The Bare Necessities

10
CHAPTER

Look for the bare necessities,
The simple bare necessities,
Forget about your worries and your strife,
I mean the bare necessities!

—The Jungle Book

Access to "the bare necessities" such as housing, water, sanitation, electricity and clean cooking fuel are a sine qua non to live a decent life. This chapter examines the progress made in providing access to "the bare necessities" by constructing a Bare Necessities Index (BNI) at the rural, urban and all India level. The BNI summarises 26 indicators on five dimensions viz., water, sanitation, housing, micro-environment, and other facilities. The BNI has been created for all states for 2012 and 2018 using data from two NSO rounds viz., 69th and 76th on Drinking Water, Sanitation, Hygiene and Housing Condition in India.

Compared to 2012, access to "the bare necessities" has improved across all States in the country in 2018. Access to bare necessities is the highest in the States such as Kerala, Punjab, Haryana and Gujarat while it is the lowest in Odisha, Jharkhand, West Bengal and Tripura. The improvements are widespread as they span each of the five dimensions viz., access to water, housing, sanitation, micro-environment and other facilities. Inter-State disparities in the access to "the bare necessities" have declined in 2018 when compared to 2012 across rural and urban areas. This is because the States where the level of access to "the bare necessities" was low in 2012 have gained relatively more between 2012 and 2018. Access to "the bare necessities" has improved disproportionately more for the poorest households when compared to the richest households across rural and urban areas. The improvement in equity is particularly noteworthy because while the rich can seek private alternatives, lobby for better services, or if need be, move to areas where public goods are better provided for, the poor rarely have such choices.

Using data from the National Family Health Surveys, we correlate the BNI in 2012 and 2018 with infant mortality rate and under-5 mortality rate in 2015-16 and 2019-20 respectively and find that the improved access to "the bare necessities" has led to improvements in health indicators. Similarly, we also find that improved access to "the bare necessities" correlates with future improvements in education indicators.

INTRODUCTION

10.1 Since the 1950s, when Shri. Pitambar Pant advocated the idea of "minimum needs", the idea that economic development can be viewed as a process of providing the "bare necessities of life" to citizens has been around in India. A family's ability to access bare necessities – such as housing, water, sanitation, electricity and clean cooking fuel – have therefore been regarded as an important barometer of economic development in academic and policymaking circles. This idea of accessing the bare necessities of life as a *sine qua* non has resonated with the common man as well. No wonder Bollywood's rhetoric, which often mirrors socio-economic issues in the country (Desai, 2004), has zoomed in on "the bare necessities" in movies such as *Roti, Kapda Aur Makaan* (1974). A pointed question by the angry young man Shri. Amitabh Bachchan in the 1989 movie *Main Azaad Hoon* "चालीस बरस में, आप एक इंसान के लिए एक गिलास पानी नहीं दे सकते, तो आप क्या कर सकते हैं?" highlights the importance of "the bare necessities" to the common man. The song "the bare necessities" in Rudyard Kipling's *The Jungle Book* captures their importance too. The Sustainable Development Goals (SDGs) focus on providing "the bare necessities" to all: Goal 6 focuses on access to clean water and sanitation to all while, goal 7 *inter alia* aims to provide universal access to electricity and clean cooking fuel. The Economic Survey 2019-20 examined access to food through the idea of "Thalinomics: The Economics of a Plate of Food in India." In this chapter, the Economic Survey builds on that endeavour by examining the progress made in the country on providing "the bare necessities" to all its citizens.

10.2 The "bare necessities" of housing, water, sanitation, electricity and clean cooking fuel are jointly consumed by all the members of a household. They, therefore, touch the life of every member in the household. As these are durable assets, they deliver services to the household over long periods of time. Access to clean drinking water, safe sanitation and clean cooking fuel also have direct linkages with health of the members in the household. Access to these saves time for a household, which they can utilise in productive activities such as education and learning.

10.3 In order to improve access to "the bare necessities," successive governments have made constant efforts. The network of schemes designed to deliver these necessities include *inter-alia* the Swachh Bharat Mission (SBM), National Rural Drinking Water Programme (NRDWP), Pradhan Mantri Awaas Yojana (PMAY), Saubhagya, and Ujjwala Yojana (Box-1). These Schemes were equipped with new features such as use of technology, real time monitoring, geo-tagging of assets, social audit, embedded digital flow of information, and direct benefit transfers wherever possible. As Chapter 10 in the Economic Survey 2018-19 highlights, these features improved the transparency in governance and enhanced the efficiency and effectiveness of the Schemes.

Box 1: Government Schemes for Bare Necessities

Scheme	Objective	Targets and achievements
Swachh Bharat Mission-Rural and Urban	Objective of SBM-Rural was to attain Open Defecation Free (ODF) India by 2nd October, 2019 by providing access to toilet facilities to all rural households in the country. Objective of SBM-Uuban is to achieve 100 per cent Open Defecation Free (ODF) status and 100 per cent scientific processing of the Municipal Solid Waste (MSW) being generated in the country.	Under SBM, rural sanitation coverage has made an incredible leap in the target achievement with more than 10 crore toilets built across rural India. With a view to sustain the gains made under the programme in the last five years and to ensure that no one is left behind and to achieve the overall cleanliness in villages, phase II of SBM(G) from 2020-21 to 2024-25 is being implemented focusing on ODF sustainability and Solid & Liquid Waste Management (SLWM) through convergence between different verticals of financing and various Schemes of Central and State Governments such as 15th Finance Commission grants to local bodies, MNREGS, Corporate Social Responsibility (CSR) funds etc. Since its launch in 2014, SBM-U has made significant progress in the area of both sanitation and solid waste management. 4,327 Urban Local Bodies (ULBs) have been declared ODF so far. This has been made possible through construction of more than 66 lakhs individual household toilets and over 6 lakhs community/ public toilets, far exceeding the Mission's targets. The Mission is now focusing on holistic sanitation through its ODF+ and ODF++ protocols with a total of 1,319 cities certified ODF+ and 489 cities certified ODF++ as on date. In the area of solid waste management, 100 per cent of wards have complete door-to door collection. Further, out of 1,40,588 Tonnes Per Day (TPD) waste generated per day, 68 per cent (i.e., 95,676 TPD) is being processed.

Pradhan Mantri Awaas Yojana (PMAY)	PMAY intends to provide housing for all in urban and rural areas by 2022.	Under PMAY (Urban), as on 18th January, 2021, 109.2 lakh houses have been sanctioned out of which 70.4 lakh houses have been grounded for construction of which 41.3 lakh have been built to the beneficiaries under PMAY(U) since inception of the scheme in June, 2015. The target number of houses for construction under PMAY (Gramin) is 2.95 crore in two phases i.e. 1.00 crore in Phase I (2016-17 to 2018-19) and 1.95 crore in Phase II (2019-20 to 2021-22). Since 2014-15, construction of approx. 1.94 crore rural houses have been completed, out of which 1.22 crore houses have been constructed under the revamped scheme of PMAY-G and 0.72 crore under erstwhile Indira Awaas Yojana scheme.
NRDWP, now Jal Jeevan Mission (JJM)	The objectives of the NRDWP was to provide safe and adequate water for drinking, cooking and other domestic needs to every rural person on a sustainable basis. Goal of JJM is to provide functional tap water connection (FTWC) every rural household by 2024 and get assured supply of potable piped water at a service level of 55 litres per capita per day (lpcd) regularly on long-term basis by ensuring functionality of the tap water connections	At the time of roll out of the scheme in August 2019, about 3.23 crore (17 per cent) households out of total 18.93 crore rural households had tap water supply. Remaining 15.70 crore (83 per cent) rural households were to be provided with functional tap water connections by 2024. Upto 16th January, 2021, so far about 3.2 crore of rural households have been provided with FTWC since the launch of the Mission. Keeping with 'no one is left out' principle, 18 districts in the country spread across Gujarat (5), Telangana (5), Himachal Pradesh (1), Jammu & Kashmir (2), Goa (2) and Punjab (3) have become 'Har Ghar Jal districts'whereas 57,935 villages have also become 'Har Ghar Jal Gaon'.
Sahaj Bijli Har Ghar Yojana – Saubhagya	Government launched Saubhagya Yojana in October, 2017 with the objective to achieve universal household electrification by providing electricity connections to all willing un-electrified households in rural areas and all willing poor households in urban areas in the country, by March, 2019.	All States have declared electrification of all households on Saubhagya portal, except 18,734 households in Left Wing Extremists (LWE) affected areas of Chhattisgarh as on 31.03.2019. Electricity connections to 262.84 lakh households have been released from 11.10.2017 to 31.03.2019. Subsequently, seven States reported that 19.09 lakh un-electrified households identified before 31.03.2019, which were earlier un-willing but have expressed willingness to get electricity connection. States have been asked to electrify these households under Saubhagya.

		These households are being electrified by the concerned States and as on 20.12.2019, electricity connections to 7.42 lakh Households have been released.
Pradhan Mantri Ujjwala Yojana (PMUY)	PMUY launched in May, 2016 in order to provide clean cooking fuel to poor households with a target to provide 8 crore deposit free LPG connection. This connection is provided in the name of an adult woman member of a poor family and the beneficiary has an option to avail connection with 14.2 kg or 5 kg cylinder. The existing beneficiary with 14.2 kg LPG cylinder has an option to swap with 5 kg cylinder also.	Under PMUY, a target to provide 8 crore new LPG connections has been achieved in September, 2019, 7 months in advance of the target date of 31st March, 2020.

Source: Complied based on information received from concerned Ministries/Departments

10.4 To measure the progress in the delivery of "the bare necessities", the Survey develops a composite index called the Bare Necessities Index (BNI); see Box 2 for the details about the construction of the index. The BNI measures access to "the bare necessities" for households in rural areas, urban areas and at the all India level. These necessities are measured using 26 comparable indicators on five dimensions *viz*., water, sanitation, housing, micro-environment, and other facilities. The indicators used to capture the availability and quality of housing, access to bathroom, kitchen, toilet, drinking water, waste discharge facilities, clean cooking fuel and disease free environment, *etc*. The composite index for the States/UTs for 2012 and 2018 has been created using data mainly from two NSO rounds viz., 69th (2012) and 76th (2018), on Drinking Water, Sanitation, Hygiene, and Housing Condition in India.

Box 2: The Bare Necessities Index

The "basic needs" approach to economic development focuses on the minimum specified quantities of basic necessities such as food, clothing, shelter, water and sanitation that are necessary to prevent ill health, and undernourishment (Streeten, 1981; Emmerij, 2010). Sen (1999) defines poverty as a failure to achieve certain minimum basic needs or capacities. Shaffer (2008) similarly defines poverty as the deprivation of material requirements for the minimum acceptable fulfilment of basic needs. The Bare Necessities Index (BNI) is an attempt to quantify this approach to economic development using data from the National Statistical Office (NSO).

The data for developing the Bare Necessities Index (BNI) is sourced from two NSO Rounds on drinking water, sanitation, hygiene, and housing condition in India: 69th (2012) and 76th (2018). The data on the indicator 'household using LPG for cooking' for 2011-12 is taken from NSO Report on Energy Sources of Indian Households for Cooking and Lighting 2011-12. The BNI is created for all

States/UTs by employing the data at State level. As Telangana did not exist in 2011, data is not available for the State in 2011; however, the maps show the index value for the combined State of Andhra Pradesh in 2011. The indicators selected are the most desirable options and relevant for public policy targets from the possible and recorded options. The index is constructed at two points of time – 2012 and 2018 – using 26 indicators on five dimensions viz., water, sanitation, housing, micro-environment, and other facilities (Table 1).

Table 1: Details of Indicators (all in per cent of Households) Used under Five Dimensions given in the NSO report.

Five Dimensions	Indicators used for the analysis are in **Bold *italics,*** *Figures in parenthesis indicate the number of indicators taken in each of the dimensions.
I. Water (6*)	• Principal source of drinking water: ***piped water into dwelling, piped water to yard/plot*** ; all options are :(bottled water - 01, piped water into dwelling - 02, piped water to yard/plot - 03, piped water from neighbour - 04, public tap/standpipe - 05, tube well - 06, hand pump - 07, well: protected - 08, unprotected - 09; tanker-truck: public - 10, private - 11; spring: protected - 12, unprotected - 13; rainwater collection -14, surface water: tank/pond - 15, other surface water (river, dam, stream, canal, lake, etc.) - 16; others (cart with small tank or drum, etc) - 19) • Distance to the principal source of drinking water: ***within dwelling, outside dwelling but within premises*** (within dwelling - 1, outside dwelling but within the premises -2, outside premises: less than 0.2 k.m. -3, 0.2 to 0.5 k.m. - 4, 0.5 to 1.0 k.m. - 5, 1.0 to 1.5 k.m. - 6, 1.5 k.m. or more - 7) • Method of taking water: ***through tap*** (through tap - 1, vessel with handle dipped in to take out water - 2, vessel without handle dipped in to take out water - 3, poured out - 4) • Nature of access: ***exclusive use of the household*** (exclusive use of household - 1, common use of households in the building - 2, neighbour's source - 3, community use: public source restricted to particular community - 4, public source unrestricted - 5, private source restricted to particular community - 6, private source unrestricted - 7; others - 9).
II. Sanitation (5*)	• Access of the household to latrine: ***exclusive use of the household*** (exclusive use of household - 1, common use of households in the building - 2, public/community latrine without payment - 3, public/community latrine with payment - 4, others - 9, no latrine - 5). • Type of latrine used by the household: ***piped sewer system, septic tank, twin leach pit, single pit*** (used: flush/pour-flush to: piped sewer system - 01, septic tank - 02, twin leach pit - 03, single pit - 04, elsewhere (open drain, open pit, open field, etc) - 05; ventilated improved pit latrine - 06, pit latrine with slab - 07, pit latrine without slab/open pit - 08, composting latrine - 10, others - 19; not used - 11)

III. Housing (3*)	• Condition of structure: ***Good*** (good - 1, satisfactory - 2, bad - 3). • Type of the dwelling: ***Independent*** (independent house - 1, flat - 2, others - 9) • Pucca dwelling: if ***having pucca[1] wall and roof*** [wall type (grass/ straw/ leaves/ reeds/ bamboo, etc. - 1, mud (with / without bamboo) / unburnt brick - 2, canvas / cloth - 3, other katcha - 4, timber - 5, burnt brick / stone/ lime stone - 6, iron or other metal sheet - 7, cement / RBC / RCC - 8, other pucca - 9); roof type (grass/ straw/ leaves/ reeds/ bamboo etc. - 1, mud / unburnt brick - 2, canvas / cloth - 3, other katcha - 4, tiles / slate - 5, burnt brick / stone / lime stone - 6, iron / zinc /other metal sheet /asbestos sheet - 7, cement / RBC / RCC - 8, other pucca - 9)]
IV. Micro-environment (4*)	• Drainage system of the household: ***No drainage, open katcha drainage*** (underground -1, covered pucca -2, open pucca -3, open katcha -4, no drainage -5) • Whether the household faced problem of flies/mosquitoes during last 365 days? : ***Severe*** (yes: severe - 1, moderate - 2; no - 3). • Whether any effort was made by the Local Bodies/State Government during last 365 days to tackle problem of flies/mosquitoes? : ***Yes*** (yes - 1, no - 2, not known - 3).
V. Other Facilities (8*)	• Kitchen type: ***with water tap, no separate kitchen*** (kitchen type (separate kitchen: with water tap - 1, without water tap - 2; no separate kitchen - 3). • Ventilation of the dwelling unit: ***good*** (good - 1, satisfactory - 2, bad - 3) • Access of the household to bathroom: ***No bathroom***, (exclusive use of household - 1, common use of households in the building - 2, public/ community use without payment - 3, public/community use with payment - 4, others - 9, no bathroom - 5). • Type of bathroom used by the household: ***attached to the dwelling unit*** (used: attached to the dwelling unit-1, detached to the dwelling unit but within the household premises-2, other-9, not used-3) • Whether the household has electricity for domestic use?: ***Yes*** (yes - 1, no - 2). • Type of electric wiring: ***temporary*** (conduit wiring - 1, fixed to the walls - 2, temporary - 3). • Type of fuel used by household for cooking: ***LPG*** (firewood, chips & crop residue - 01, LPG - 02, other natural gas - 03, dung cake - 04, kerosene - 05, coke / coal - 06, gobar gas - 07, other biogas - 08, charcoal - 09, electricity (incl. generated by solar or wind power generators) - 10, solar cooker - 11, others - 19, no cooking arrangement - 12).

[1]*Pucca* structure as defined in NSO report is a structure whose walls and roofs were made of pucca materials such as cement, concrete, oven burnt bricks, hollow cement/ash bricks, stone, stone blocks, jack boards (cement plastered reeds), iron, zinc or other metal sheets, timber, tiles, slate, corrugated iron, asbestos cement sheet, veneer, plywood, artificial wood of synthetic material and poly vinyl chloride (PVC) material.

The index for each State and group has been constructed for rural, urban and (rural + urban) combined for India for 2012 and 2018. For directional uniformity, the negative indicators - less of which is desirable - are transformed to indicate the desired positive outcomes by deducting them from 100 (as all indicators are in per cent). For instance, "percentage of households with no bathroom", which is a negative indicator, is converted to "percentage of households having bathroom", which is a positive indicator. The index is constructed by first aggregating the indicators for each dimension, and then the dimensions are aggregated using their scores for the particular State/group. Arithmetic mean is used for aggregation. The score for an indicator for particular State/group is calculated using the formula below:

$$\text{Indicator Score} = \frac{\text{Actual value-Minimum value (fixed at 0)}}{\text{Maximum value (fixed at 100) - Minimum value (fixed at 0)}}$$

The value of the index ranges between 0 and 1. Higher the value of index, better is the access to the bare necessities.

OVERALL BNI

10.5 State-wise values of BNI in 2012 and 2018 for India (rural + urban), rural and urban are plotted respectively in Figures 1, 2, and 3. A higher value indicates better access to bare necessities in a State. The three colours, green, yellow and red, used in the maps show the level of a State in providing access to bare necessities to its households. Green (above 0.70) indicates 'High' level and is therefore the most desirable, followed by yellow (0.50 to 0.70), which indicates 'Medium' level. In contrast, Red (below 0.50) indicates very 'Low' level of access. The difference in colours in a map indicate the regional variation in the access to bare necessities for the households.

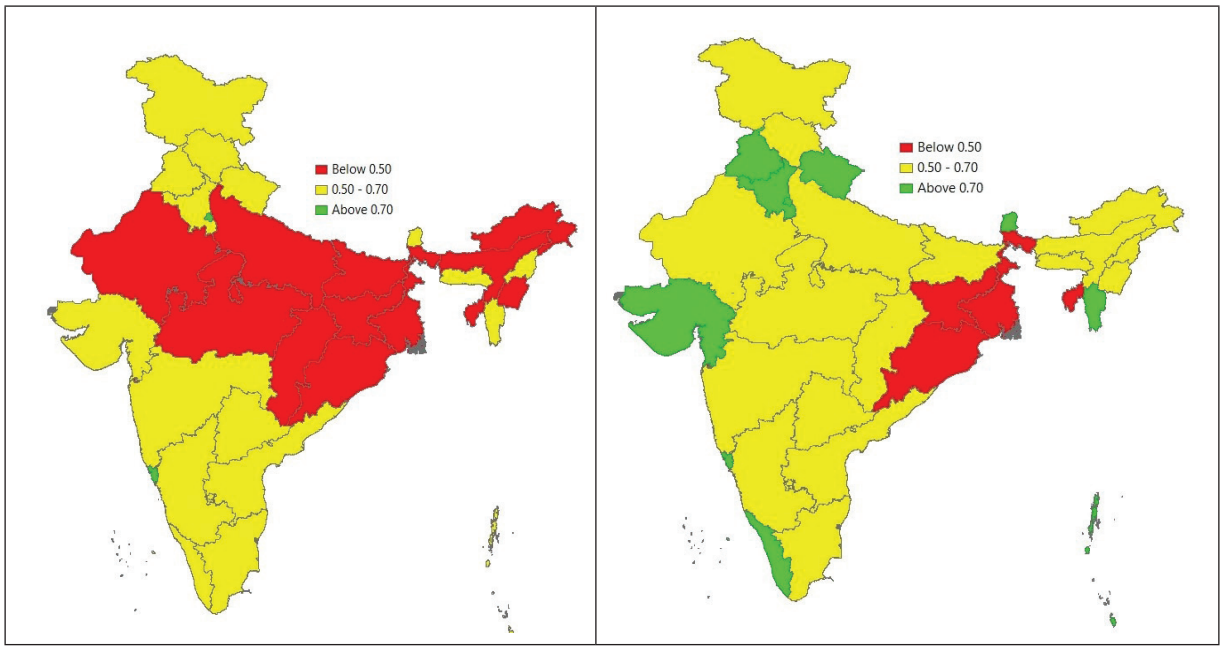
10.6 It is quite evident from Figure 1 that in most of the states, the access to bare necessities for the households in 2018 is significantly better compared to 2012. Access to bare necessities in 2018 is the highest in the States such as Kerala, Punjab, Haryana, Gujarat, Uttrakhand, Delhi, Goa, Mizoram and Sikkim while it is the lowest in Odisha, Jharkhand, West Bengal and Tripura. The states showing improvement on the access to bare necessities, where red in 2012 became yellow or green in 2018 or where yellow in 2012 became green in 2018, are Haryana, Punjab, Uttarakhand, Gujarat, Kerala, Rajasthan, Uttar Pradesh, Bihar, Madhya Pradesh, Chhattisgarh, and North East states except for Tripura, Nagaland and Meghalaya.

10.7 In rural India, the highest access to bare necessities in 2018 is recorded in Punjab, Kerala, Sikkim, Goa and Delhi, while the lowest in Uttar Pradesh, Madhya Pradesh, Bihar, Jharkhand, West Bengal, Odisha, Assam, Manipur and Tripura. The States showing improvement in their access to bare necessities are J&K, Punjab, Rajasthan, Gujarat, Maharashtra, Karnataka, Chhattisgarh, Tamil Nadu, Andhra Pradesh, Kerala, Goa, Meghalaya and Arunachal Pradesh.

In urban India, no State is showing the lowest level of BNI in 2018, and the States showing improvement over 2012 include Uttarakhand, J&K, Punjab, Rajasthan, Madhya Pradesh, Maharashtra, Karnataka, Kerala, Tamil Nadu, Arunachal Pradesh and Manipur.

Figure 1: Improvement in the Bare Necessities Across India (Rural + Urban) from 2012 to 2018

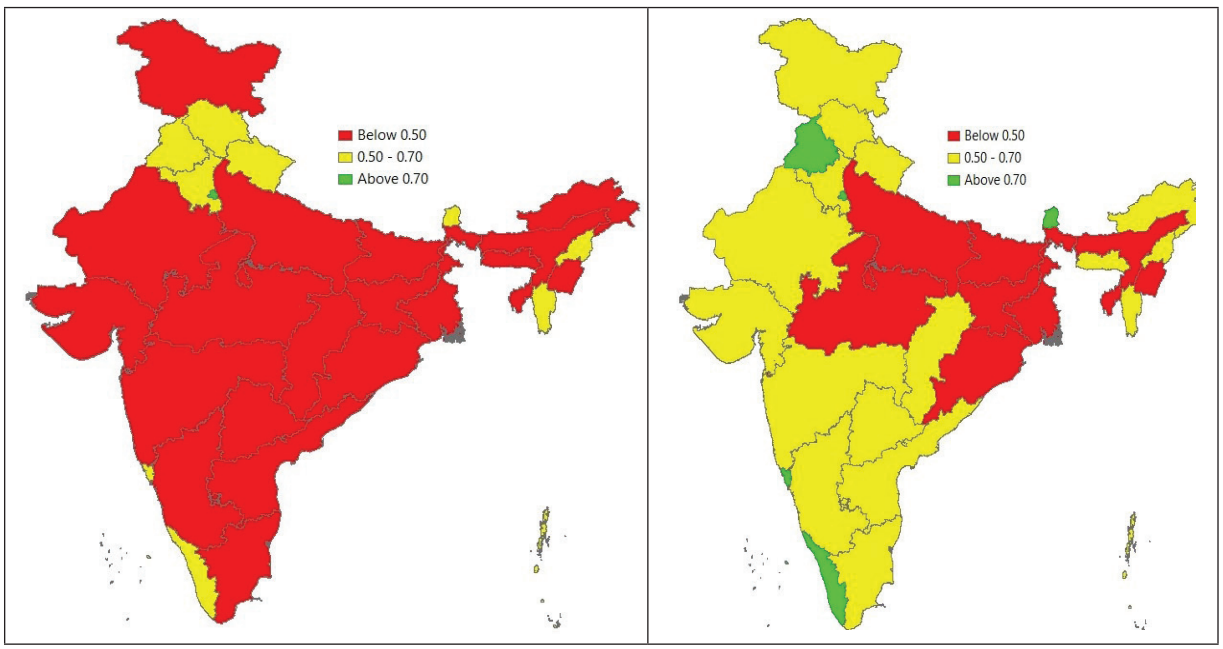
BNI for India (Rural + Urban) 2012 BNI for India (Rural + Urban) 2018



Source: Survey calculations.

Figure 2: Improvement in the Bare Necessities Across Rural India from 2012 to 2018

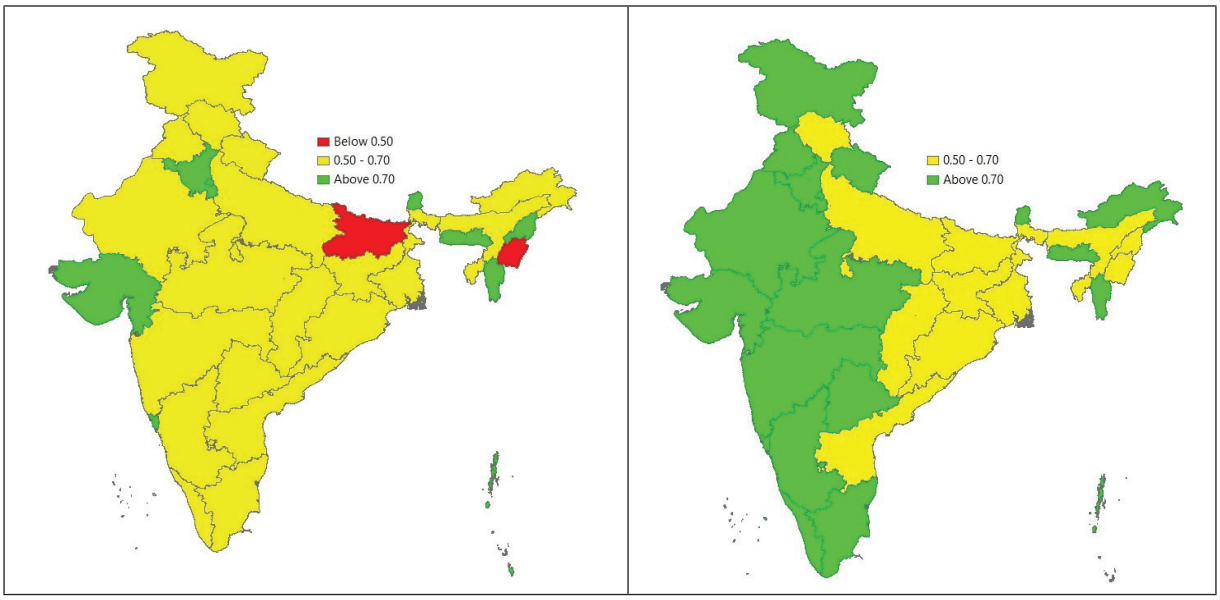
BNI for Rural India 2012 BNI for Rural India 2018



Source: Survey calculations.

Figure 3: Improvement in the Bare Necessities Across Urban India from 2012 to 2018

BNI for Urban India 2012 BNI for Urban India 2018



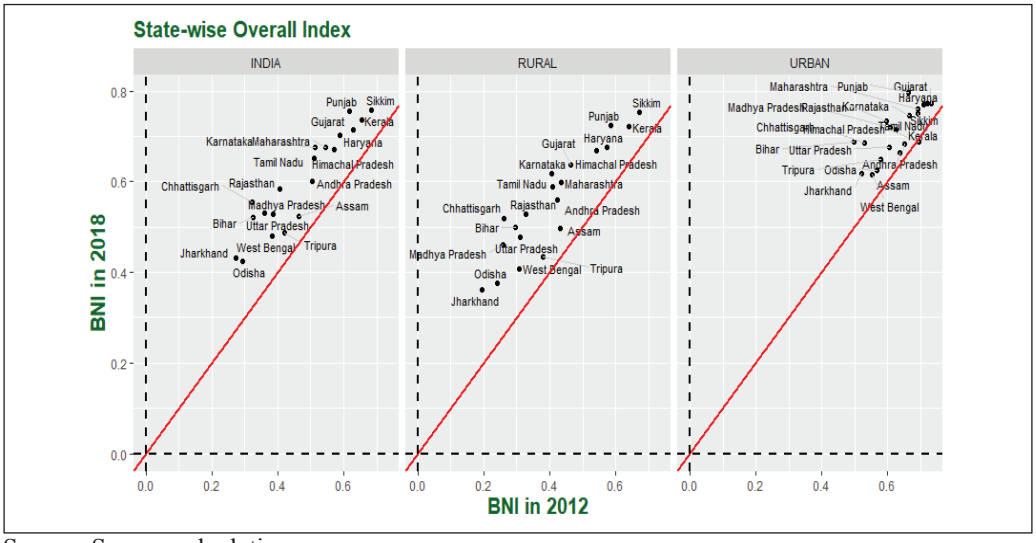
Source: Survey calculations.

10.8 Figure 4 plots the level of BNI for the selected States[2] in 2012 and 2018. The red 45° line represents the benchmark for no change between 2012 and 2018 with which we can compare each State. A State located above the red line shows improvement while one below the red 45° line shows deterioration in 2018 from its level in 2012. The vertical distance from the red line indicates the extent of change for a State. The farther a State is located above the red line, the higher are the gains. As reflected in the all-India index, access to bare necessities is high in the States such as Kerala, Punjab, Haryana and Gujarat while lowest in Odisha, Jharkhand, West Bengal and Tripura. Since all States are above the 45° red line, it is evident that access to bare necessities has secularly improved in 2018 compared to 2012 (Figure 4). The improvement is significantly higher in the rural areas when compared to the urban areas. However, variation in the access to bare necessities across states and between rural and urban remained large.

10.9 Figure 5 plots gains per year against the value of the index in 2012. Gains per year indicates the speed of improvement in a year on access to bare necessities for households in a State. Gains per year are calculated by subtracting the index value in 2012 for a State from its value in 2018 and dividing by the number of years between 2012 and 2018. The decline in regional disparities reflect in the negative association between level of the index in 2012 and the per year gains. Figure 5 shows that inter-State disparities in terms of access to bare necessities to the households have declined both in rural as well as in urban areas. States that had low level of access to bare necessities in 2012 have gained relatively more between 2012 and 2018.

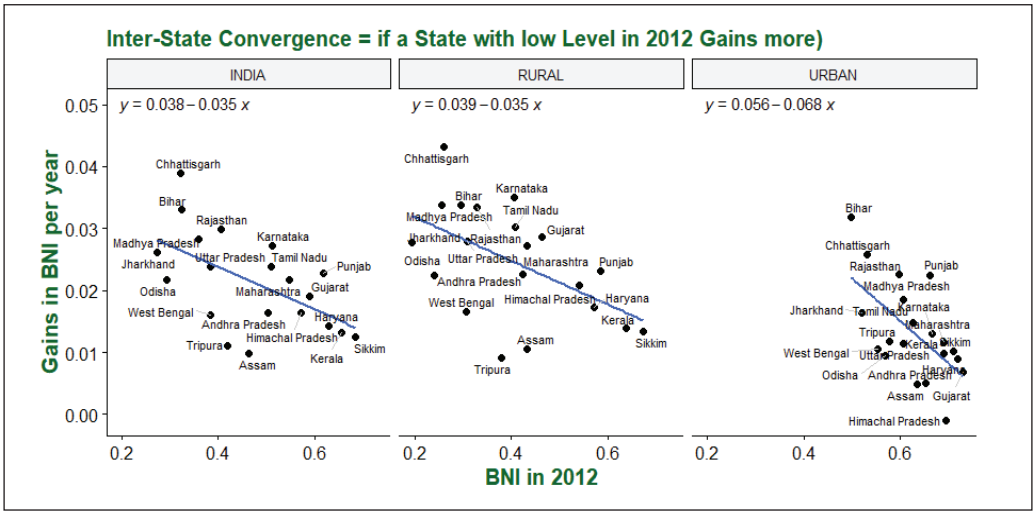
[2]Excluding small states performance of which may vary because of their nature of governance, special needs, and size such as Goa, Delhi, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, J&K, Uttarakhand, and Union Territories.

Figure 4: Improvements in Access to Bare Necessities in 2018 vis-à-vis 2012



Source: Survey calculations.

Figure 5: Change in Regional Disparities of Access to Bare Necessities

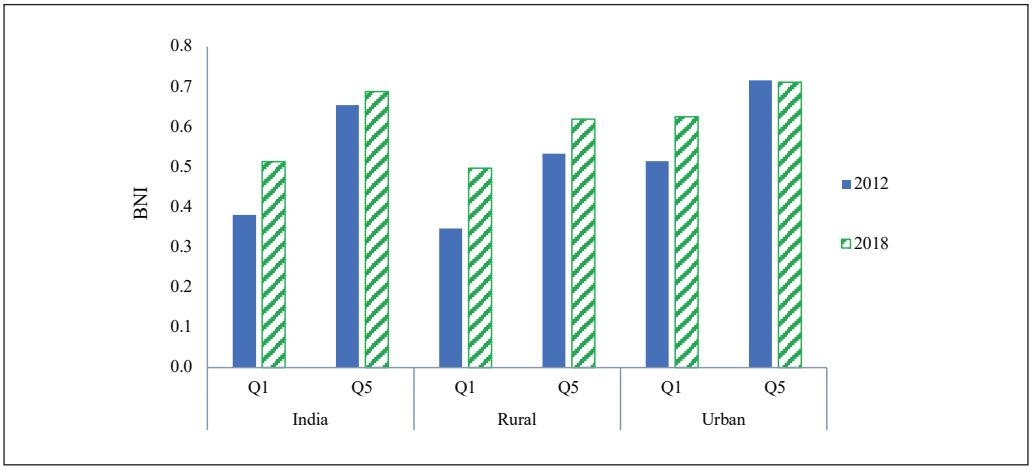


Source: Survey calculations.

10.10 Figure 6 plots the BNI for 2012 and 2018 across the income groups with the lowest quintile (Q1) corresponding to the poorest and the highest quintile (Q5) corresponding to the richest as per the monthly per capita expenditure[3]. We can see that the access to bare necessities has improved disproportionately more for the poorest households when compared to the richest households across India (urban + rural), rural as well as urban areas. The improvement in equity is particularly noteworthy because while the rich can seek private alternatives, lobby for better services, or if need be, move to areas where public goods are better provided for, the poor rarely have such choices (Besley and Ghatak, 2004). Thus, provision of public goods can particularly affect the quality of living of the vulnerable sections in a society.

[3]The expenditure includes expenditure on purchase of household durables during last 365 days, imputed value of usual consumption in a month from wages in kind, free collection, gifts, etc, imputed value of usual consumption in a month from home grown stock and other purchases for household purposes.

Figure 6: Improving Equity in Access to Bare Necessities



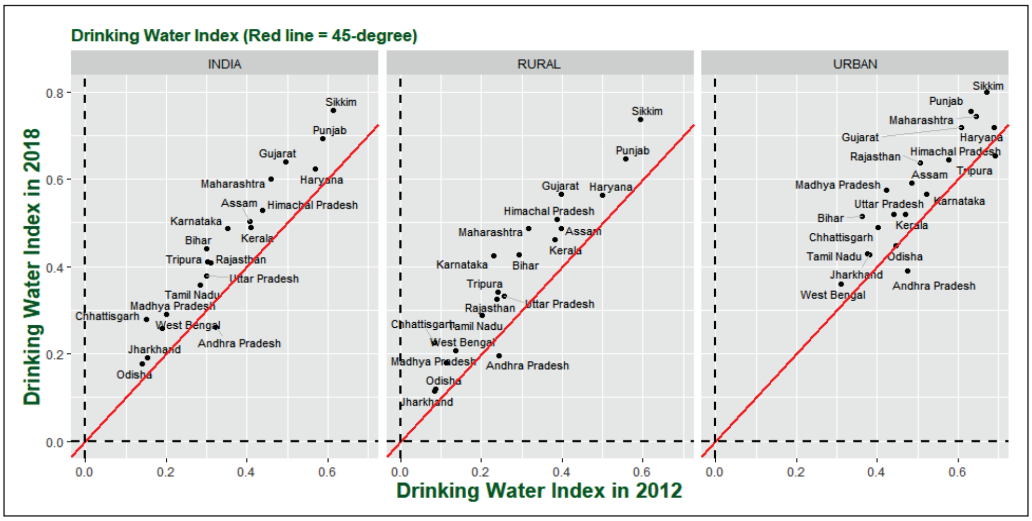
Source: Survey calculations.

DRINKING WATER ACCESSIBILITY INDEX

10.11 The sub-index for access to drinking water, drinking water accessibility index, is composed of sub-dimensions viz., the principal source of drinking water, distance from source of water, nature of access, and method of taking out water. The indicators included from these sub-dimensions are in terms of the per cent of households that have piped water into dwelling or piped water to yard/plot, within dwelling or outside dwelling but within premises, have water through tap, and exclusive use of the household or not.

10.12 The values of drinking water accessibility index for combined India, rural and urban for 2012 and 2018 are plotted in Figure 7. Most of the States are above the line, suggesting that the access to drinking water to households in most of the States has improved in 2018 compared to 2012, in rural as well as in urban areas, (except for Andhra Pradesh in Rural and Andhra Pradesh and Himachal Pradesh in urban areas). States such as Sikkim, Punjab, Haryana and Gujarat are

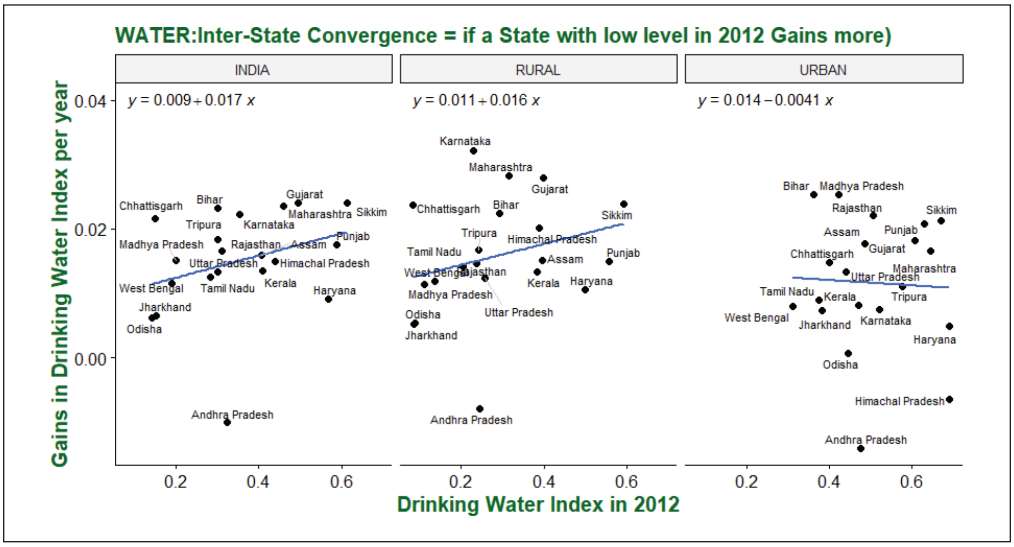
Figure 7: Improvements in Access to Drinking Water in 2018 vis-à-vis 2012



Source: Survey calculations.

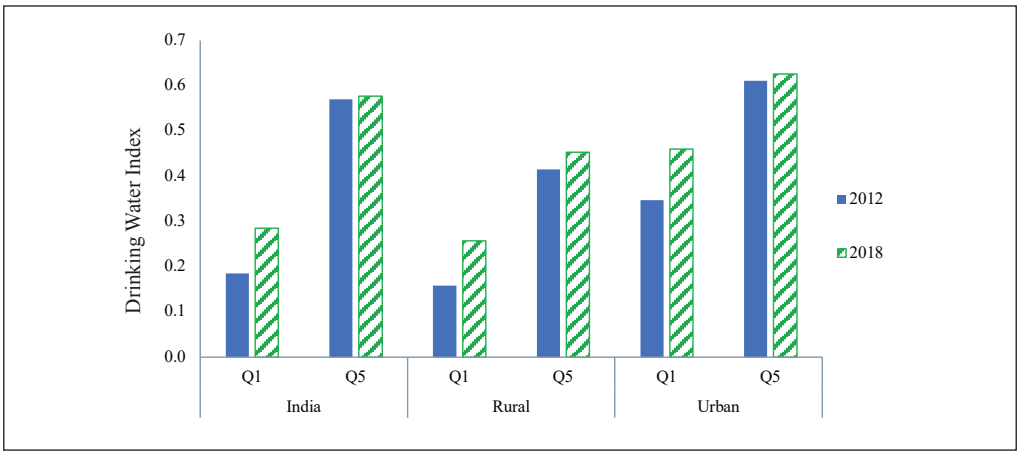
at the top while Odisha, Jharkhand and Andhra Pradesh are at the bottom on the drinking water accessibility index. Regional disparities have increased in 2018 when compared to 2012 despite such disparities declining in urban areas (Figure 8). This is because these disparities have increased in the rural areas. The Jal Jeevan mission must therefore focus on reducing the disparities in the rural areas as the reduction in such disparities will reduce the disparities across India. Across all groups, equity in access to drinking water increased in 2018 when compared to 2012 (Figure 9).

Figure 8: Regional Disparities in Access to Drinking Water



Source: Survey calculations.

Figure 9: Increasing Equity in Access to Drinking Water



Source: Survey calculations.

SANITATION INDEX

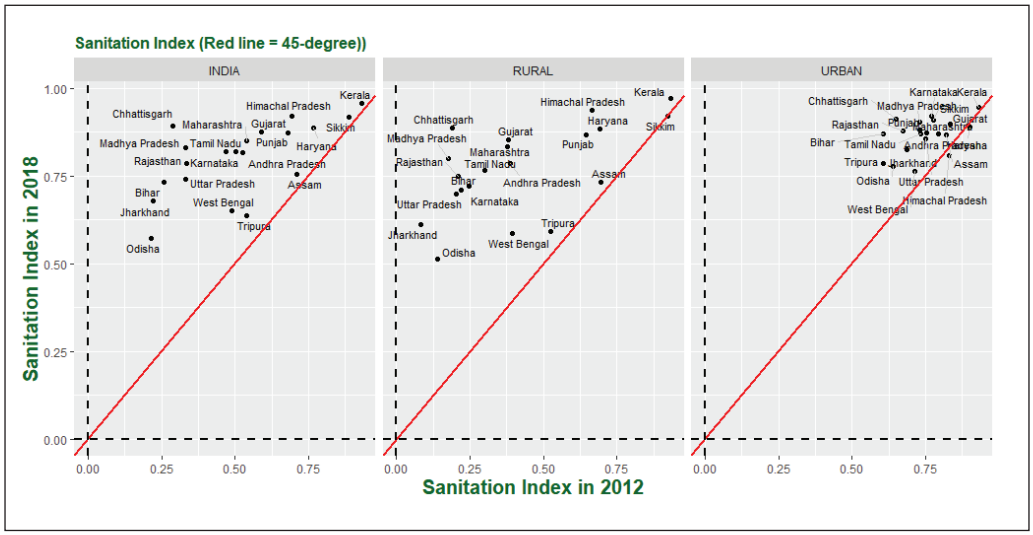
10.13 Indicators used in the sub-index are percentage of households by access to latrine for exclusive use, the type of latrine viz., piped sewer system, septic tank, twin leach pit, single pit.

[4]The indicator is about the physical access not about the use. Various survey such as National Annual Rural Sanitation Survey (NARSS) 2018-19 shows that most of household who have latrine are also using them.

These indicators show physical as well as quality of access to sanitation[4]. Figure 10, which plots the level of access to sanitation for States, shows that the sanitation access has improved for all States in rural areas and for most of the States in urban areas in 2018 compared to 2012. Regional disparities in access to sanitation has declined as the states having low access to sanitation in 2012 have gained more (Figure 11). However, inter-State difference in access to sanitation are still large, especially in rural areas. The level of access to safe sanitation has increased in lowest income quintile, both in rural as well as in urban areas (Figure 12).

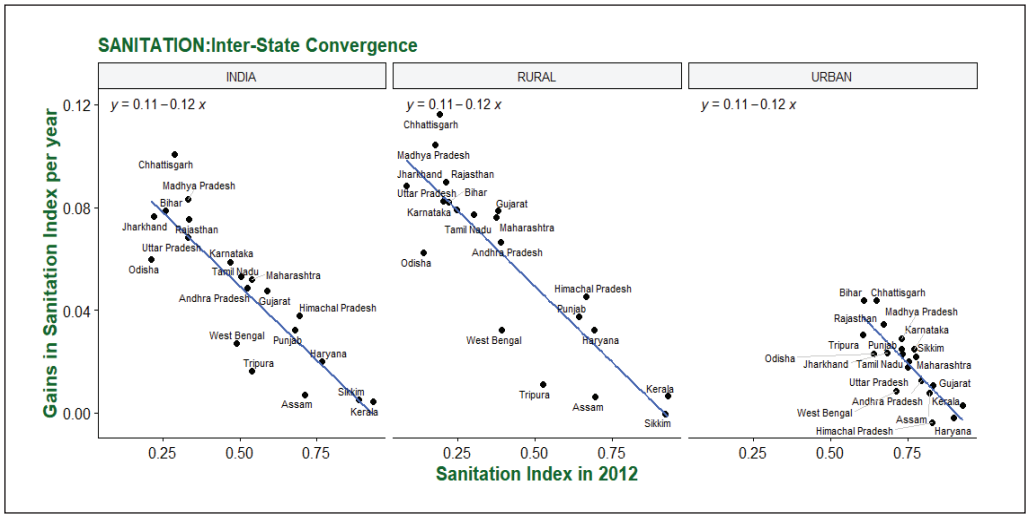
10.14 In continuation of the efforts made by the government through various government programmes, such as Total Sanitation Campaign, Government launched Swachh Bharat Mission in 2014. Under the programme, more than 10 crore toilets were built in rural areas. The programme has been critical in enhancing the access to safe sanitation to rural households.

Figure 10: Improvements in Access to Sanitation in 2018 vis-à-vis 2012



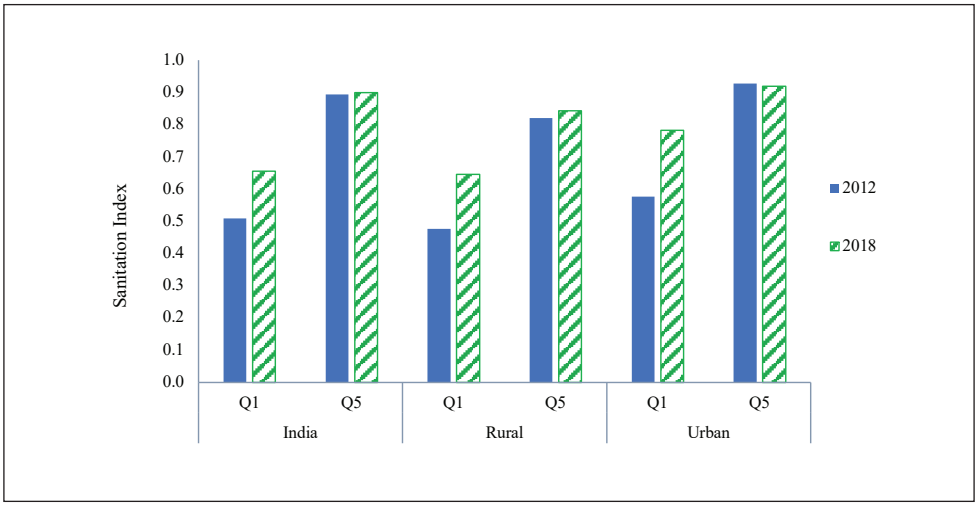
Source: Survey calculations.

Figure 11: Sharp Convergence Across States in Sanitation



Source: Survey calculations.

Figure 12: Increasing Equity in Sanitation

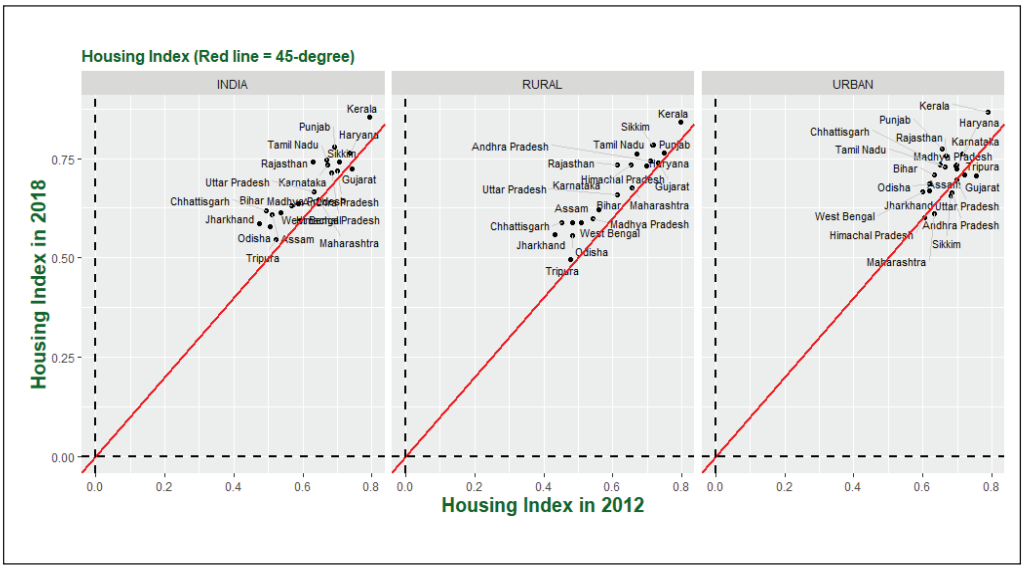


Source: Survey calculations.

HOUSING INDEX

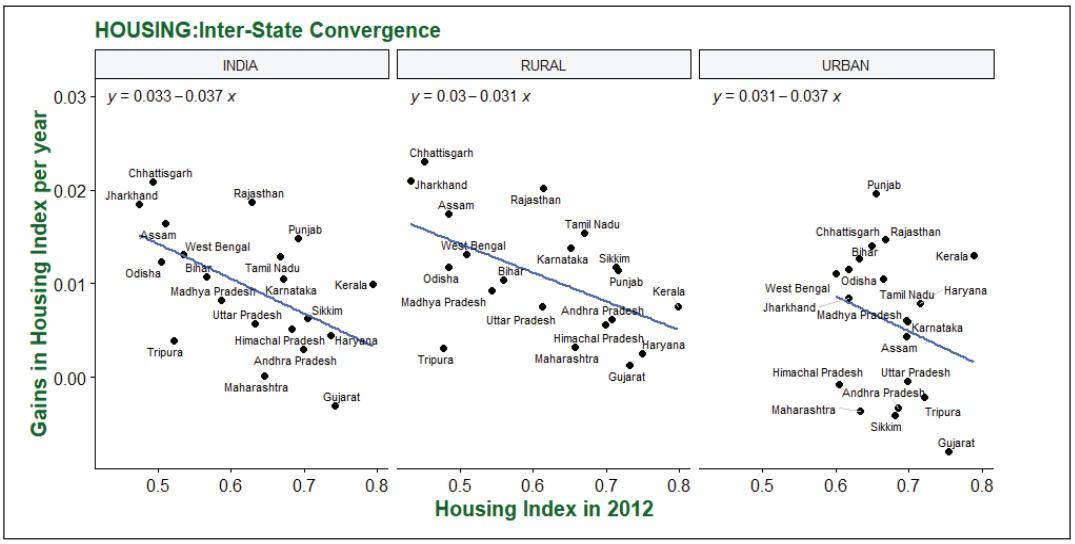
10.15 The housing index measures not only the structure of house (in terms of *Pucca* or *Katcha*), but also the quality of house in terms of type of dwelling unit (independent or not) and condition of structure (Good or not). Figure 13 shows that the access to housing has improved in all States, except urban areas in few States. The inter-State disparities have also declined as the States having low level in 2012 have gained more (Figure 14). However, the gaps in the levels across states have been large, especially in rural areas. The improvement in access to housing has also been disproportionately greater for the lowest income group when compared to the highest income group, thereby enhancing equity in access to housing in 2018 vis-à-vis 2012 (Figure 15).

Figure 13: Improvements in Access to Housing in 2018 vis-à-vis 2012



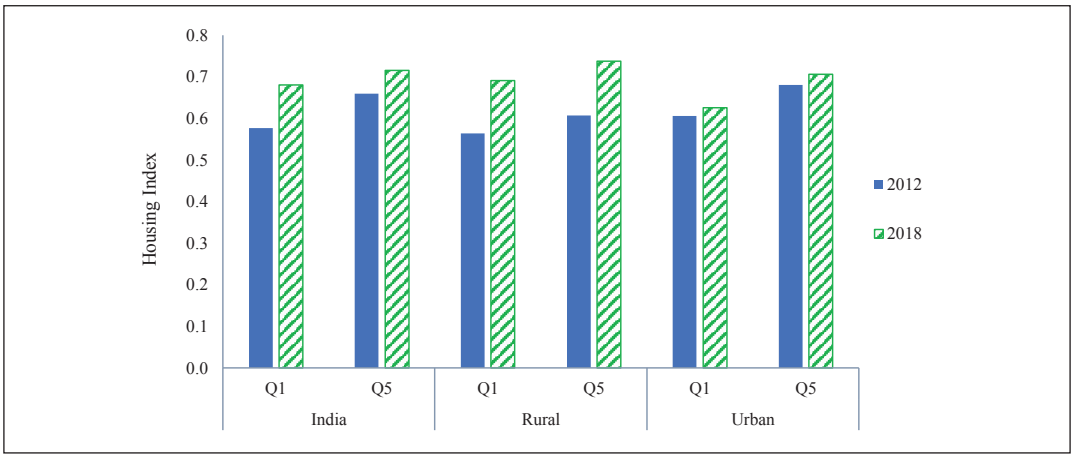
Source: Survey calculations.

Figure 14: Convergence Across States in Access to Housing



Source: Survey calculations.

Figure 15: Increasing Equity in Access to Housing



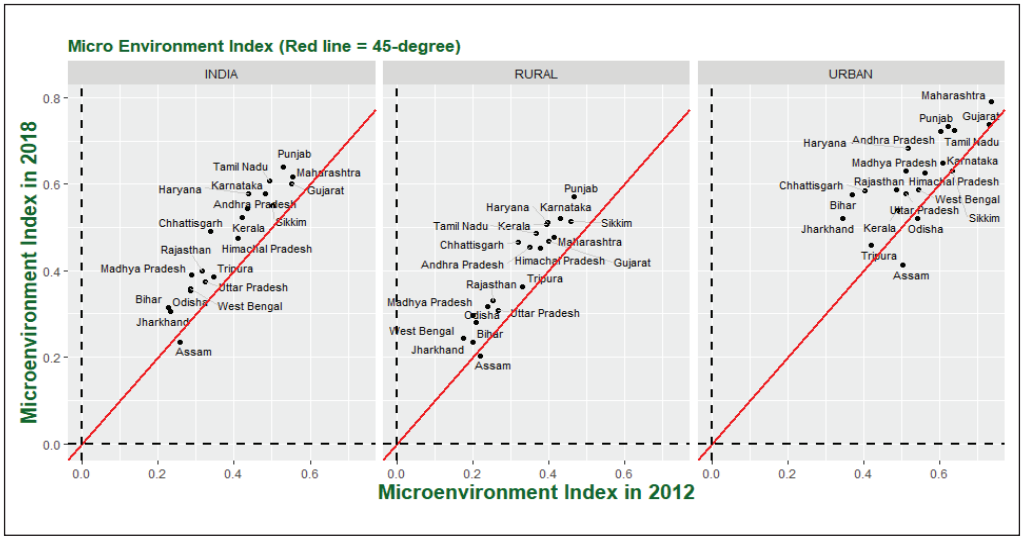
Source: Survey calculations.

MICRO-ENVIRONMENT INDEX

10.16 The micro-environment index measures the percentage of households who are living in a dwelling unit with access to drainage (indicated in terms of access to drainage and quality of drainage in terms of other than *Katcha* drainage), without problems of flies/mosquitoes (indicated by other than severe), and efforts made by local bodies/State government to tackle problem of flies/mosquitoes.

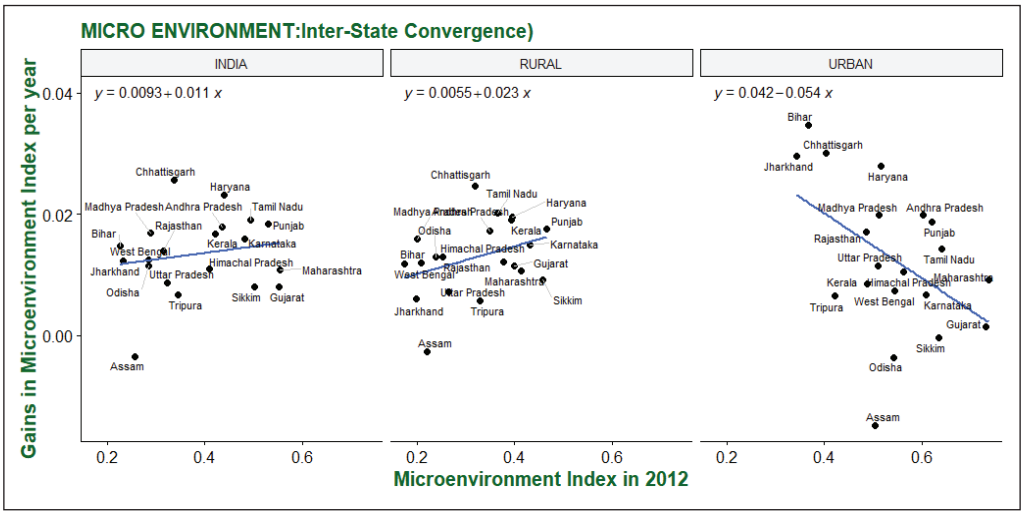
11.17 Micro-environment, as measured by the index, has improved in 2018 for all States, except for Assam in rural and Odisha and Assam in urban areas, as compared to 2012 (Figure 16). Regional disparities have declined sharply in urban areas in 2018 vis-à-vis 2012, though it was increased in the rural areas (Figure 17). The micro-environment is much better in urban areas when compared to the rural areas, and the rural-urban gaps are large. The access to micro-environment in 2018 has improved especially to the lowest income quintile in rural as well as in urban areas (Figure 18).

Figure 16: Improvements in Micro-environment in 2018 vis-à-vis 2012



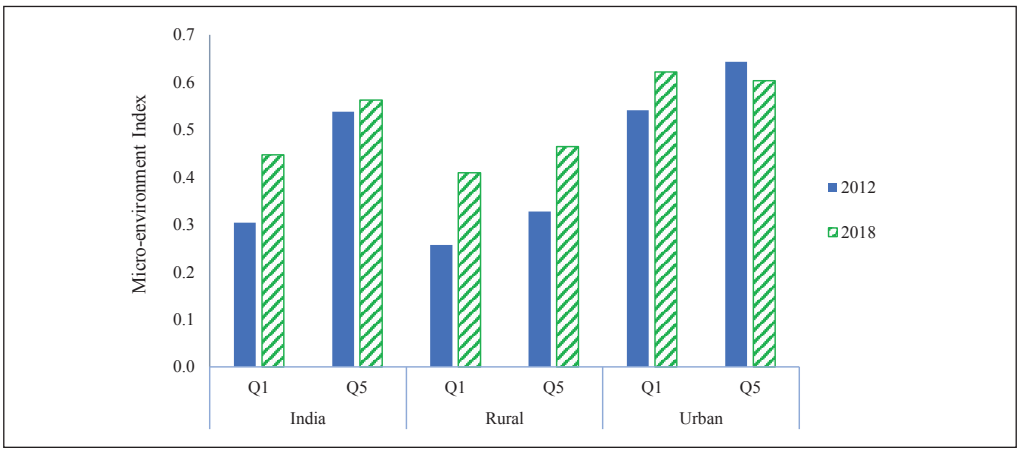
Source: Survey calculations.

Figure 17: Regional Disparities in Micro-environment



Source: Survey calculations.

Figure 18: Increasing Equity in Micro-environment



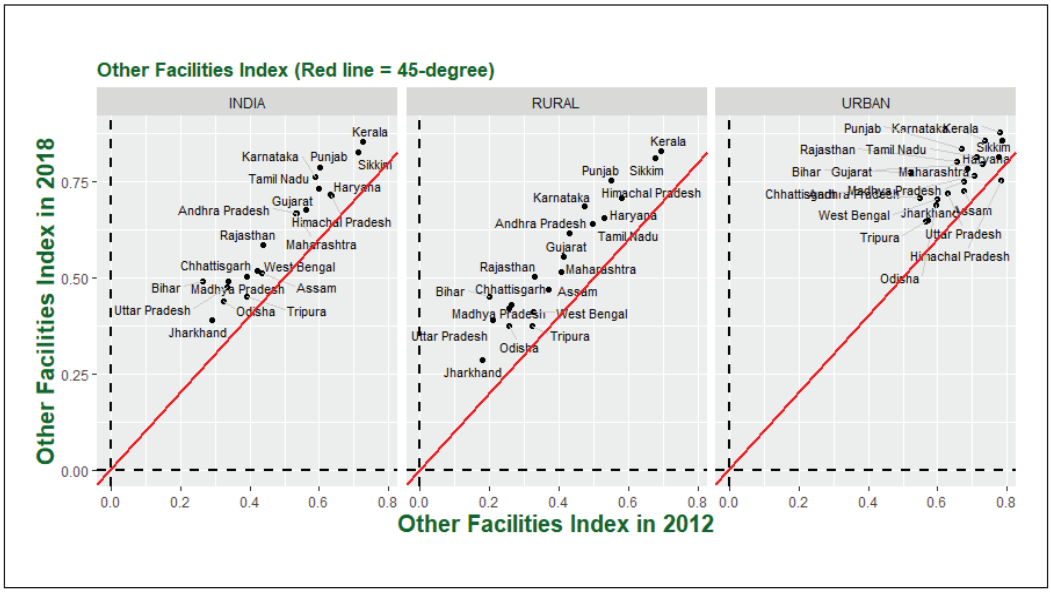
Source: Survey calculations.

OTHER FACILITIES INDEX

10.18 'Other facilities' index captures the availability of kitchen, kitchen with a water tap, good ventilation in house, access to bathroom, attached bathroom, electricity use, the types of wiring used instead of temporary electric wiring, and type of fuel used for cooking (LPG or others).

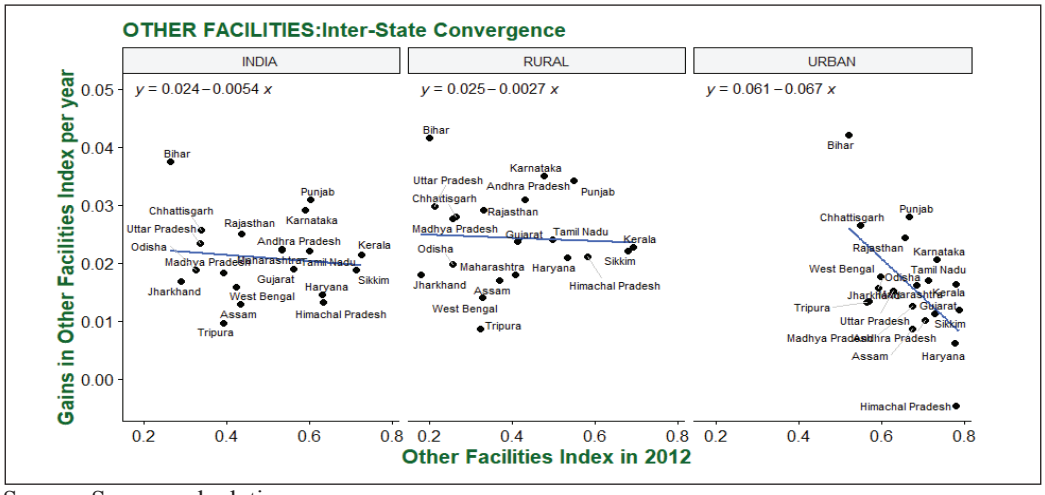
10.19 Access to Other-facilities for a household has improved for all States in 2018 compared to 2012 for rural as well as in urban areas except for Himachal Pradesh in urban (Figure 19). The inter-states disparities in terms of these facilities have also declined, especially in the urban areas (Figure 20). The equity in access to other facilities has improved in rural and urban areas (Figure 21). The gaps are still high across the State in rural, between rural and urban in States, between income groups, and between rural and urban in income groups.

Figure 19: Improvements in Access to Other Facilities in 2018 vis-à-vis 2012



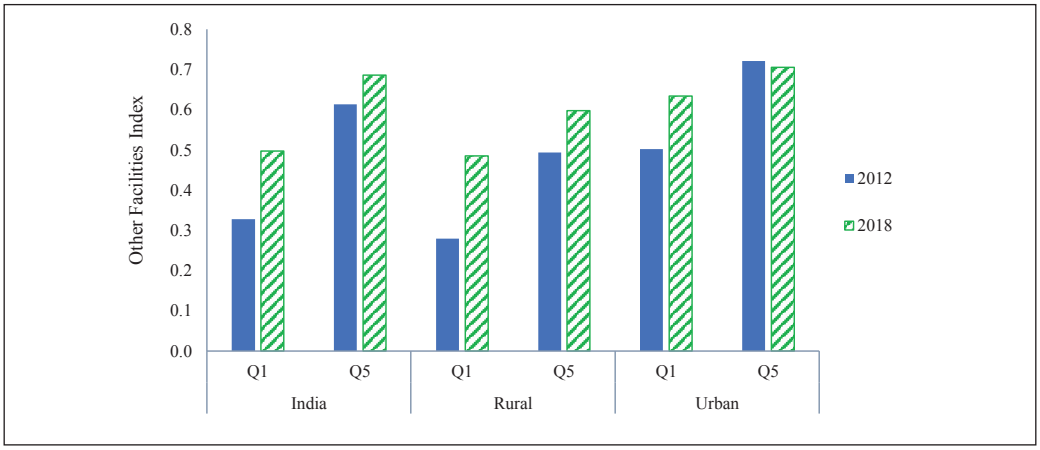
Source: Survey calculations.

Figure 20: Convergence Across States in Access to Other Facilities



Source: Survey calculations.

Figure 21: Increasing Equity in Access to Other Facilities



Source: Survey calculations.

HEALTH OUTCOMES

10.20 Research highlights the health benefits that can accrue from greater access to the bare necessities examined above. The Economic Survey 2018-19 (Chapter 8, Volume 1) showed the benefits of the Swachh Bharat Mission, as it led to a decrease in diarrhea and malaria cases in children below five years, still births and new-borns with weight less than 2.5 kg. Geruso and Spears (2014) document similar effects on child survival of safe sanitation through the decline in open defecation. Access to improved sanitation also reduces the risk of contracting diarrhoea (Kumar and Vollmer, 2013; Jalan and Ravallion, 2003). Further, the access to the piped water and sanitation is critical in reducing the child mortality substantially (Zwane *et.al*., 2007). The distance and time spent on fetching water from the source is found to affect under-five child health (Pickering and Davis, 2012; Zayatri *et. al*., 2013) and increase the risk of illness (Xia and Hunter, 2010).

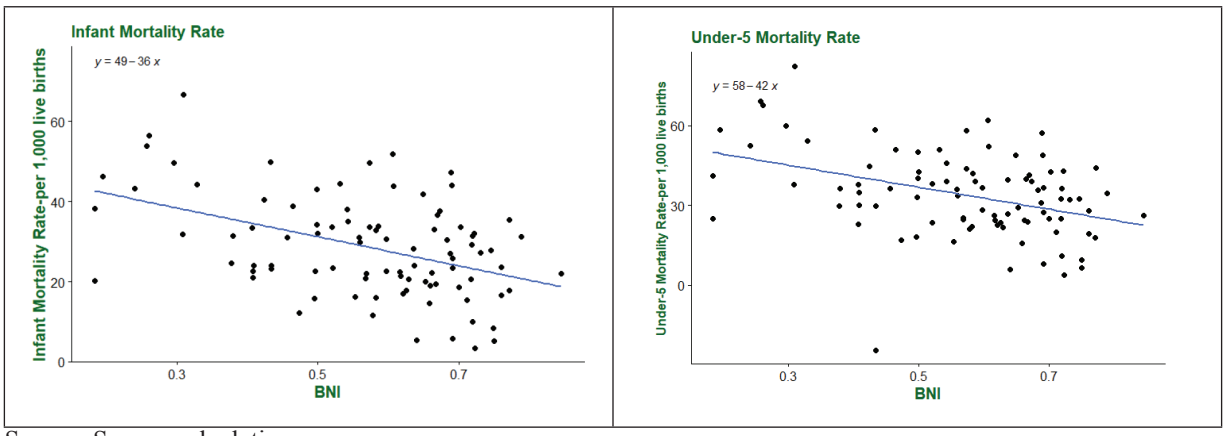
10.21 Research also supports the view that access to clean cooking fuel improves child health. Studies have found a significant trend for higher infant mortality among households that cooked with a greater proportion of biomass fuel (Rinne *et.al*., 2007). The close association between household air pollution and mortality among children aged under-five, possibly because of respiratory illnesses, support the case for providing clean cooking fuel through government programmes (Naz *et. al*., 2016). Having a separate kitchen improves the indoor environment, thereby yielding health benefits to the household, especially women and children. Access to housing, better housing conditions and amenities are closely connected with health outcomes (Thomson *et. al*., 2017).

10.22 Motivated by the various studies described above, we correlate the BNI with health outcomes in India. Figure 22 plots the correlation of BNI with infant mortality rate and under-5 mortality rate[5] for rural and urban areas; the data for both from NFHS-4 and NFHS-5 against the corresponding levels of BNI. The close associations suggest bare necessities correlate strongly with health outcomes. Table 2 shows the results from a panel regression that controls for the effect

[5]State-wise data on IMR and under-5 MR are taken from NFHS-4, 2015-16 and NFHS-5, 2019-20 (for 22 States/ UT where data has been released).

of State level differences by including State fixed effects (FE). The results seen in Figure 22 remain robust and thereby suggest that the effect of BNI on health outcomes are likely to be causal.

Figure 22: Infant and Under-5 Mortality Rates



Source: Survey calculations.

Table 2: Regression Results: Health and Education Indicators and BNI

	(1)	(2)	(3)	(4)
Dependent variable:	**Infant Mortality Rate (per 1,000 live births)**	**Under-5 Mortality Rate (per 1,000 live births)**	**Gross Enrolment Ratio Class 9-10**	**Gross Enrolment Ratio Class 11-12**
BNI	-26.21***	-30.63***	86.33***	46.11**
	(7.375)	(9.930)	(12.86)	(18.80)
Constant	45.37***	53.68***	24.91***	23.93**
	(5.431)	(6.212)	(7.685)	(11.52)
Observations	91	90	59	59
R-squared	0.751	0.677	0.874	0.851
State FE	Yes	Yes	Yes	Yes

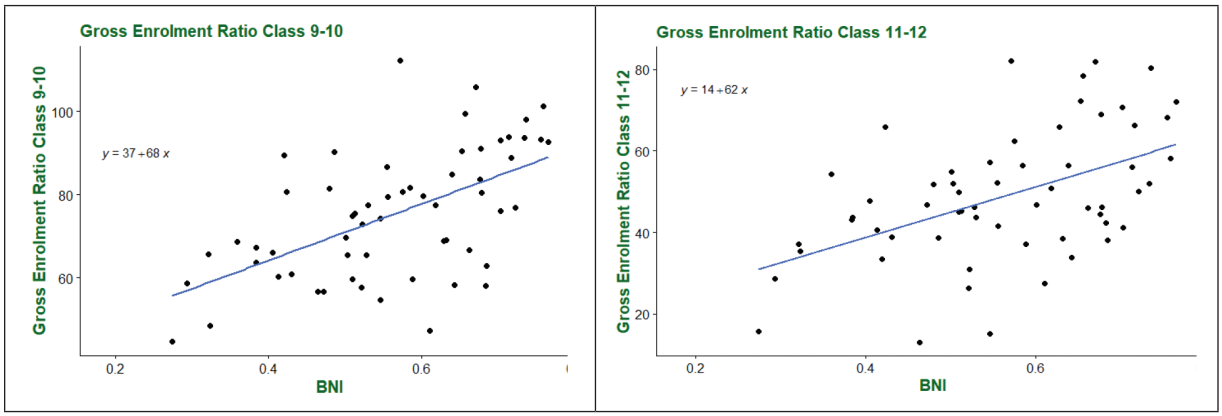
Source: Survey calculations.
Note: Robust standard errors clustered by State in parentheses; *** p<0.01, ** p<0.05, * p<0.1

EDUCATION OUTCOMES

10.23 Research studies support that the access to bare necessities through its possible linkages can positively impact educational indicators as well. Water hauling, a daily activity, consumes substantial time and effort of a household. It is found that water hauling activity is negatively associated with the girls' school attendance (Nauges and Strand, 2011; Sekhri, 2013). Access to latrine in schools substantially increases enrolment of pubescent-age girls (Adukia, 2016). Further, the electrification's links with education, which could be through lighting and use of other equipment, are visible in day-to-day life. In fact, there is a strong correlation between electricity consumption per capita and higher scores on the education index across countries (Makoto and Nakata, 2008). In view of the above, it is pertinent to explore relation, if any, between BNI levels and education indicators.

10.24 The State-wise BNI in 2012 and 2018 correlate positively with the gross enrolment ratio[6] for class 9-10 and class 11-12 (Figure 23). The panel regression results presented in Table 1 are also statistically significant suggesting that high level of the gross enrolment ratio in the schools could be linked with BNI.

Figure 23: BNI India and Gross Enrolment Ratio



Source: Survey calculations.

CONCLUSION

10.25 Using the composite index of bare necessities, this chapter summarizes the progress made in providing access to bare necessities for ensuring a healthy living. It was found that compared to 2012, access to "the bare necessities" has improved across all States in the country in 2018. The improvements are widespread as they span each of the five dimensions viz., access to water, housing, sanitation, micro-environment and other facilities. Inter-State disparities in the access to "the bare necessities" have declined in 2018 compared to 2012 across rural and urban areas. This is because the States where the level of access to "the bare necessities" was low in 2012 have gained relatively more between 2012 and 2018. Access to "the bare necessities" has improved disproportionately more for the poorest households when compared to the richest households across rural and urban areas. The improvement in equity is particularly noteworthy because while the rich can seek private alternatives, lobby for better services, or if need be, move to areas where public goods are better provided for, the poor rarely have such choices. It was also found that the improved access to "the bare necessities" has led to improvements in health indicators and in education indicators. However, while improvements in access to bare necessities are evident, the disparities in access to bare necessities continues to exist between rural-urban, among income groups and also across States. Government schemes, such as the Jal Jeevan Mission, SBM-G, PMAY-G, may design appropriate strategy to address these gaps to enable India achieve the SDG goals of reducing poverty, improving access to drinking water, sanitation and housing by 2030. There should be effective targeting of the needier population be they in urban or rural areas or across states. As civic amenities in urban areas are also provided by the local self-governments, there must be effective convergence in scheme implementation at the Centre-State and local levels. For this purpose, a BNI based on large annual household survey data can be constructed using suitable indicators and methodology at district level for all/ targeted districts to assess the progress on access to bare necessities.

[6]Data for 2011-12 and 2018-19 sourced from Statistics of School Education 2011-12, Ministry of Education and for 2018-19 from U-DISE.

CHAPTER AT A GLANCE

- Compared to 2012, access to "the bare necessities" has improved across all States in the country in 2018. Access to bare necessities is the highest in the States such as Kerala, Punjab, Haryana and Gujarat while it is the lowest in Odisha, Jharkhand, West Bengal and Tripura.
- The improvements are widespread as they span each of the five dimensions viz., access to water, housing, sanitation, micro-environment and other facilities. Inter-State disparities in the access to "the bare necessities" have declined in 2018 when compared to 2012 across rural and urban areas. This is because the States where the level of access to "the bare necessities" was low in 2012 have gained relatively more between 2012 and 2018.
- Access to "the bare necessities" has improved disproportionately more for the poorest households when compared to the richest households across rural and urban areas. The improvement in equity is particularly noteworthy because while the rich can seek private alternatives, lobby for better services, or if need be, move to areas where public goods are better provided for, the poor rarely have such choices.
- Using data from the National Family Health Surveys, we correlate the BNI in 2012 and 2018 with infant mortality and under-5 mortality rate in 2015-16 and 2019-20 respectively and find that the improved access to "the bare necessities" has led to improvements in health indicators.
- Similarly, improved access to "the bare necessities" correlates with future improvements in education indicators. Thrust should be given to reduce variation in the access to bare necessities across states, between rural and urban and between income groups, on bare necessities. The schemes, inter alia, Jal Jeevan mission, SBM-G, PMAY-G, may design appropriate strategy to reduce these gaps.
- A BNI based on large annual household survey data can be constructed using suitable indicators and methodology at district level for all/targeted districts to assess the progress on access to bare necessities.

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