) has moved up to high rank in the year 2011 (78.2 percent). The state-wise statistics of 2001 revealed that in Indian states still Chhattisgarh 85.8 percent, Odisha 85.1 percent, Bihar 80.8 percent and Jharkhand 80.3 percent households are without toilet facility.

Whereas, the states of Chhattisgarh Odisha (22 percent), Jharkhand (22.1 percent), Bihar (23.1 percent), (24.7 percent), Madhya Pradesh and (28.8 percent) are extremely deprived off in terms of the availability of latrines during the year 2011. As against this, the eastern states viz. Lakshadweep (97.8 percent), Kerala (95.2 percent), Mizoram (92 percent), NCT of Delhi (89.6 percent), Manipur (89.2 percent), Chandigarh (87.7 percent), Sikkim (87.2 percent) and Tripura (86 percent) are the first eight leading states in India in terms of the availability of latrines during the year 2011.

It is also inferred from Table 1 that the growth of households across states in India in 2001, on an average over a period was found to be inferior to the growth of households across states in India in 2011. The average number of households

across states in India in 2001 was 5484683.86 and 7048361.91 in 2011. The value of the coefficient of variation specifies that the growth of households across states in India was relatively stable.

Table 1: Availability And Type Of Latrine Facility In India.

Sl.No	State/ Union Territory	Total households		Water closet (Percentage of households)		Pit latrine (Percentage of households)		Other latrines (Percentage of households)		Total	Total	No latrine (Percentage of households)	
		2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
	INDIA	191,963,935	246,692,667	18	36.4	11.5	9.4	6.9	1.1	36.4	46.9	63.6	53.1
1	Jammu and Kashmir	1,551,768	2,015,088	8.8	33	17.4	5.5	26.9	12.7	53.1	51.2	46.9	48.8
2	Himachal Pradesh	1,240,633	1,476,581	11.4	60.7	14.6	8.1	7.4	0.3	33.4	69.1	66.6	30.9
3	Punjab	4,265,156	5,409,699	20.4	59.3	24.3	19.2	12.1	0.8	56.8	79.3	43.2	20.7
4	Chandigarh	201,878	235,061	68.3	87.1	1.6	0.5	8.9	0.1	78.8	87.7	21.1	12.4
5	Uttarakhand	1,586,321	1,997,068	15.4	53.2	18.7	11.9	11	0.7	45.1	65.8	54.8	34.2
6	Haryana	3,529,642	4,717,954	10.9	50.4	22.3	17.4	11.3	0.8	44.5	68.6	55.5	31.4
7	NCT of Delhi	2,554,149	3,340,538	45.5	85.7	16.4	1.8	16.1	2.1	78	89.6	22	10.5
8	Rajasthan	9,342,294	12,581,303	11.9	27.6	10.5	6.5	6.6	0.8	29	34.9	71	65
9	Uttar Pradesh	25,760,601	32,924,266	8	29.8	10.3	4.2	13.2	1.7	31.5	35.7	68.6	64.4
10	Bihar	13,982,590	18,940,629	7.9	20.1	6.5	2.5	4.8	0.5	19.2	23.1	80.8	76.9
11	Sikkim	104,738	128,131	32.1	75	26.3	12	5	0.2	63.4	87.2	36.6	12.8
12	Arunachal Pradesh	212,615	261,614	11	38.4	25.8	18.8	19.4	4.8	56.2	62	43.7	38
13	Nagaland	332,050	399,965	8.7	47.7	45.9	27.7	15.9	1.1	70.5	76.5	29.4	23.5
14	Manipur	397,656	507,152	8.7	46.6	66.9	34.6	6.5	8	82.1	89.2	18	10.7
15	Mizoram	160,966	221,077	19.5	60.8	62.2	30.6	7.3	0.6	89	92	11	8.1
16	Tripura	662,023	842,781	11.7	24.8	62.1	60.2	7.7	1	81.5	86	18.6	14
17	Meghalaya	420,246	538,299	12.3	38.2	30.5	23.3	8.3	1.5	51.1	63	48.8	37.1
18	Assam	4,935,358	6,367,295	15.9	28.5	43.9	34.7	4.8	1.8	64.6	65	35.4	35.1
19	West Bengal	15,715,915	20,067,299	20.9	31.9	17.5	25.6	5.2	1.4	43.6	58.9	56.3	41.2
20	Jharkhand	4,862,590	6,181,607	10.7	20.4	3.3	1.4	5.7	0.3	19.7	22.1	80.3	78
21	Odisha	7,870,127	9,661,085	8.8	17.7	4	3.5	2.1	0.8	14.9	22	85.1	78
22	Chhattisgarh	4,148,518	5,622,850	8.9	21	2.4	3.5	2.9	0.2	14.2	24.7	85.8	75.4
23	Madhya Pradesh	10,919,653	14,967,597	12.5	26.1	5.9	2.3	5.6	0.4	24	28.8	76	71.2
24	Gujarat	9,643,989	12,181,718	31.1	52.6	8.7	4.5	4.8	0.3	44.6	57.4	55.4	42.7
25	Daman and Diu	34,342	60,381	34.6	77.1	7.2	1	2.1	0.1	43.9	78.2	56.1	21.8
26	D and N Haveli	43,973	73,063	30.8	53.7	1.1	0.7	0.7	0.3	32.6	54.7	67.4	45.3
27	Maharashtra	19,063,149	23,830,580	21.9	43.5	8.9	8.8	4.3	0.9	35.1	53.2	64.9	46.9
28	Andhra Pradesh	16,849,857	21,024,534	18.1	43.1	8.5	5.4	6.3	1.1	32.9	49.6	67	50.4
29	Karnataka	10,232,133	13,179,911	18.6	36.9	13.4	13.6	5.5	0.7	37.5	51.2	62.5	48.8
30	Goa	279,216	322,813	29.8	74.1	18.8	4.4	10	1.2	58.6	79.7	41.4	20.3
31	Lakshadweep	9,240	10,703	82.4	97.4	0.5	0.4	6.3	0	89.2	97.8	10.8	2.2
32	Kerala	6,595,206	7,716,370	65.2	66.7	12.4	28.3	6.5	0.2	84.1	95.2	16	4.8
33	Tamil Nadu	14,173,626	18,493,003	23.2	41.2	7.3	6	4.6	1.1	35.1	48.3	64.8	51.7
34	Pondicherry	208,655	301,276	45.7	67.4	1.8	0.8	2.5	0.3	50	68.5	50.1	31.6
35	A and N Islands	73,062	93,376	31.3	67	10.6	2.9	11.4	0.2	53.3	70.1	46.7	29.9
	Mean (X)	5484683.86	7048361.91	23.51	48.70	18.24	12.36	7.99	1.40	49.74	62.46	50.24	37.56
	Standard Deviation (SD)	6688675.52	8576634.74	18.41	21.33	17.88	13.58	5.36	2.46	21.91	22.57	21.90	22.57
	Co-efficient of Variation (CV)%	121.95	121.68	78.30	43.80	102.01	109.87	67.08	175.71	44.04	36.13	43.60	60.09

Source: www.censusindia.gov.in, Census of India, 2001 and 2011.

Similarly, the growth of the availability of the type of latrine facility services across states in India in 2001, on an average over a period was found to be inferior to the growth of a type of latrine facility services across states in India in 2011. The average percentage of the type of latrine facility services in India in 2001 was 49.74 and 62.46 in 2011. The value of the coefficient of variation specifies that the growth of availability of the type of latrine facility services in India was relatively stable.

Whereas, the growth of the not availability of latrine facility services across states in India in 2001, on an average over a period was found to be higher than the growth of latrine facility services across states in India in 2011. The average percentage of not the availability of latrine facility services across states in India in 2001 was 50.24 and 37.56 in 2011. The value of the coefficient of variation specifies that the growth of not availability of latrine facility services in India was relatively stable.

Table 2: State/Ut-Wise Individual Household Latrines (Ihhs).

S.N.	State/UT	2013-14	2014-15	2015-16	2016-17
1	A and N Islands	-	-	-	941
2	Andhra Pradesh	138721	213867	354996	418554
3	Arunachal Pradesh	14433	12902	19439	9211
4	Assam	160602	148237	465545	245974
5	Bihar	161646	165457	427038	107003
6	Chhattisgarh	67457	39128	357107	584727
7	Goa	0	0	28637	0
8	Gujarat	155268	335762	922728	751564
9	Haryana	116426	107765	132661	25102
10	Himachal Pradesh	9170	54265	66632	80905
11	Jammu and Kashmir	70884	8496	64665	30963
12	Jharkhand	76818	98512	315130	276371
13	Karnataka	505697	791687	533011	343638
14	Kerala	39601	34101	11752	193474
15	Madhya Pradesh	515583	521739	1022566	609156
16	Maharashtra	559042	500897	889170	662594
17	Manipur	35442	27860	47636	26187
18	Meghalaya	29012	42002	44129	19368
19	Mizoram	4524	534	6026	1957
20	Nagaland	20102	0	22617	1905
21	Odisha	33759	130925	1329832	686491
22	Puducherry	0	0	0	1044
23	Punjab	3912	9887	71543	55067
24	Rajasthan	266197	653306	2164590	1312849
25	Sikkim	3443	3562	3707	0
26	Tamil Nadu	313402	378162	948287	299071
27	Telangana	180682	130725	240168	276203
28	Tripura	6077	24869	61173	16675
29	Uttar Pradesh	789092	515427	694487	814590
30	Uttarakhand	91084	57833	64030	188878
31	West Bengal	608218	847080	1432065	1021488
Total		4976294	5854987	12741367	9061950
Mean (X)		160525.61	188870.55	411011.84	292320.97
Standard Deviation (S.D)		213523.75	249862.16	531542.94	349415.79
Co-efficient of Variation (C.V)%					

Source: Ministry of Drinking Water and Sanitation, Government of India, 2016.

The State/UT-wise Individual Household Latrines (IHHLs) constructed during 2013-14 to 2016-17 is presented in table 2

From Table 2, it is also understood that the State/UT-wise Individual Household Latrines (IHHLs) constructed during 2013-14 to 2016-17 across states is also marked with a significant number of variation. The states of A and N Islands, Goa and Puducherry, are not constructed Individual Household Latrines (IHHLs) during the year 2013-14. Similarly, the states of A and N Islands, Goa, Nagaland and Puducherry have not constructed Individual Household Latrines (IHHLs) during the year 2014-15. Likewise, the states of A and N Islands and Puducherry have not constructed Individual Household Latrines (IHHLs) during the year 2015-16. Correspondingly, the states of Goa and Sikkim have not constructed Individual Household Latrines (IHHLs) during the year 2016-17.

Whereas, the states of Uttar Pradesh (789092) and West Bengal (608218) are constructed the highest proportion of Individual Household Latrines (IHHLs) during the year 2013-14. Similarly, the states of West Bengal (847080) and Karnataka (791687)

are found the highest proportion of Individual Household Latrines (IHHLs) during the year 2014-15. Likewise, the states of Rajasthan (2164590) and West Bengal (1432065) are found the highest proportion of Individual Household Latrines (IHHLs) during the year 2015-16. Correspondingly, the states of West Bengal (1021488) and Uttar Pradesh (814590) are found the highest proportion of Individual Household Latrines (IHHLs) during the year 2016-17.

It is also inferred from Table 2 that the growth of Individual Household Latrines (IHHLs) across states in India in 2015-16, on an average over a period was found to be higher than to the growth of households across states in India during 2013-14 to 2016-17. The average number of Individual Household Latrines across states in India in 2013-14 to 2016-17 was 160525.61, 188870.55, 411011.84 and 292320.97 respectively. The value of the coefficient of variation specifies that the growth of Individual Household Latrines across states in India was relatively stable.

The trend and growth of availability and type of latrine facility in India in 2001 and 2011 and growth

Table 3: Trend and Growth of Availability and Type of Latrine Facility and Individual Household Latrines in India.

Particulars	Trend Coefficient		R ²	Compound Growth Rate in Percent
	a	b		
Availability and type of latrine	8.528	0.081*(9.122)	0.635	7.214
Individual Household Latrines	7.916	0.077*(8.402)	0.554	4.811

Figures in brackets represent 't' values, *Significant at 5 percent level.

of Individual Household Latrines during the period 2013-14 to 2016-17 in India are shown in Table 3.

It is found from Table 3 that the trend coefficient was found to be statistically significant for availability and type of latrine facility and growth of Individual Household Latrines in India. It indicates, on average, it had increased by 8.1 percent for availability and type of latrine facility and 7.7 percent for Individual Household Latrines per annum. The growth rates are found to be 7.214 percent, and 4.811 percent for availability and type of latrine facility and growth of Individual Household Latrines in India.

The value of R² indicates that the availability and type of latrine facility (0.635), and Individual Household Latrines (0.554) explain variations independent variables to the extent of 64 percent, and 55 percent respectively.

Conclusion

We have shown considerable discrepancies in latrine coverage between different parts of India. If we can improve our understanding of the reasons underlying these differences, it would help us to identify policies to increase the rate of progress toward sanitation for all. Thus, there is an urgent need to pace up the developmental efforts for rural sanitation to achieve the Sustainable Development Goals, along with complementary measures to focus on backward regions, weaker sections and socio-spatial position of households in rural India.

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