

# **Access to Social Services in India: Findings from a Social Equality Index (SEI)**

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## Table of Content

Executive Summary .....	3
1. Introduction.....	4
1.1 Background to the Inequality Discourse.....	4
1.2 The Indian Scenario.....	6
1.3 Index Pillars and Rationale.....	8
2. Methodology and Data.....	9
2.1 Data.....	12
3. Ranking within Pillars.....	12
3.1 Access to Basic Amenities (Drinking water and sanitation facility).....	12
3.2 Access to Education.....	14
3.3 Access to Basic Healthcare Services.....	17
3.4 Access to Financial Service.....	19
3.5 Access to Justice .....	20
4. Composite Ranking.....	23
5. Further Research for Thought.....	27
6. Appendix.....	29
Reference.....	34

## Executive Summary

Despite being one of the fastest growing economies in the world in recent years, the average Indian remains relatively poor due to a highly-skewed income distribution and inequitable access to basic social and economic services. The poorer half jostles for a mere 4.1% of national wealth while relational inequities continue to rise across states. This gap of four times between the richest and the poorest state in India is responsible for one of the highest level of disparity in the developing world which subsequently affects delivery mechanisms and access to basic social services such as basic education, healthcare, credit institutions, law enforcement justice mechanisms and other basic amenities (drinking water and sanitation).

This report provides an in-depth assessment of each Indian State's performance in ensuring access to basic social and economic services (including access to basic health care, education, credit or financial services, water and sanitation facilities and access to justice-law enforcing institutions) to its citizens. The objective of this in-depth data analysis is to initiate policy level discussions on minimizing levels of unequal opportunities for citizens residing across identified states of the country.

We theoretically use a Mini-Max approach (inverse to the Maxi-Min utilitarian principle) in understanding the relative dimensions of social and economic inequality present across states in India. The objective of using such a concept is to promote minimum access to some identified social and economic services that enable people (across states) to develop capabilities which are instrumental towards the maximization of their well-being over a period of time. The five fundamental pillars constituting as basic services to be safeguarded and provided by agencies of the state include:

- a) Access to Basic Amenities (Drinking water and sanitation facilities)
- b) Access to Education
- c) Access to Basic Healthcare services
- d) Access to Credit and Financial service
- e) Access to Justice (Public Institutions of law enforcement).

In terms of methodology, we use principle component analysis for deriving the index values for each pillar. The states based on index value have been classified as **leaders, above average performing states, average performing states, below average performing states** and **least performing states**. The classification acts as a scorecard for the persistence of access inequality in the Indian states and will draw the attention of policymakers towards states that lag behind in the implementation of the various policies and reforms. Such a method of ranking also enables states to identify their counterparts who have successfully ensured greater progress in terms of providing basic social and economic services at nearer proximity and as per the state population needs.

## **1. Introduction**

### **1.1 Background to the Inequality Discourse**

Recent decades have witnessed a higher degree of convergence between parts of the industrially developed and developing the world. Still, in countries representing parts of the developing world, intersectional aspects of economic development (accompanied with a higher rate of economic growth) have further continued to widen fault lines of social and economic inequity both, in terms of distribution of economic gains between social groups, and in terms of enabling access to basic economic and social services which are instrumental in achieving a higher state of economic well-being.

Drivers of inequality manifest across time and space in different forms and ways. The social and economic aspects of inequality have been studied extensively in parts of the developing and to some extent within developed countries too. While standards of absolute poverty can be explained by different deterministic criteria (in terms of income, nutrition, access to basic needs etc.), the ‘relative’ dimensions of inequity are subject to much more deliberations and remains a conceptual work in progress.

A simple reason for this is that every country or states in a country remain positioned with different conditions of developmental growth, making the process of benchmarking standards for assessing

the extent of socio-economic inequality relatively different from one state to another. Further, feasibility constraints and a lack of political capital to minimize social and economic inequality make states to take different approaches in meeting the needs of citizens (including those residing in cities as against rural areas).

It is for similar reasons that the subject of rising income and social inequality across nations continues to encourage debate and attract more research interest amongst social scientists, particularly economists. Scholars continue to produce a wide range of scholarship studying the dynamics of social and income while categorizing the broader idea of inequality in two key aspects i.e. an unequal distribution of opportunities with or without an unequal distribution of outcomes for citizens of a given nation.

The inequality of outcomes (usually measured in terms of income or consumption) as an apt measure has been discussed by Dworkin (1981)<sup>2</sup>, Arneson (1989)<sup>3</sup>, Cohen (1989)<sup>4</sup>, Sen (1985)<sup>5</sup> etc., further arguing how inequality perpetuates across social groups through disparate distributions of outcomes measurable in the form of incomes—which in most cases is an important yardstick (but not the only one) for measuring distributional aspects of gains across any economic system. Despite their own argumentative differences, most of these authors suggest that the inequalities that reside in a logically prior space of resources, capabilities, and opportunities, one cannot hold individual responsible for it. For instance, individuals have control over measures such as “efforts”, while “circumstances” such as race, gender, or family background, they cannot be held to have any responsibility<sup>6</sup>.

On the other hand, inequality seen in terms of opportunities i.e. differences in access to basic economic services and capabilities becomes equally important to analyze or study in compliment to the outcome-based measures (Ferreira 2011<sup>7</sup>). Drawing out a distinction between opportunity-

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<sup>2</sup> Dworkin, R. 1981a. “What is equality? Part 1: Equality of welfare,” *Phil.&Pub.Affairs* 10, 185-246

<sup>3</sup> Arneson, R. 1989. “Equality and equal opportunity for welfare,” *Phil.Stud.*56, 77-93.

<sup>4</sup> Cohen, G.A. 1989. “On the currency of egalitarian justice,” *Ethics* 99, 906-944

<sup>5</sup> Sen, A. 1980. “Equality of what?” in S. McMurrin (ed.) *The Tanner Lectures on Human Values*, Salt Lake City:University of Utah Press

<sup>6</sup> Roemer, John E.”*Equality of Opportunity*”, Harvard University Press, Cambridge, 1998.

<sup>7</sup> Ferreira, F.H.G. and J. Gignoux.2011. “The measurement of inequality of opportunity: Theory and an application to Latin America,” *Rev.Inc.Wealth* 57, 622-657

based and outcome-based aspects of inequality becomes vital for any country to understand the nature of inequality present across social groups while undertaking any economic or social reforms.

Opportunity based drivers for enabling social equality further improve conditions of developmental growth. Conditions of growth remains closely dependent not only on the rise in per capita income distribution levels but also on the extent of social segregation seen between and within labor groups (through the lens of organized and unorganized labor); nature of employment opportunities (as per skill levels); existing policies of redistributive transfers (via tax and non-tax collected revenues) etc. (Oxfam 2018<sup>8</sup>). Thus, going beyond income and consumption metrical differences (as important as they may be) there remains a critical need to develop a more cross-sectional focus on measures responsible for high social and economic inequality (both, in terms of outcome and opportunity levels).

This study makes an effort to focus on the opportunity-based aspect of inequality in the context of India at a cross-state level with an objective to understand the state of access of basic economic and social services-considered vital for the enhancement of capabilities as part of the citizens' economic well-being-across states in India. A deeper understanding of opportunity-based drivers of inequality in states across India (illustrated by the pillars of Social Equality Index-SEI) helps us in getting a critical perspective. i.e. to what extent states across India are able to ensure access to some of the basic social and economic services to the citizens and how each state's scenarios(in guaranteeing such essential services) differs from one state to another.

## **1.2 The Indian Scenario**

Despite being one of the fastest growing economies in the world in recent years, India's human development growth hasn't caught up as it ranks as low as 131 in a pool of 188 countries in Human

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<sup>8</sup> Himanshu. 2018. "India Inequality Report 2018: Widening Gap," OXFAM India. Available at [https://www.oxfamindia.org/sites/default/files/WideningGaps\\_IndiaInequalityReport2018.pdf](https://www.oxfamindia.org/sites/default/files/WideningGaps_IndiaInequalityReport2018.pdf)

Development Index 2016<sup>9</sup>. Between 1990 and 2016, India's economy grew at a compound rate of around 7% in current dollars and yet, the average Indian is relatively poor as a result of the highly-skewed income distribution<sup>10</sup>. According to a report by the Johannesburg-based company New World Wealth, India is the second-most unequal country globally, with millionaires controlling 54% of its wealth<sup>11</sup>. The latest data from Credit Suisse and Oxfam also suggests that the richest 10% of Indians own 80% of the country's wealth<sup>12</sup>.

Chancel and Piketty (2017)<sup>13</sup> by combining household surveys and national accounts in their pioneering study have cemented the notion that the income inequality in India has risen considerably between 1922 and 2015. According to their benchmark estimates, after 1980, the top 0.1% of the income quartile captured a higher share of the total growth than the bottom 50% of the income bin. Analogously, the uppermost 1% section grasped a higher share of the total growth as compared to the middle 40%.

At the other end, the poorer half jostles for a mere 4.1% of national wealth, with regional inequality rising. In 2014, the richest state, Kerala, was four times richer than the still poorest state of Bihar<sup>14</sup>. This gap of four times between the richest and the poorest large state in India is among the highest in the world. This also has implication on their access to basic goods such as quality education, health or justice because of uneven distribution of income.

For the purpose of our study, we assess the performance of states in ensuring access to basic social and economic services (including access to basic health care, education, credit or financial services, water and sanitation facilities and access to justice-law enforcing institutions) that help

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<sup>9</sup> Human Development Report 2016, UNDP

<sup>10</sup> Hassan.R.2017. "India's rising inequality is taking the shine off its growth story even in the world's eyes", *Yale Global Online*

<sup>11</sup> India's 54 per cent wealth controlled by millionaires, most unequal country after Russia: Report, New World Wealth, <https://indianexpress.com/article/india/india-news-india/indias-54-per-cent-wealth-controlled-by-millionaires-most-unequal-country-after-russia-report-3013286/>

<sup>12</sup> OXFAM. (2018). "Reward Work, Not Wealth", Oxfam India, Available at [https://d1tn3vj7xz9fdh.cloudfront.net/s3fs-public/file\\_attachments/bp-reward-work-not-wealth-220118-en.pdf](https://d1tn3vj7xz9fdh.cloudfront.net/s3fs-public/file_attachments/bp-reward-work-not-wealth-220118-en.pdf)

<sup>13</sup> Alverdo.F, Chancel.L,Piketty.T., Saez.E.,and Zucman.G. (2018). "World Inequality Report, Available at <https://wir2018.wid.world/files/download/wir2018-summary-english.pdf>

<sup>14</sup> Chakravarty.P. and Dehejia.V.(2016). "The Gap Between Rich and Poor state", *The Hindu*, <https://www.thehindu.com/todays-paper/tp-opinion/The-gap-between-rich-and-poor-States/article14624599.ece>

in further minimizing levels of unequal opportunities for citizens residing within the identified states.

In this effort, we theoretically use a Mini-Max approach (inverse to the Maxi-Min utilitarian principle) in understanding the relative dimensions of social and economic inequality present across states in India. The Mini-Max approach emphasizes the need to understand minimum access to basic social services calculated either in terms of population (using the number of people as a denomination to ensure access) or in terms of spatial proximity (geographical access-nearby distance), across states in India. The objective of using such a concept is to promote minimum access to some identified social and economic services that enable people (across states) to develop capabilities which are instrumental towards the minimization of their well-being over a period of time.

The five fundamental pillars constituting as basic services to be safeguarded and provided by agencies of the state include:

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- e) Access to Justice (Public Institutions of law enforcement).

In terms of methodology, we use a principle component analysis for deriving the index values as further explained in the section below. The states<sup>15</sup> based on index value have been classified as leaders, above average performing states, average performing states, below average performing states and least performing states. The classification acts as a scorecard for the persistence of inequality in the Indian states and will draw the attention of policymakers towards states that lag behind in the implementation of the various policies and reforms. The objective of the rankings is to provide geospatial standards of access.

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<sup>15</sup> We have ranked 29 states and Delhi across the pillars. Due to lack of data, Arunachal Pradesh and Tripura have been dropped from the Health pillar. The ASFP states (explained in access to justice pillar section) and Telangana (due of lack of data) has been dropped from the access to Justice pillar.



The index aims to influence the design of reforms by identifying and suggesting specifically where the state is lagging behind and what needs to be changed. Such a ranking also enables states to identify their counterparts who have successfully created a more progress in terms of providing services within near proximity and then reach out to them to learn directly from their peers. Such an index would create the political will for state governments to invest in more of such services and also foster competition between states as they vie for the top spot in the rankings.

### 1.3 Index Pillars and Rationale

States are scored on each of the above mentioned five pillars which are ranked based on their performance on sub-indicators chosen within each pillar.

**Figure 1.3.1: Five Pillars of the Social Equality Index**



In the enhancement of human capabilities access to each of the identified services remain critical. For the least developed section of the society, the proximity of a service matters much more since increasing cost in terms of expenditure on travel for availing any service is a huge factor when it comes to determining whether to avail the service or defer it or forego it altogether. Designing of a policy framework by the government to counter increasing inequality of outcomes will fail to serve its purpose if they cannot ensure more equal access to high-quality education, health care,

### **Box 1.3.1 Rationale behind Pillars**

**Education** is one of the most important national objectives and was hence been made a fundamental right (Article 21A) to obtain education for all children between the age group of 6 and 14. Better access to education has strong forward linkages, as it leads to diverse job opportunities and a prospect to escape the vicious circle of poverty for the marginalized section. This, in turn, would lead to a steady increase in wages and productivity and thus have varied ancillary effects. With the laudable improvement in the enrolment ratio in schools at primary school level; the focus now should be to improve the quality of education provided and high dropout rate between primary and secondary school. Focusing on improving the condition of our public schools, especially in the rural areas is the need of the hour.

and infrastructure to all social groups and across regions.<sup>16</sup>

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<sup>16</sup> Report on the OECD framework for Inclusive Growth (2014)

**Healthcare facilities** in India are in a dilapidated state and it has been reflective in the representative health indicators. Critics have argued that the increasing budgetary allocations for healthcare should be one of the key priorities for the policymakers as it has remained stagnant for a prolonged period. The new flagship National Health Protection Scheme, providing a health insurance covers of ₹5 lakhs a family per annum is a welcome step in this regard. Creation of health and wellness centres has also been proposed by the government, which will “bring health care closer to home”. This progress towards universal health coverage will have umpteen social as well as long term economic benefits.

**Access to basic amenities** has been one of the key focuses of policymakers and has picked up the pace in the last few years. Basic amenities including sanitation and water facility (within or near premises) are essential to improve the health status of the members. Poor and socially deprived classes have less probability of having access to the basic amenities such as drinking water and proper sanitation and electricity etc. Universal and comprehensive access to basic improved amenities will ensure overall improvement in economic and social outcomes.

**Financial inclusion and access to better financial infrastructure** act as a stepping stone for better economic stability. To counter inequality, the poorer or individuals engaged predominantly in the agriculture sector should have decent access to formal banking and credit facilities to bring them out of the shackles of informal money-lenders. Access to finance and credit will ensure that all the sections of the society have access to equal opportunities and prospects. Financial inclusion can be spread faster if there is a sharper focus on enhancing branch and credit penetration amongst all states across India.

**Improvement in the access to social justice** is an inevitable component of overall equality as it is one of the basic human rights of an individual. One of the primary responsibilities of the State is to safeguard the justice system. Heterogeneity and a complex hierarchical social structure in India make the right to justice an even more predominant factor for the idea of equality to perpetuate. Overburdening of our courts with case load and proportionately lesser disposal rate is a cause of major concern. Kapur (2017) has argued that it is weak that need strong public institutions since the strong will always be able to buy their way, like avail police protection etc. Strengthening state capacities requires urgent attention as almost all of India’s governance problems can find links to the lack of manpower in state services (State capacity freed is state capacity built, Livemint 2017).

Below, we offer a detailed assessment of relative dimensions of state-level inequality through access to social and economic services (discussed above).

## **2. Methodology and data**

The study uses principle component analysis for deriving the index values. PCA is a multivariate method of analysis that has been widely used for large multidimensional data sets (as explained in

Appendix 1). It is a mathematical procedure that transforms a number of (possibly) correlated variables into a (smaller) number of uncorrelated variables called principal components. Principal components reflect both common and unique variance of the variables and may be seen as a variance-focused approach seeking to reproduce both the total variable variance with all components and to reproduce the correlations.

- The PCA has the advantage of using normalised data, which allows us to compare otherwise incomparable states– for example, due to their differences in a geographical area or varying population densities.
- The PCA attributes weights automatically in an objective manner. This method is preferable for our study of state comparisons since the PCA helps in attributing the largest factor loadings to the sub-indicators that have the largest variation across states.

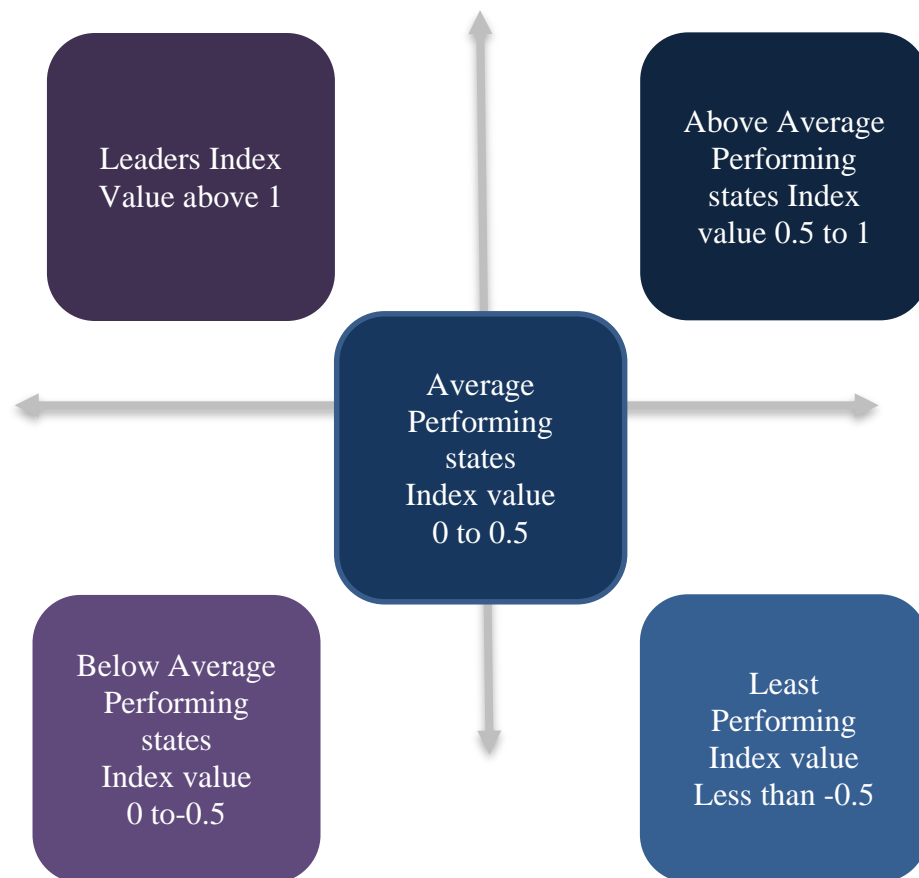
Most composite indicators rely on equal weights by which each variable has the same importance. When considering indicators that reflect a more complex concept, however, weights often need to be altered so that those variables that have a greater influence are given more importance in the measurements. The PCA computes the weights automatically but with this method, they do not reflect the importance of the variable. In PCA, the weights are utilised to minimise the impact of very strongly correlated variables in an attempt to correct for overlapping information. This ensures that when comparing the States, the data that explains the differences i.e. the most varied data is given more importance.

The use of PCA allows the number of variables in a multivariate data set to be transformed into a set of orthogonal variables, such that the first transformed variable, known as the first principal component, explains the maximum percentage of variation of the original data-set. The likelihood that the first PC explains is that, a greater percentage of variation of the original data-set increases if the number of variables is small in number. This is the reason for using multistage PCA, where a smaller number of variables for sub-indices is integrated to construct a higher order index. Using the method mentioned above, we have quantified the social inequality status of different states of India which allows us to rank the states with regard to their relative positions. However, because of missing data, we have limited our analysis to rank sub-indicators and not provide a composite

ranking for the states. We have not included Jammu and Kashmir and Union territories except Delhi in our rankings.

The sub-indicators value derived through the PCA has a mean of 0 and a standard deviation of 1. This being the case, the states have been divided into 5 levels. The states have been classified in terms of their inequality on the basis of index value as follows:

**Figure 2.1: Different Levels of Classifications**



For each of our pillars we have classified states based on these five levels and a ‘qualitative’ assessment of the geospatial standard of access has been provided through pillar wise rankings. These state rankings are subject to certain admonitions and it is important to take note of nuances of what these ranking does and does not reflect. *Firstly*, the rankings give a clear understanding of the state of states in terms of geographical access and availability of services in various aspects but don’t say anything about the status of overall service in the state. For example, although Kerala performs very well in education and has perfect literacy rate, it might not be the best performing state in providing uniform access to all. *Secondly*, the analysis does not give an understanding of the intra state variation of access to services. A qualitative extension of the study can be undertaken in the future to derive inferences about the delivery mechanism of the distribution of services in India.

## **2.1 Data**

The study has relied extensively on various government data sources including data from Census (2011), Reserve Bank of India (RBI), Bureau of Police Research and Development (BPRD), National Health Rural Mission (NHRM), National Sample Survey (NSS). See Appendix 2 for more details.

### **Box 2.1 Data Limitations**

Paucity or unavailability of frequently updated data is an enormous hindrance in formulating a contemporary set of state rankings. This is especially true in the case of the pillar - access to basic amenities, where the most recent data about the status of households is available from Census 2011. Certain states might have improved the condition of access to services since then, but it is difficult to say the same with backing from more recent data. Wherever possible, the variables included have been abetted with variables with more recent data. Except for Delhi, the other Union territories have not been studied because of unavailability of data. The section below provides a comprehensive understanding of the state's performance within each of the pillars.

## **3 Rankings within the Pillars**

### **3.1 Access to Basic Amenities (Drinking water and sanitation facility)**

Despite massive outlays for drinking water and sanitation in India, access to safe drinking water remains a challenge. Institutional challenges in rural and urban drinking water and sanitation remain a major hurdle. Access to safe drinking water was declared as a human right by the United Nations but remains a challenge for India. India has the maximum number of people, 63 million, living in rural areas without access to clean water, according to a new global report released to mark World Water Day in 2017<sup>17</sup>.

Besides, roughly half of the rural population is estimated to lack proper access to sanitation. This has attracted more attention in India over the past few years under the Swachh Bharat Mission (Clean India Mission). Launched in 2014, this project seeks to make the country free of “open defecation” – the practice of defecating outside – by 2019. An assessment of how unequal the states do in terms of access to basic amenities; drinking water and sanitation is addressed by this pillar.

Under this pillar, four indicators were chosen to rank the states. These include:

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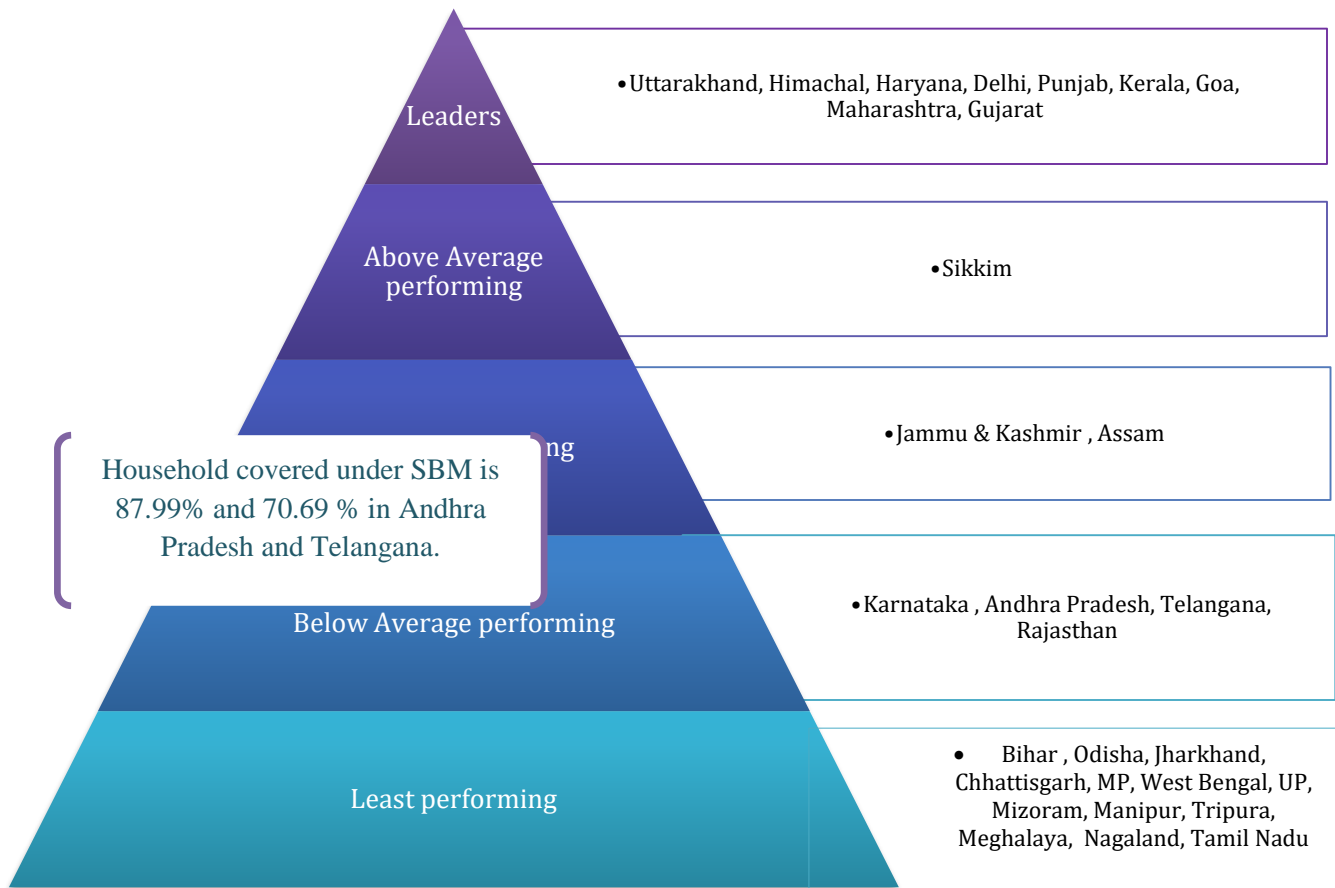
<sup>17</sup> Water Aid India Report (2017). “Wild Water: state of world water 2017”, Available at <http://wateraidindia.in/publication/wild-water-state-worlds-water-2017/>

- Percentage of a household having access to the main source of drinking water (Tap water from treated source)
- Location of drinking water source: within the premise
- Location of drinking water source near premise
- Swacchh Bharat Mission(SBM) Individual Household Latrine (IHL) facility

Figure 3.1.1 depicts that Uttarakhand, Himachal, Haryana, Delhi, Punjab, Kerala, Goa, Maharashtra, Gujarat are leaders in terms of providing access to water and sanitation facility to its people. According to census 2011, on an average, only 38.6% of households in India have access to drinking water from the treated source. 55.9 % households of Haryana and 44.1 % of Punjab's population have access to drinking water from treated source as compared to some of the below performing and least performing states. Similarly, almost 85.9 % of households in Punjab have drinking water facilities available within premise as compared to other states in India. Under the Swachh Bharat Mission (Grameen), sanitation coverage has been recorded 100 percent for states like Delhi, Kerala, Uttarakhand, Sikkim, and Rajasthan.

**Figure 3.1.1 Access to Basic Amenities: Ranking of states in terms of different levels**





Sikkim followed by Jammu & Kashmir and Assam are above average performing and average performing states respectively. About 52.6% of households in Sikkim have drinking water available within premises with sanitation coverage of 100 %. Assam compared to other below average and least performing states perform better in providing access to drinking water facility within premise to its household. On the other hand; Karnataka, Andhra Pradesh, Telangana, and Rajasthan are below average performing states. The least performing states consist primarily of north-eastern, eastern and BIMARU states of India. Madhya Pradesh and Chhattisgarh too are least achievers.

According to census 2011 data, the drinking water available to households from the treated source in Andhra Pradesh, Karnataka though higher than the all Indian average is relatively low compared to above average performing states. In terms of drinking water available within the premise, only

36 % of households in Andhra Pradesh, 44.5 % in Karnataka and 34.9% in Tamil Nadu have access to services, with the national average being 50.7 % for India. Households in Madhya Pradesh and Chhattisgarh, on the other hand, have very low access to drinking water from the treated source and drinking water available within the premise. Under SBM, only 53.6% households in Odisha, 63.4 % households in Uttar Pradesh and 54.7 % households in Bihar has been covered under the program. The northeastern states like Tripura, Mizoram, Meghalaya, Nagaland, Manipur though has better coverage under SBM program, their performance across all the other indicators are relatively poor. The drinking water available to the households from treated source range from 6.1% in Nagaland to 39.4 % in Mizoram.

### **3.2 Access to Education**

Following the rolling out of the Right of Children to Free and Compulsory Education Act in 2009, which set the path towards universalisation of elementary education in India, the enrolment in elementary schools has improved drastically. Better enrolment ratio in elementary schools, improved literacy rate, amongst both men and women and across all classes of the society has now become the norm across India. But there are still numerous problems in the education sector which calls for immediate attention. High dropout rate between elementary and secondary classes can be resolved by focusing on secondary education as much as in the elementary education.

To capture the trend amongst states in terms of secondary education, we emphasise on indicators reflecting the proximity of schools from households, the overall enrolment ratio, and the ratio of teachers to students and to add an element of tertiary education, the enrolment in colleges and universities.

- Secondary schools at a distance of less than 2 km
- Gross Enrolment Ratio in secondary education
- Gross Enrolment Ratio in tertiary education
- Pupil -Teacher Ratio in secondary schools

Figure 3.2.1 depicts the hierarchical standing of all the major states in India in terms of access to secondary as well as tertiary education. As would have been anticipated, states such as Kerala, Himachal Pradesh, Goa and Delhi which have a higher literacy rate perform better in secondary and tertiary education as well. In general, peninsular states with an exception of Andhra Pradesh outperform the ones in the hinterland in access to secondary education. Although, it should be noted here that in terms of overall literacy rate the trend is that there is clear demarcation between the northern and the southern states. The quintessentially worse-off states such as Jharkhand, Bihar, and Chhattisgarh etc. perform badly in secondary education, even though the enrolment ratio has been more than satisfactory.

Distance to school is an important determinant of the most persecuted section of the society. It is a major concern especially for better enrolment and continued education of girl child. The proximity of secondary schools is well above average in states like Delhi, Haryana, Punjab and really lagging behind in states like Bihar, Madhya Pradesh and hilly states of Himachal Pradesh and Uttarakhand. Gross Enrolment in secondary as well as tertiary education follows the anticipated trend amongst states. There is a strong positive correlation between them as the states which performed well in secondary education did well in terms of tertiary education as well.

On an average across India, 72% of the schools are located at a distance of less than 2 km

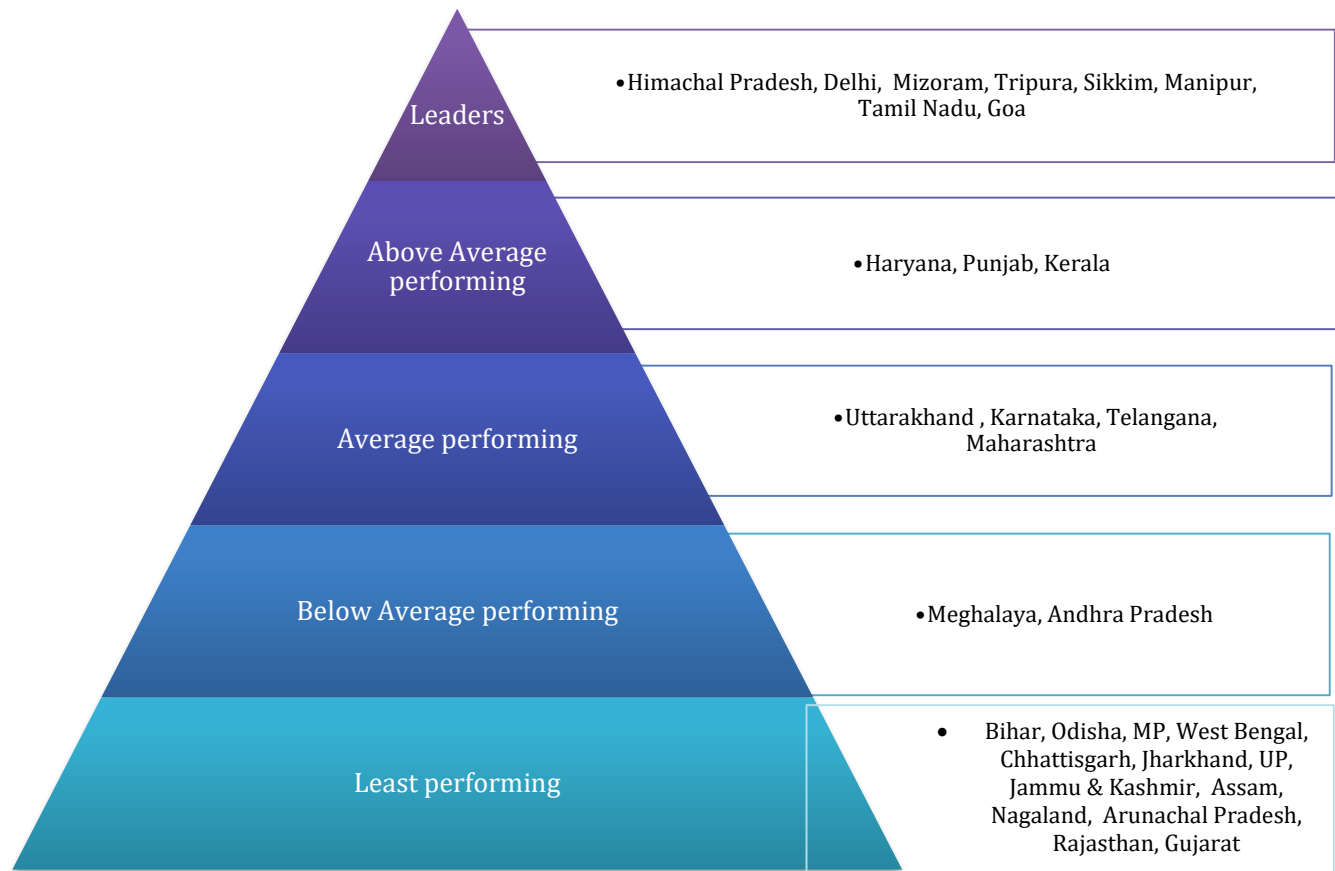
According to National Sample Survey (NSS) 71<sup>st</sup> round, of the 1000 schools, 973 secondary schools in Delhi and 843 schools in Mizoram are located at less than 2km distance, with lowest in

The enrolment in tertiary education is highest in Delhi and Tamil Nadu with 45.36 and 44.32 respectively.

Arunachal Pradesh being 441. However, the number of secondary schools in above average and average performing states ranges between 650-850 schools.

Similarly, the Gross enrolment ratio in leading states is as high as 120 with least performing states having an enrolment rate of 66.8. Sikkim tops the enrolment in secondary education, followed by Mizoram, Himachal Pradesh, Goa, and Tripura. Kerala, on the other hand, has an enrolment ratio of 103. While the average performing states like Maharashtra has enrolment rate of 89.9 followed by Uttarakhand (85.72), Karnataka (83.22) and Telangana (82.53). All the BIMARU states, on the other hand, have an enrolment ratio below the all India average level of 25.53.

**Figure 3.2.1 Access to Education: Ranking of states in terms of different levels**



Pupil-Teacher Ratio is an indirect indicator which tells about how well the teachers are able to attend to the students. A high *pupil-teacher ratio* suggests that each *teacher* has to be responsible for a large number of *pupils*. In other words, the higher the *pupil/teacher ratio*, the lower the relative access of *pupils* to *teachers*. As per Unified District Information System for Education (UDISE) the PTR at a national level for elementary schools, is 24:1 and for secondary schools it is 27:1<sup>18</sup>. The PTR in most of the States and UTs is found to be satisfactory except for Bihar, Jharkhand and Uttar Pradesh, where the ratio lingers around 70:1.

The present state of education in India reflects that the government expenditure on education in India is a major blockade which needs to be addressed. According to the Kothari Commission (1964), the recommended allocation in education should be around 6 % of GDP, a policy

<sup>18</sup> Press Information Bureau (PIB). (2017). Government of India Ministry of Human Resource Development, <http://pib.nic.in/newsite/PrintRelease.aspx?relid=158326>

recommendation endorsed by the National Policy of Education, two decades later in 1986<sup>19</sup>. But the overall expenditure in India still looms between 2-3%. Concurrently with the focus on budgetary allocations on education, the quality of education imparted to students, both in primary and secondary classes should be scrutinized and developed for better educational outcomes. According to the budget documents of the state governments, Delhi, Chhattisgarh, Madhya Pradesh and hilly states have consistently made more expenditure in education in comparison to other states. Incessant expenditure on education showcases states' stand on prioritization of education and will reap long-term benefits.

### **3.3 Access to Basic Healthcare Service**

Ensuring healthcare access can't be overstated for a developing country like India. Apart from direct linkages to the well-being of the population, access to health care services enhances productivity capacities, thereby ensuring economic growth of the country. Despite, the consensus among political circle and academic literature, successive governments have failed to address India's healthcare needs for the vast majority of its population. Inadequacies in healthcare infrastructure, dismal health-care expenditure, lack of awareness and monitoring of diseases are some of the issues that the country faces. Universal access and affordable health care will not just address the country's health needs but also have a positive impact on poverty and growth levels. A state level assessment in this regards in necessary.

To capture the trend amongst states, we captured the following indicators:

- Per capita availability of hospital beds
- Per capita availability of doctors in government hospitals
- Per capita availability of Referral transport
- Per capita blood banks
- Per capita availability of sub-divisional and district hospital in India

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<sup>19</sup> Tilak. J. (2007). "The Kothari Commission and Financing of Education", *Economic and Political Weekly* Vol. 42, No. 10 (Mar. 10-16, 2007), pp. 874-882

- Percentage of children fully immunized

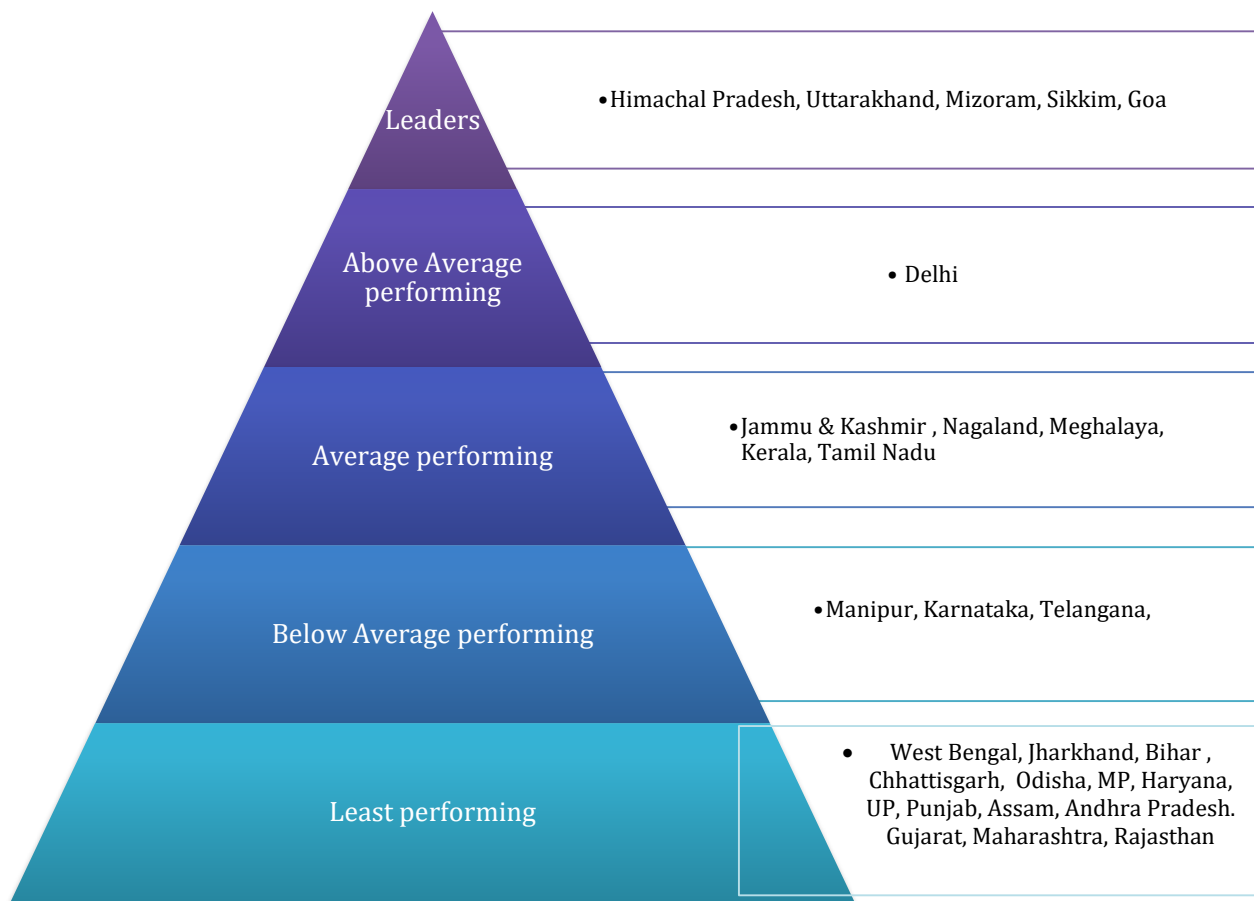
The leaders in providing basic health care services include Himachal Pradesh, Uttarakhand, Mizoram, Sikkim, and Goa. While in Goa and Sikkim about 88.4% and 83% of the children have received the vaccination, with the national average being 91.3%. Delhi, the above performing state has about 24,000 hospital beds to serve its 1 crore population<sup>20</sup> (as per census data). The availability of government doctor is also fairly decent compared and per capita availability of sub-district hospital in Delhi is 3.3 with national average being 4.6. Jammu and Kashmir, Nagaland, Meghalaya, Kerala and Tamil Nadu have been categorized as average performing state. The per capita availability of hospital beds in these states range between as low as 0.08% in Tamil Nadu to as high as 0.11% in Kerala. Similarly the availability of doctors varies from 0.01% in Tamil Nadu to 0.03% in Jammu and Kashmir. About 82% of the children have been covered under vaccination program in Kerala, however, only 35.7% of children have received the vaccination in Nagaland, under the Immunisation program. On, per capita availability of blood bank, Kerala, and Tamil Nadu are doing fairly well with most of the leaders and above average performing state. Tamil Nadu also has better referral transport system compared to other states, with Maharashtra performing the best on this indicator.

**Figure 3.3.1 Access to Basic Healthcare Service: Ranking of states in terms of different levels**

The per capita availability of Government doctors is highest in Himachal Pradesh.

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<sup>20</sup> Note population data is taken from census 2011.



Manipur, Karnataka and Telangana, the below performing state has abysmally low availability of per capita sub-district hospital. On an average, these three states together have only 65.5 % of the children covered has received the vaccination. While per capita availability of blood banks and referral transport in Telangana and Karnataka is fairly decent, the per capita availability of doctors in both these state is 0.01%. Maharashtra, on the other hand, is categorized as the least performing state. The state has only provided vaccination to only 56.3% of the children. The per capita availability of hospital beds is 0.04% and only 0.01% of government doctors are available to serve the population. Similarly, availability of government doctors and hospital beds are major concerns in these states including Andhra Pradesh and Punjab. BIMARU states performance across the indicators are not satisfactory. Availability of referral transport and blood banks are extremely unsatisfactorily in some of these states. Assam, Gujarat and Uttar Pradesh have very low coverage of immunization of children.

These variations across the state call for a rethinking of the policies and expenditures on health care services across the states.

### 3.4 Access to Financial services

Despite India boasting higher economic growth, a vast majority of the country's population still remains unbanked or has low access to financial services such as ATM. The global trend shows that in order to achieve inclusive development and growth, the expansion of financial service is of utmost importance. Under this pillar, three indicators were chosen to rank the states. These include:

- Percentage of household availing banking services
- Per capita availability of ATM and
- Number of Schedule and Commercial Bank (SCB) accounts per capita.

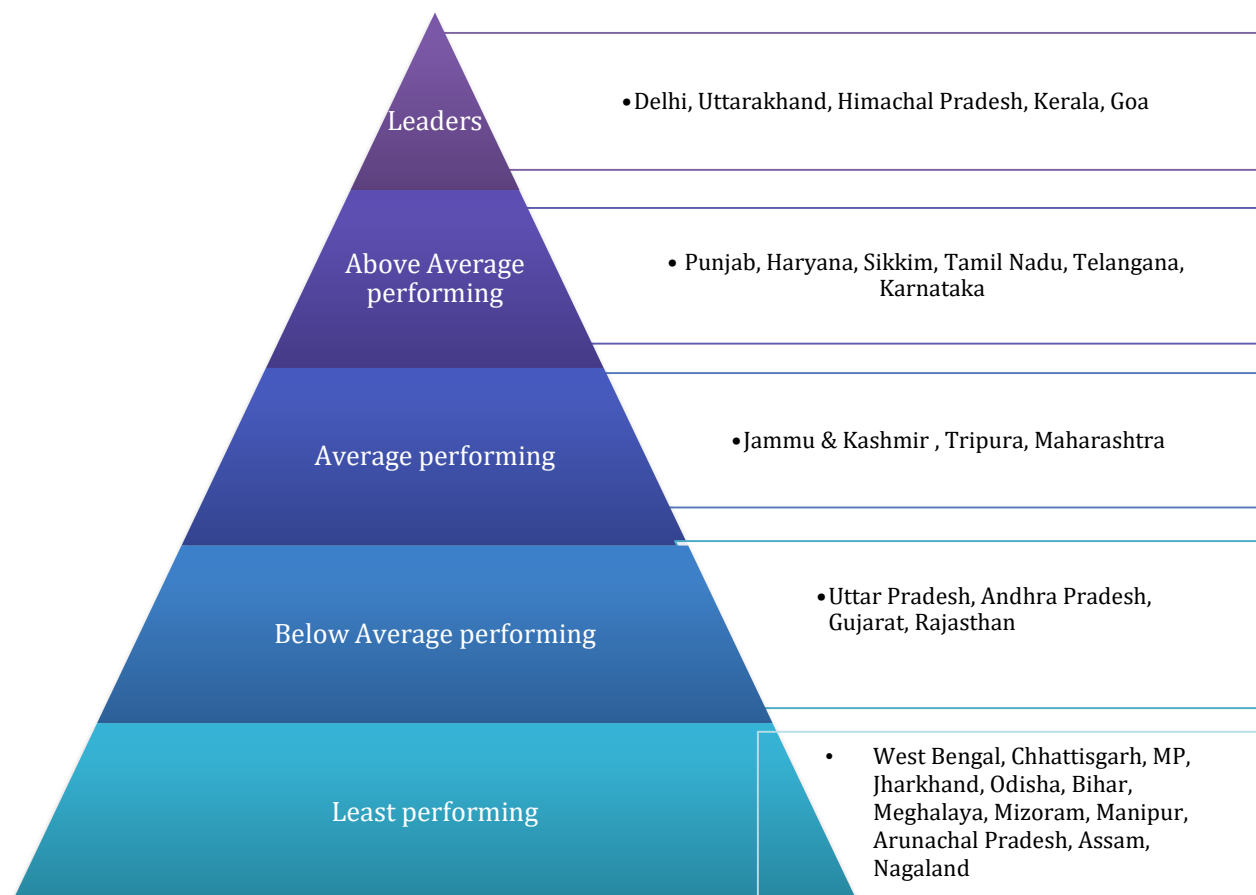
Figure 3.4.1 depicts the hierarchical pyramid. The one that performs the best is Delhi, Uttarakhand, Himachal Pradesh, Kerala, and Goa. In Himachal Pradesh and Uttarakhand, the household availing banking services are 89.1% and 80.7 % respectively.

In terms of per capita ATM and per capita SCB accounts, Goa performs the best

Punjab, Haryana, Sikkim, Karnataka, Telangana, Tamil Nadu are above performing states and Maharashtra, Tripura and Jammu & Kashmir are average performing states. The household availing banking services in Punjab (65.2%), Haryana (68.1%), Sikkim (67.5%) and Tripura (79.2%) is relatively higher compared to below average and least achiever states. Similarly, the per capita ATM and SCB accounts are relatively high in Haryana, Punjab, and Sikkim as compared to Gujarat, Uttar Pradesh and Rajasthan.



**Figure 3.4.1 Access to Financial Services: Ranking of states in terms of different levels**



On the other end of the spectrum, below average (Andhra Pradesh, Gujarat, Uttar Pradesh, Rajasthan) and least performing states consist primarily of north-eastern, eastern and northern states of India. Madhya Pradesh and Chhattisgarh on the other hand also are least achievers. Both in Andhra Pradesh and Gujarat household availing banking services are below the all India average level of 58.7 % according to census 2011 data. Similarly, Chhattisgarh and Madhya Pradesh have extremely low access of banking services by households; 48.8% and 46.6 %.

### **3.5 Access to Justice (Institutional presence of Police personnel and judges)**

One of the basic features strengthening the social contract between any government and citizen

remains rooted in the government's capacity to ensure an environment of safety and protection for all citizens. In terms of access to basic law and order establishment (i.e. the police force) while

As per BPR&D statistics, there are around 273 police stations without a single police vehicle for transport; around 267 without telephone lines and 129 without wireless sets; while, 51 of overall police stations neither have a telephone line nor wireless sets available

instances of rising crime continue to be reported, what remains often understated is the limited availability of police force within/across states to address citizen needs. The police-to-population ratio (according to BPR&D) must be around 222 police personnel for one lakh citizens, whereas, in India, this ratio is 151<sup>21</sup>.

Further, poor state-level funding for developing policing infrastructure adds to the concerns of low police (wo) men available. Many police stations lack basic utilities of vehicles, phones, and wireless communication.

In the case of resolving legal disputes, the need for a higher number of judges to resolve pending judicial cases (across different levels) continues to rise further. According to T.S. Thakur<sup>22</sup>(an earlier Chief Justice of India (CJI)), at a national level, courts require more than 70,000 judges to clear pending cases. In terms of judges-per ten lakh population ratio, there are 18 judges<sup>23</sup> per 10 lakh people as compared to a ratio of 50 to 10 lakh people, as recommended by the Law Commission in an earlier report.

To understand the disparity across states, under this pillar three indicators were chosen.

- The ratio of pending cases resolved
- Police per lakh population
- Judges per lakh population

<sup>21</sup>Harrendorf.S., Heiskanen.M. and Malby.S.(2010). "International Statistics on Crime and Justice", HEUNI Publication Series No. 64. Available at [https://www.unodc.org/documents/data-and-analysis/Crime-statistics/International\\_Statistics\\_on\\_Crime\\_and\\_Justice.pdf](https://www.unodc.org/documents/data-and-analysis/Crime-statistics/International_Statistics_on_Crime_and_Justice.pdf)

<sup>22</sup>Kumar.P.A. (2016). "How many judges does India really need?," *Live Mint* <https://www.livemint.com/Politics/3B97SMGhseobYhZ6qpAYoN/How-many-judges-does-India-really-need.html>

<sup>23</sup>PTI (2016). "India has 8 judges per 10 lakh people , *Live Mint* <https://www.livemint.com/Politics/DuH5FJ8MHUh3btmVrCT9NP/India-has-18-judges-per-10-lakh-people.html>

The ranking under this pillar does not take into account the AFSPA states and Jammu Kashmir. This is because of deployment of policeman per lakh population is higher because of the state categorized under *Armed Forces (Special Powers) Acts (AFSPA)*. In order to give a realistic sense of inequality (in terms of access to justice), present in other states of India, AFSPA states have been dropped. Because of unavailability of data on Telangana we have dropped the state under this pillar ranking.

Figure 3.5.1 depicts that the leaders under access to justice are Delhi, Sikkim, Mizoram, Tripura<sup>24</sup>, and Goa. The deployment of police in Sikkim and Mizoram is as high as 822 and 702 per lakh population. The percentage of pending cases resolved in these states is relatively high compared to other states categorized in different levels<sup>25</sup>. The working strength of judges in Delhi is 482 (as against 838 recommended by CJI). Similarly, for Goa is 43 (73), Himachal Pradesh is 148 (343) and Uttarakhand is 230 (506).

On the other hand, states like Punjab, Haryana, Himachal Pradesh, Uttarakhand, Meghalaya<sup>26</sup> has showcased average performance under this pillar. Approximately 99.35 % pending cases in Himachal Pradesh and 99.1 % case in Uttarakhand has been resolved in 2017. The below average performing states include Madhya Pradesh, Chhattisgarh, Tamil Nadu, Karnataka, Kerala, Maharashtra, Rajasthan . Maharashtra and Chhattisgarh have resolved 98.18% and 98.53 % cases respectively. Additionally, the police per lakh population available in Maharashtra are 186.5 and 228.6 in Chhattisgarh. Though the numbers are low, the states perform better in comparison to below achievers and least achievers states.

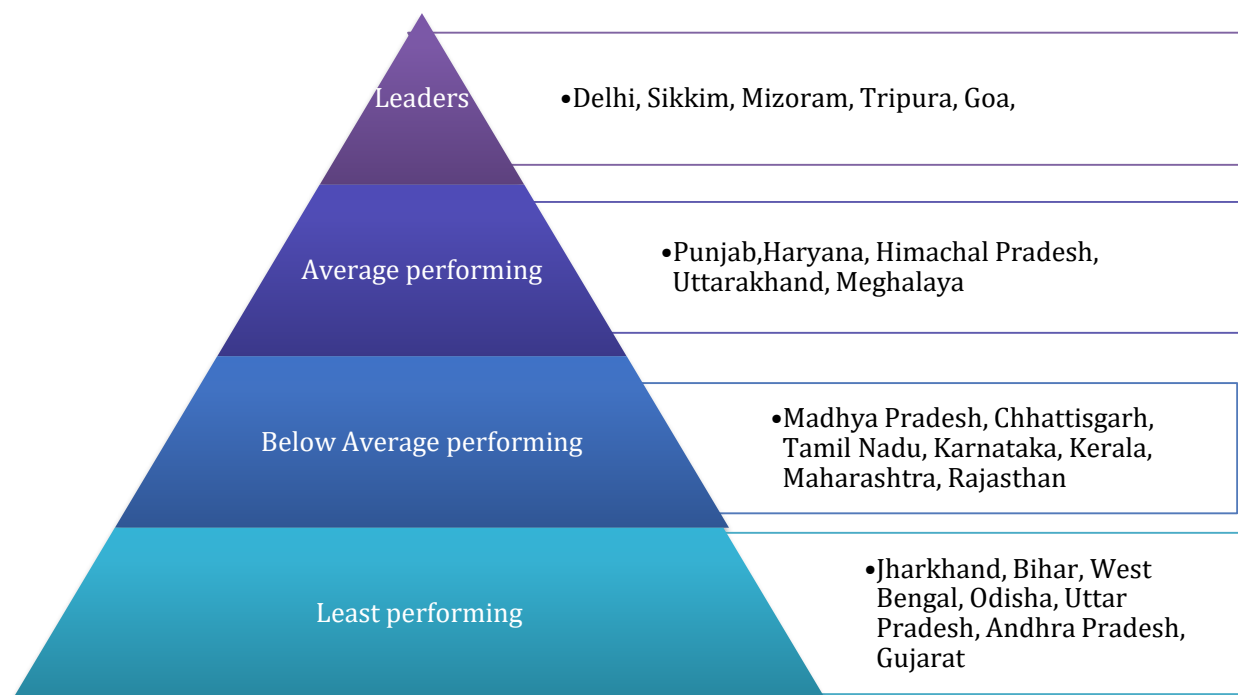
### **Figure 3.5.1 Access to Justice (Institutional presence of Police personnel and judges)**

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<sup>24</sup> AFSPA removed from Tripura in 2015.

<sup>25</sup> Note : On the basis of the levels categorized, this indicator doesn't have above average performing states.

<sup>26</sup> AFSPA removed from Meghalaya in 2017



The police per lakh population in these states are relatively low compared to leader states and above average achiever states, with the availability of police in Tamil Nadu being 184.2 followed by Kerala (174.1), Karnataka (145.1), MP (125.4), and Rajasthan (121.7). The ratio of pending cases resolved is lowest in Gujarat; 98.04 and the state has 120.2 policemen available to cater to the need of the population. The judges per capita are also low in these states with Tamil Nadu having a shortage of 2699 judges followed by Karnataka, Gujarat, and Kerala with 2081, 1898, 1219 as recommended by CJI. The availability of Police per lakh population in Andhra Pradesh is extremely low with 95.4 police personnel available. Similarly, Andhra Pradesh (including Telangana) lacks 3314 judges to meet the need of its population.

#### 4. Composite Ranking

The pillar wise ranking explained in the section above provides an in-depth analysis of how some states are successfully providing services to its population and within geographical proximities. However, there are laggard states whose performance is not at par with the leaders and above average performing states. This section provides a comprehensive analysis on how states have performed across the entire five pillars. Though the section doesn't rank states, but from Table

4.1.1 and Table 4.1.2 an understanding can be built that provide a composite view of states performance across the five pillars.

**Table 4.1.2 States' Social Equality Index Levels**

<b>State/ Level</b>	<b>Access to Basic Amenities</b>	<b>Access to Education</b>	<b>Access to Basic Healthcare</b>	<b>Access to Finance</b>	<b>Access to Justice</b>
<b>Andhra Pradesh</b>	4	4	5	4	5
<b>Arunachal Pradesh</b>	4	5	-	5	-
<b>Assam</b>	3	5	5	5	-
<b>Bihar</b>	5	5	5	5	5
<b>Chhattisgarh</b>	5	5	5	5	4
<b>Delhi</b>	1	1	2	1	1
<b>Goa</b>	1	1	1	1	1
<b>Gujarat</b>	1	5	5	4	5
<b>Haryana</b>	1	2	5	2	3
<b>Himachal Pradesh</b>	1	1	1	1	3
<b>Jammu &amp; Kashmir</b>	3	5	3	3	-
<b>Jharkhand</b>	5	5	5	5	5
<b>Karnataka</b>	4	3	4	2	4
<b>Kerala</b>	1	2	4	1	4
<b>Madhya Pradesh</b>	5	5	5	5	4
<b>Maharashtra</b>	1	3	5	3	4
<b>Manipur</b>	5	1	5	5	
<b>Meghalaya</b>	5	4	3	5	3

<b>Mizoram</b>	5	1	1	5	1
<b>Nagaland</b>	5	5	2	5	-
<b>Odisha</b>	5	5	5	5	5
<b>Punjab</b>	1	2	5	2	3
<b>Rajasthan</b>	4	5	5	4	4
<b>Sikkim</b>	2	1	1	2	1
<b>Tamil Nadu</b>	5	1	3	2	4
<b>Telangana</b>	4	3	4	2	-
<b>Tripura</b>	5	1	-	3	1
<b>Uttar Pradesh</b>	5	5	5	4	5
<b>Uttarakhand</b>	1	3	1	1	3
<b>West Bengal</b>	5	5	5	5	5

Himachal Pradesh, Uttarakhand, Delhi, and Goa are four states whose performance throughout the pillars has been satisfactory. The least achiever and below average performing states are more or less the same across all the pillars including Jharkhand, Bihar, and West Bengal, Uttar Pradesh, Chhattisgarh and Madhya Pradesh. Amongst the southern states, Kerala is a leader in providing basic amenities and financial and credit services. Andhra Pradesh on the other hand in all the pillars is been classified either as below average performing or least performing state. There is variation in the ranking of other southern states across the pillars. Similarly, Maharashtra performance varies across the pillar. While it is categorized as a leader in providing basic amenities, it is the least performing state in access to health care services.

**Table 4.1.2 Assessment of states Social Equality Index**

<b>Indicator</b>	<b>Level 1 (Leaders)</b>	<b>Level 2 (Above Average Performing states)</b>	<b>Level 3 (Average Performing states)</b>	<b>Level 4 (Below Average Performing states)</b>	<b>Level 5 (Least Performing states)</b>
Access to Basic Amenities	Uttarakhand, Himachal, Haryana, Delhi, Punjab, Kerala, Goa, Maharashtra, Gujarat	Sikkim	Jammu & Kashmir Assam	Karnataka, Andhra Pradesh, Telangana, Rajasthan	Bihar, Odisha, Jharkhand, Chhattisgarh, MP, West Bengal, UP, Mizoram, Manipur, Tripura, Meghalaya, Nagaland, Tamil Nadu
Access to Education	Himachal Pradesh, Delhi, Mizoram, Tripura, Sikkim, Manipur, Tamil Nadu, Goa	Haryana, Punjab, Kerala	Uttarakhand, Karnataka, Telangana, Maharashtra	Meghalaya, Andhra Pradesh	Bihar, Odisha, MP, West Bengal, Chhattisgarh, Jharkhand, UP, Jammu & Kashmir, Assam, Nagaland, Arunachal Pradesh, Rajasthan, Gujarat

Access to Health care services	Himachal Pradesh, Uttarakhand, Mizoram, Sikkim, Goa	Delhi, Nagaland	Jammu & Kashmir, Meghalaya, Tamil Nadu	Karnataka, Telangana, Kerala	Jharkhand, Bihar, MP, Chhattisgarh, Odisha, West Bengal, UP, Haryana, Punjab, Manipur, Assam, Andhra Pradesh. Gujarat, Maharashtra, Rajasthan
Access to Financial Service	Delhi, Uttarakhand, Himachal Pradesh, Kerala, Goa	Punjab, Haryana, Sikkim, Tamil Nadu, Telangana, Karnataka	Jammu & Kashmir, Tripura, Maharashtra	Uttar Pradesh, Andhra Pradesh, Gujarat, Rajasthan	West Bengal, Chhattisgarh, MP, Jharkhand, Odisha, Bihar, Meghalaya, Mizoram, Manipur, Arunachal Pradesh, Assam, Nagaland
Access to Justice	Delhi, Sikkim, Mizoram, Tripura, Goa		Punjab, Haryana, Himachal Pradesh, Uttarakhand, Meghalaya	MP, Chhattisgarh, Tamil Nadu, Karnataka, Kerala, Maharashtra, Rajasthan	Jharkhand, Bihar, West Bengal, Odisha, Uttar Pradesh, Andhra Pradesh, Gujarat



## 5. Further Research for Thought

The variation in the states rankings and classification especially the state whose performance is below average is reflective of inadequacies in state government policies and budget allocation. Though there has been a 13 % rise in the estimated budgetary expenditure on health, education and social protection in 2018-19, a 2.1% decline in the allocation towards the national health mission, India's largest programme for primary health infrastructure was observed.

According to India Spend report of 2018, inadequate sanitation–management of human excreta, solid waste, and drainage–costs India Rs 2.4 trillion (\$53.8 billion)<sup>27</sup> every year in losses due to health, damage to drinking water and tourism costs. There has been 7 % cut in the expenditure of Swachh Bharat Mission and allocation to the Ministry of Drinking Water and Sanitation in 2018-19. Similarly, the share of education in the budget has been lowest in five years declining from 6.15% in 2014 to 3.48% in 2018. To make education, health, sanitation accessible to the citizen, budgetary allocation needs to be increased.

Secondly, a review mechanism should be in place to set a target and review the progress made by the state government on these services. A concentrated effort to provide services at proximity is required. A study in 2014 found that distance is a significant barrier to institutional births in India. In a country like India, where the physical distance to health facilities is quite large especially in rural areas, access is a significant barrier to institutional delivery. According to the study, the significant effect of distance suggests that increasing the density of health facilities and providers in rural areas may improve maternal and neonatal care<sup>28</sup>. Hence, access to service both for population and within proximity should be increased. This also calls for the states to identify their counterparts to set up a geospatial standard for each of the services.

For a better understanding and setting up of geospatial standards for the states, decentralized data collection is needed. Data centers at local and district level should be in place to report the data in

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<sup>27</sup>Salve.P. (2018). "Budget 2018: 522 Mn Indians Still Defecate in the Open, Putting Them At Risk Of Disease & Poverty", *India spend*. <http://www.indiaspend.com/cover-story/budget-2018-522-mn-indians-still-defecate-in-the-open-putting-them-at-risk-of-disease-poverty-24599>

<sup>28</sup>Kumar.S, Dansereau.E & Murray.C. 2014. "Does distance matter for institutional delivery in rural India?", *Applied Economics*, 46:33, 4091-4103, DOI: [10.1080/00036846.2014.950836](https://doi.org/10.1080/00036846.2014.950836)

a timely and adequate manner which can be used by various stakeholders for their respective purposes.

Going forward, for a clearer understanding of heterogeneities in terms of spatial proximity of services in India and perpetuating inequality it evolves into, it will be worthwhile to perform this analysis at the district level and provoke a discussion about intrastate variations. Also, it is equally important to include qualitative considerations in constructing performance standards; this study focuses more on illustrating state level scenarios of accessibility to basic social and economic services. A follow up study can be undertaken in assessing qualitative standards of existing facilities (reported by the data here).

## Appendix 1 Principal Component Analysis (PCA)

The objective of PCA is to explain the variance of the observed data through a few linear combinations of the original data. Even though there are  $Q$  variables,  $x_1, x_2, \dots, x_Q$ , much of the data's variation can often be accounted for by a small number of variables – principal components, or linear relations of the original data,  $Z_1, Z_2, \dots, Z_Q$  that are uncorrelated. At this point, there are still  $Q$  principal components, i.e., as many as there are variables. The next step is to select the first, say  $P < Q$  principal components that preserve a “high” amount of the cumulative variance of the original data.

$$Z_1 = a_{11} x_1 + a_{12} x_2 + a_{1Q} x_Q$$

$$Z_2 = a_{21} x_1 + a_{22} x_2 + a_{2Q} x_Q$$

.....

$$Z_Q = a_{Q1} x_1 + a_{Q2} x_2 + a_{QQ} x_Q$$

The lack of correlation in the principal components is a useful property. It indicates that the principal components are measuring different “statistical dimensions” in the data. When the objective of the analysis is to present a huge dataset using a few variables, some degree of the economy can be achieved by applying Principal Components Analysis (PCA), if the variation in the  $Q$  original  $x$  variables can be accounted for by a small number of  $Z$  variables. It must be stressed that PCA cannot always reduce a large number of original variables to a small number of transformed variables. Indeed, if the original variables are uncorrelated, then the analysis is of no value. On the other hand, a significant reduction is obtained when the original variables are highly correlated—positively or negatively.

The weights  $a_{ij}$  (also called component or factor loadings) applied to the variables  $j$   $x$  in Equation (1) are chosen so that the principal components  $i$   $Z$  satisfy the following conditions:

- i. They are uncorrelated (orthogonal),
- ii. The first principal component accounts for the maximum possible proportion of the variance of the set of  $x$  s, the second principal component accounts for the maximum of the remaining variance and so on until the last of the principal component absorbs all the remaining variance not accounted for by the preceding components.

PCA involves finding the eigenvalues  $\lambda_j$ ,  $j=1,\dots,Q$ , of the sample covariance matrix  $CM$ . The eigenvalues of the matrix  $CM$  are the variances of the principal components and can be found by solving the characteristic equation.  $CM - \lambda I = 0$  where  $I$  is the identity matrix with the same order as  $CM$ , and  $\lambda$  is the vector of eigenvalues. This is possible, however, only if  $Q$  is small. There are  $Q$  eigenvalues, some of which may be negligible.

Negative eigenvalues are not possible for a covariance matrix. An important property of the eigenvalues is that they add up to the sum of the diagonal elements of  $CM$ . That is, the sum of the variances of the principal components is equal to the sum of the variances of the original variables:  
 $\lambda_1 + \lambda_2 + \dots + \lambda_Q = cm_{11} + cm_{22} + \dots + cm_{QQ}$

A drawback of the conventional PCA is that it does not allow for inference on the properties of the general population. Traditionally, drawing such inferences requires certain distributional assumptions to be made regarding the population characteristics, which the PCA techniques are not based upon.

### Appendix 2: List of Sub-Indicator

Indicator	Year	Source
<b>Access to Basic Amenities</b>		
Main Source of Drinking Water (Tap water from treated source)	2011	Census
Location of drinking water source : Within and near premise	2011	Census
State/UT-wise, Sanitation Coverage and improvement in coverage since the launch of SBM(G	2017	Rajya Sabha
<b>Access to Financial Services</b>		
Household availing banking services, Percent	2011	Census
Number of ATMs	quarter ended December, 2017	RBI
Number of SCB Account per capita	2017	RBI
<b>Access to Justice</b>		
Judges per capita	As on 18 <sup>th</sup> April 2018	National Judicial Data

Total Police (per lakh population)	2015	Bureau of Police Research and Development
Proportion of pending cases resolved	2017	National Judicial Data
Access to Health		
Hospital Beds	2017	Rajya Sabha
Doctors in Government Hospitals	2017	Rajya Sabha
Referral Transport	2017	NHRM
Total Number of Blood Banks	2015	Central Drug Standard Control Organisation (CDSCO)
Total available sub divisional and district hospitals in India	2017	NHRM
Percentage of Children Fully Immunized	2016	NFHS-4
Access to Education		
Secondary schools at a distance of less than 2 km	2014	NSS
Gross Enrolment Ratio secondary and Tertiary education	2016	Niti Aayog
Pupil Teacher Ratio Secondary education	2016	Niti Aayog





### Appendix 3: Working strength of Judges and Judges required as per CJI

States/ Uts	Working Strength of Judges	Judges required as per CJI	Shortage (Judges required as per CJI- working strength of judges)
<b>Sikkim</b>	18	30	12
<b>Goa</b>	43	73	30
<b>Tripura</b>	76	184	108
<b>Himachal Pradesh</b>	148	343	195
<b>Uttarakhand</b>	230	506	276
<b>Delhi</b>	482	838	356
<b>Haryana</b>	496	1268	772
<b>Punjab</b>	538	1385	847
<b>Chhattisgarh</b>	335	1277	942
<b>Kerala</b>	450	1669	1219
<b>Jharkhand</b>	419	1648	1229
<b>Assam</b>	352	1588	1236
<b>Odisha</b>	656	2097	1441
<b>Gujarat</b>	1121	3019	1898
<b>Karnataka</b>	976	3057	2081
<b>Rajasthan</b>	1122	3431	2309
<b>Madhya Pradesh</b>	1293	3630	2337
<b>Tamil Nadu</b>	908	3607	2699
<b>Andhra Pradesh and Telangana</b>	920	4234	3314
<b>West Bengal</b>	927	4567	3640
<b>Maharashtra</b>	1930	5619	3689
<b>Bihar</b>	993	5190	4197

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