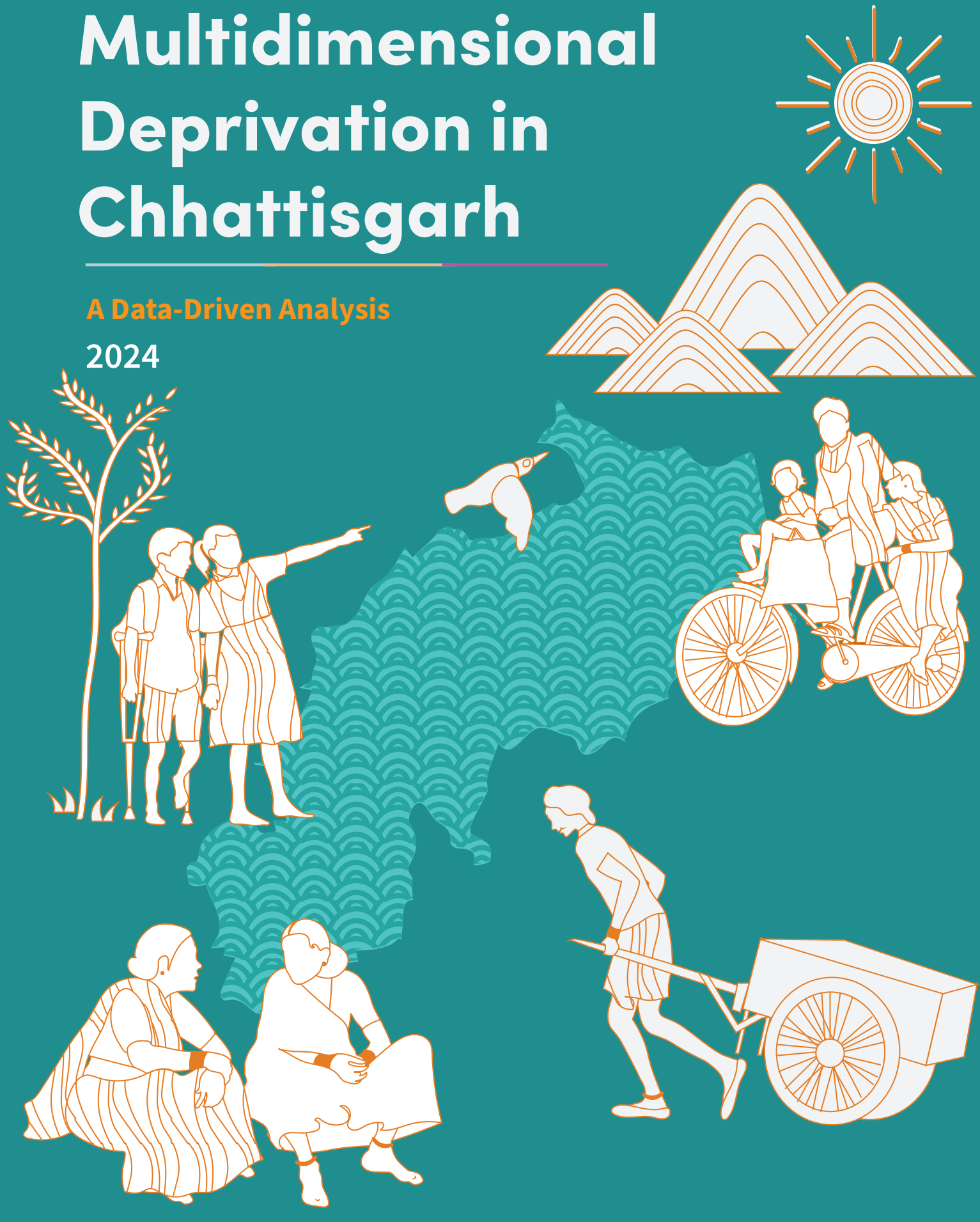
Azim Premji University

Rural Multidimensional Deprivation in Chhattisgarh

A Data-Driven Analysis

2024



This report is part of the Development Dialogue with
Data Initiative at School of Development, Azim Premji University.

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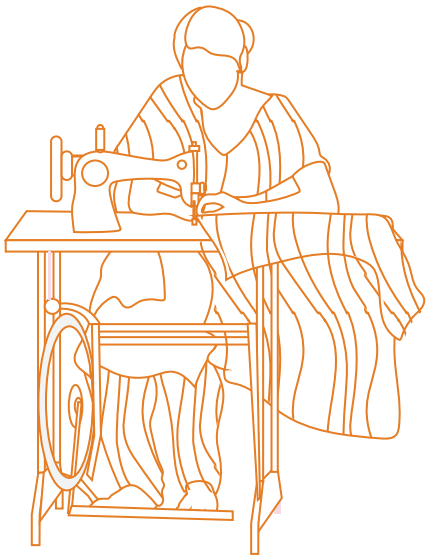

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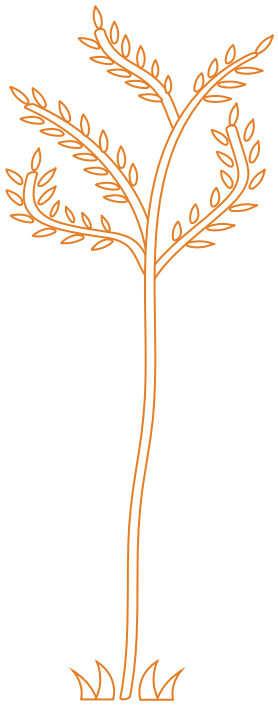
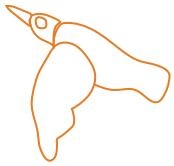
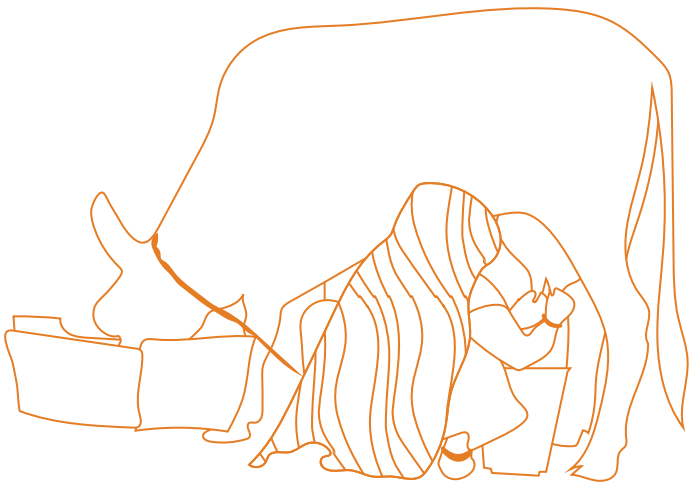






Executive Summary

Chhattisgarh is a relatively new, but important mineral and forest-rich state of India. This report presents a unique way to measure rural poverty in the state. It constructs a rural multidimensional deprivation index (RDI), composed of 22 indicators in the areas of infrastructure, health and education. The idea of the index is similar to the Multidimensional Poverty Index (MPI) proposed by Alkire et. al. (2015). Like the MPI, the RDI can be decomposed into its different sub-components to understand which of the indicators contribute the most to deprivation. Further, it can be analyzed at different levels, starting from the block to the taluka, district, state and national level.

While the RDI inherits these merits of the MPI, from a policy and public action perspective, the RDI is more useful than the MPI. This is because the RDI is composed of public provisioning of amenities at the village level. A high RDI reflects lack of access to public amenities and deprivation in villages. Because India has a decentralized government where the Panchayats are responsible for taking governance at the grassroot levels, results from this report can be extremely useful to these institutions as they can identify which villages need provisioning of what amenities and accordingly act. Furthermore, since we focus on provisioning rather than outcomes of public amenities, the recommendations from the report are easy to address and implement for the concerned local bodies.

We use data from the Mission Antyodaya Survey, 2019, on provisioning of basic public amenities such as markets, transport facilities, schools, public health centers, etc. at the village level. The survey covers 97% of the total villages in India and 96.8% of villages in Chhattisgarh in 2019.

The indicators we choose under each of the dimensions are the starkest values of those indicators. For instance, to assess access to banks, we consider a village to be deprived only if there is no bank present within a radius of 10 kms from the village boundary. Similarly, we classify a village as deprived of a high school only if there is no such school present within a radius of 10 kms from the village boundary. However, on indicators that are mandated by the government, such as the presence of an Anganwadi in every village or the presence of a sanitary toilet in every household, we consider absence of these mandated facilities as indicators of deprivation.

Indicators Constituting the Multidimensional Deprivation Index

Infrastructure

- Irrigation
- All-weather Roads
- Internal Roads
- Public Transport
- Markets
- PDS
- Banks
- ATM
- Electricity
- Telephone

Health

- Primary Health Care Centre
- Mother and Child Health
- Anganwadi
- Sanitary Toilets
- Drainage
- Piped Water

Education

- Primary School
- Middle School
- High School
- SSC School
- Vocational Training Center

To construct the RDI, we first assess if a village is deprived of any of the chosen 22 indicators. We classify a village as multidimensionally deprived if it is deprived on at least five of the 22 indicators, or, in other words, has a composite deprivation score of over 0.2. The RDI is a product of two components-

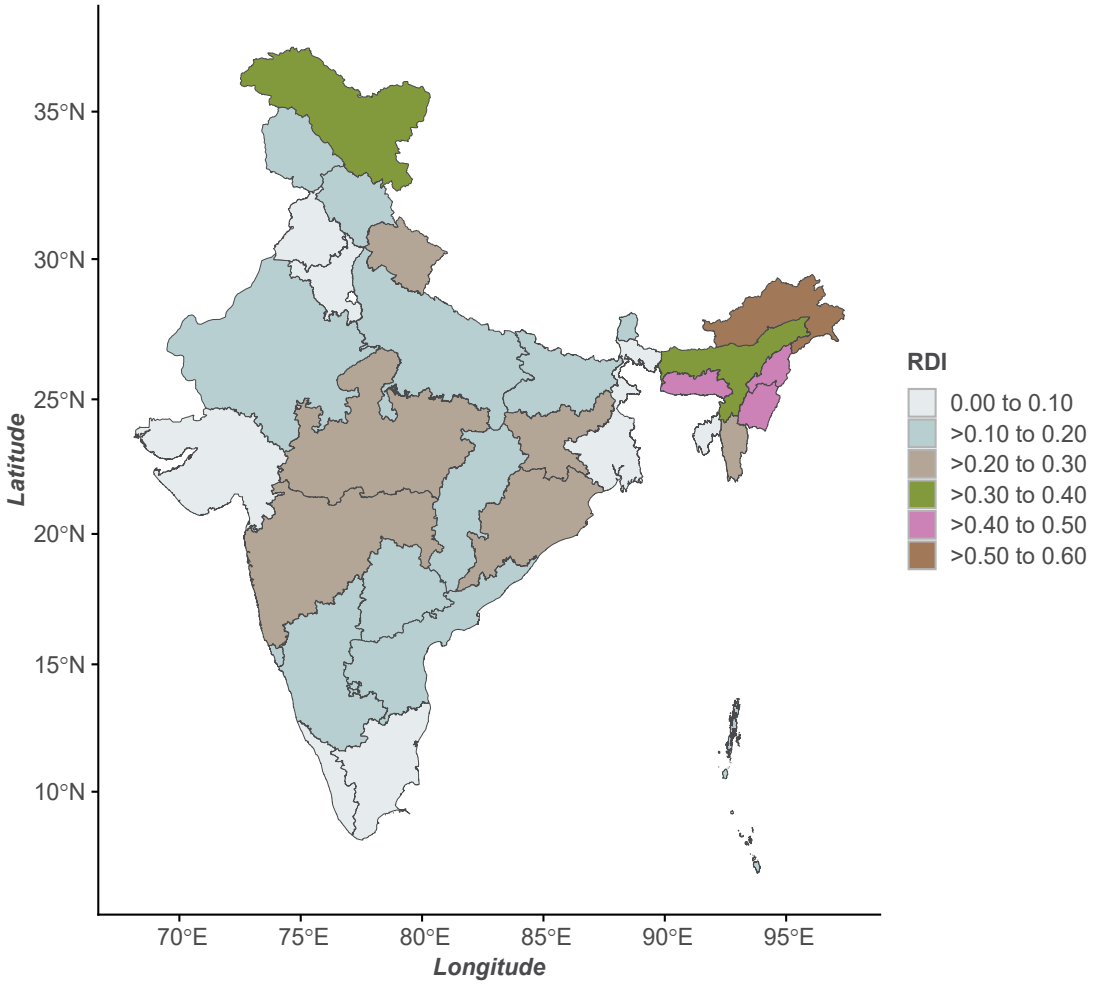
(i) Headcount Ratio, which measures the proportion of villages deprived.

(ii) Intensity Ratio, which measures the average level of deprivation in multidimensionally deprived villages.

The RDI thus gives the average level of multidimensional deprivation, considering both the depth and breadth of deprivation.

Key Results

Chhattisgarh's performance vis-à-vis other states



Chhattisgarh's National Ranking in Rural Multidemensional Deprivation

(Higher the deprivation, higher the rank)

13th in terms of RDI

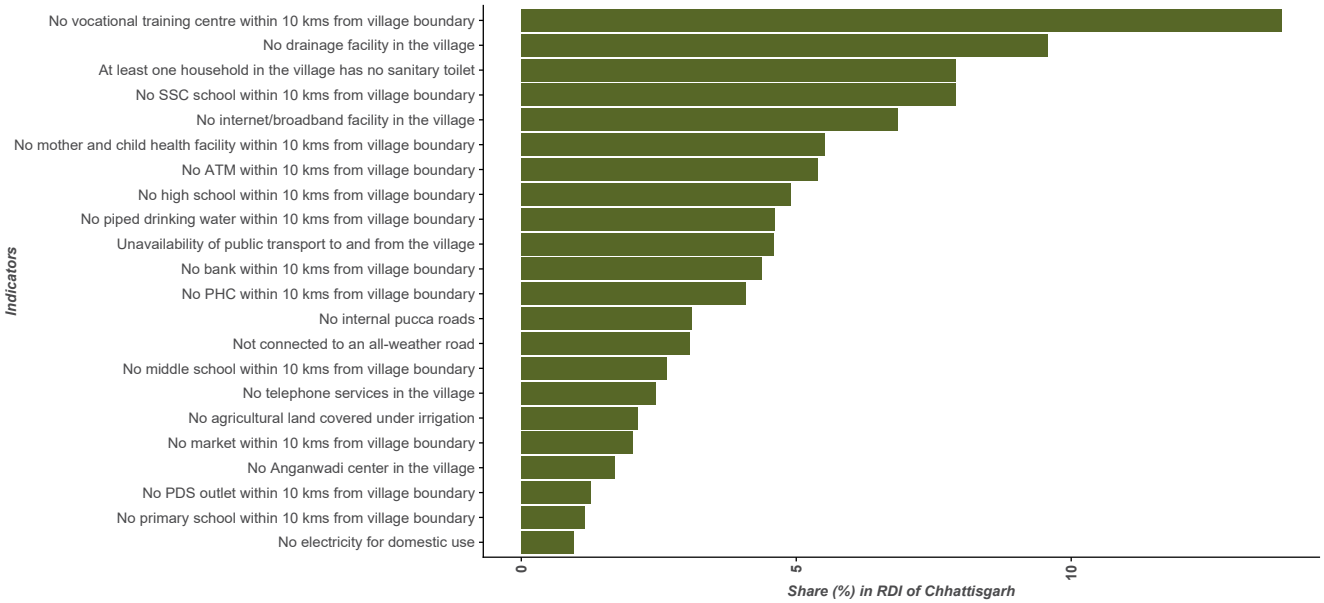
15th in terms of Headcount Ratio

9th in terms of Intensity Ratio

(out of 32 states and Union Territories)

Average RDI in the state is above the national average, but it does better than some its bigger neighbouring states.

Sources of Multidimensional Deprivation in Chhattisgarh



All Contribute to Deprivation, but Specific Indicators call for more Attention

Health indicators that need the most attention:

Building drainage facilities in villages

Building sanitary toilets in households

Education indicators that need the most attention:

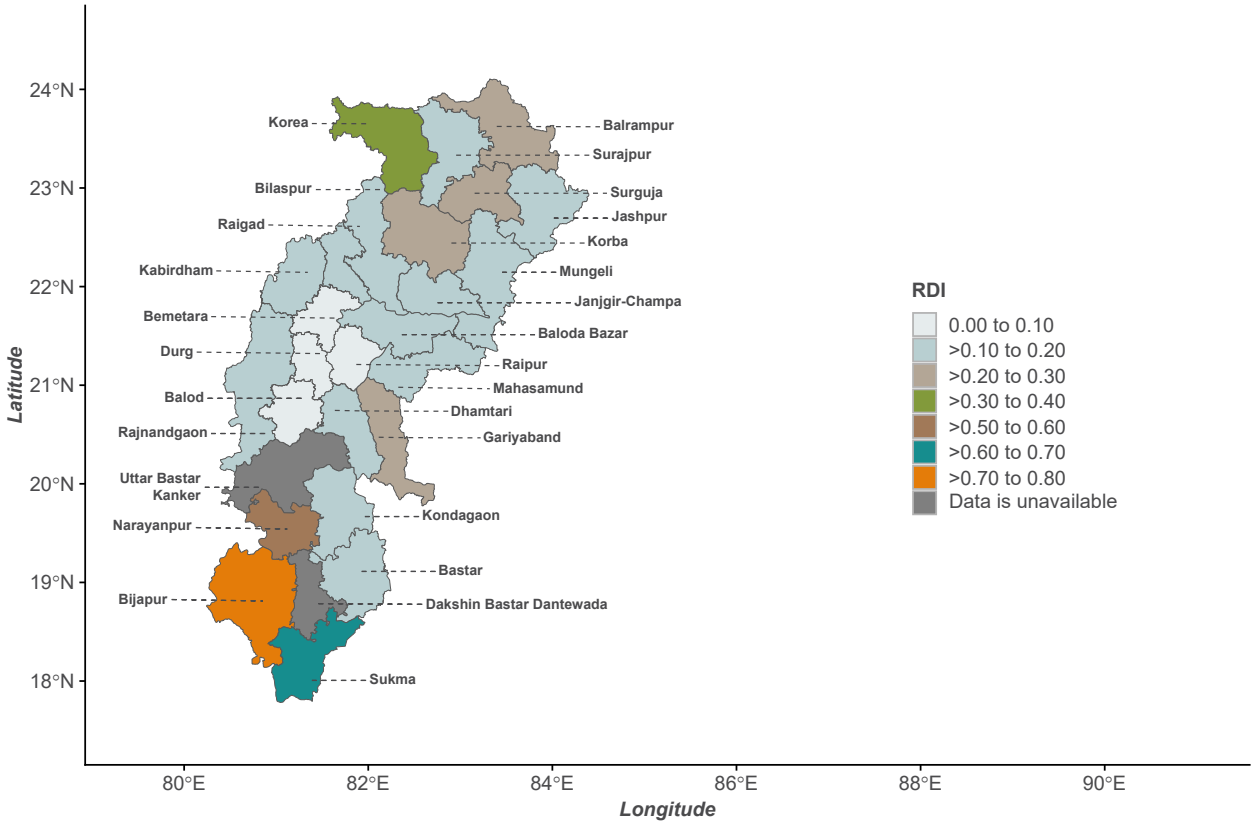
Building SSC schools and vocational training centres

Infrastructure indicators that need the most attention:

Providing Internet, Bank and ATM facilities in villages

Providing public transport facilities to and from villages

Intra-state Disparities in Multidimensional Deprivation



Intra-State Disparity is High

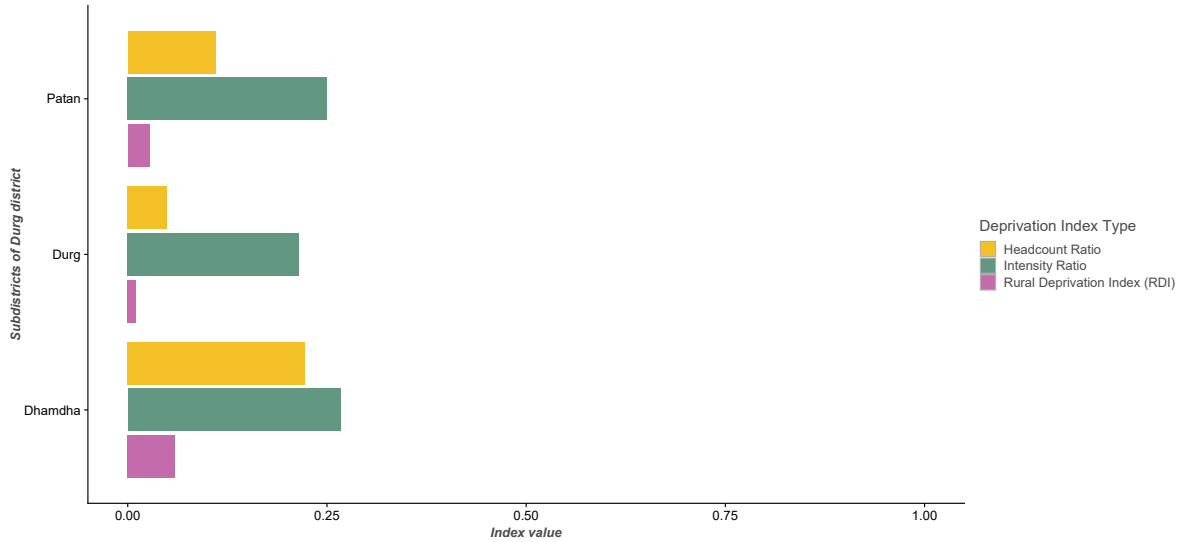
Districts in the tribal and forested Bastar division - Bijapur, Sukma and Narayanpur have the highest RDI in the state, of over 0.6.

Districts in the Durg and Raipur divisions- Durg, Raipur and Balod have the lowest RDI, of less than 0.05.

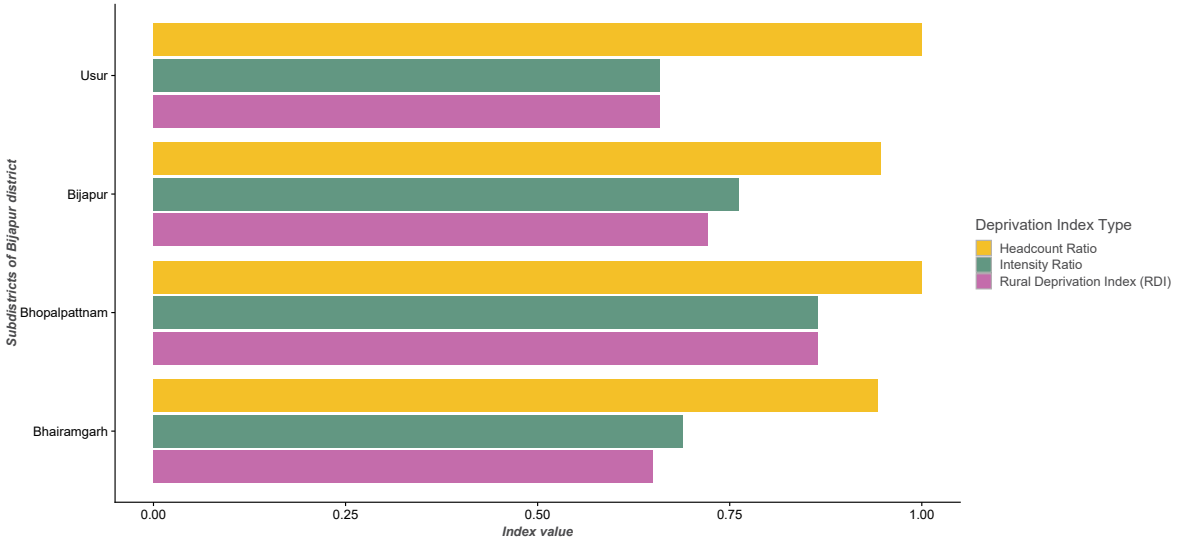
A similar trend in intra-state disparity is found across all dimensions of health, education and infrastructure.

Best and Worst Performing Districts of Chhattisgarh - How do they Compare?

Rural Deprivation Index (RDI), Intensity Ratio, and Headcount ratio for different subdistricts of the Durg district of Chhattisgarh



Rural Deprivation Index (RDI), Intensity Ratio, and Headcount ratio for different subdistricts of the Bijapur district of Chhattisgarh



Durg vs Bijapur

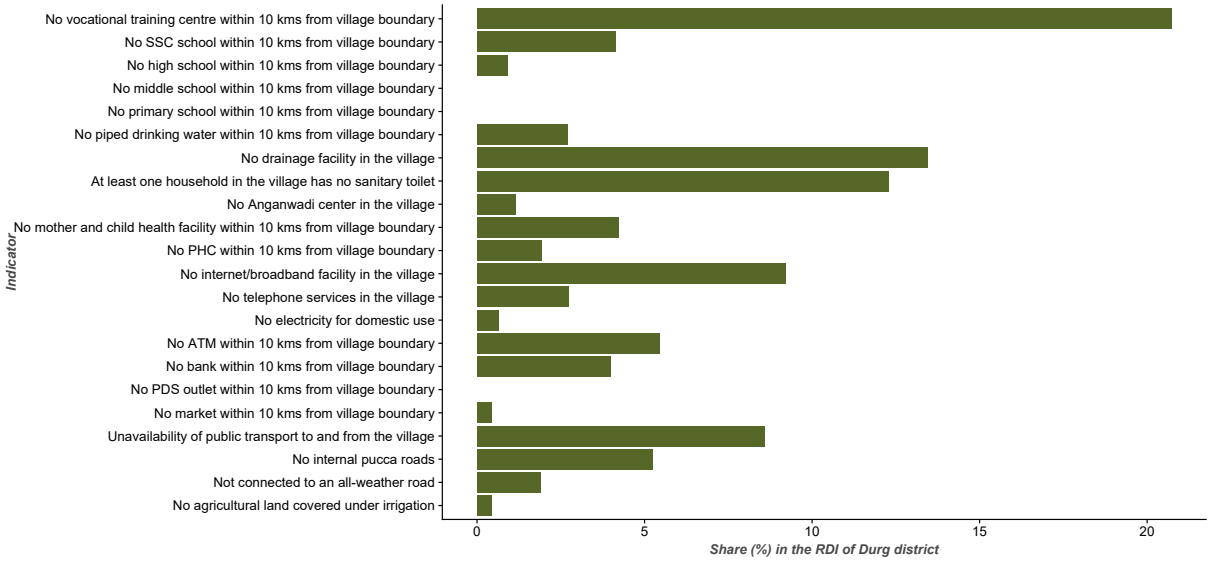
Headcount Ratio

Almost all villages in the talukas (sub-districts) of Bijapur are multidimensionally deprived, as compared to about a quarter in Durg.

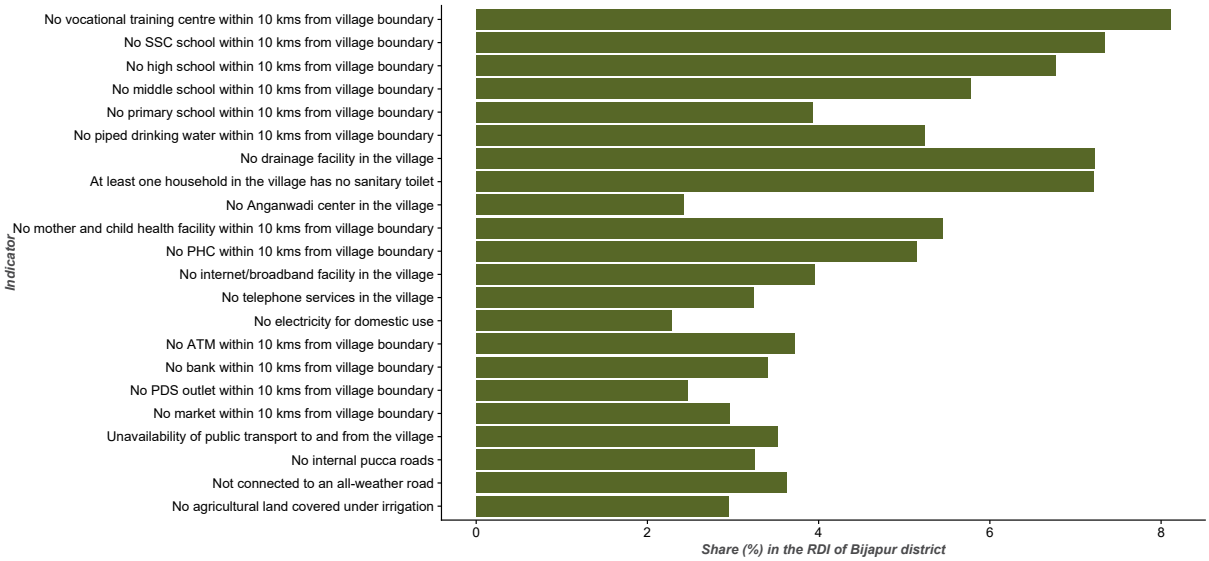
Intensity Ratio

A multidimensionally deprived village in any taluka of Durg is deprived of no more than 25% of the indicators on average, whereas a multidimensionally deprived village in any taluka of Bijapur is on average deprived of 65% of the indicators.

Contribution of various factors to the RDI of Durg District



Contribution of various factors to the RDI of Bijapur District



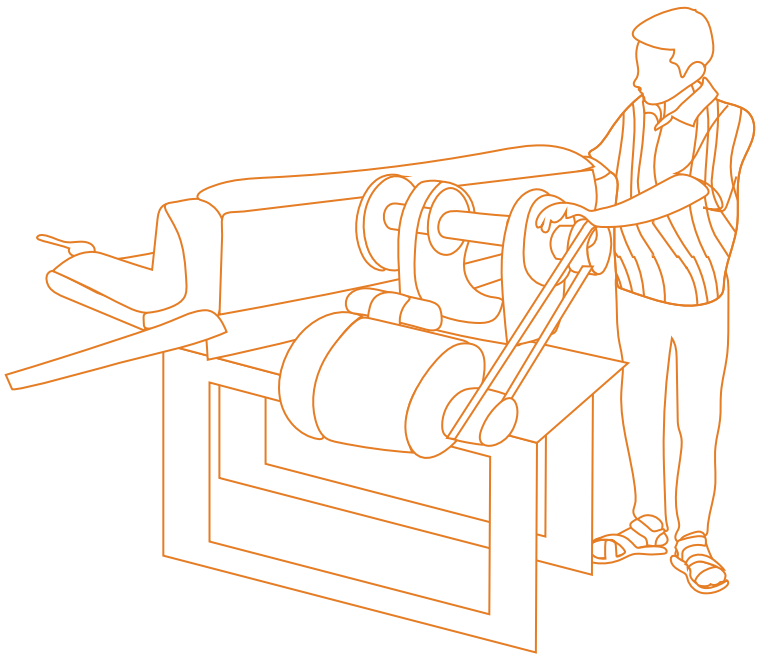
Durg vs Bijapur

Lack of vocational training centres, drainage facilities and sanitary toilets are the primary contributors to multidimensional deprivation in Durg.

All indicators contribute significantly to multidimensional deprivation in Bijapur.

Implications

- As Chhattisgarh performs relatively poorly in terms of its intensity ratio than headcount ratio of multidimensional deprivation, it implies that the state needs to focus more on reducing the depth of deprivation rather than the incidence or the breadth of it. The state needs to target specific districts or villages that are highly deprived and improve provisioning of public amenities in them, rather than have state-wide policy measures of building public amenities.
- The highly uneven level of provisioning of public amenities within the state reiterates the high level of intensity ratio of multidimensional deprivation in Chhattisgarh. Specific focus needs to be given to the Bastar region, particularly to Bijapur, Sukma and Narayanpur districts, which are yet to catchup with more developed areas like Durg and Raipur.
- The less deprived districts have witnessed positive externalities of being in proximity to major cities of the state and being well-connected to other parts of the country. Bastar being highly forested and tribal, deserves a lot more attention from state authorities, across all the dimensions of deprivation.
- Focusing on providing basic public amenities in highly deprived areas like the Bastar division can be the first step towards ensuring better development outcomes in the region.
- Within the most deprived areas of the state, all dimensions and indicators call for equal attention. However, the rest of the regions in the state are deprived of specific indicators, rather than specific dimensions of deprivation.
- We find that indicators that contribute the least to multidimensional deprivation are linked to existing government policies mandating them, or government programmes that have given them a boost. For instance, the presence of Anganwadis in every village under the ICDS has ensured that every village has an Anganwadi. In contrast, indicators such as vocational training centers or drainage facilities or internet connections in villages are not formally covered under any government scheme.
- The combination of a state policy mandating the presence of specific amenities in villages, and effective governance at the grassroot level can ensure that specific bottlenecks in specific regions are addressed appropriately.



1. Introduction

Poverty eradication has been a fundamental developmental goal in post-independent India. Although we have been able to tackle poverty to some extent over the last few years, there is lot of disparity within the country when it comes to poverty reduction. It is hence important to study specific regions of the country to understand poverty in a more nuanced way. This report presents an analysis of rural multidimensional deprivation in the central Indian state of Chhattisgarh, an important mineral and forest-rich tribal belt of the country.

The state of Chhattisgarh was constituted in the year 2000. It is the ninth largest state in India by area and ranks seventeenth by size of its economy. It, however, lags in terms of human development as compared to the rest of the country and is highly unequal in terms of its standard of living. As a large part of the state is forested and rural, it performs poorly on important economic and human development indicators as compared to the rest of the country. This makes it important to study the state and its different regions in detail.

Although poverty at a disaggregated level and with a special focus on Chhattisgarh has been studied before (see for example, Chauhan et.al., 2016; Reddy, Mishra and Nagaraju, 2016), this report is unique in its approach to understanding and measuring poverty. The foremost merit of this report is its applicability to public action and government policy, as explained below.

There are multiple ways of measuring poverty and the methodologies have undergone many changes over the years. The earliest attempt to measure poverty in India can be traced back to Dadabai Nowroji's idea of measuring poverty using a subsistence basket of goods (Srinivasan, 2007). Such subsistence-based measures later evolved to include Lakdawala's poverty measurement based on energy requirements, to the more recent measurements proposed by the Tendulkar and the Rangarajan committees based on a minimum level of consumption expenditure. All these methods viewed poverty as a unidimensional concept, consisting of income or calorie consumption alone. Poverty, however, is a multi-dimensional concept. The World Bank defines poverty as nothing but pronounced deprivation in well-being (Haughton & Khandker, 2009). Well-being can in turn be understood as the "capability" to function in society (Sen, 1987). Poverty arises when people lack key capabilities in the form of health, education, infrastructure, or even basic rights such as freedom of speech. Poverty thus needs to be measured as a combination of lack of these key capabilities.

The Multidimensional Poverty Index (MPI) developed by Alkire and Foster (see Alkire et. al., 2015) views poverty as a function of multiple dimensions. In the case of India, the NITI Ayog, jointly with the Oxford Poverty and Human Development Initiative (OPHI) and the United Nations Development Programme (UNDP), has computed a Multidimensional Poverty Index (MPI) for the country, using dimensions of health, education and standard of living, rather than relying on income or consumption alone (NITI Ayog, 2023). Taking the MPI a step further, this report presents a novel way of measuring poverty.

We build a Rural Multidimensional Deprivation Index (RDI) for Chhattisgarh based on the theoretical idea of Alkire and Foster's MPI. Our index is however different from the MPI as it looks at poverty through the lens of deprivation of basic public amenities that are essential for any person's everyday functioning and well-being. The relationship between poverty reduction and infrastructure development has been studied by many (see for example, Ali & Pernia, 2003; Pouliquen, 2000; Jerome, 2011). However, none of them have developed a multidimensional poverty index based primarily on deprivation of infrastructure and other public services. Further, unlike other poverty measures, we do not analyze poverty at the individual or

household level, but at the village level. By using the village as the basic unit of analysis, our results can help the government and other state stakeholders to target and address deprivation at the village level, where resources are allocated. This report can especially be used by Panchayats in Chhattisgarh to work for the betterment of their gram panchayats and villages, as laid under the 73rd Constitutional Amendment Act.

We construct the RDI along three dimensions- infrastructure, health and education. The index is different from existing measurements of poverty on at least four counts. First, unlike other poverty indices that focus on financial values or that use a combination of economic, demographic, and human development indicators, this index focuses on deprivation in basic public services at the rural level. Further, it explicitly looks at provisioning of basic rural amenities, rather than the outcomes to focus on backwardness. Second, the index is additive, implying that it can be broken down into different dimensions and indicators as well as by different spatial units. For instance, the index helps in identifying the dimensions of deprivation that contribute the most to overall deprivation, as well as villages that are the most deprived. Though we use the district as the primary level of analysis in this report, we use a large scale publicly available village level data set. This allows us to construct our state and district level indices from the data at the subdistrict, block and gram panchayat levels. Thus, our index is essentially a gram panchayat level index which we aggregate to the block, sub-district, district, and the state level. This helps not only in identifying the most deprived state and district, but also the most backward gram panchayat. The property of additivity thus is immensely helpful as it helps identify a subset of dimensions and regions that need the most urgent attention. Third, the index allows us to measure both the breadth as well as the depth of deprivation. That is, we can measure the number of deprived villages in a sub-district, district, state, etc. as well as the intensity of deprivation in those deprived villages. The RDI is essentially a combination of breadth and depth of deprivation. Finally, the index has the property of "deprivation focus", meaning it will not go down unless the deprivation levels in at least one dimension or geographical region go down. This makes the index a particularly attractive tool to measure policy effectiveness.

This report analyzes rural multidimensional deprivation across districts and sub-districts (talukas) in Chhattisgarh, along with comparing the state with other parts of the country. We draw our data from the Mission Antyodaya survey of 2019, a publicly available village level dataset covering important variables on provisioning of public services. Additionally, this dataset has the advantage that it is being collected every year. This helps us track the evolution of regional deprivation at a regular frequency.

2. Data and Methodology

We use the Mission Antyodaya data, a gram panchayat level survey data set on a number of different variables, covering aspects related to infrastructure, health and education. Adopted in Union Budget 2017-18, Mission Antyodaya is a convergence and accountability framework aiming to bring optimum use and management of resources allocated by 27 Ministries / Departments of the Government of India under various programmes for the development of rural areas. It is envisaged as a state-led initiative with Gram Panchayats as focal points of convergence efforts (NIRDPR, 2018). Annual survey in Gram Panchayats across the country is an important aspect of the Mission Antyodaya framework. It is carried out coterminous with the People's Plan Campaign (PPC) of Ministry of Panchayat Raj and its purpose is to lend support to the process of participatory planning for Gram Panchayat Development Plan (GPDP). The Mission Antyodaya Portal[1] has data for 2,67,205 gram panchayats out of a total of 2,69,943 gram panchayats in the country for the year 2019, covering 6,48,358 out of 6,67,933 villages, or over 97% of the villages in the country. For Chhattisgarh, the data covers 19,962 villages out of a total of 20,619 villages in the state, thus covering 96.8% of the total villages in the state. It is this dataset that the analysis in this report is based on.

2.1 Choice of Dimensions and Indicators

The Mission Antyodaya has data on a wide array of variables, largely relating to provisioning and outcomes at the village and gram panchayat levels. Out of these, variables that encompass provisioning in three key dimensions of development are chosen in this analysis to construct the Rural Multidimensional Deprivation Index. These dimensions are:

(a) Infrastructure (b) Health (c) Education

Under each of the three broad dimensions, select indicators that are necessary for people's basic functioning, such as the presence of roads, availability of a Public Health Centre, availability of a primary school, etc. are chosen. The criteria for deprivation for most of the indicators are based on the starkest values of these indicators. For instance, a village is classified as deprived of having a bank only if there is no bank available even within 10 kms from the village boundary. Similarly, a village is considered deprived of public transport only if there is absolutely no form of public transport available to and from the village. Choosing such extreme criteria to classify a village as deprived in a particular indicator ensures that the ones finally classified as multidimensionally deprived are developmentally backward by all measures. However, for amenities that are mandated by the government to be present in every village or household, such as the presence of an Anganwadi center in every village, or a sanitary toilet in every household, we take the absence of that amenity in the village as an indicator of deprivation.

Choice between Provisioning and Outcomes

An important aspect of the choice of indicators used is the focus on provisioning, instead of outcomes. This is done for several reasons.

Firstly, the index is envisaged to measure and mitigate poor provisioning at the village level. Hence, it is important to focus sharply on what a gram panchayat or a block level officer can achieve. Examining outcomes relating to health, education etc. will require to jointly examine the issue of provisioning as well as

1 https://missionantyodaya.nic.in

quality. Though this may seem attractive, it may not yield very clear indications of what to do to resolve the problem. The policy tools required for setting up a school, for instance, are different from the policy tools that are necessary to ensure that the school is running well. By focusing exclusively on the provision aspect, sharp policy conclusions can be made.

Secondly, the data on outcomes, even though collected through a rigorous survey, is often likely to have a substantial degree of error. To take an example from within the Mission Antyodaya data set, the number of children not attending school in a village is likely to be highly dynamic and hard to measure. After holding a data ground proofing exercise of having long but casual discussions with Gram Pradhans in Uttar Pradesh and Maharashtra to check the validity of the data, it was found that data on outcomes could be at times vitiated with inadequate record keeping and faulty information gathering. On the other hand, data on basic provision, like whether there is a primary school in the village, or whether the village is connected to an all-weather road, is less likely to be problematic. This data does not have to be gathered from any records but is starkly visible to the surveyor and well known to everyone in the village. During the ground truthing exercise, it was learned that provisioning level data supplied directly from the village by the gram Pradhan /Panchayat secretary through the panchayat office or the general public and line departmental functionaries like linesman or teacher who are directly engaged at the village level, is much more likely to be correct compared to the data that has to be obtained from records or that have to be computed fresh. These factors have led us to focus on provisioning rather than on outcomes.

Finally, in addition to data quality, it has been argued that access to public amenities and infrastructure is also associated with better human development outcomes as well as poverty (Mohanty et al (2016), Sapkota (2014), Ali and Pernia (2003), Brenneman and Kerf (2002)). Given the significance of public infrastructure, it seems legitimate to focus on provisioning without considering the question of quality. After all, a minimum threshold level of provisioning can be reasonably assumed to be a basic precondition for quality outcomes.

Table 1 displays the list of indicators used under each of the three dimensions. Villages are classified as deprived or non-deprived on an indicator based on the presence or absence of provision of that indicator in the village. This binary approach allows us to develop an index that is theoretically identical to the multidimensional poverty index of Alkire et al (2015).

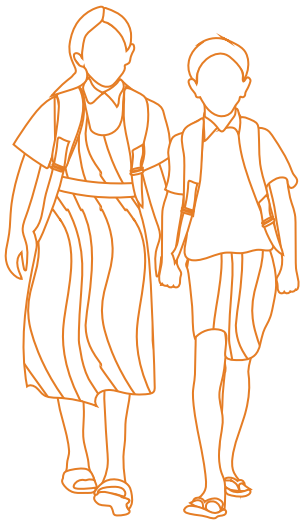


Table 1: Dimensions and Indicators of Deprivation			
No.	**Dimension**	**Indicator**	**Deprivation Criteria**
1	Infrastructure	Irrigation	None of the agricultural areas in the village are covered under irrigation.
2		Roads	The village is not connected to an all-weather road.
3		Internal Roads	The village has no internal pucca roads (covered or partially covered).
4		Public Transport	No form of public transport (Bus/Van/Auto) is available to and from the village.
5		Market	The nearest market (mandi/regular market/weekly market) to the village is farther than 10 kms from the village revenue boundary.
6		PDS	The nearest fair price shop (ration shop) is farther than 10 kms from the village revenue boundary
7		Bank	The nearest bank is farther than 10 kms from the village revenue boundary.
8		ATM	The nearest ATM is farther than 10 kms from the village revenue boundary.
9		Electricity	There is no electricity for domestic use in the village.
10		Telephone	There are no telephone services (mobile or landline) in the village.
11		Broadband	There is no internet/ broadband facility available in the village.
12	Health	Primary Health Centre	The nearest primary health center/ community health center/ Sub-center is farther than 10 kms from the village revenue boundary.
13		Mother and Child Health	The nearest mother and child health facility is farther than 10 kms from the village revenue boundary.
14		Anganwadi	There is no Anganwadi center in the village.
15		Toilets	The village has at least one household without a sanitary toilet.
16		Drainage	There is no drainage facility in the village.
17		Piped water	The distance to the nearest piped tap water facility is more than 10 kms from the village revenue boundary.
18	Education	Primary School	The nearest primary school is farther than 10 kms from the village revenue boundary.
19		Middle school	The nearest middle school is farther than 10 kms from the village revenue boundary.
20		High School	The nearest high school is farther than 10 kms from the village revenue boundary.
21		SSC School	The nearest SSC school is farther than 10 kms from the village revenue boundary.
22		Vocational Training	The nearest vocational training center/ polytechnic/ ITI/RSETI/ DDU_KY center is farther than 10 kms from the village revenue boundary.

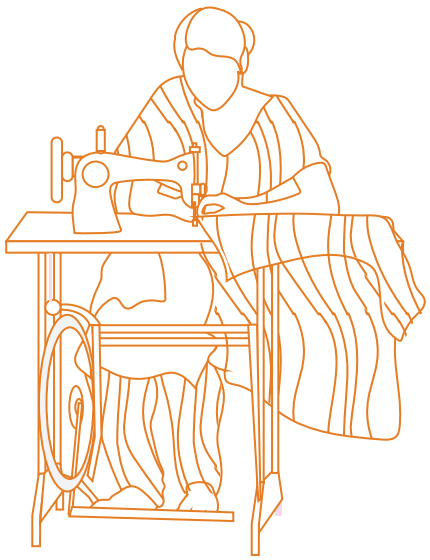
Note: If answer to the question listed under Deprivation Criteria is Yes, then the village is classified as Deprived in that indicator, else it is classified as Non-deprived.

2.2 Composite Deprivation Score

Having zeroed in on the indicators to use, we must next decide what constitutes deprivation. For this, each of the indicators are first coded as 1 (deprived) or 0 (non-deprived) depending upon satisfaction of the deprivation criteria for every village in the data set. For village i and indicator j, d_{ij}=0 if the j^{th} deprivation criteria is not met (that is, answer to the statement in column 4 of Table 1 is "No"). On the other hand, if the deprivation criteria are met, we have d_{ij}=1. This gives us the deprivation score for each indicator under the dimension. For each village, we calculate the arithmetic mean over the dimensional deprivation scores. This gives us the deprivation score for a particular dimension for each village. For instance, the educational deprivation score for each village is obtained by averaging over the five indicators after recoding 1 or 0 according to whether the village does not or does meet the deprivation criteria for each of the indicators in the education subset.

We then proceed to compute the composite deprivation score for each village by taking an arithmetic average of the three dimensions. The composite deprivation score is a number between 0 and 1, with both the extremes being a possibility. At this point, we can classify villages into those that are multidimensionally deprived and those that are not by choosing a cutoff value, the second order cut-off, for the composite deprivation index. A cut-off of 1 will classify only those villages that are deprived on all the 22 indicators as multidimensionally deprived. Choosing a cutoff of 0 will classify all the villages as multidimensionally deprived. Choosing 0.5 as cutoff implies classifying all villages that are deprived on any of the 11 or more indicators as multidimensionally deprived. The choice of this cutoff ought to reflect the researcher's judgment about what is the minimum number of dimensions across which a village needs to be deprived in order to be classified as "multidimensionally deprived". In that sense, it involves a value judgement.

We classify villages with a composite deprivation score equal to or more than 0.2 as "multi-dimensionally deprived". This means that all villages that are deprived of any five or more indicators will be classified as "multidimensionally deprived". We find this choice of cut-off appropriate in view of the rather drastic nature of the deprivation definitions that we have chosen for each indicator. After all, if a village does not have a primary school, ration shop, primary health center within ten kilometers, has no electricity and piped water, it ought to be classified as a "multidimensionally deprived village". We also assign equal weights to each indicator as all of them are equally vital in ensuring a basic level of development. In other words, a village deprived of any of these indicators is developmentally challenged in an equal measure.



2.3 Rural Multidimensional Deprivation Index

Let $\mathbf{C}_i$ be the composite deprivation score of village i. Village i will be classified as multidimensionally deprived if $\mathbf{C}_i \geq 0.2$. If the i^{th} village meets this condition, we let $CD_i = 1$. Otherwise, $CD_i = 0$. Let V be the total number of villages. We define the headcount ratio, HR as:

$$HR = \frac{\sum_{i=1}^{v} CD_i}{V}$$

Equation (1)

The headcount ratio in our context is identical to the headcount ratio that is usually employed in analysis of individual and household level analysis of poverty. The limitations of the headcount ratio are well known. Though simple to understand, it does not account for how poor the average poor village is. We measure this by the average deprivation of the multidimensionally deprived villages. Intensity of deprivation is measured as follows:

$$\text{intensity} = \frac{\sum_{i=1}^{v1} c_i * CD_i}{V_1}$$

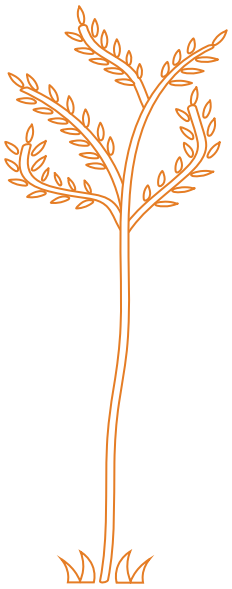
Equation (2)

Where V1 is the total number of multidimensionally deprived villages.

Finally, we measure the rural multidimensional deprivation index (RDI) of a region j as the product of the headcount ratio for the region and the intensity for the region.

$RDI_j = HR_j * \text{intensity}_j$ Equation (3)

The RDI value for each region therefore is a composite measure of the incidence of deprivation (headcount ratio) as well as the intensity of deprivation in that region.



3. Performance of Chhattisgarh at the all-India level

Based on the methodology described above, we compute the rural multidimensional deprivation index for India and each of its states to look at the position of Chhattisgarh within the country. Our analysis is based on 32 states and Union Territories of India for which data is available.

The first step in our analysis is to calculate the composite deprivation score for each village and classify them as multidimensionally deprived or not deprived. As mentioned earlier, if a village is deprived of at least five of the 22 indicators, that is, has a composite deprivation score greater than 0.2, then it is classified as multidimensionally deprived. We then proceed to calculate the headcount and intensity ratio of multidimensional deprivation (as defined in Equations 1 and 2) for each state in India, followed by the computation of the rural multidimensional deprivation index (RDI), as defined in Equation 3.

Figure 1 shows the state-wise Headcount Ratio and Intensity Ratio of Rural Multidimensional Deprivation. Chhattisgarh ranks 15th in terms of headcount ratio of multidimensional deprivation among 32 states and Union territories (greater the deprivation, higher the rank). The state is slightly above the national mean in terms of its headcount ratio, implying that it has a higher headcount ratio of deprivation compared to the national average. The state fares worse in terms of intensity ratio, ranking 9th in the country. The level of deprivation among the deprived villages is thus much higher in Chhattisgarh as compared to most of the states in the country.

To put this in perspective, Chhattisgarh has a lower headcount ratio of deprivation than states such as Maharashtra, Rajasthan, Himachal Pradesh, Jharkhand, Odisha and Uttarakhand. However, its intensity ratio is higher than each of these states, which shows that the depth of deprivation is much worse in Chhattisgarh as compared to these other states in the country.

As Appendix Table 3A shows, Chhattisgarh's headcount and intensity ratios are 0.487 and 0.40, respectively. The headcount ratio of 0.487 implies that 48.7%, that is, close to half of the state's villages are multidimensionally deprived. Moreover, the intensity ratio of 0.40 implies that the average multidimensionally deprived village is deprived of 40% of the indicators, that is, on about nine of the 22 indicators considered for the analysis. This is indeed a matter of serious concern and appropriate policies need to be put in place to improve the situation.

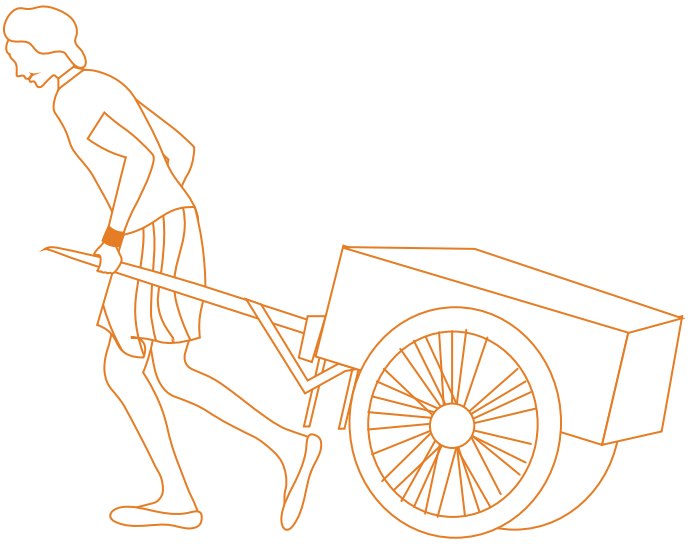
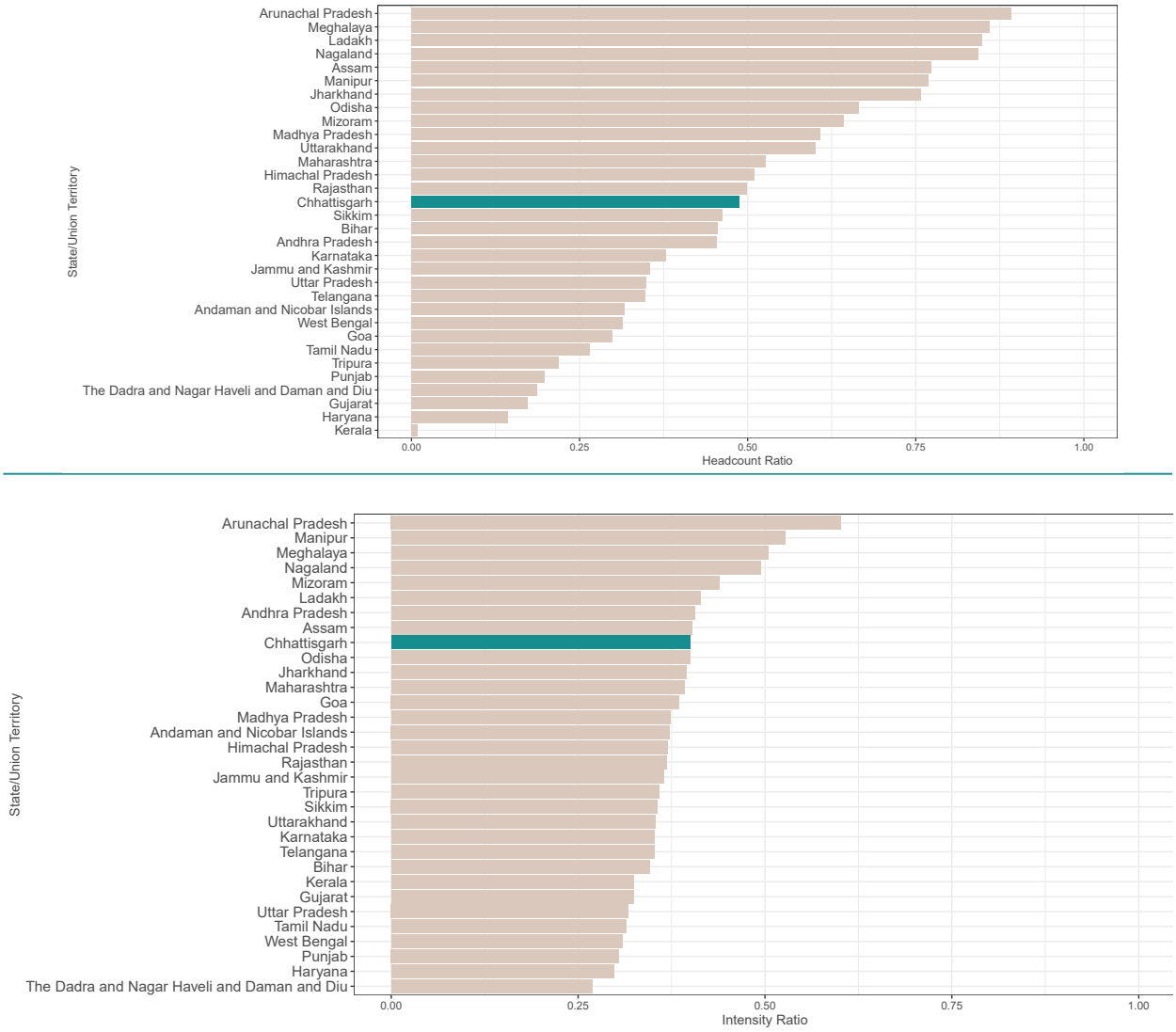


Figure 1: Headcount and Intensity Ratio of Rural Multidimensional Deprivation for India's States and UTs



Bringing together the headcount and intensity ratios of rural multidimensional deprivation, we compute the Rural Multidimensional Deprivation Index (RDI) for different states of India, as shown in Figure 2. Chhattisgarh ranks 13th, with an RDI score of 0.195 (see Appendix Table 3A for further details).

In terms of its RDI, Chhattisgarh does better than some of the bigger states like Madhya Pradesh, Assam, Odisha and even Maharashtra, but is more deprived when compared to Rajasthan, Bihar, Uttar Pradesh, West Bengal and Haryana and all the southern states of Karnataka, Tamil Nadu, Telangana, Andhra Pradesh and Kerala. Kerala is the best performing Indian state as far as rural multidimensional deprivation is concerned and hence it ranks last. Other states that do well are Haryana, Gujarat, Punjab, and the Union Territory of Dadra & Nagar Haveli. If we choose to neglect Dadra & Nagar Haveli given its small size, then the top four best performing states of India are Kerala, Haryana, Gujarat and Punjab.

Overall, Chhattisgarh's RDI score of 0.195 is higher than the national average of 0.179 (see Appendix Table 3A), implying that the average village in the state is more deprived than the average village in India.

Figure 2: State-wise RDI in India

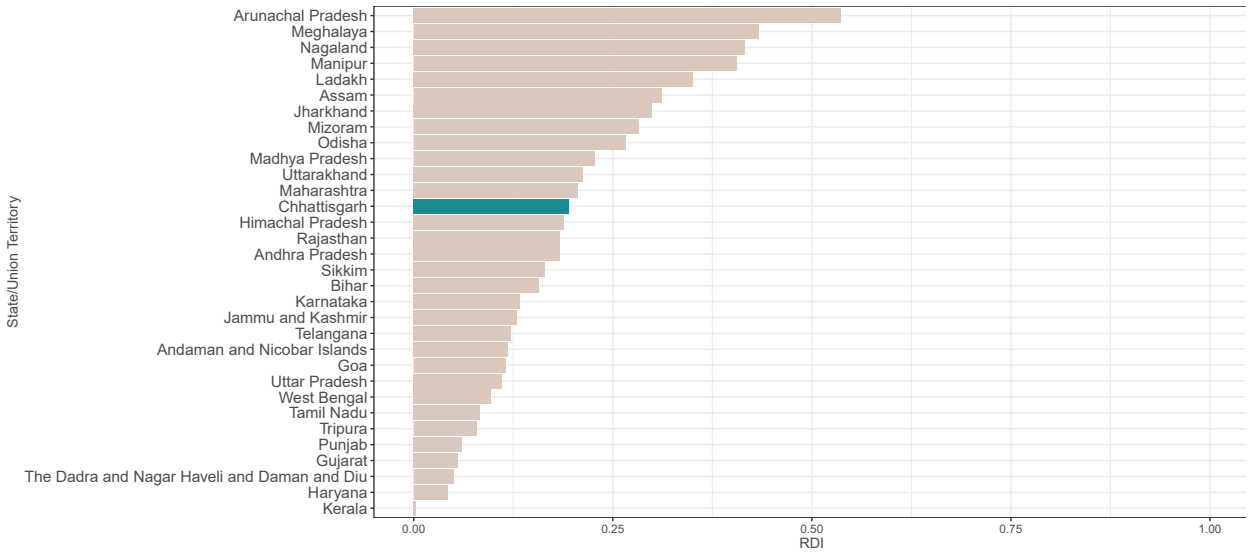
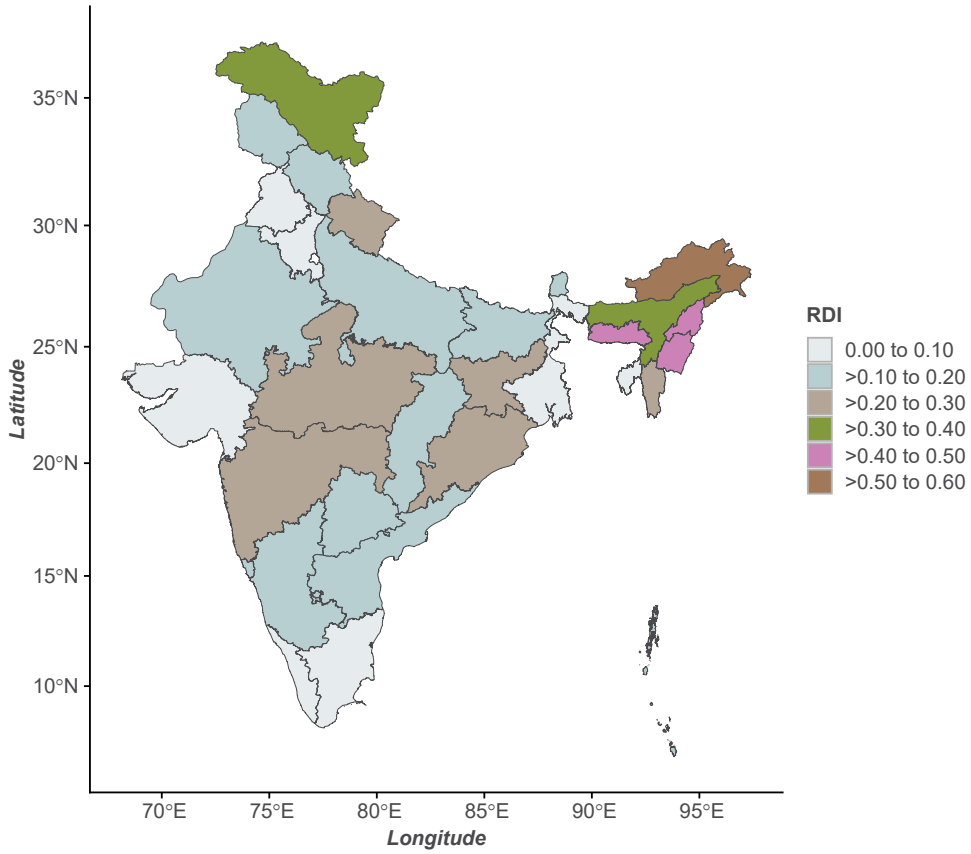


Figure 3 shows the spatial distribution of RDI across Indian states. In general, southern states of India are less deprived as compared to others. Gujarat, Punjab, Haryana are other big states that have a low level of rural deprivation. States in the central and north-eastern regions have high levels of deprivation.

Figure 3: State-wise Spatial Distribution of RDI in India



4. State of Rural Deprivation in Chhattisgarh

Having looked at the relative performance of Chhattisgarh vis-à-vis other states in India, we now analyse the state of rural multidimensional deprivation in Chhattisgarh in further detail. As shown earlier, Chhattisgarh ranks 13th out of 32 states and Union territories in India, making its rural multidimensional deprivation worse than the national average. The forthcoming sections present detailed analysis of the indicators and dimensions that contribute the most to the state's rural multidimensional deprivation as well as the level of rural multidimensional deprivation across districts and talukas of the state.

4.1 Indicators of deprivation

Figure 4 shows indicator-wise deprivation for Chhattisgarh and for India. At the outset, we find that on most of the indicators the state performs poorly in comparison to the national average. A large proportion of villages in Chhattisgarh are particularly deprived of an internet connection and vocational training centres. It is indeed alarming to find that close to 50% of the villages in the state have no public transport facilities to and from the village and lack in drainage facilities as well. The state however performs well in terms of having primary schools within a radius of 10kms from the village and in having Anganwadi centres in the villages.

The reason for many villages being deprived in some indicators and not others is perhaps related to public policy in these areas. In case of the primary schools, it is likely that because the Right to Education (RTE) mandates the state government to ensure that all children between six to fourteen years of age attend school, the state has made efforts in making primary schools easily accessible. Further, setting up of Anganwadi centres in villages is also a mandate of the state under the Integrated Child Development Services (ICDS). Thus, we find that Chhattisgarh performs well on these indicators. However, although making India Open Defecation Free by 2019 is mandated under the Swachh Bharat Mission, Chhattisgarh as well as India in general were far from having a sanitary toilet in every household of its villages in 2019. This shows that although policy mandates of the government help in addressing deprivation (such as setting up schools under the RTE or having Anganwadi centres under the ICDS), they take time to be implemented on the ground.

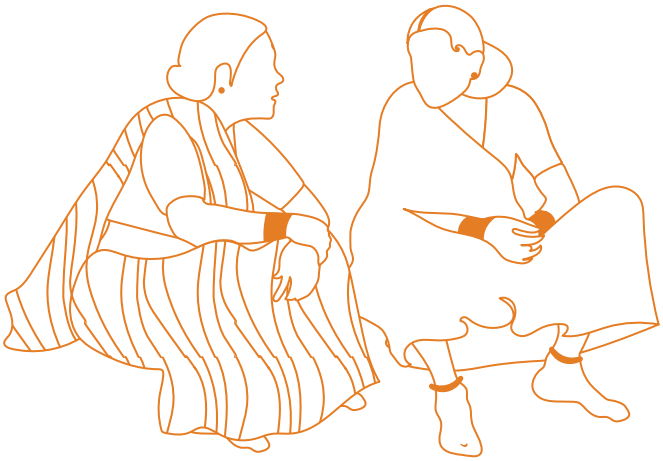


Figure 4: Percentage of Deprived Villages in Chhattisgarh and in India under each Indicator

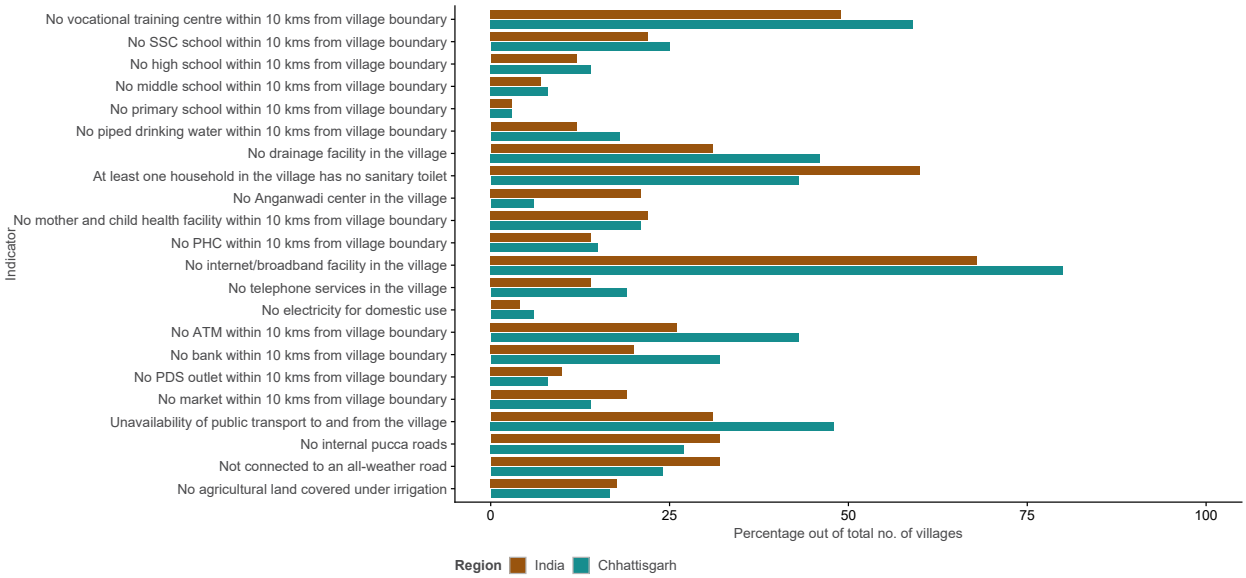


Table 2 shows the extent of deprivation in each indicator in terms of population size. Close to 70% of the state's rural population, that is, 9.3 million people, do not have an internet connection. Further, over half of the villagers, or 7.8 million people, are deprived of a vocational training centre within a radius of 10 kms from their village. Over 40% of the population, that is, 5.7 million people, live in villages where some of the households have no toilets and over 4.9 million people do not have access to a drainage facility.

These numbers show that on the health front, there is a lot to be done to provide drainage and toilet facilities in the state. To ensure better employment opportunities, vocational training centres need to be set up in villages. This can address the youth unemployment situation to a great extent. On the infrastructure front, the state needs to work on setting up internet connections, banks, ATMs and public transport facilities in villages that are all vital in boosting economic activities in the state. Government policies mandating these facilities in villages or programmes giving a boost to transport facilities can be instrumental in addressing such deprivations.

Table 2: Size of Population in the State Deprived under each Indicator

No.	Dimension	Indicator of Deprivation	Population Deprived (in nos.)	Share of Population Deprived in Total Rural Population of the State (in %)
1	Infrastructure	None of the agricultural areas in the village are covered under irrigation.	1192357	8.58
2		The village is not connected to an all weather road.	2041762	14.67
3		The village has no internal pucca roads (covered or partially covered).	2740883	19.72
4		No form of public transport (Bus/Van/Auto) is available to and from the village.	4977609	35.81
5		The nearest market (mandi/regular market/weekly market) to the village is farther than 10 kms from the village revenue boundary.	1186894	8.54
6		The nearest fair price shop (ration shop) is farther than 10 kms from the village revenue boundary	541184	3.9
7		The nearest bank is farther than 10 kms from the village revenue boundary.	3525366	25.36
8		The nearest ATM is farther than 10 kms from the village revenue boundary.	5170923	37.20
9		There is no electricity for domestic use in the village.	309307	2.22
10		There are no telephone services (mobile or landline) in the village.	1710130	12.30
11		There is no internet/ broadband facility available in the village	9295599	66.88

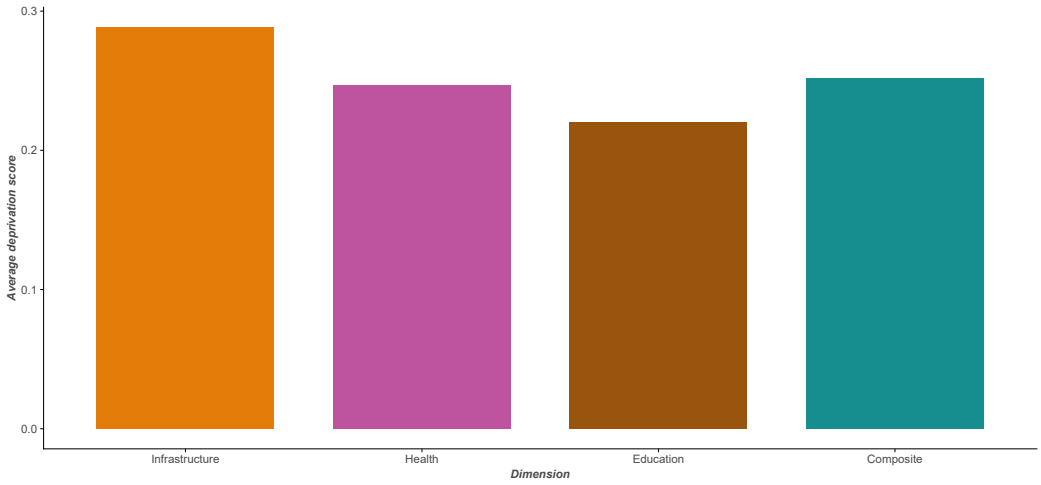
12	Health	The nearest primary health center/ community health center/ Subcenter is farther than 10 kms from the village revenue boundary.	1233148	8.87
13		The nearest mother and child health facility is farther than 10 kms from the village revenue boundary.	2093085	15.06
14		There is no Anganwadi center in the village.	274795	1.98
15		The village has at least one household without a sanitary toilet.	5716462	41.13
16		There is no drainage facility in the village.	4929576	35.47
17		The distance to the nearest piped tap water facility is more than 10 kms from the village revenue boundary.	1865817	13.42
	Education	The nearest primary school is farther than 10 kms from the village revenue boundary.	141168	1.02
		The nearest middle school is farther than 10 kms from the village revenue boundary.	448386	3.23
		The nearest high school is farther than 10 kms from the village revenue boundary.	1308059	9.41
		The nearest SSC school is farther than 10 kms from the village revenue boundary.	2584154	18.60
		The nearest vocational training center/ polytechnic/ ITI/RSETI/ DDU_KY center is farther than 10 kms from the village revenue boundary.	7762423	55.85

Source: Compiled by the authors using Mission Antyodaya Survey, 2019. Population data taken from Census 2011.

Once we identify whether a village is deprived or not on a specific indicator, we look at the average deprivation score for each dimension. As mentioned in the methodology section, these scores indicate the average number of indicators in a specific dimension that a group is deprived of. For example, the infrastructure deprivation score gives the average number of infrastructure indicators of which a village is deprived. Similarly, the health deprivation score provides the average number of health indicators of which a village is deprived.

Figure 5 shows that on an average, villages in Chhattisgarh are most deprived on the infrastructure front, followed by health and education, respectively. On the infrastructure front, an average village in the state is deprived of 3 out of 11 indicators. On the health and education fronts, the corresponding numbers are 1.5 out of 6 and 1 out of 5, respectively. Thus, the difference between average deprivation level across dimensions is only marginal. The composite deprivation score indicates that an average village in the state is deprived of 25% of the indicators, that is, of about 6 out of 22 indicators.

Figure 5: Mean Deprivation Scores Across Dimensions for Chhattisgarh



Overall, the results for Chhattisgarh show that the state is in general deprived across all dimensions in the range of 22% to 29%. Although the average deprivation level across dimensions is marginal, the deprivation level on specific indicators within these dimensions varies greatly, as seen earlier. From a policy perspective, focus should thus be given to specific indicators such as drainage facilities, sanitary toilets, vocational training centers, etc., which most villages in the state are deprived of.

4.2 Composite Deprivation Scores across districts in Chhattisgarh

Analysis at the state level only gives us a bird's-eye view of the situation of multidimensional deprivation. To better understand the issues at hand as well as come up with policy responses, it is essential to dig deeper, and understand the situation at the district level and beyond. This section hence studies the patters in deprivation in Chhattisgarh at the district level.

Figure 6: Infrastructure Deprivation Scores for the Districts of Chhattisgarh

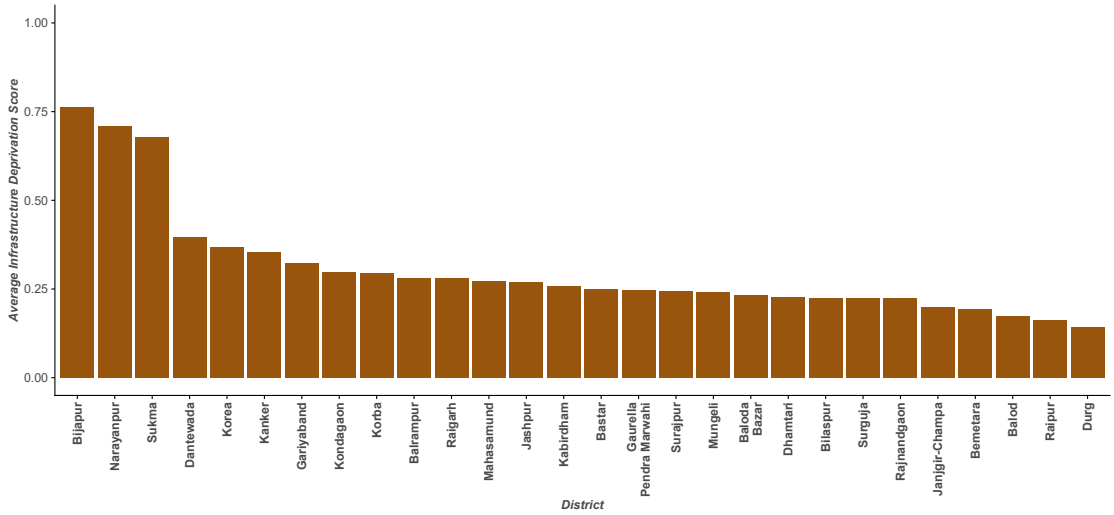


Figure 6 shows the mean infrastructure deprivation score across districts in Chhattisgarh. At the outset, the figure makes it clear that there is quite some variation in the infrastructure deprivation score between districts. The most striking feature is that the districts of Bijapur, Narayanpur and Sukma are far more deprived as compared to the other districts in the state. In terms of numbers, we find that the district with the highest level of infrastructure deprivation, that is, Bijapur, is deprived on 75% of the infrastructure indicators, that is, on about 8 out of the 11 infrastructure indicators. In contrast, districts such as Balod, Raipur and Durg, which are the least deprived, are deprived of only 2 to 3 of the infrastructure indicators.

Figure 7: Spatial Distribution of Infrastructure Deprivation Score in Chhattisgarh

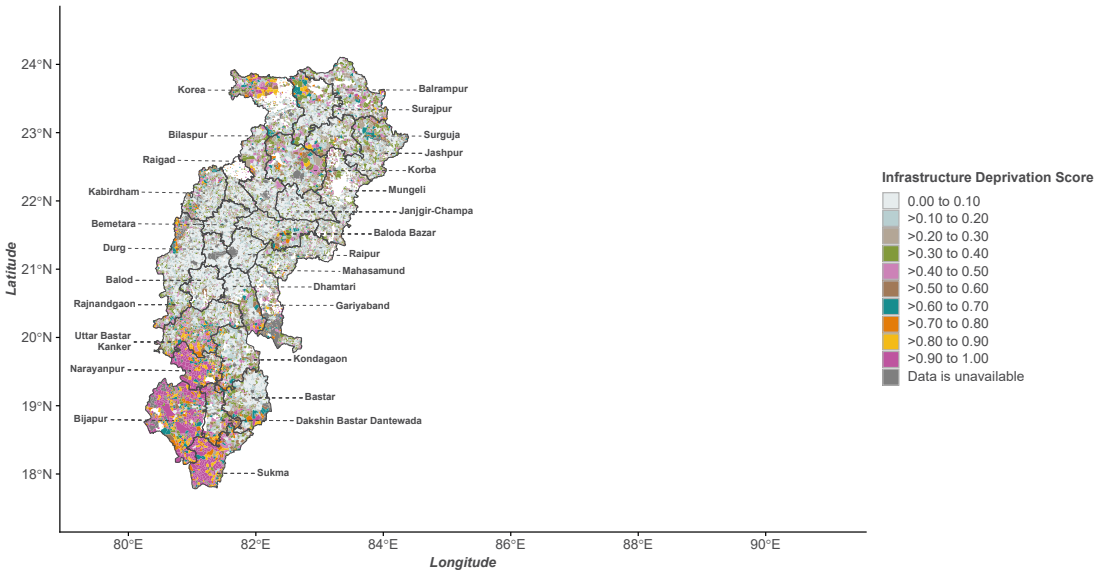


Figure 7 gives a more nuanced picture of infrastructure deprivation in the state. The Bastar region of the state, where the most deprived districts of Bijapur, Narayanpur and Sukma are located, is the most deprived. Furthermore, we see that almost all villages in the districts of Bijapur, Sukma and Narayanpur are showing high levels of infrastructural deprivation (indicated by dark pink spots across these districts). In contrast, the districts of Korea, Korba, Dhamtari, etc. have few pockets with levels of infrastructural deprivation as high as that of villages in the Bastar region while the rest of the villages have moderate to low levels of deprivation. Thus, while districts in the Bastar region need an overall push to improve their infrastructural amenities, a few other need to target specific villages improve their infrastructure levels.

Figure 8: Health Deprivation Scores for the Districts of Chhattisgarh

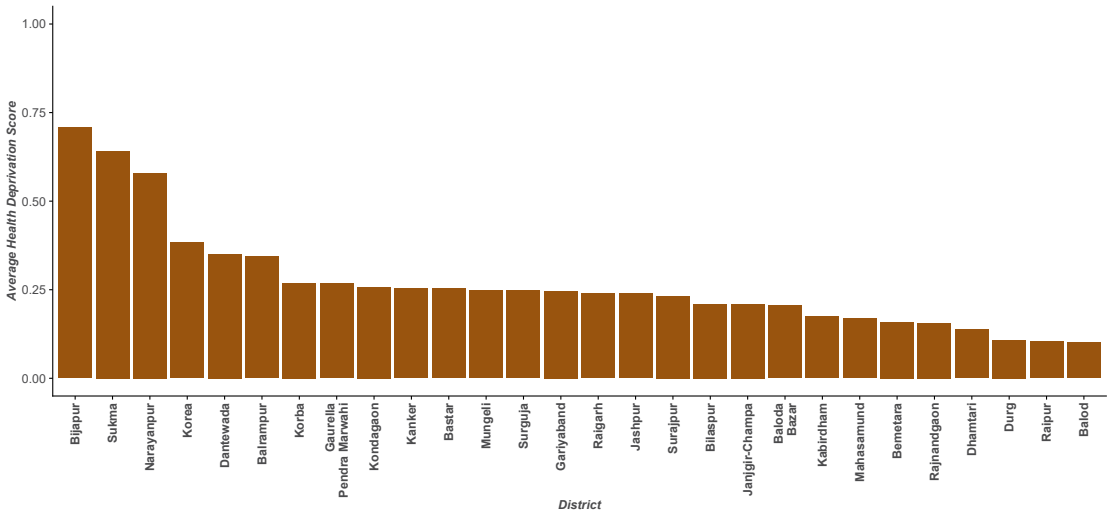
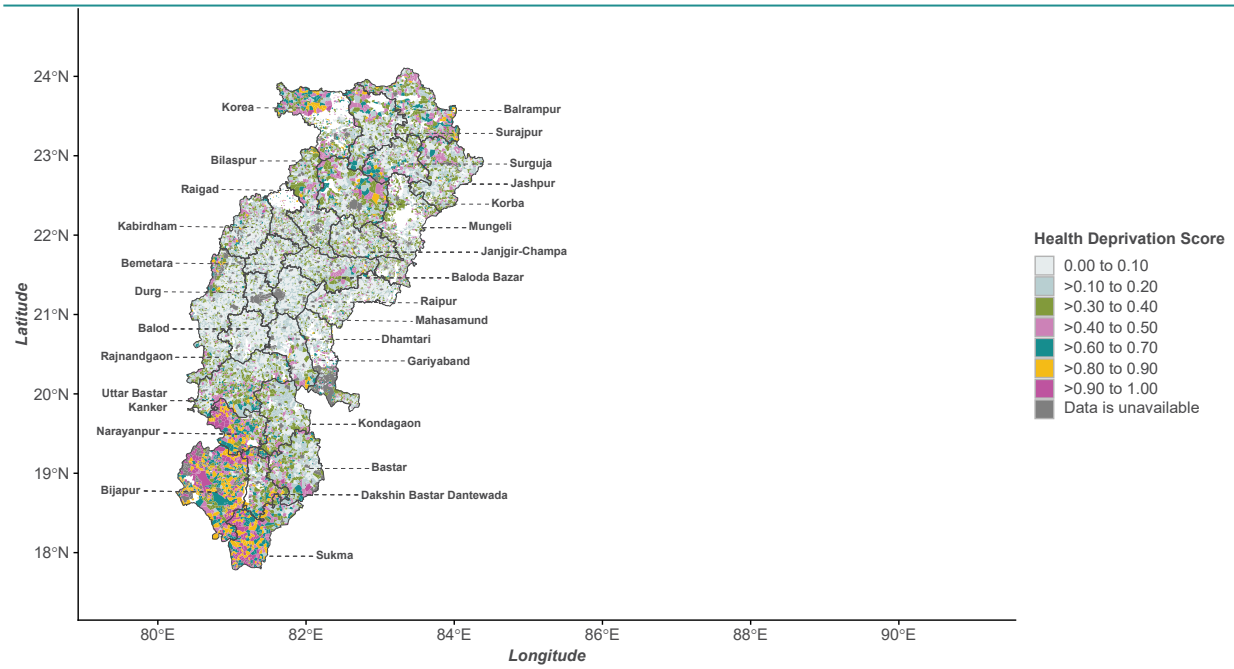


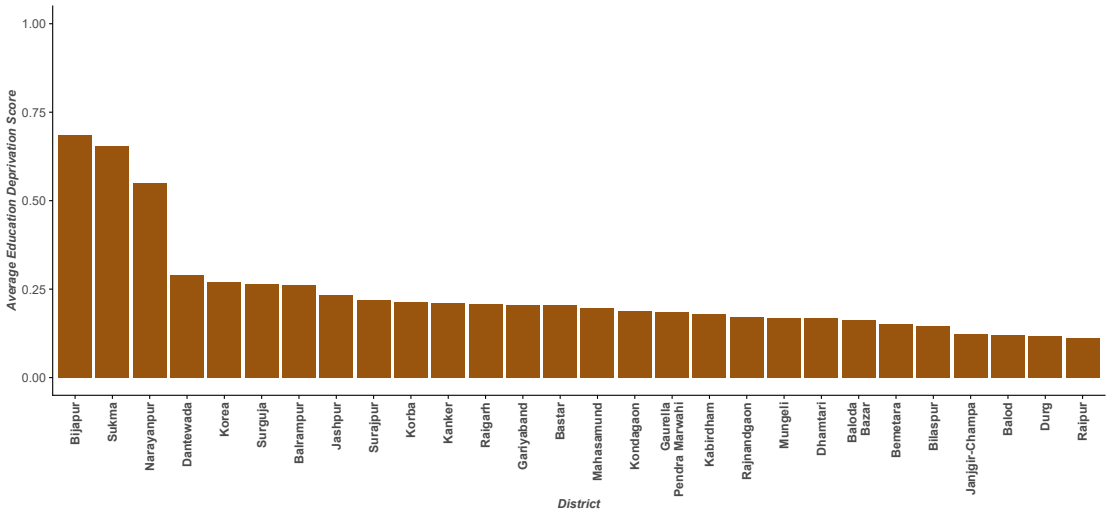
Figure 8 shows that the disparity within the state remains even in terms of health deprivation. In fact, the top and bottom 3 districts are the same when it comes to health and infrastructure deprivation. Bijapur is the most deprived district on an average on the health front too, while Balod is the least deprived. There is some variation in the ranking of the other districts though. The districts of Balrampur and Gaurella Pendra Marwahi stand out as they rank sixth and eighth (higher the rank, greater the deprivation), respectively, of the 28 districts in terms of health deprivation score, but fair better on the infrastructure front, ranking tenth and sixteenth out of 28 districts, respectively. Thus, these specific districts need to focus more on public provisioning of health services, rather than infrastructure.

Figure 9: Spatial Distribution of Health Deprivation Score in Chhattisgarh



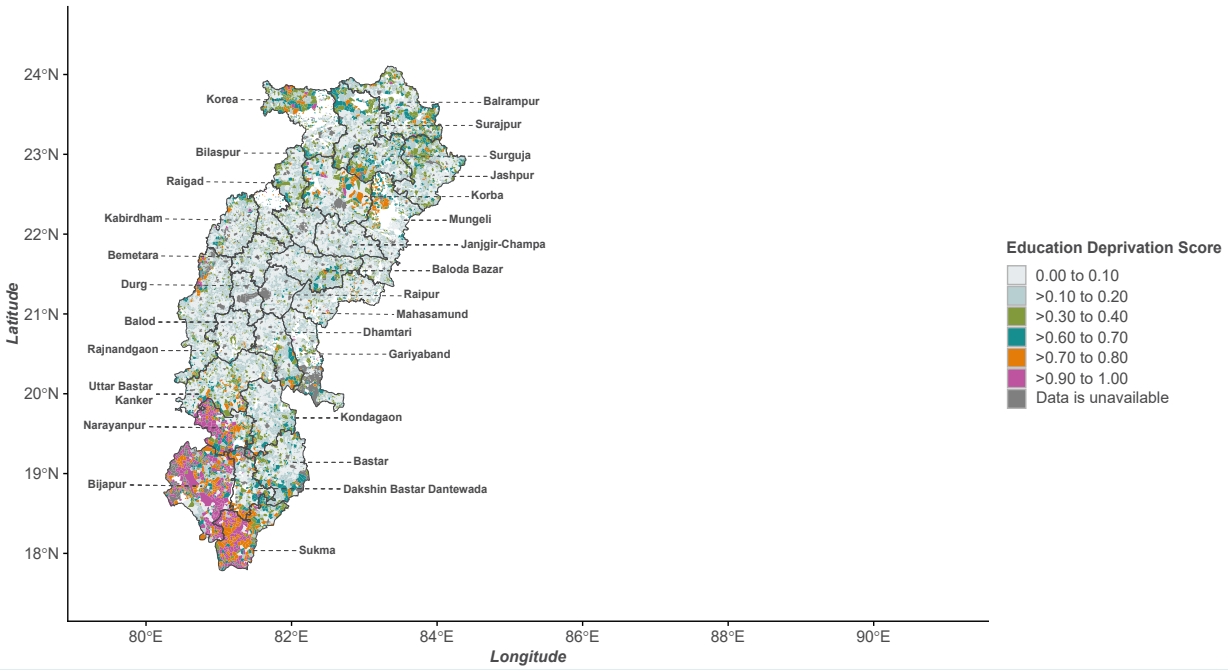
The spatial distribution of health deprivation score as shown in Figure 9 looks similar to that of the infrastructure deprivation score. Deprivation of public provisioning of health facilities is concentrated in the southern part of Chhattisgarh in the Bastar area, with few pockets in the districts of Korba, Korea, Dhamtari, etc. also calling for attention.

Figure 10: Education Deprivation Scores for the Districts of Chhattisgarh



The picture does not change much on the education front. As Figure 10 shows, Bijapur, Sukma and Narayanpur continue to be the laggard districts of the state, whereas Balod, Durg and Raipur perform the best. In general, the lower mean education deprivation score across all districts of Chhattisgarh shows that the state does slightly better in provisioning of education facilities. But as agrued earlier, the reason behind this might be that under the RTE the state has made provisions for children to access schools easily. Because such government policies are lacking on the health and infrastructure fronts, we find that public amenities in these dimensions are fewer in villages.

Figure 11: Spatial Distribution of Education Deprivation Score in Chhattisgarh



In spite of the RTE, the spatial distribution of education shows that the Bastar region is highly deprived of education facilities. In comparison to spatial distribution of infrastructure and health deprivation scores, Figure 11 has a lighter shade across the rest of the state, showing a lower level of educational deprivation. The range of education deprivation scores lies either on the higher side, between 60% and 100%, or on the lower to moderate side, of upto 40%. In general, Figure 11 reiterates the need for more attention in the Bastar division across all dimensions of deprivation.

Figure 12: Composite Deprivation Score for the Districts of Chhattisgarh

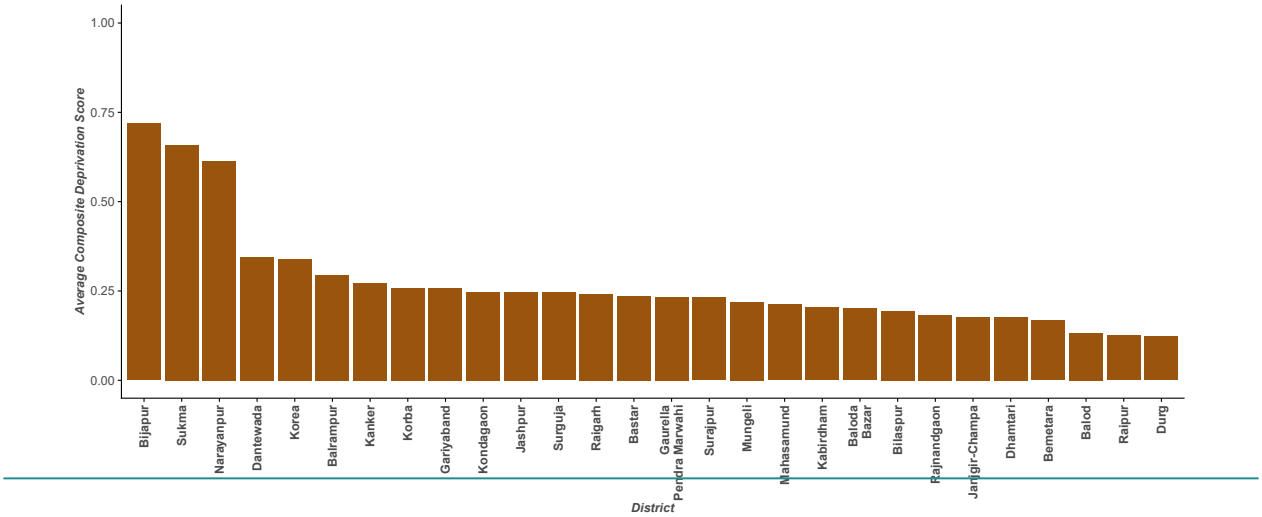


Figure 12 shows the composite deprivation scores, that is, averaged across the three dimensions of infrastructure, health, and education. As expected, the districts of Bijapur, Sukma and Narayanpur are the most deprived, their average deprivation score ranging between 60% to 75%. In other words, these districts are on an average deprived of between 14 to 16 indicators out of the total of 22 indicators considered. Compared to the state average of 6 indicators of deprivation, these districts do quite poorly. Moreover, the best performing districts of Durg, Raipur and Balod have a mean composite deprivation score of about 12% (3 out of 22 indicators), indicating the sharp disparity in deprivation levels within the state.

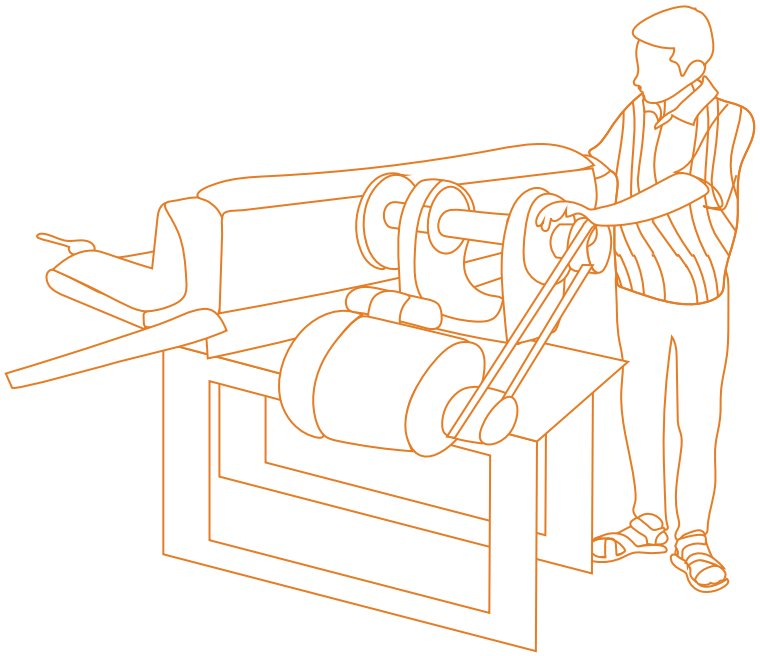
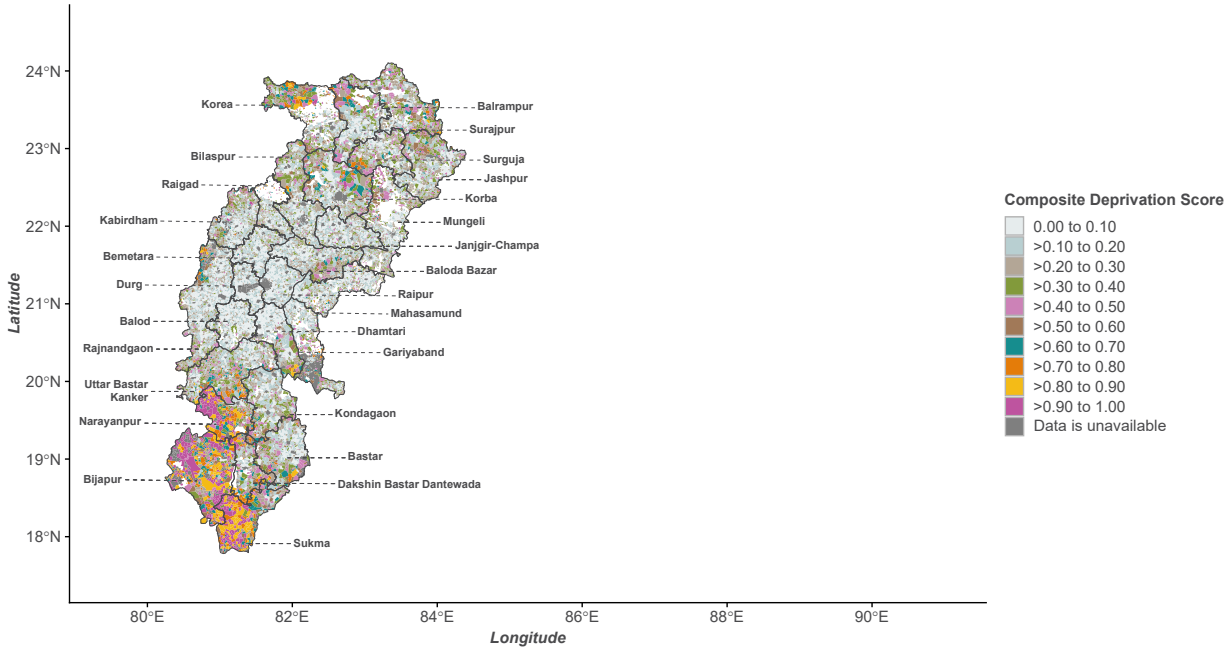


Figure 13: Spatial distribution of the Composite Deprivation Score in Chhattisgarh



Emphasizing the findings above, Figure 13 shows that overall, the most deprived villages in Chhattisgarh lie primarily in the three districts of Sukma, Bijapur and Narayanpur. Many villages in these districts have a composite deprivation score in the range of 80% to 100% (dark red in colour in Figure 13), implying that many villages in these districts are deprived of as high as 18 to 22 indicators. Undoubtedly, concentrated efforts need to be made to uplift these areas. In contrast, no village in districts of Durg, Raipur or Balod has a composite deprivation score of over 40%.

The district-level analysis of composite deprivation scores thus shows that the level of disparity of deprivation within the state is quite high. The tribal belt of Bastar is quite deprived when compared to the rest of the state. Policy measures and government efforts thus need to be driven towards public provisioning of amenities in these districts. Further, we find that the differences in deprivation are starker between districts in the state rather than between dimensions. Public and government action thus needs to be targeted in specific pockets of the state and on specific indicators, rather on a specific dimension of deprivation.

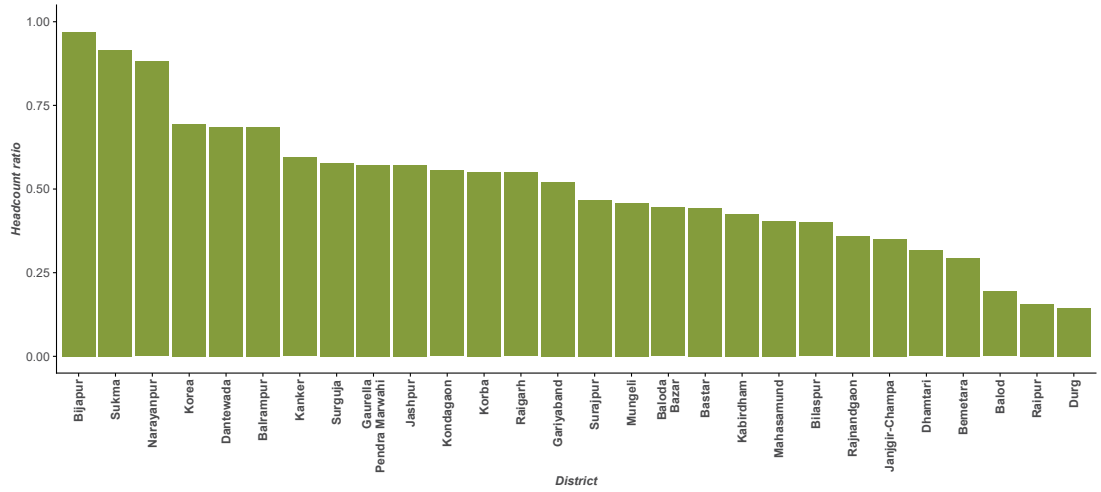
4.3 Rural Multidimensional Deprivation in Chhattisgarh

After looking at the composite deprivation scores and the average deprivation scores across each dimension, we now analyse "multidimensional" rural deprivation in Chhattisgarh. As stated earlier, we define a village as multidimensionally deprived if the village is deprived of at least five of the 22 indicators listed in Table 1. In other words, villages with a composite deprivation score of greater than 0.2 are classified as multidimensionally deprived. Such a classification of multidimensional deprivation enables us to identify villages or pockets of the state that are most deprived. Particularly in the case of Chhattisgarh this is useful, as the previous section showed that deprivation is persistent in specific pockets of the state, rather than in specific dimensions.

Figures 14 and 15 show the distribution of the headcount ratio of multidimensional deprivation (ratio of number of villages that are multidimensionally deprived to the total number of villages) across districts in Chhattisgarh.

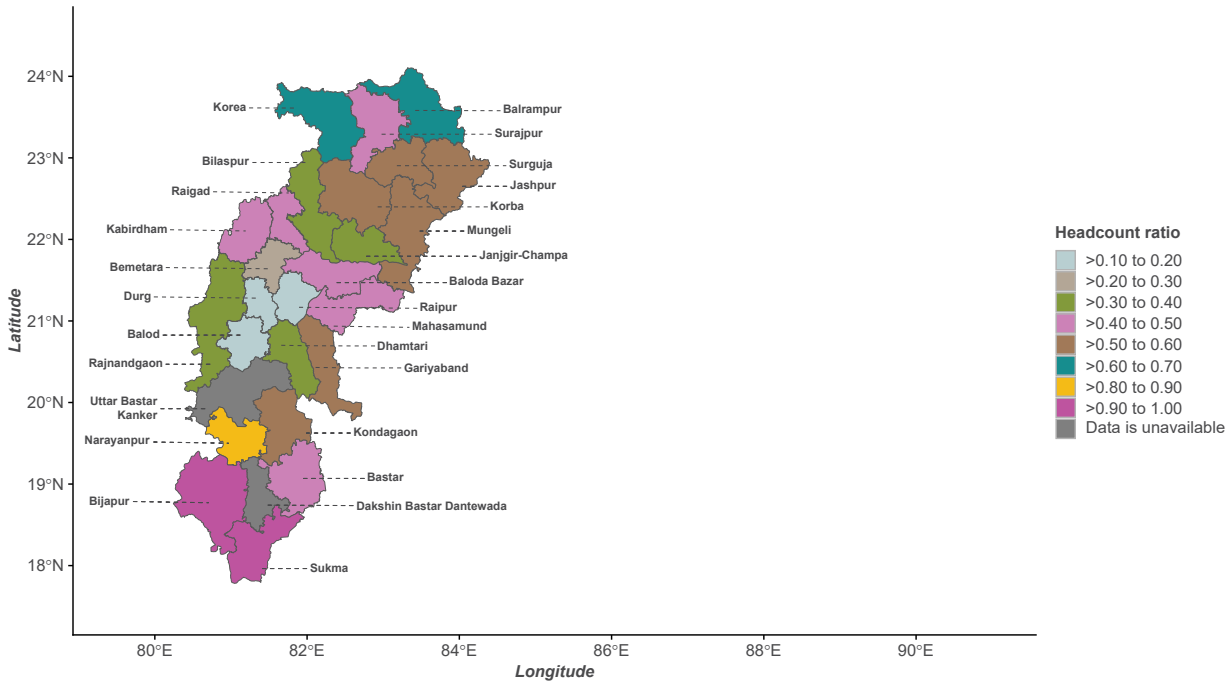
The figures are in line with the findings on composite deprivation scores. The tribal districts of Bijapur, Sukma and Narayanpur have the highest headcount ratio of multidimensionally deprived villages, whereas Durg, Raipur and Balod have the lowest. It is alarming to find that 97% of the villages in Bijapur are multidimensionally deprived, whereas the corresponding figure for Durg is less than 15%. The distribution of headcount ratio of multidimensional deprivation reiterates the level of inequality in access to public amenities within the state.

Figure 14: Distribution of Headcount Ratio of Rural Multidimensional Deprivation across Districts in Chhattisgarh



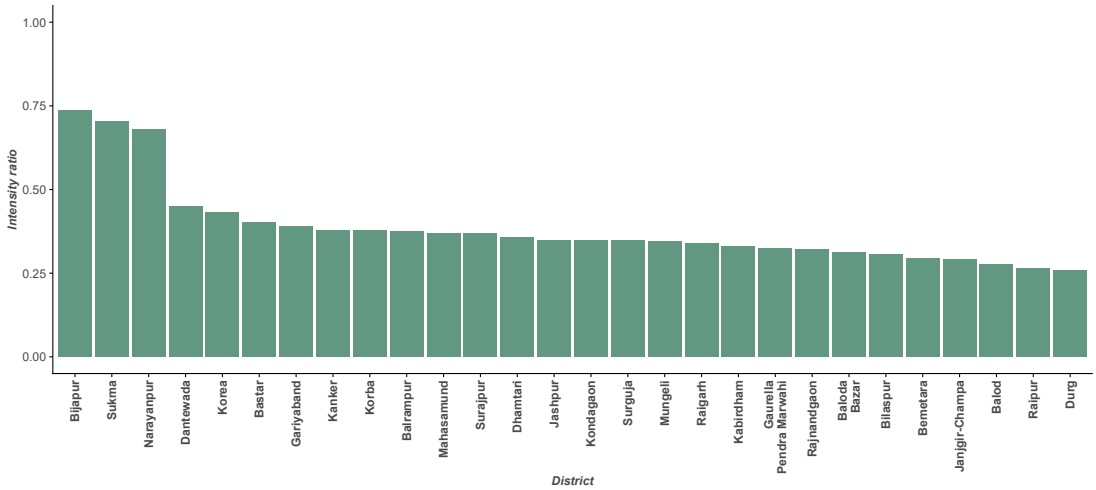
The spatial distribution in Figure 15, makes it evident that the southern part of the state, which forms the Bastar division, has the highest level of deprivation. This is closely followed by districts in the Surguja division, in the north of the state. The Durg division is the least deprived in terms of headcount ratio.

Figure 15: Spatial Distribution of Headcount Ratio of Rural Multidimensional Deprivation across Districts in Chhattisgarh



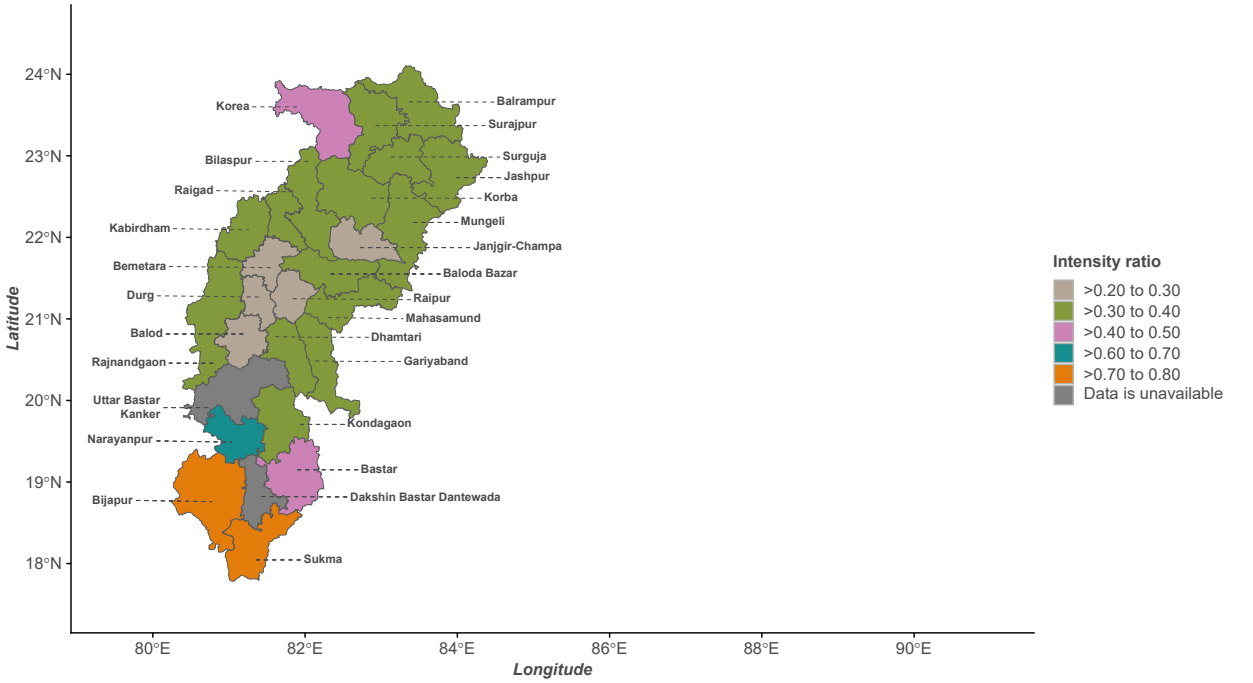
Figures 16 and 17 depict the distribution of intensity ratio (ratio of the sum of composite deprivation among the multidimensionally deprived to the number of multidimensionally deprived villages) across districts in the state. The districts of Bijapur, Sukma and Narayanpur not only have the highest proportion of villages that are multidimensionally deprived, but the level of deprivation among the deprived villages is also the highest in the state. For instance, the average multidimensionally deprived village in Bijapur is deprived of 74% of the indicators, or, 16 out of 22 indicators, which, by all means, is a high figure. Durg, Raipur and Balod have the lowest intensity ratio, in the range of 26% to 28%.

Figure 16: Distribution of Intensity Ratio of Rural Multidimensional Deprivation across Districts in Chhattisgarh



Interestingly, there is less variation in the intensity ratio as compared to the headcount ratios. The spatial distribution of intensity ratio in Figure 17 clearly depicts this. If we leave out the three worst-performing districts, then the intensity ratio is not above 45% for any district. That is, the intensity ratio drops drastically after the top three districts. These numbers stress the need for efforts to improve the conditions of the three districts of Bijapur, Sukma and Narayanpur.

Figure 17: Spatial Distribution of Intensity Ratio of Rural Multidimensional Deprivation across Districts in Chhattisgarh



Putting the headcount and intensity ratios together, Figures 18 and 19 show the distribution of RDI in Chhattisgarh. As expected, districts in the Bastar region lag behind, followed by districts in the Surajpur division. Similar to the trend in intensity ratio, the RDI falls drastically after the top three distircts and then falls gradually for every other distirct in the state. While the top three distircts have an RDI of 0.6 and above, the others have an RDI of not more than 0.3. The bottom three districts of Raipur, Durg and Balod have an RDI of less than 0.05. These numbers highlight the disparity within the state, and the poor conditions of three specific districts of the state.

Figure 18: Distribution of Rural Multidimensional Deprivation Index across Districts in Chhattisgarh

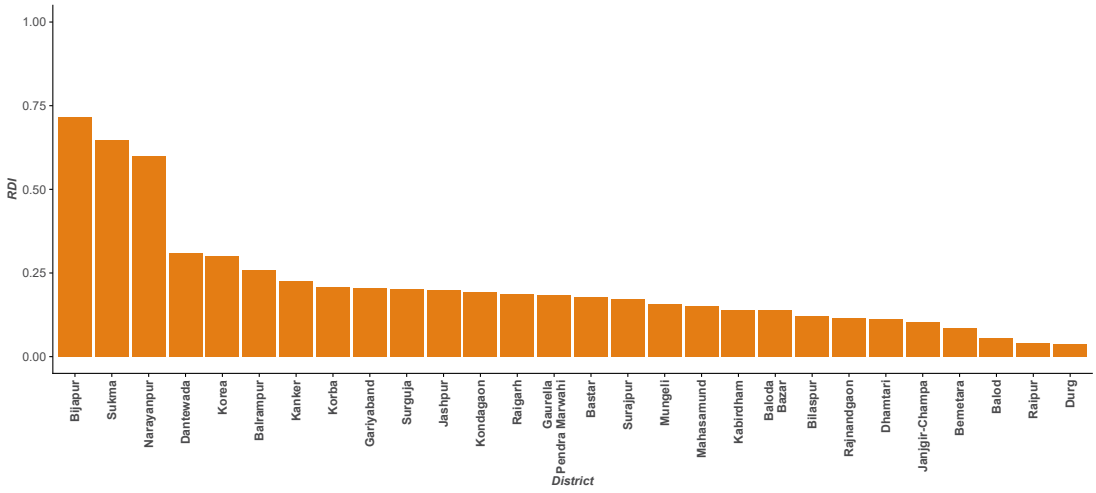
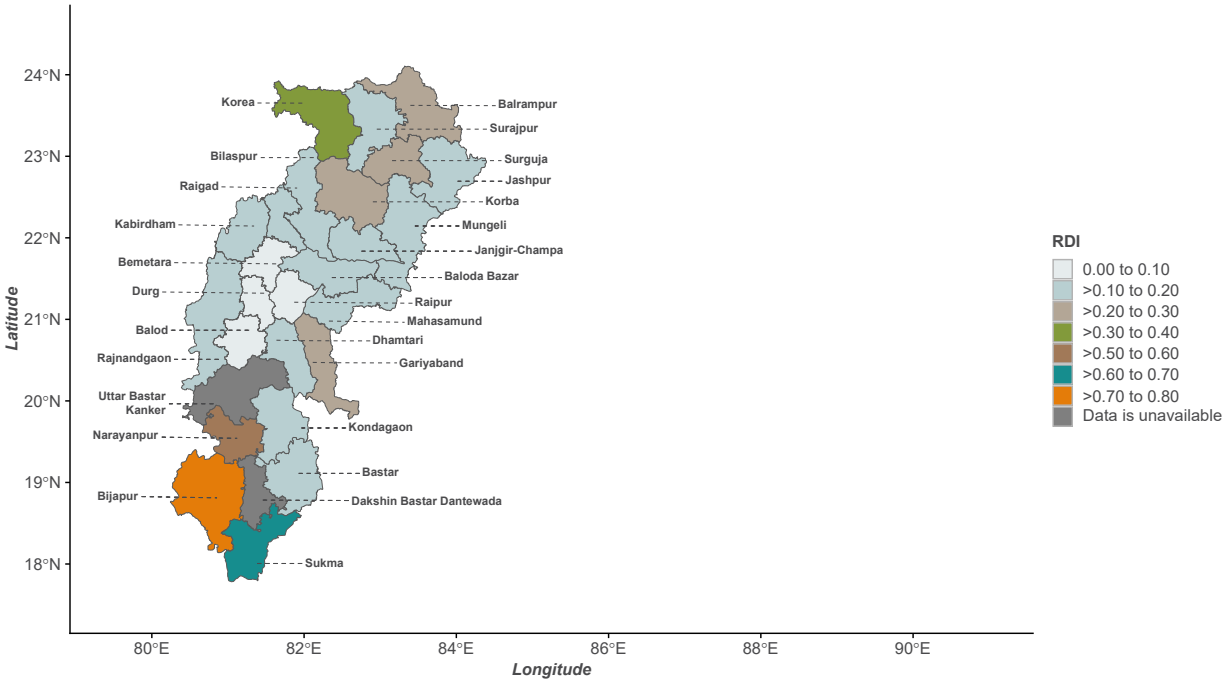


Figure 19: Spatial Distribution of Rural Multidimensional Deprivation Index across Districts in Chhattisgarh



The anlaysis of rural multidimensional deprivation thus shows that much needs to be done in three specific districts of the state. The district-wise analysis shows that specific pockets in the state, particularly the forest regions dominated by tribal populations, such as Bastar, call for focused action. The districts in this divison not just have a large proportion of villages that are multidimensionally deprived, but the level of deprivation in them is also the highest in the state. Districts such as Durg, Raipur and Balod, which are surrounded by big cities, are doing better than the rest of the state in terms of access to public amenities. This shows that geography and urban agglomeration are playing a crucial role in the development of the state.

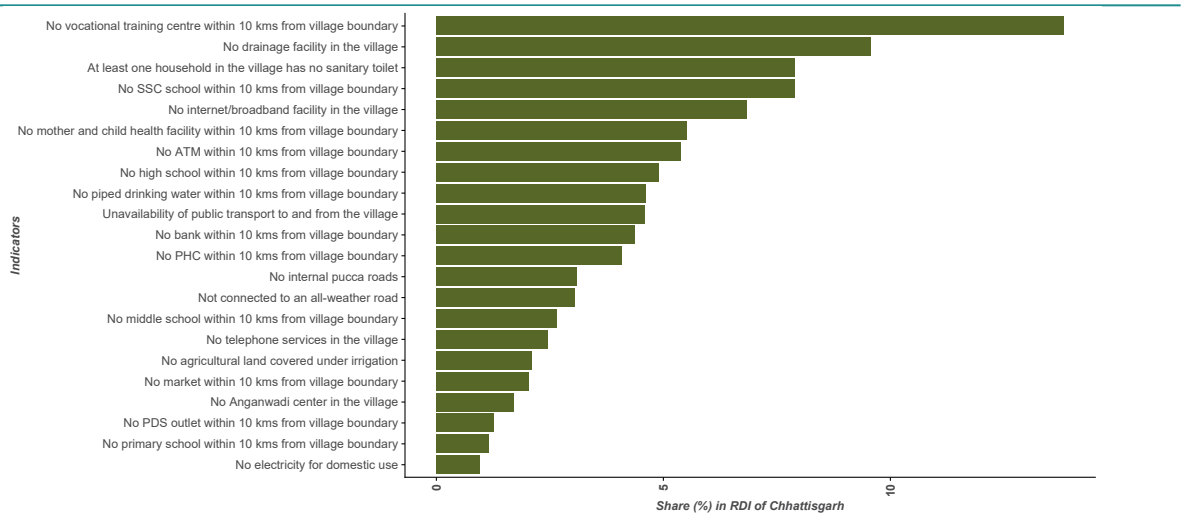
4.4 Indicator-wise contribution to Overall Deprivation

Having analysed rural multidimensional deprivation across districts in Chhattisgarh, we now decompose the index to understand the contribution of each indicator to overall deprivation. This analysis will help us in identifying the indicators that need the largest focus in order to tackle multidimensional deprivation in the state.

As Figure 20 shows, lack of vocational training centres is the largest contributor to the state's deprivation index, contributing about 15% to the index. This is followed by lack of drainage facilities in villages and absence of secondary schools and sanitary toilets, respectively. Unavailability of electricity for domestic use and absence of primary schools are the smallest contributors to the index, having a share of about 1% each.

By aggregating the indicators across dimensions, we find that health and infrastructure contribute about 35% each to the multidimensional deprivation index, whereas the education dimension contributes about 30%. Thus, collectively, the state needs to focus relatively more on infrastrucutre and health amenities, as compared to education. But as argued earlier, a better strategy will be to focus on specific indicators within each of these dimesnions as the disparity there is starker.

Figure 20: Share of Each Indicator to the RDI of Chhattisgarh



5. District-wise analysis of RDI in Chhattisgarh

The analysis so far shows that specific districts in the state are a lot more deprived than others. But it is also essential to understand if specific talukas within a district are more deprived than others. This section hence analyses rural multidimensional deprivation at the district level by looking at the distribution of RDI across each district in the state and the contribution of each indicator to the district RDI. We divide the districts based on the administrative regions in which they are located, that is, Surguja, Bilaspur, Durg, Raipur and Bastar.

5.1 Surguja Division

Districts in the Surguja division show some variations in their levels of RDI. While Surajpur has the lowest level of multidimensional deprivation among all the districts in the division, Korea and Balrampur have high levels of deprivation, ranking 5th and 6th respectively in the state (see Appendix Table 4A). There is variation in the level of deprivation also within each of these districts, which is discussed below.

Surajpur District

Premnagar and Oudgi are the most multidimensionally deprived areas of Surjpur, with over 75% of their population being deprived. Oudgi also has the worst intensity ratio in the district- the average multidimensionally deprived village in this area is deprived on 50% of the inidcators, which is a matter of grave concern. Surajpur, Bhaiyaihan and Ramanujnagar have a relatively low level of RDI in this district

(see Figure 21a).

The indicator-wise analysis (Figure 21b) shows that similar to the state-wide trend, lack of vocational training centres contribute the most to multidimensional deprivation in the district. SSC schools and drainage facilities are other areas that the district needs to work on. Overall, similar to the state-level trend, deprivation in education contributes about 30% of the deprivation in the district, health contributes about 35% and infrastructure contributes the rest of the 35%.

Figure 21a: Rural Multidimensional Deprivation in Surajpur District

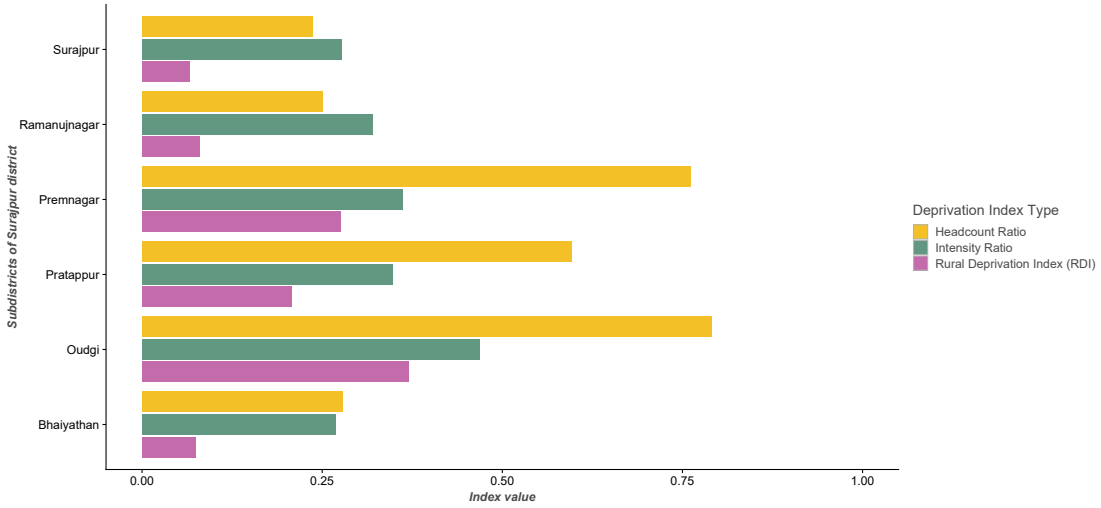
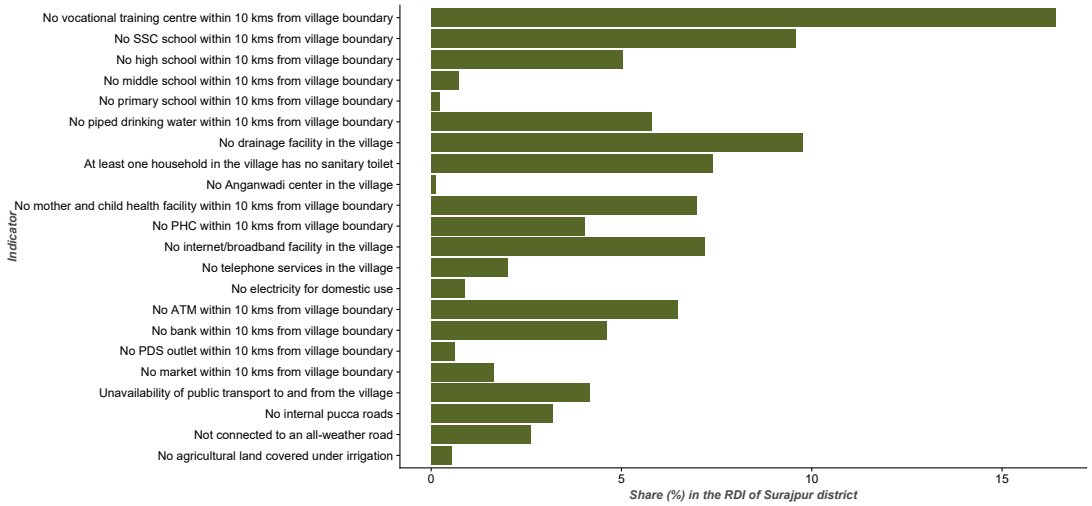


Figure 21b: Contribution of various factors to the RDI of Surajpur District



Jashpur District

The Jashpur district ranks 11th out of the 32 districts in Chhattisgarh, with an overall RDI score of 0.199 (see Appendix Table 4A). Many of its areas have a high headcount ratio of multidimensional deprivation, with the taluka of Bagicha topping the list with 75% of its villages being multidimensionally deprived. In general, efforts to improve the level of development is needed across all areas of this district (see Figure 21c).

Figure 21c: Rural Multidimensional Deprivation in Jashpur District

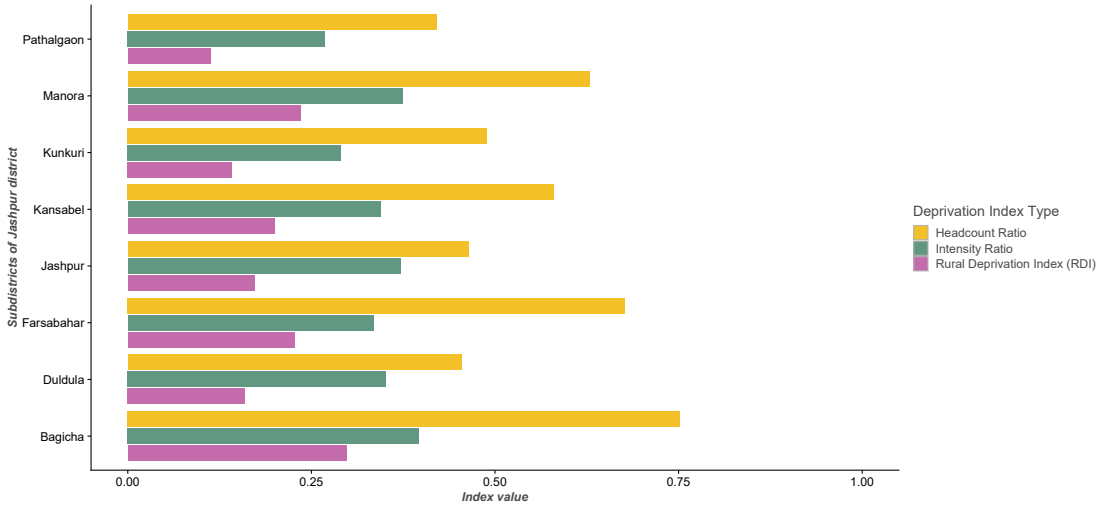
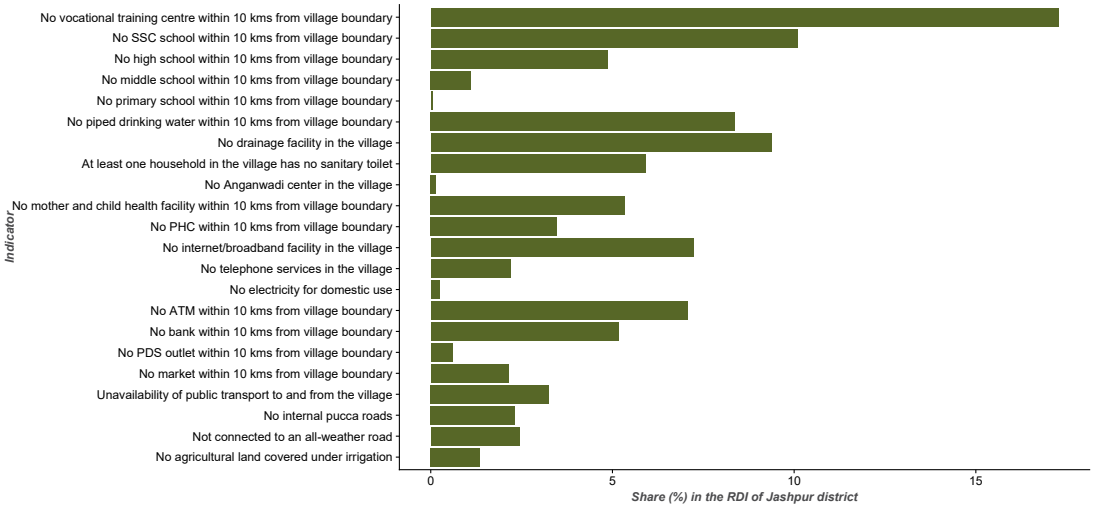
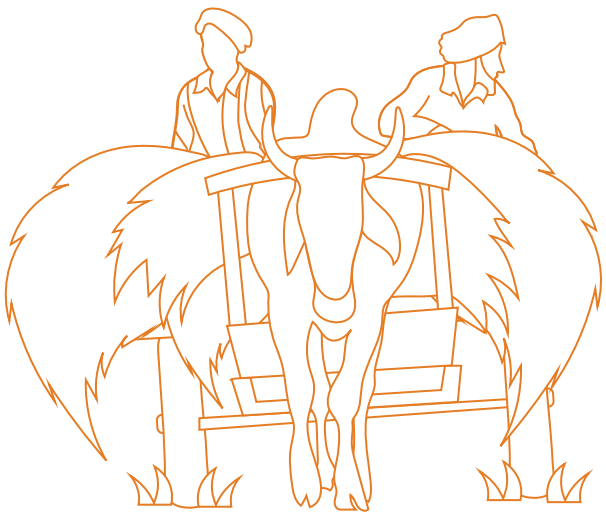


Figure 21d shows that the district has a good number of primary schools, anganwadi centres, telephone services and PDS outlets. However, it needs to work on setting up more vocational training centres, SSC schools, drainage facilities and piped water facilities. Each of these indicators contribute between 8% to 20% of the deprivation in the district.

Figure 21d: Contribution of various factors to the RDI of Jashpur District





Surguja District

Ambikapur and Sitapur areas have the lowest levels of deprivation in the Surguja district. All the other areas have a headcount ratio between 50% and 75%, which is quite high (see Figure 21e). Udaypur has the highest level of multidimensional deprivation with an RDI score of over 0.25. It's headcount ratio and intensity ratio both are quite high.

As Figure 21f shows, the indicator contributing the most to multidimensional deprivation in Surguja district is lack of vacational training centres, similar to that at the state level. However, unlike the state-level trend, this district performs better in terms of infrastructure amenities as compared to health and education. Specifically, it does poorly in terms of having mother and child health facilites in the village, with the indicator contributing to over 10% to the RDI.

Figure 21e: Rural Multidimensional Deprivation in Surguja District

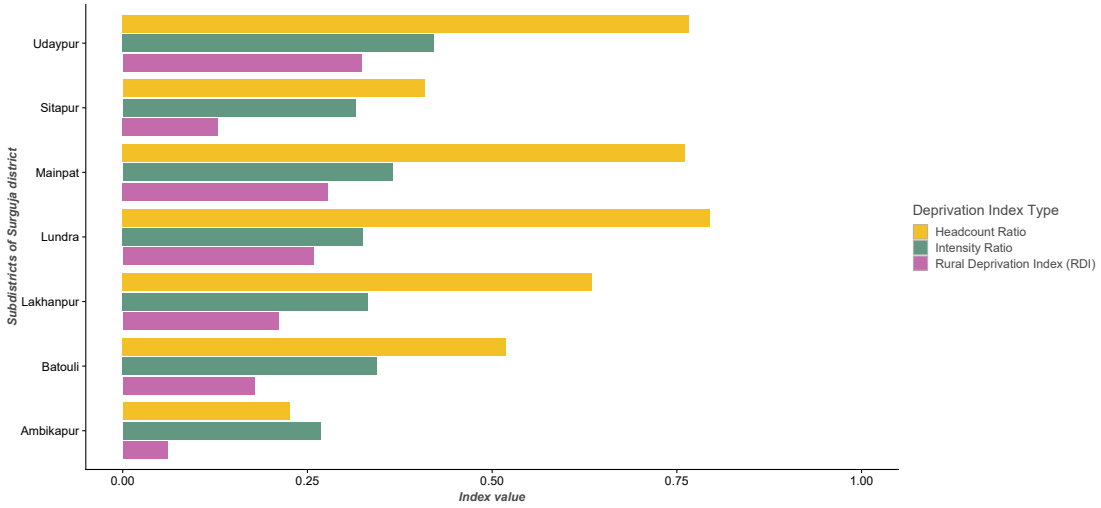
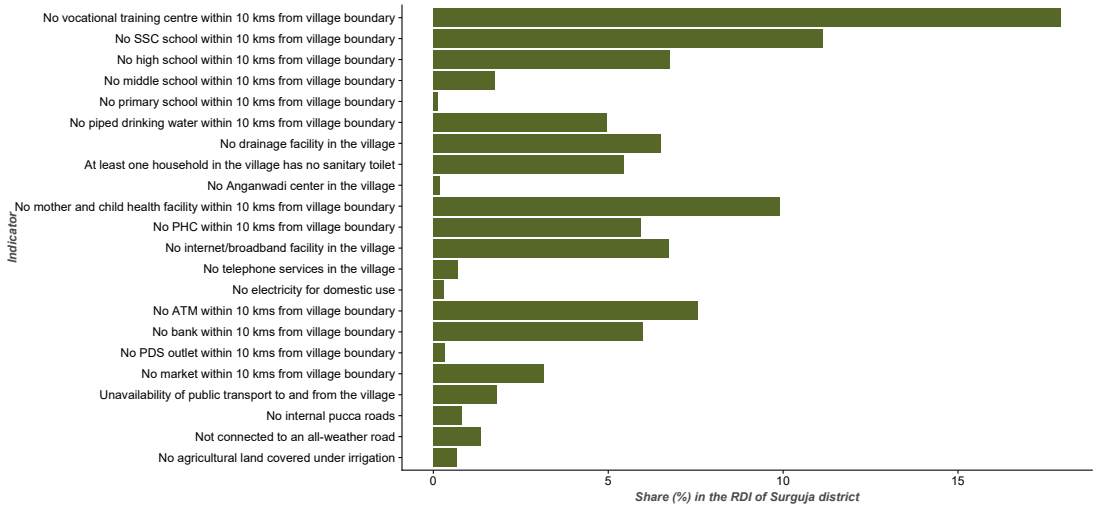


Figure 21f: Contribution of various factors to the RDI of Surguja District



Balrampur District

The Balrampur district is among the more deprived areas of the state, ranking 6th among all the districts in Chhattisgarh with an RDI score of 0.257. Except for Raipur and Utraula, which have a headcount ratio of less than 50% and an RDI score of below 0.2, all the other talukas show a high level of multidimensional deprivation. Figure 21h shows that on the health front, the district needs to work on creating drainage facilities in its villages, giving households access to piped drinking water as well as building toilets. On the education front, many of the villages have no vocational training centres. The district also has few villages with SSC schools in the vicinity. The district fairs better on the infrastructure front but does need to work on public transport facilities in villages as well as having banks, ATMs and internet connections in the villages.

Figure 21g: Rural Multidimensional Deprivation in Balrampur District

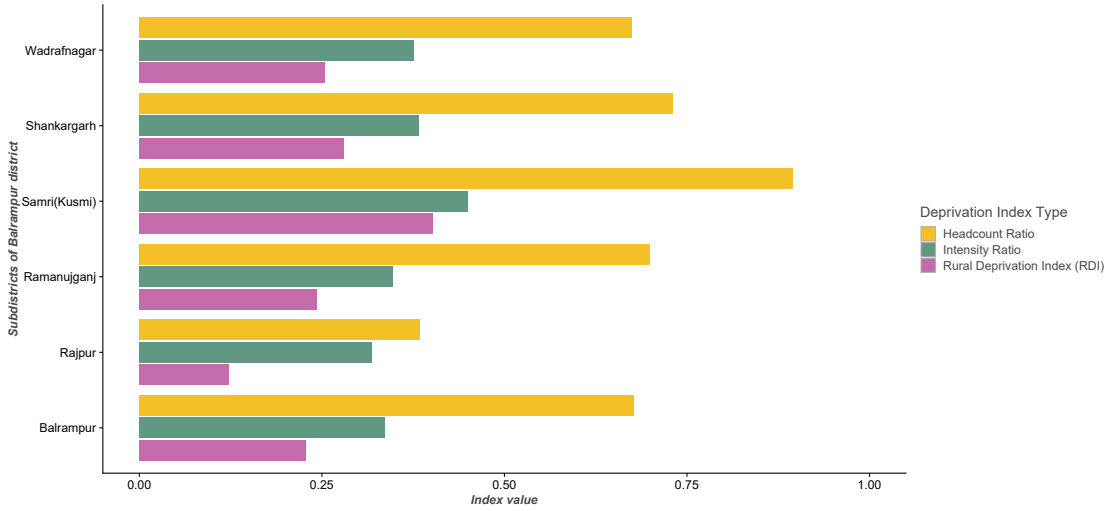
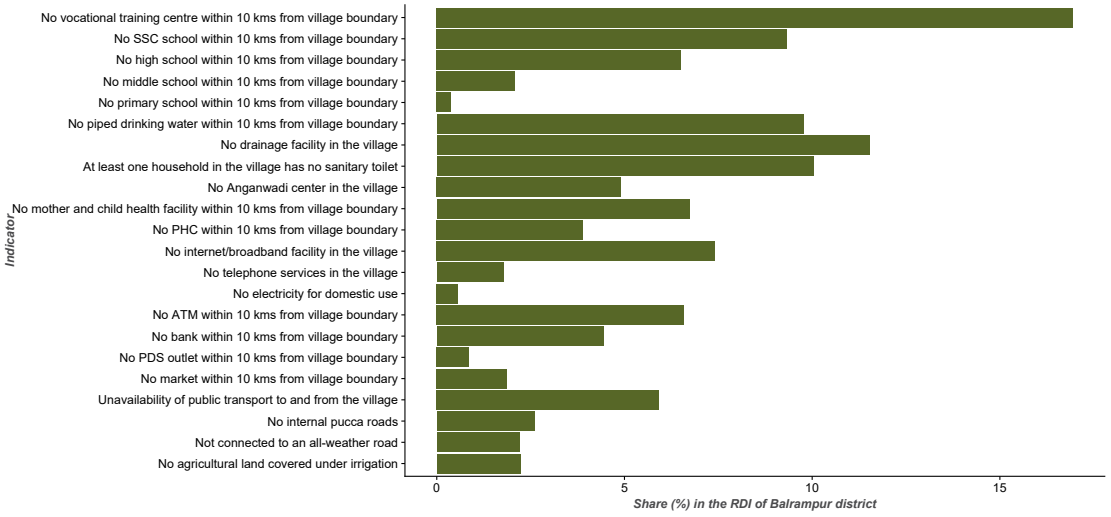


Figure 21h: Contribution of various factors to the RDI of Balrampur District



Korea District

Korea is the most multidimensionally deprived district in this division, ranking 5th among all the districts in the state. As Figure 21i shows, all its talukas have high levels of deprivation, with Bharatpur leading the table. Bharatpur has an extremely high level of headcount ratio, with close to 90% of its villages being multidimensionally deprived. On an average, a village in Bharatpur is deprived of about 45% of the indicators. Sonhat has an exceptionally high level of intensity ratio, showing that the level of deprivation in its deprived villages is quite high. Development efforts need to be concentrated specifically in these multidimensionally deprived villages.

Figure 21i: Rural Multidimensional Deprivation in Korea District

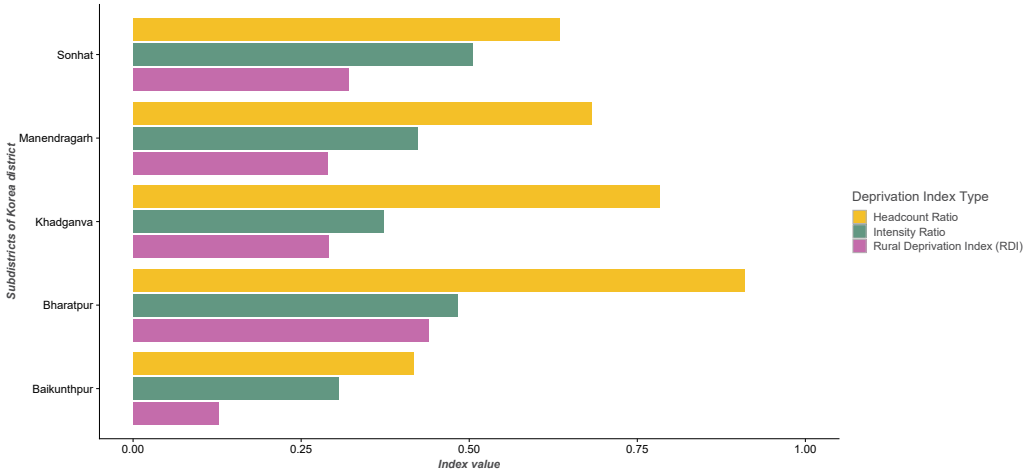
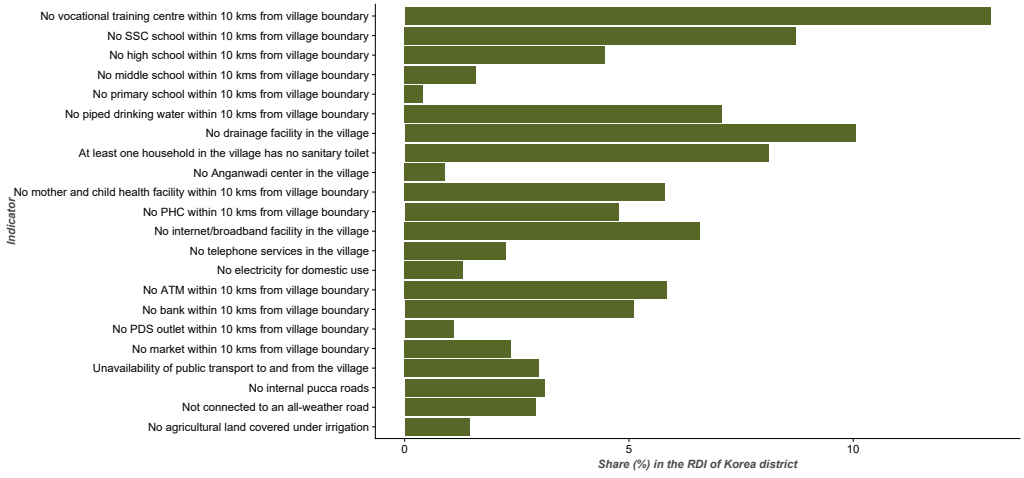


Figure 21j shows that almost 15% of the multidimensional deprivation in Korea can be attributed to lack of vocational training centres in its villages. Lack of drainage facilities, SSC schools, piped drinking water, sanitary toilets, etc. are the other major contributors to the deprivation in the district.

Figure 21j: Contribution of various factors to the RDI of Korea District



5.2 Bilaspur Division

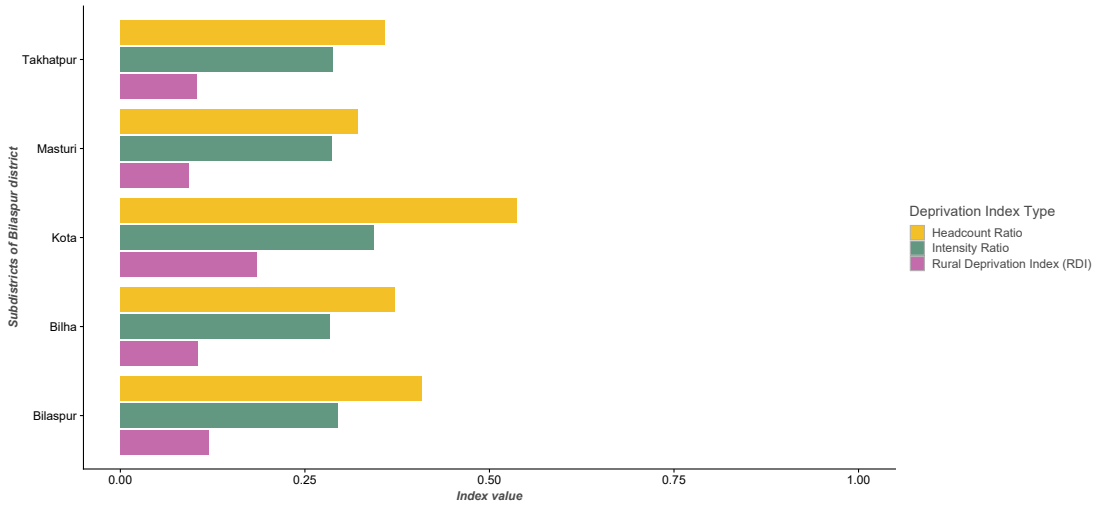
Bilaspur division is comprised of six districts, namely, Bilaspur, Korba, Janjgir-Champa, Raigarh, Mungeli and Gaurella Pendra Marwahi. Of these, Bilaspur has the lowest level of multidimensional deprivation, ranking 21st out of 28 districts in the state, while Korba does the worst, ranking 8th on the table

(see Appendix Table 4A).

Bilaspur District

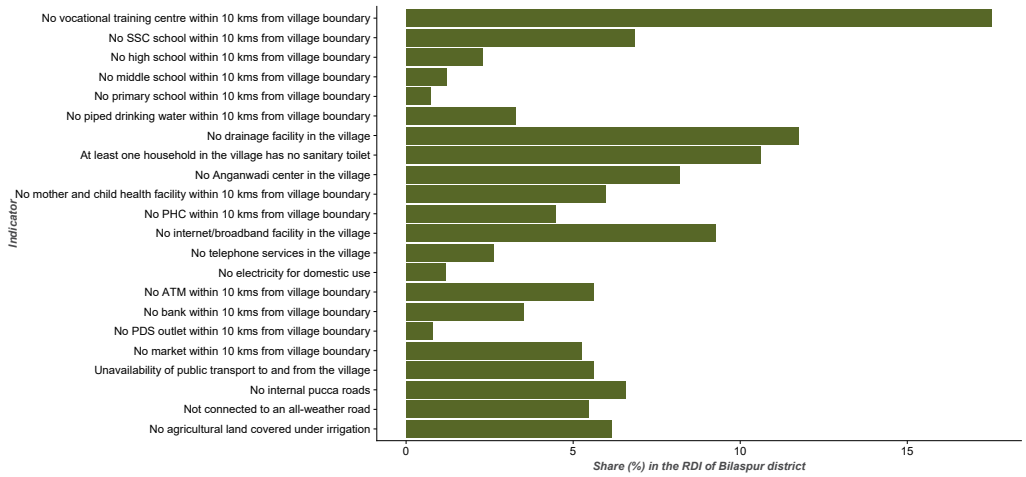
Bilaspur is a relatively developed district, with most of its areas showing low levels of multidimensional deprivation. Kalol is the most derpived area in the district, with an RDI score of over 0.25. All the other talukas have RDI scores below 0.2.

Figure 22a: Rural Multidimensional Deprivation in Bilaspur District



Although Bilaspur is a relatively developed distirct, a number of indicators contribute to its multidimensional deprivation. Each of the indicators of vocational training centres, drainage facilities, sanitary toilets and internet connections contribute anywhere between 10% to 15% of the total multidiemsnional deprivation in the district. It is worth noting that while in general the state has Anganwadi centres in most villages and that this indicator contributes very little to its RDI, the Bilaspur district is an exception, where lack of Anganwadi centres contributes about 8% to the overall deprivation in the district. There are thus factors other than government regulations that are playing a role in the development of this district.

Figure 22b: Contribution of various factors to the RDI of Bilaspur District



Korba District

Korba district, as stated earlier, is among the more deprived regions in this division. The taluka of Korba particularly has a high level of multidimensional deprivation, as seen in Figure 22c.

Figure 22c: Rural Multidimensional Deprivation in Korba District

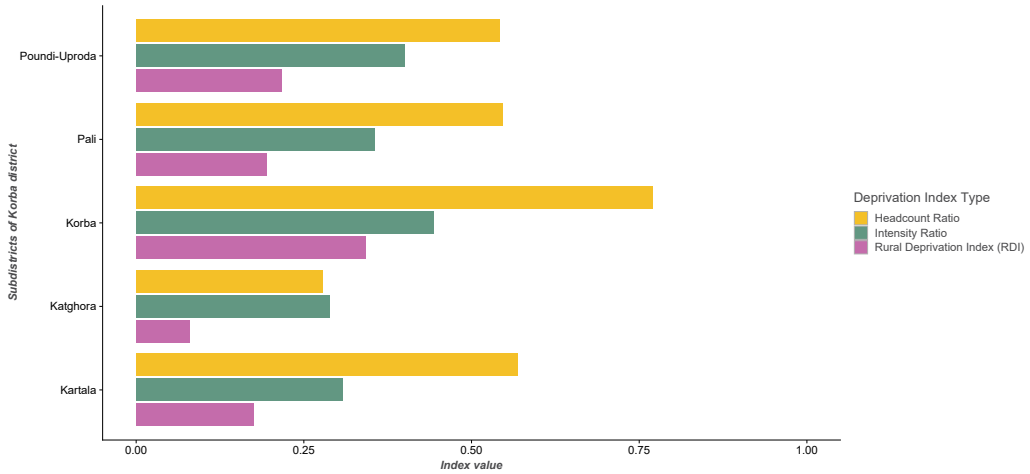
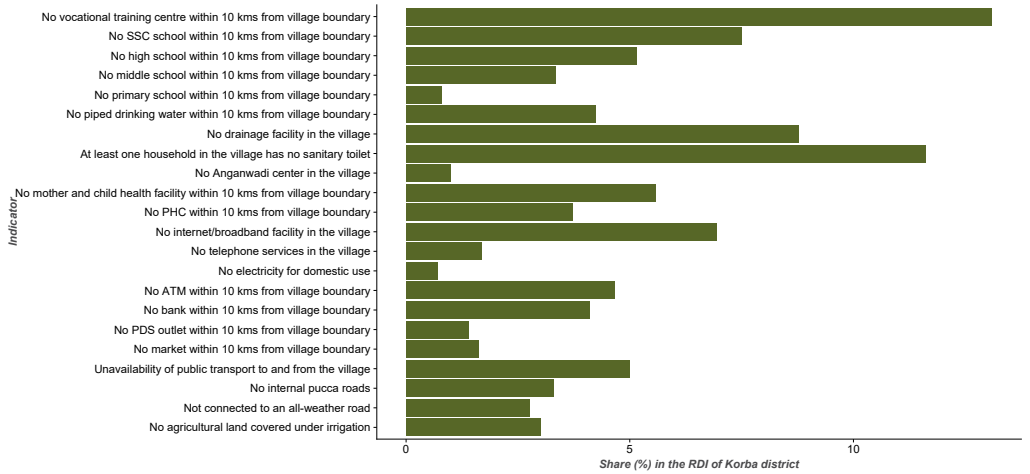


Figure 22d shows that other than lack of vocational training centres, lack of sanitary toilets in households is an important contributor to multidimensional deprivation in the state, the indicator contributing over 10% to the overall RDI score of the district.

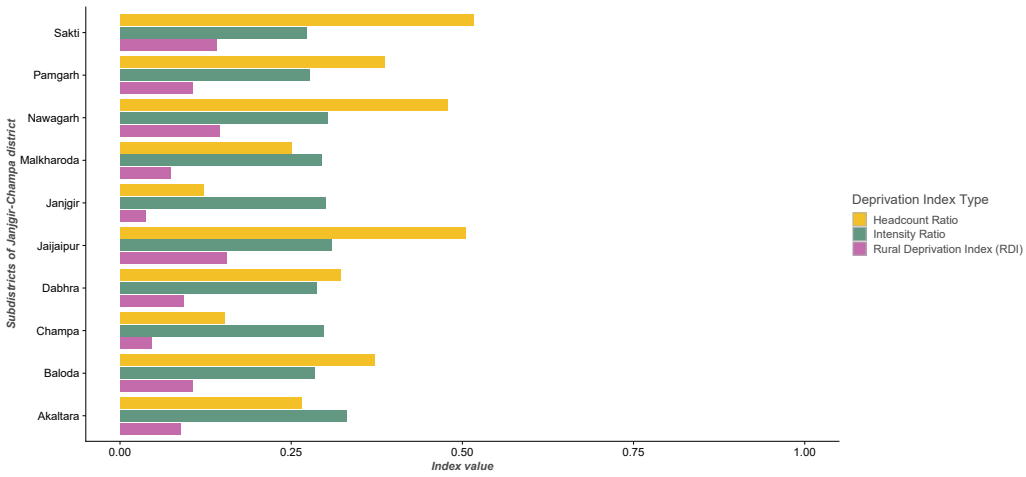
Figure 22d: Contribution of various factors to the RDI of Korba District



Janjgir-Champa District

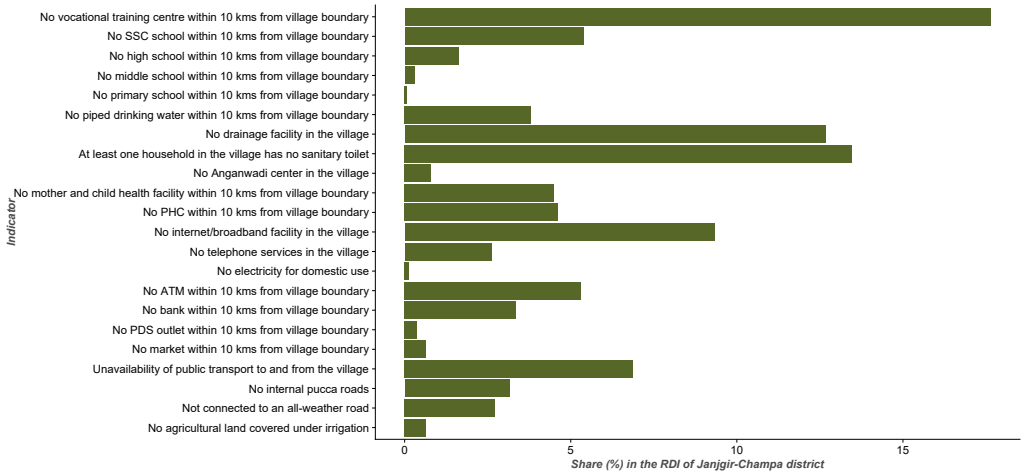
The district of Janjgir Champa has a moderate level of multidimensional deprivation. All its talukas have about the same level of RDI score, the maximum being slightly over 0.1 for the taluka of Jaijaipur.

Figure 22e: Rural Multidimensional Deprivation in Janjgir-Champa District



Similar to other districts in this division, lack of sanitary toilets is an important factor contributing to the level of multidimensional deprivation in this district. Other indicators that need more focus are drainage facilities, vocational training centres, internet connections and transport facilities (see Figure 22f).

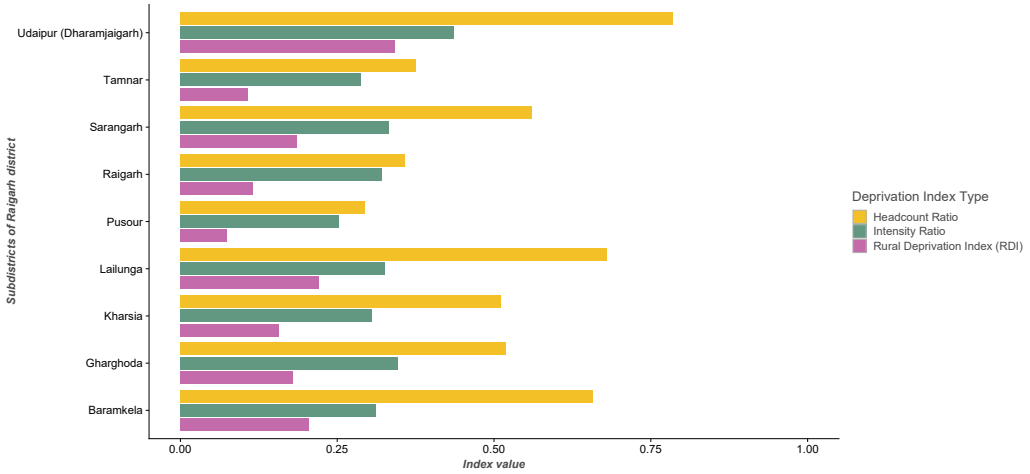
Figure 22f: Contribution of various factors to the RDI of Janjgir-Champa District



Raigarh District

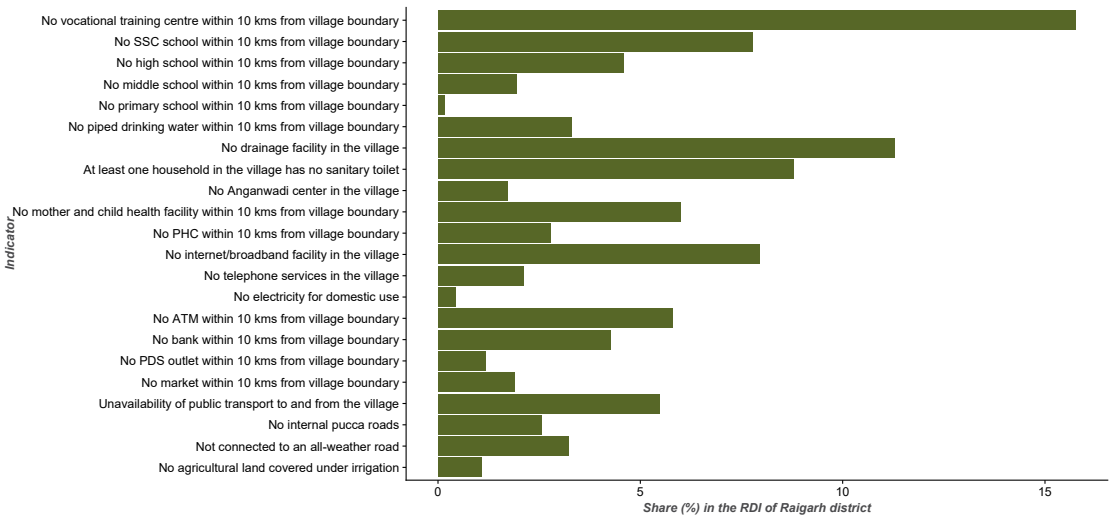
Raigarh has a moderate level of multidimensional poverty, ranking 12th out of 28 districts in the state. Udaipur/ Dharamjaigarh has the highest level of deprivation in this district[2] , with over 75% of its villages being multidimensionally deprived (Figure 22g). This is followed by Lailunga and Baramkela. The Pusour taluka has the lowest level of deprivation in this district.

Figure 22g: Rural Multidimensional Deprivation in Raigarh District



Factors contributing to RDI in this district are similar to other areas of the state- lack of vocational training centres, SSC schools, drainage facilities, sanitary toilets and internet connections (Figure 22h).

Figure 22h: Contribution of various factors to the RDI of Raigarh District

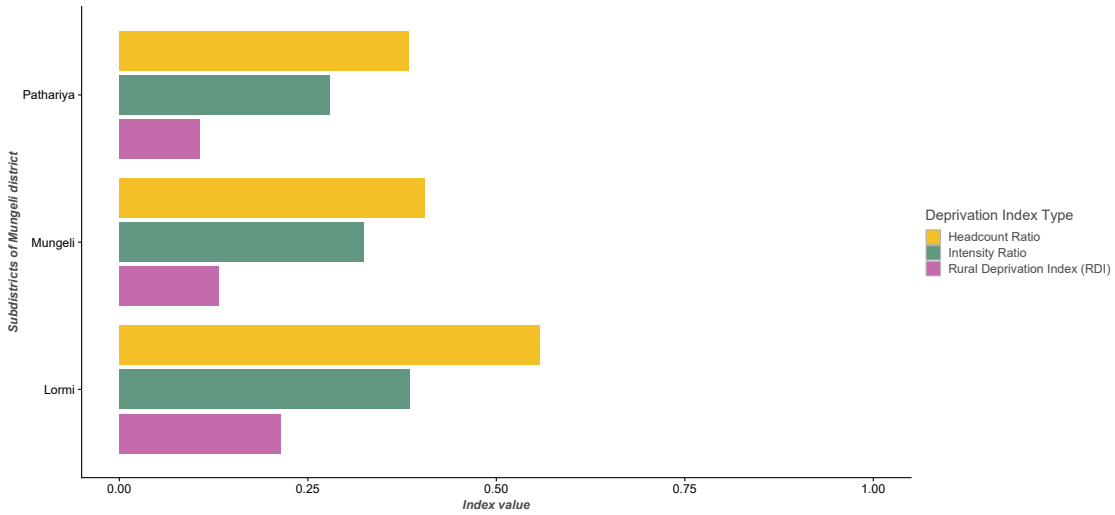


[2]A detailed analysis on multidimensional deprivation in Dharamjaigarh Block is presented in Section B of the Appendix.

Mungeli District

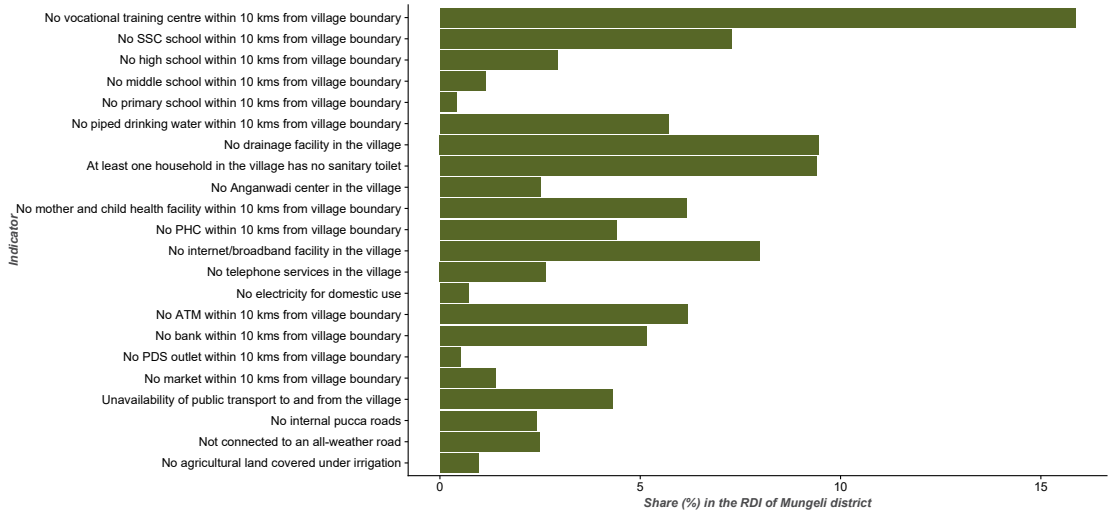
Mungeli is a moderately deprived district, ranking 17th in the state with an RDI score of 0.159. As Figure 22i shows, except for Lormi, all the talukas of Mungeli have a fairly low headcount ratio of multidimensional deprivation, and an intensity ratio of over 25%. This district thus needs to focus most on the taluka of Lormi.

Figure 22i: Rural Multidimensional Deprivation in Mungeli District



To further improve the socio-economic conditions in the district, the concerned authorities need to work on setting up more vocational centres to improve educational and employment outcomes, and more drainage and toilet facilities in the villages to improve community health (see Figure 22j).

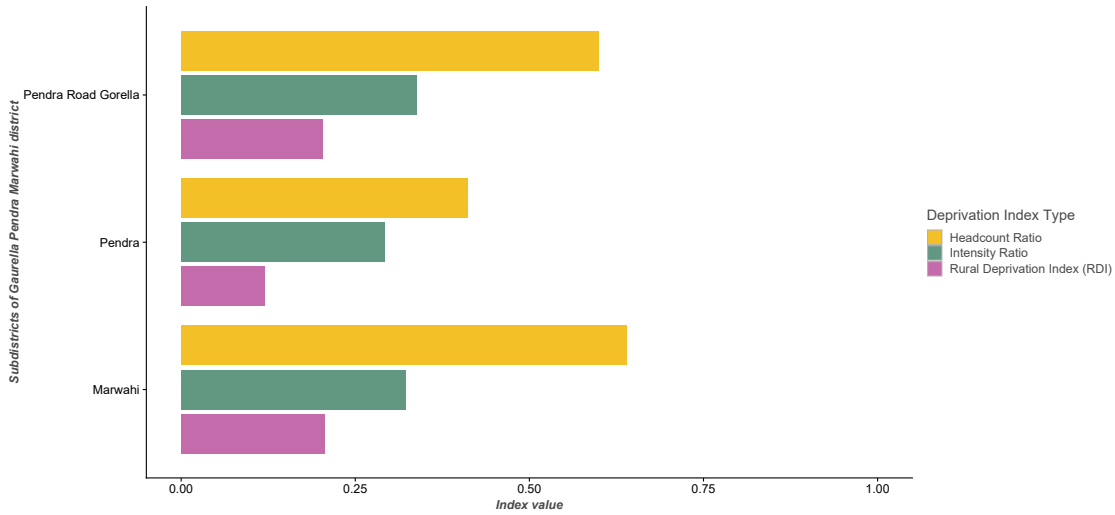
Figure 22j: Contribution of various factors to the RDI of Mungeli District



Gaurella Pendra Marwahi District

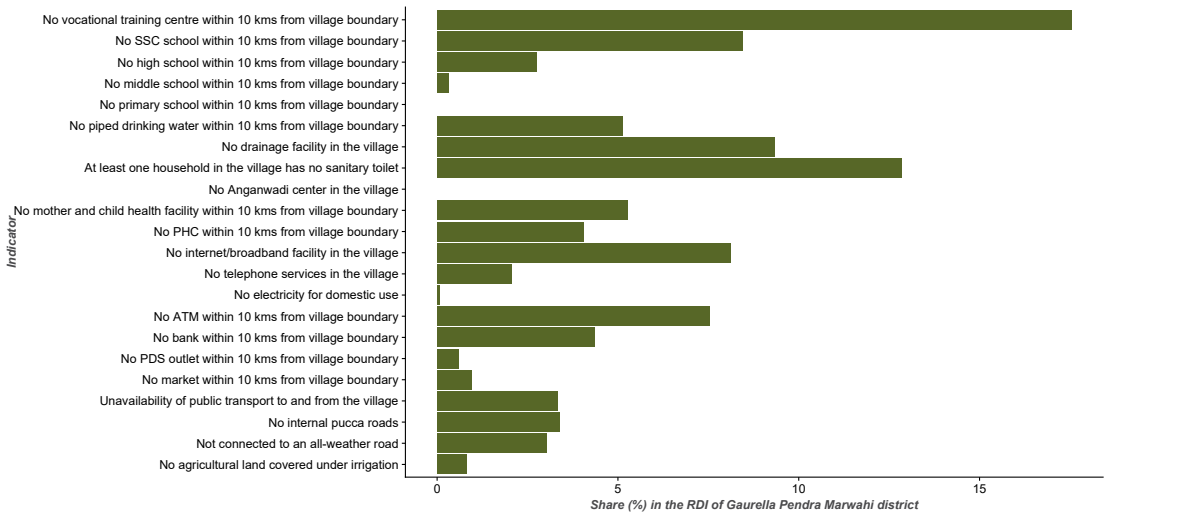
Gaurella Pendra Marwahi district ranks 14th with an RDI score of 0.185. As Figure 22k shows, both Gorella and Marwahi talukas of this district have high levels of multidimensional deprivation, with more than half of the villages in these areas being multidimensionally deprived.

Figure 22k: Rural Multidimensional Deprivation in Gaurella Pendra Marwahi District



As Figure 22l shows, other than lack of vocational training centres, lack of sanitary toilets is a huge contributor to multidimensional deprivation in this district. In contrast, all villages in this district have primary schools within a radius of at least 10 kms from the boundary and close to 100% have electricity for domestic use.

Figure 22l: Contribution of various factors to the RDI of Gaurella Pendra Marwahi District



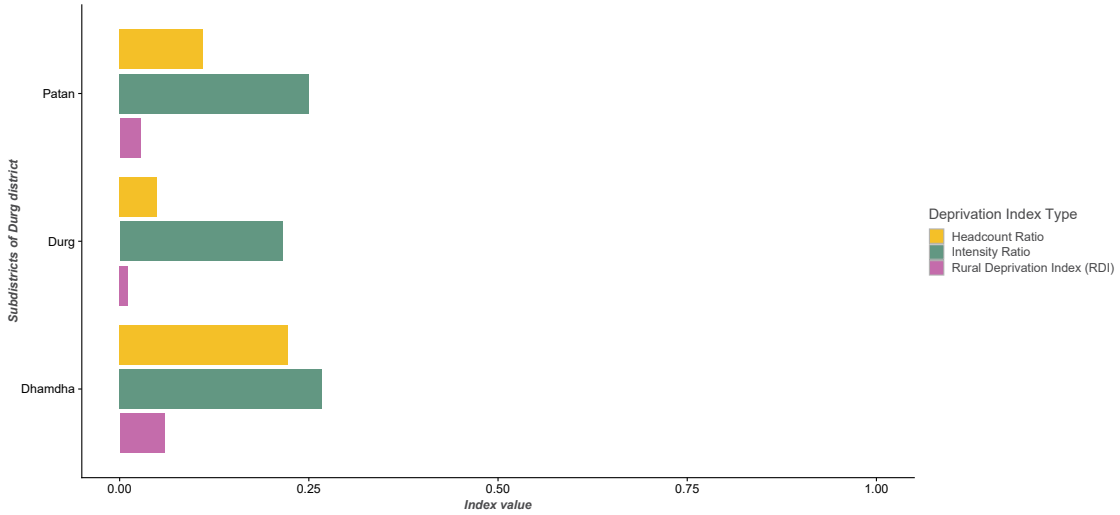
5.3 Durg Division

Durg division is the most developed region of the state. All its districts have low levels of multidimensional deprivation.

Durg District

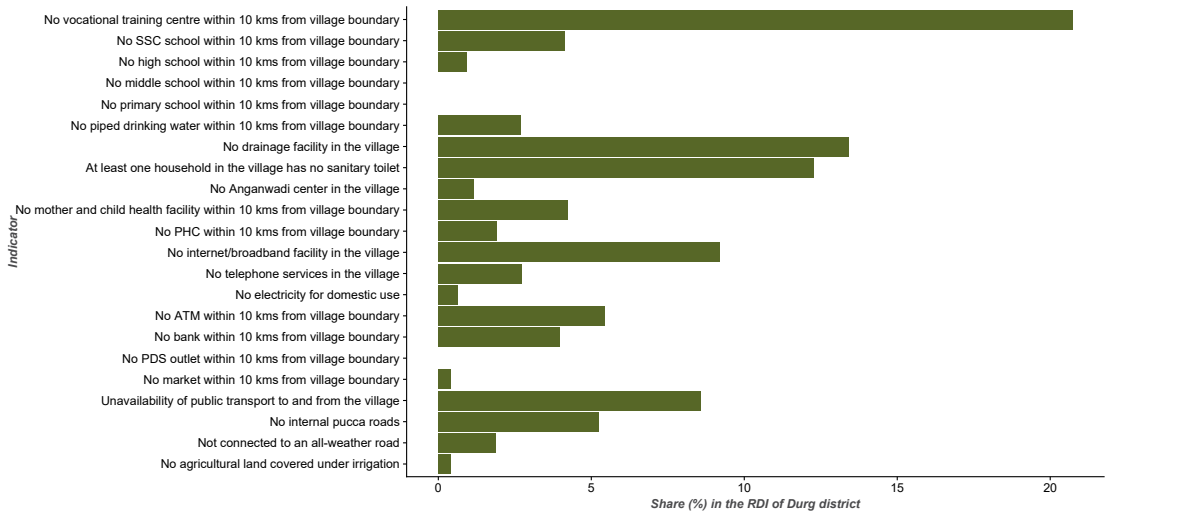
As seen in the previous section, Durg is the least multidimensionally deprived district of Chhattisgarh, with an RDI score of 0.037. Moreover, there is very little disparity between talukas within the district, reflecting an equal distribution of public amenities across the district. As Figure 23a shows, all areas of this district have a headcount ratio of multidimensional deprivation below 25% and a rather low RDI score.

Figure 23a: Rural Multidimensional Deprivation in Durg District



As Figure 23b shows, this district has no village that is deprived on indicators of lack of primary schools, middle schools or PDS outlets. The main contributors of multidimensional deprivation in this region are lack of vocational training centres, drainage facilities and sanitary toilets, similar to the trend in the rest of the state. This shows that these indicators need attention even in the more developed areas of the state.

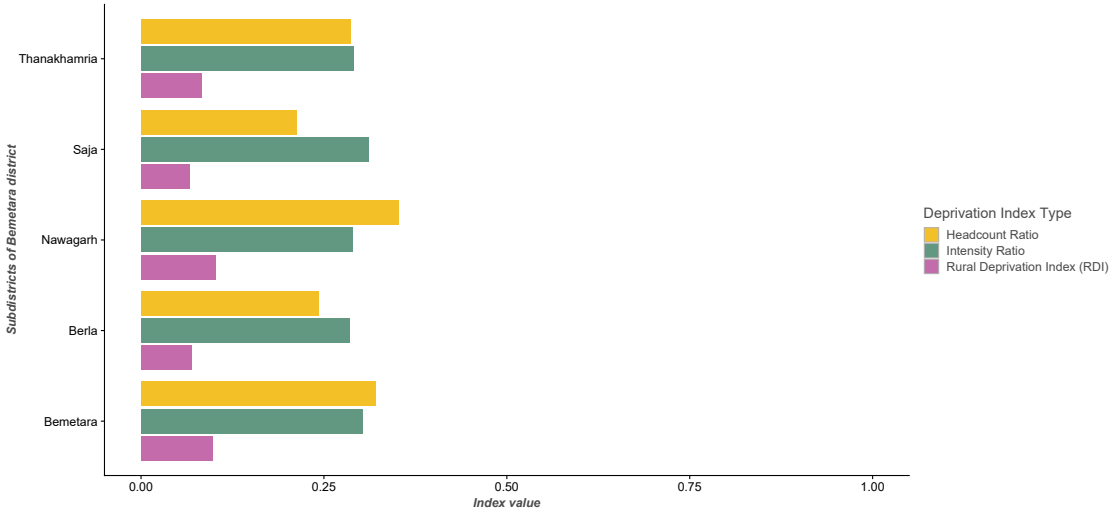
Figure 23b: Contribution of various factors to the RDI of Durg District



Bemetara District

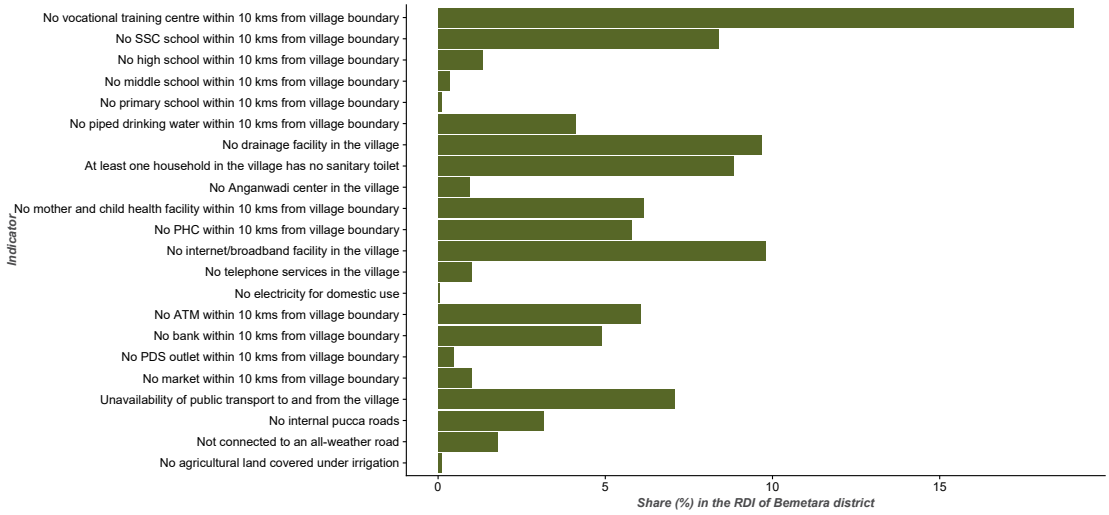
The Bemetara district is another district with low levels of multidimensional deprivation, ranking 25th out of 28 districts, with an RDI score of 0.087. As the taluka-wise analysis shows, the highest headcount ratio of multidimensional deprivation in this district is below 30%. Further, similar to Durg, there is little variation in multidimensional deprivation within the district.

Figure 23c: Rural Multidimensional Deprivation in Bemetara District



The factors contributing the most to multidimensional deprivation in the district are the usual indicators such as lack of vocational training centres, SSC schools, drainage facilities, sanitary toilets and an internet connection

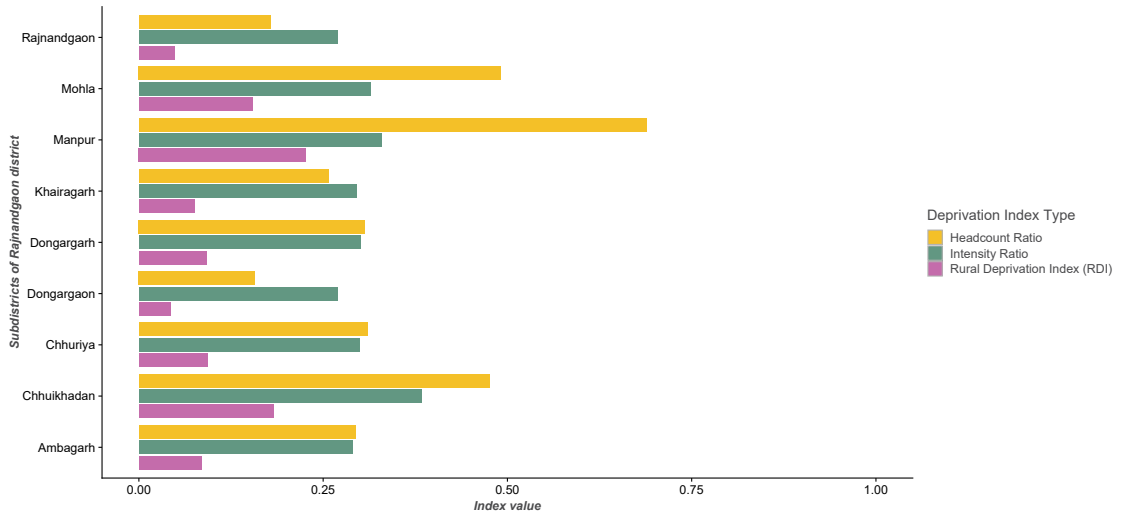
Figure 23d: Contribution of various factors to the RDI of Bemetara District



Rajnandgaon District

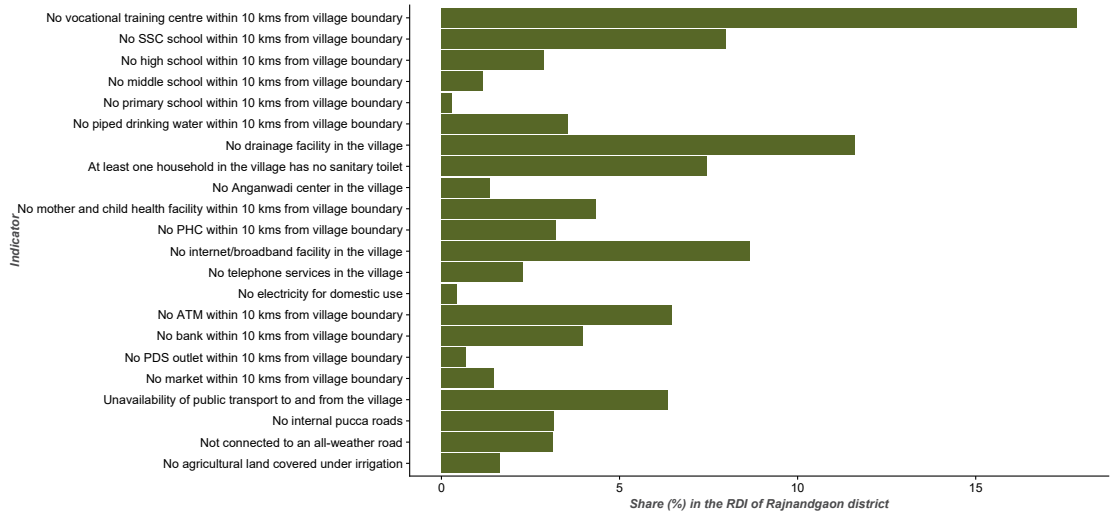
Overall, Rajnandgaon has an RDI score of 0.115, which makes it the seventh least deprived district in the state. However, unlike other districts in this division, this district calls for focused efforts on specific areas, as some of the talukas have high levels of multidimensional deprivation. As Figure 23e shows, more than 50% of the villages in the talukas of Manpur and Mohla are multidimensionally deprived. Moreover, even areas with relatively low levels of headcount ratio, like Rajnandgaon, Dongargarh and Khairagarh have a high intensity ratio of deprivation.

Figure 23e: Rural Multidimensional Deprivation in Rajnandgaon District



Similar to other districts, lack of vocational training centres, drainage facilities, internet connections, SSC schools, etc. are the main contributing factors to multidimensional deprivation in this district.

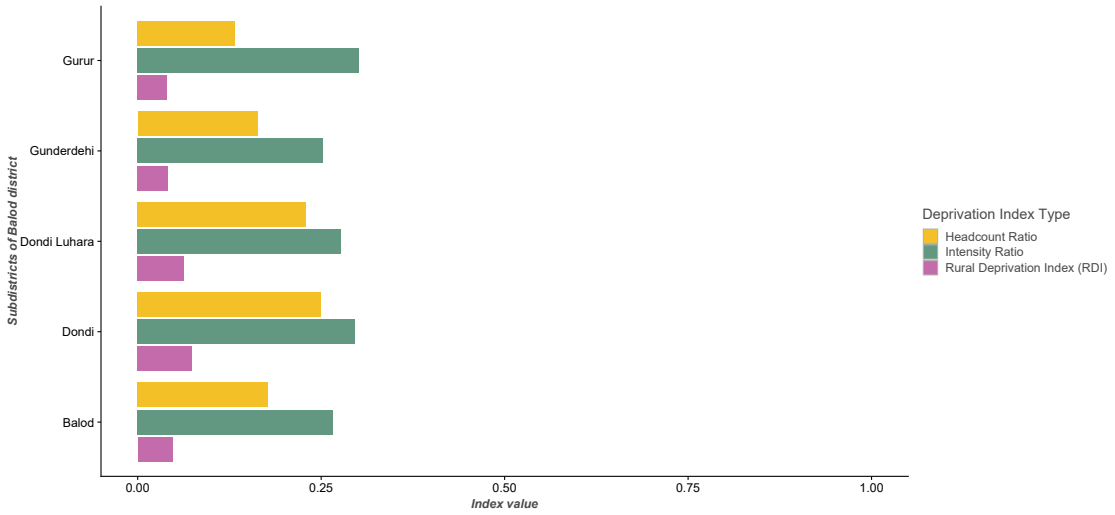
Figure 23f: Contribution of various factors to the RDI of Rajnandgaon District



Balod District

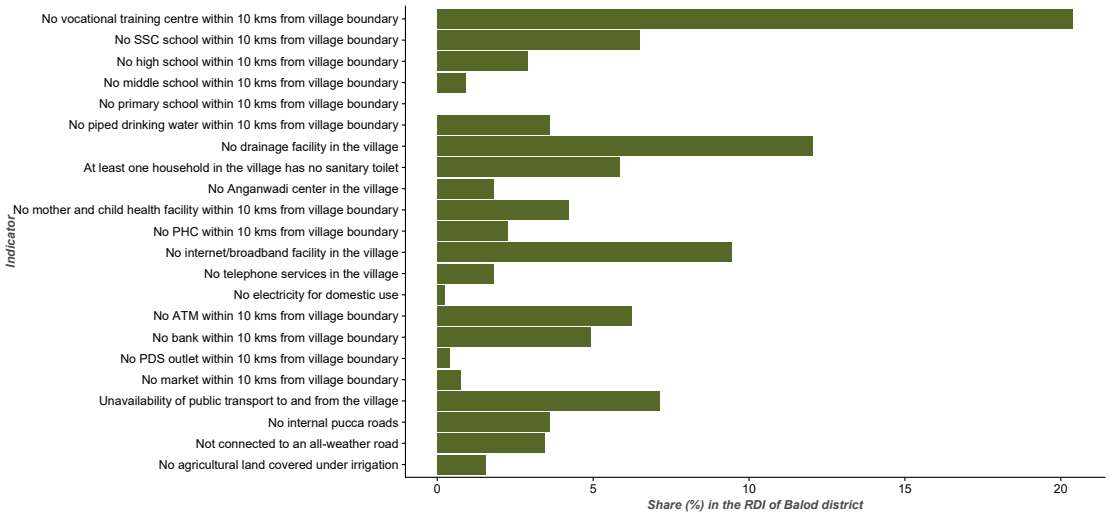
As discussed earlier, Balod is among the less multidimensionally deprived areas of the state, behind only Durg and Raipur. Furthermore, there is not much variation in deprivation within the district. As Figure 23g shows, all talukas of Balod have a low headcount ratio and a low intensity ratio of multidimensional deprivation.

Figure 23g: Rural Multidimensional Deprivation in Balod District



The low level of deprivation in this district is characterized by the availability of primary schools in all the villages as well availability of electricity, markets and PDS outlets in almost all villages in the district (see Figure 23h). To further develop the district, efforts can be focused on setting up vocational training centres, drainage facilities, internet connections and public transport services in more villages in the district.

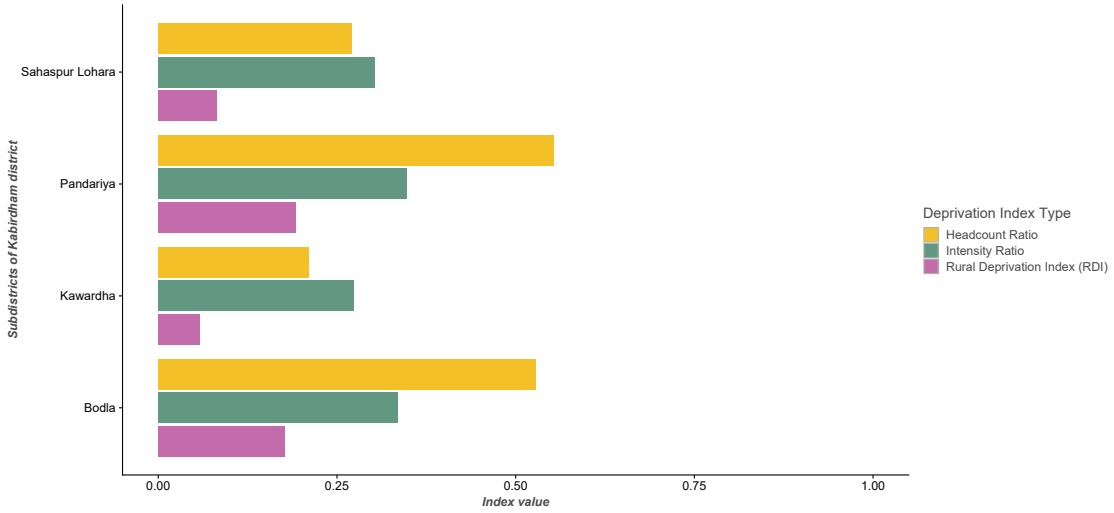
Figure 25a: Contribution of various factors to the RDI of Balod District



Kabirdham District

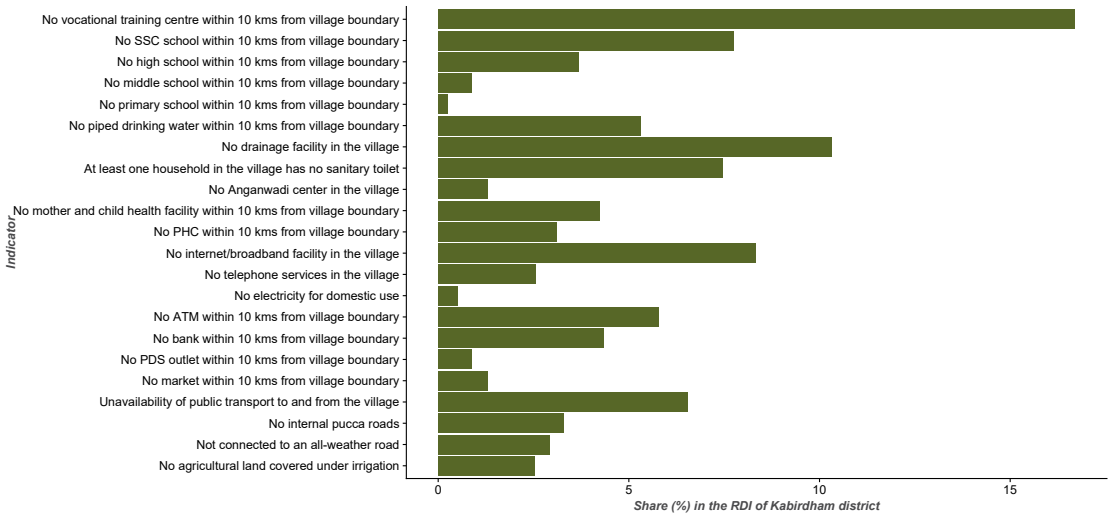
Within Durg division, Kabirdham is the most multidimensionally deprived district. All talukas in this district have moderate levels of multidimensional deprivation.

Figure 23h: Rural Multidimensional Deprivation in Kabirdham District



Other than the ususal indicators contributing to multidimensional deprivation across the state, we find that many villages in Kabirdham are also deprived of public transport facilities, ATMs and piped drinking water.

Figure 23i: Contribution of various factors to the RDI of Kabirdham District



5.4 Raipur Division

The Raipur division is also among the more developed regions of the state, but unlike Durg, has pockets with high levels of deprivation. The division consists of Gariyaband, Raipur, Dhamtari, Mahasamund and Baloda Bazar districts. Of these, Gariyaband has the highest level of multidimensional deprivation, ranking 9th out of 28 districts. The rest of the districts are among the bottom 10 in the ranking table, with Raipur having the lowest level of deprivation in this division (see Appendix Table 4A).

Gariyaband District

A number of areas of the Gariyaband district are characterized with high levels of multidimensional deprivation. These include Manipur, Gariyaband and Deobhog, all of which have a headcount ratio of deprivation of over 50%. The former two talukas also have a high RDI score of over 0.25. This is thus another district where specific pockets demand more attention from the authorities.

Figure 24a: Rural Multidimensional Deprivation in Gariyaband District

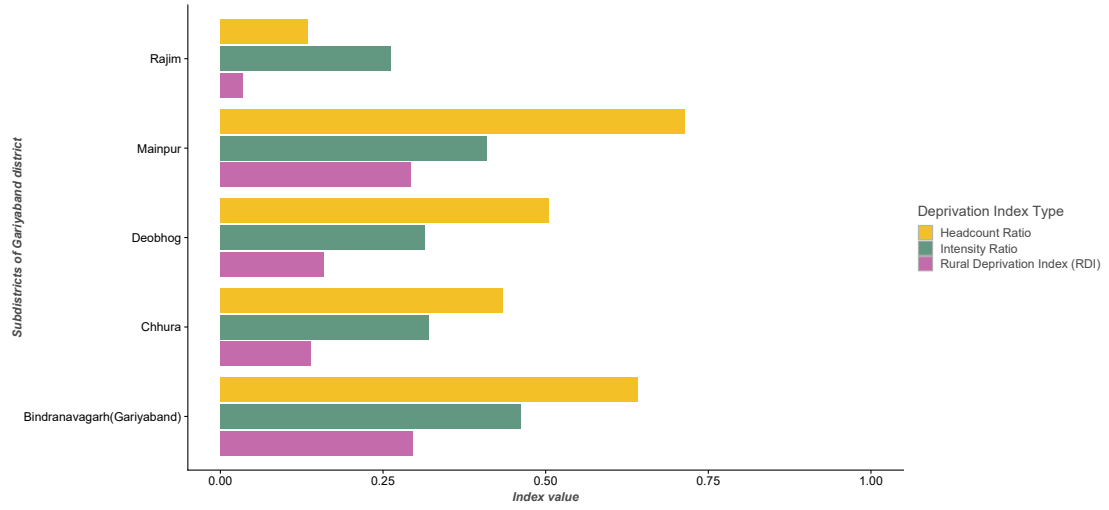
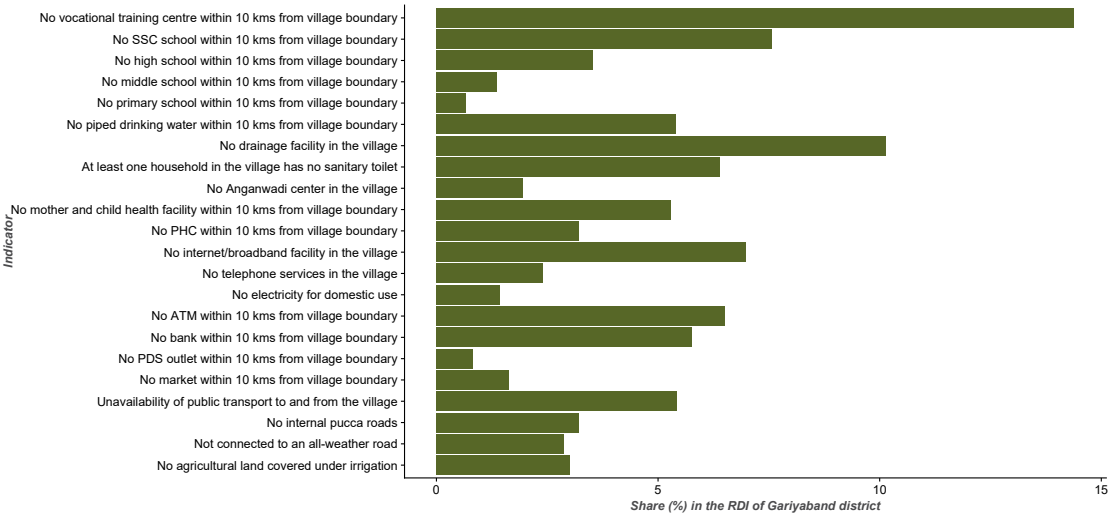


Figure 24b shows that every indicator has a significant share in the RDI score of this district. However, lack of vocational training centres and drainage facilities are the largest contributors.

Figure 24b: Contribution of various factors to the RDI of Raipur District



Raipur District

Raipur district has the second lowest level of multidimensional deprivation in the state. As Figure 24c shows, all its talukas also have low levels of deprivation, with none of them having a headcount ratio of over 25%.

Figure 24c: Rural Multidimensional Deprivation in Raipur District

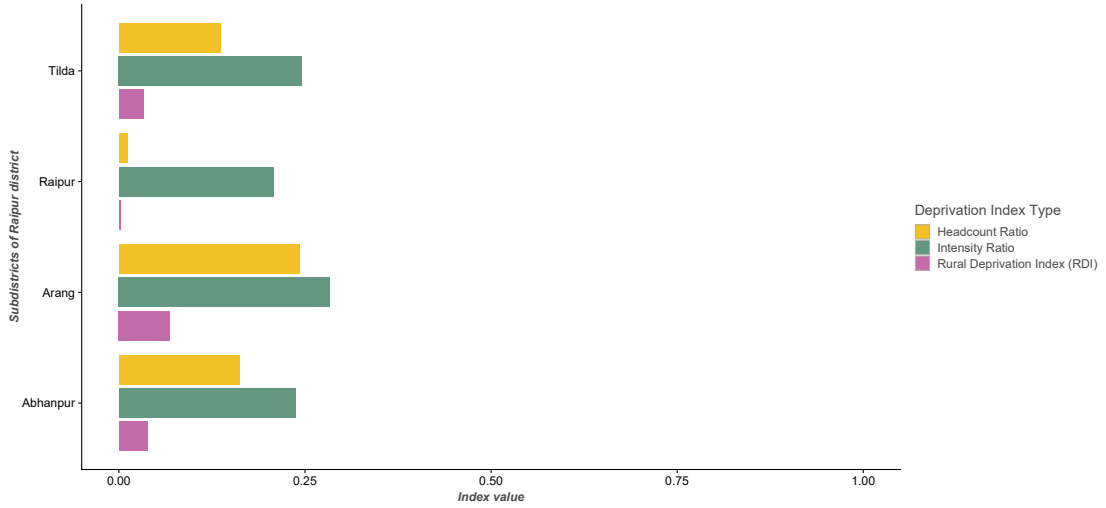
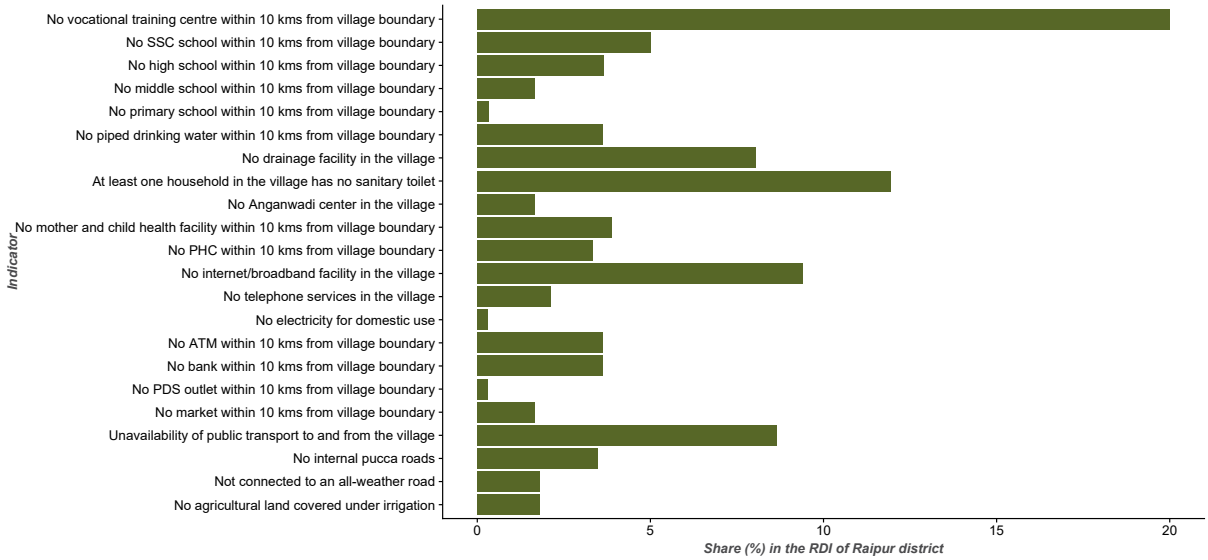


Figure 24d shows that lack of vocational training centres, sanitary toilets, public transport facilities are the primary contributors to deprivation in this district.

Figure 24d: Contribution of various factors to the RDI of Raipur District



Dhamtari District

Dhamtari ranks 23rd on the index of multidimensional deprivation, that is, its level of deprivation is the sixth lowest in the state. Nagri taluka has the highest level of RDI in this district, as seen in Figure 24e. This is followed by Magarlod, Dhamtari and Kurud, respectively.

Figure 24e: Rural Multidimensional Deprivation in Dhamtari District

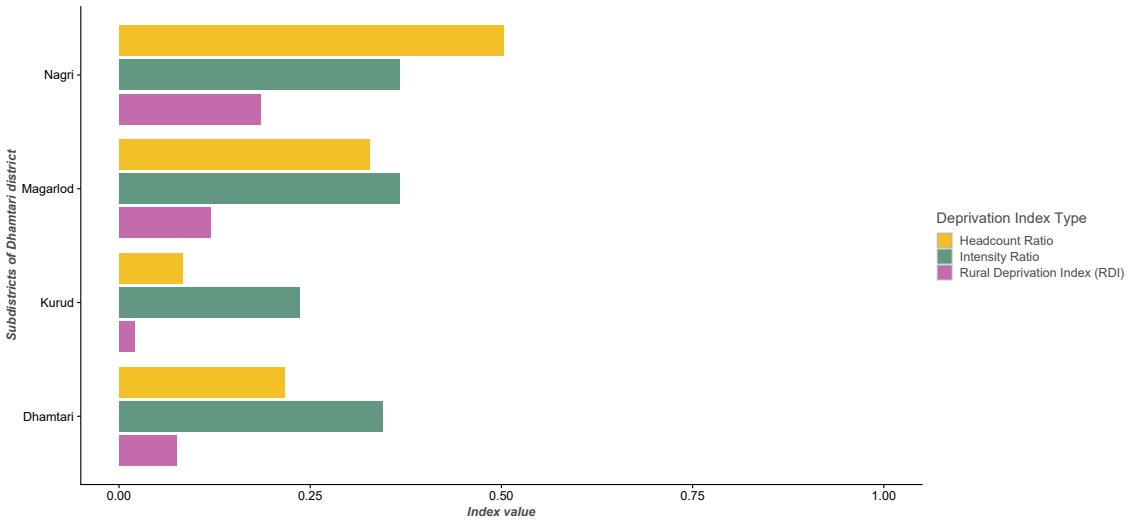
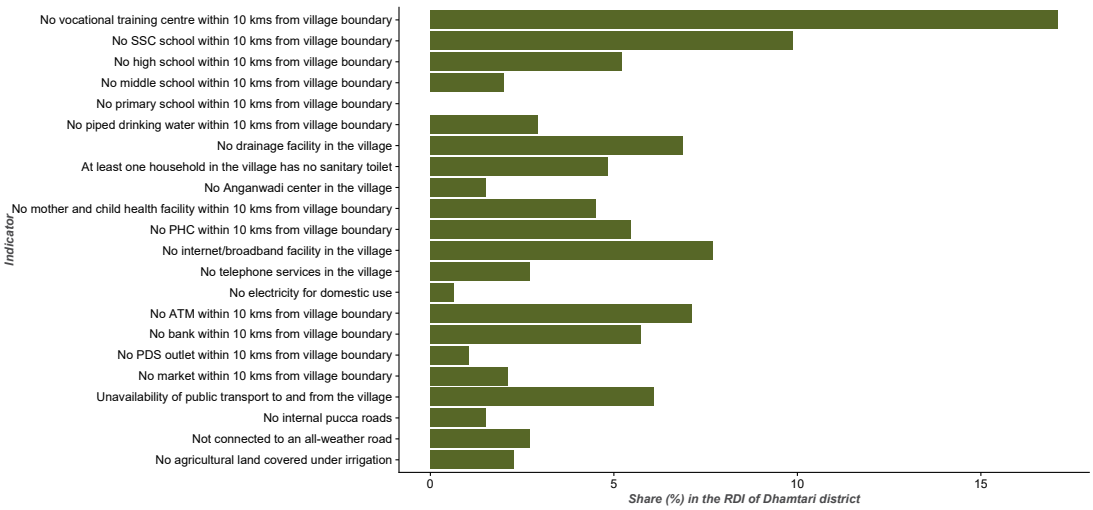


Figure 24f shows that none of the multidimensionally deprived villages in Dhamtari are deprived of primary schools in the vicinity. However, higher education facilities demand attention; lack of vocational training centres and SSC schools being the largest contributors to the RDI of this district.

Figure 24f: Contribution of various factors to the RDI of Dhamtari District



Mahasamund District

The Mahasamund district is also characterised by some variation in RDI within its talukas. For instance, Basna has a headcount ratio of multidimensional deprivation of over 50%, whereas Pithora and Mahasamund have a deprivation headcount ratio of about 25%. Overall, the district ranks 18th out of 28 districts in the state, with a moderate level of multidimensional deprivation score.

Figure 24g: Rural Multidimensional Deprivation in Mahasamund District

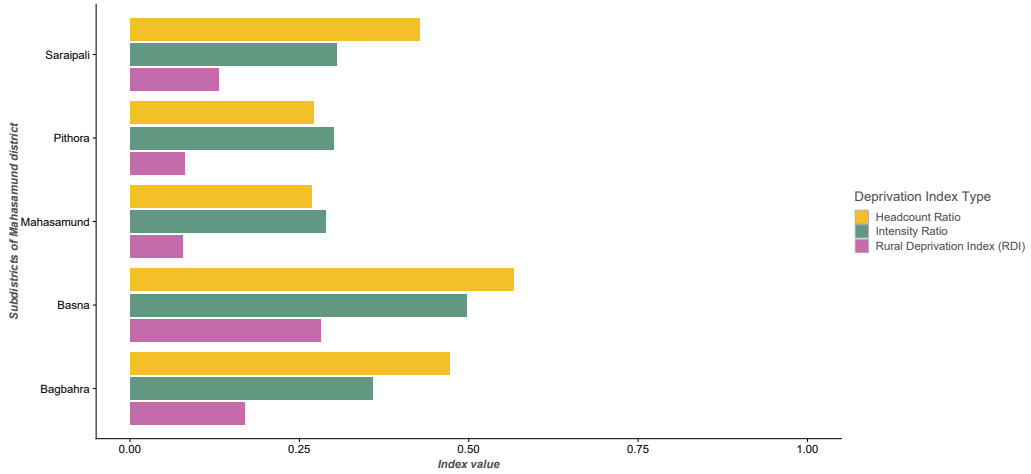
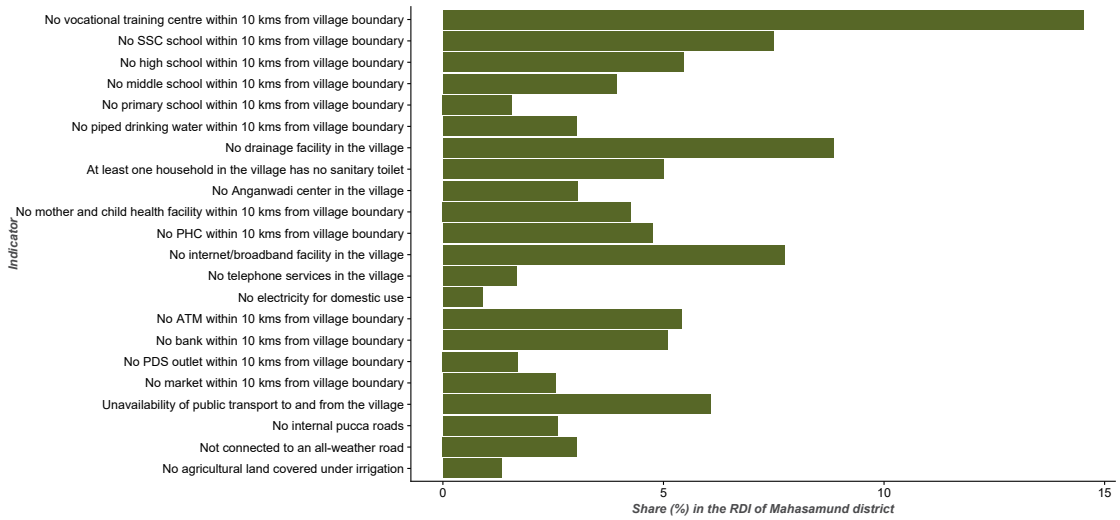


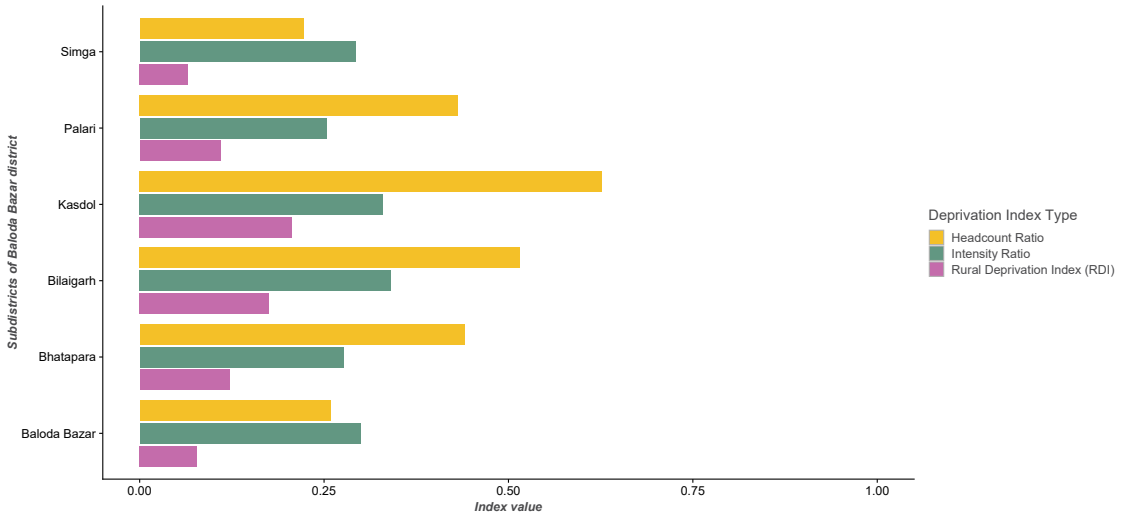
Figure 24h: Contribution of various factors to the RDI of Mahasamund District



Baloda Bazar District

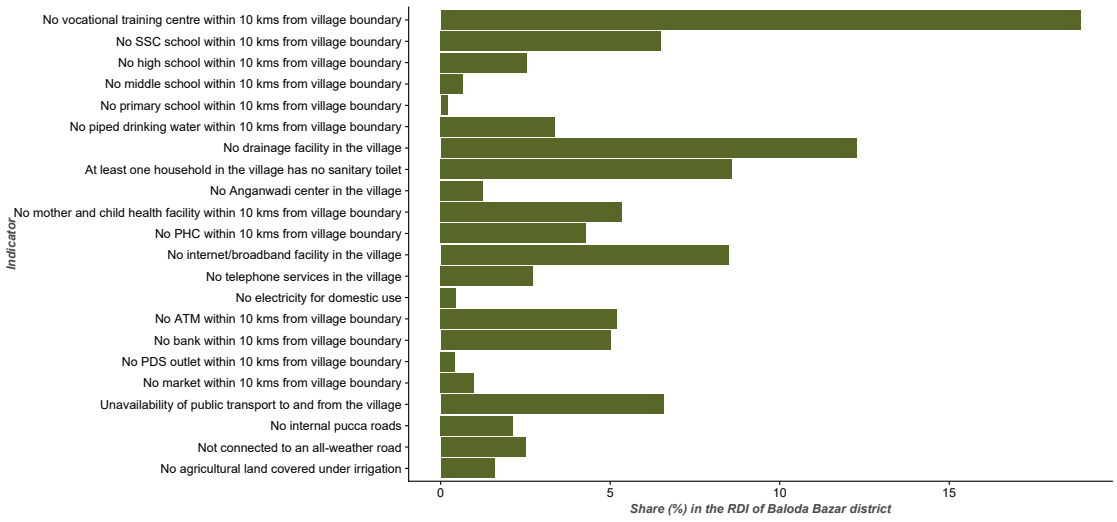
Baloda Bazar is a district with moderate level of multidimensional rural deprivation. As Figure 24i shows, Kasdoi taluka in this region is the most deprived, whereas Simga and Baloda Bazar have the lowest RDI.

Figure 24i: Rural Multidimensional Deprivation in Baloda Bazar District



Lack of vocational training centres and drainage facilities continue to be the main factors contributing to deprivation in this district as well (see Figure 24j).

Figure 24j: Contribution of various factors to the RDI of Bastar District



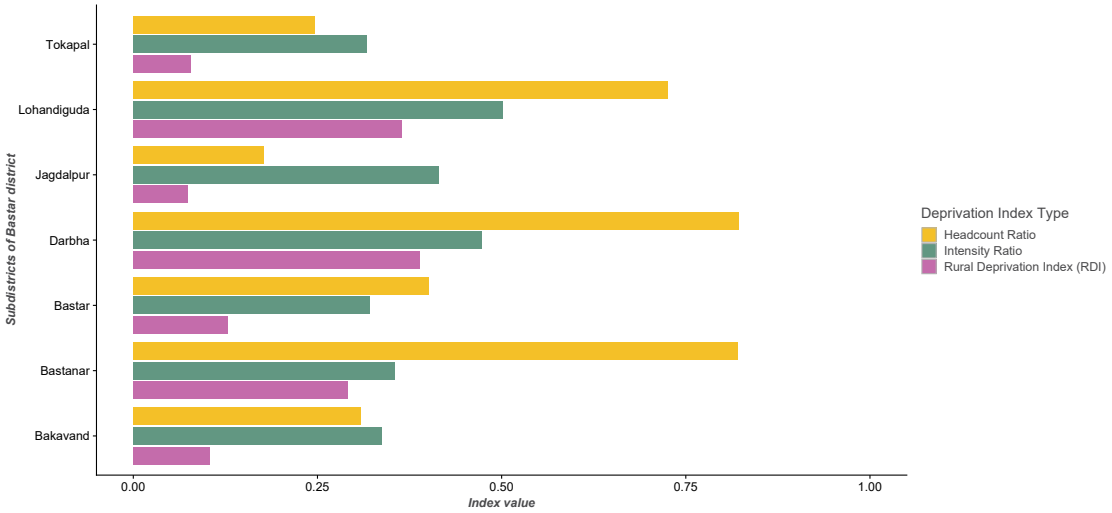
5.5 Bastar Division

The Bastar division, as discussed in the earlier section, does poorly in terms of development. The top three districts with the highest multidimensional deprivation score are located in this division.

Bastar District

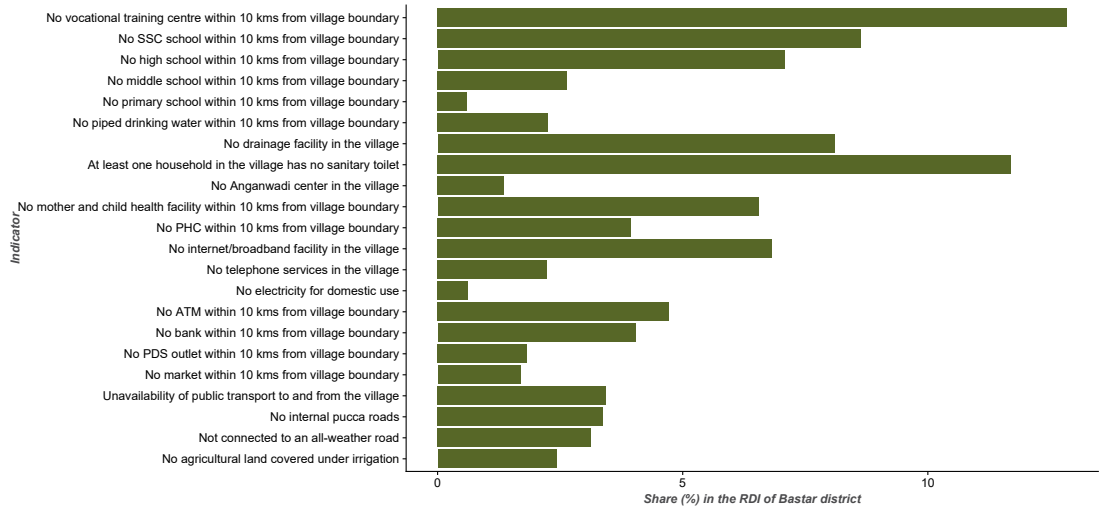
Bastar is among the better-off districts of this division, ranking 15th on the RDI score. However, the talukas of Bastanar, Darbha and Lohandiguda have a high RDI score of over 0.25 and headcount ratio of over 70% (Figure 25a). Thus, although the district might be doing better than its counterparts in the division, specific talukas within the district have a high level of multidimensional deprivation.

Figure 25a: Rural Multidimensional Deprivation in Bastar District



As Figure 25b shows, other than lack of vocational training centres, lack of sanitary toilets plays a major role in the district's deprivation, contributing over 10% to its RDI share.

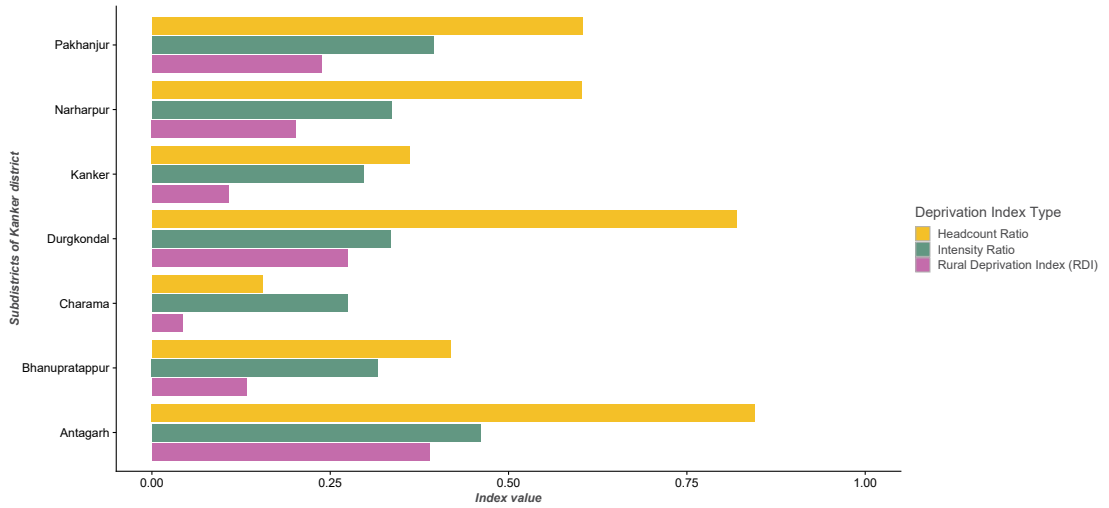
Figure 25b: Contribution of various factors to the RDI of Bastar District



Kanker District

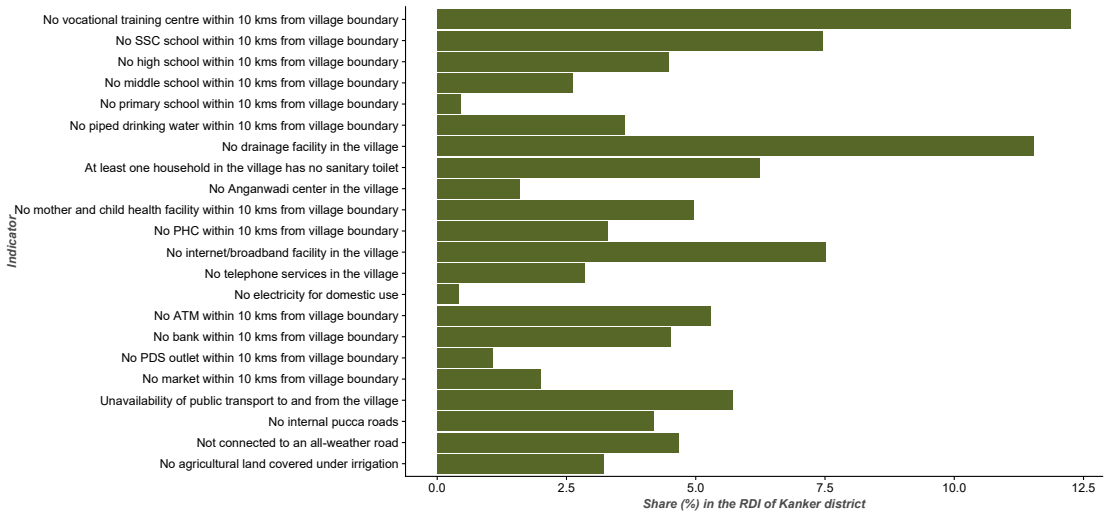
Kanker ranks seventh in the state, with a high RDI score of 0.225 (see Appendix Table 4A). As Figure 25c shows, out of the seven talukas in the region, four have a headcount ratio of over 50%, with two of them having over 75% villages multidimensionally deprived in their respective talukas. Clearly, more efforts are needed in these talukas to ensure better access to public amenities.

Figure 25c: Rural Multidimensional Deprivation in Kanker District



As Figure 25d shows, both lack of vocational training centres and drainage facilities contribute equally to the deprivation in Kanker. Focused efforts on these specific indicators can improve deprivation in this district to a great extent.

Figure 25d: Contribution of various factors to the RDI of Narayanpur District



Bijapur District

Bijapur is the worst-performing district in Chhattisgarh, with 97% of its villages in the multidimensionally deprived category. As Figure 25e shows, this deprivation is spread across all parts of the district. All its talukas have an RDI score of over 0.6 and a headcount ratio close to 100%.

Figure 25e: Rural Multidimensional Deprivation in Bijapur District

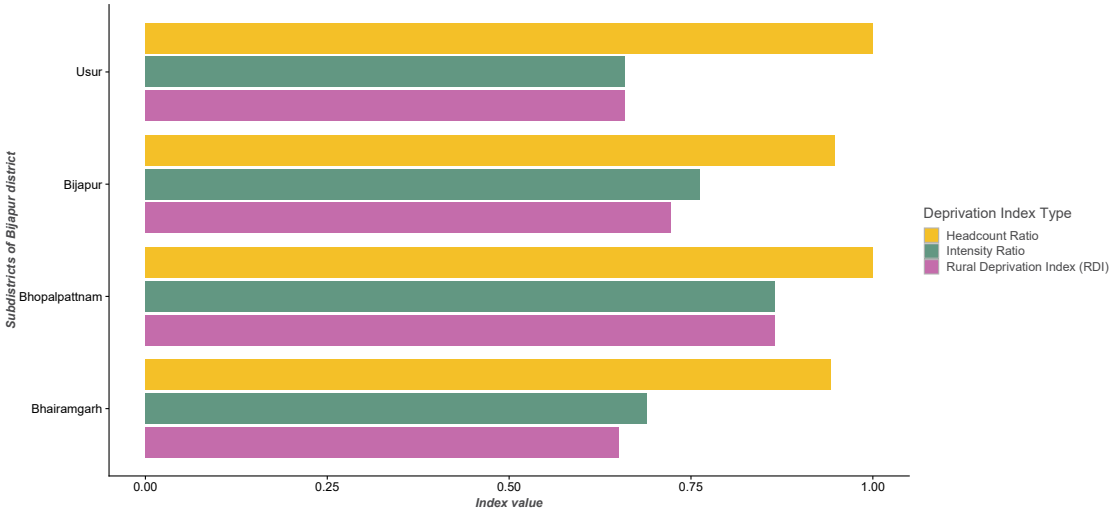
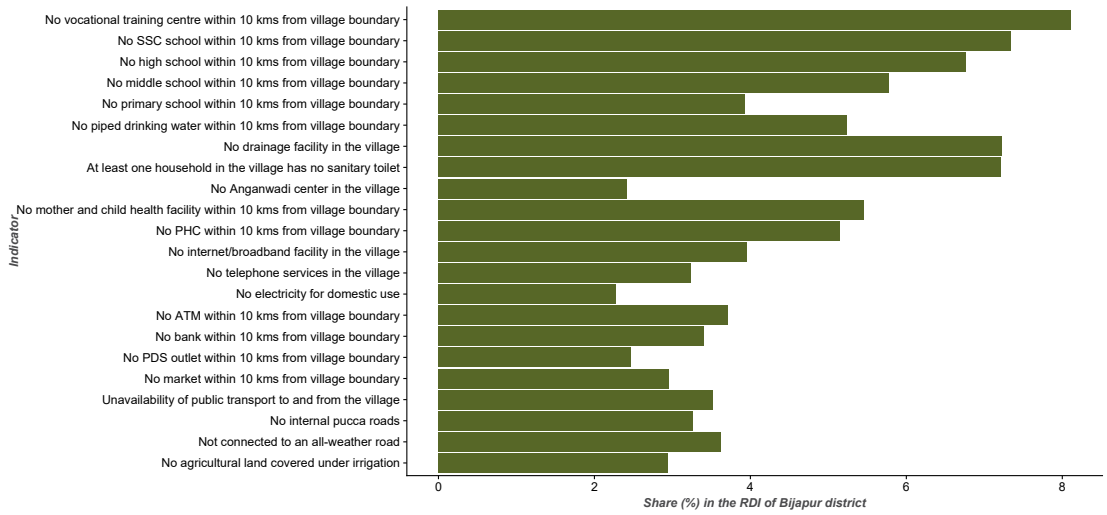


Figure 25f further shows that unlike most other districts in the state, where some of the indicators contribute a large share to the RDI score, in Bijapur, all indicators have a sizeable share in the deprivation index. The district thus has to work on all indicators, rather than concentrate on a few of them.

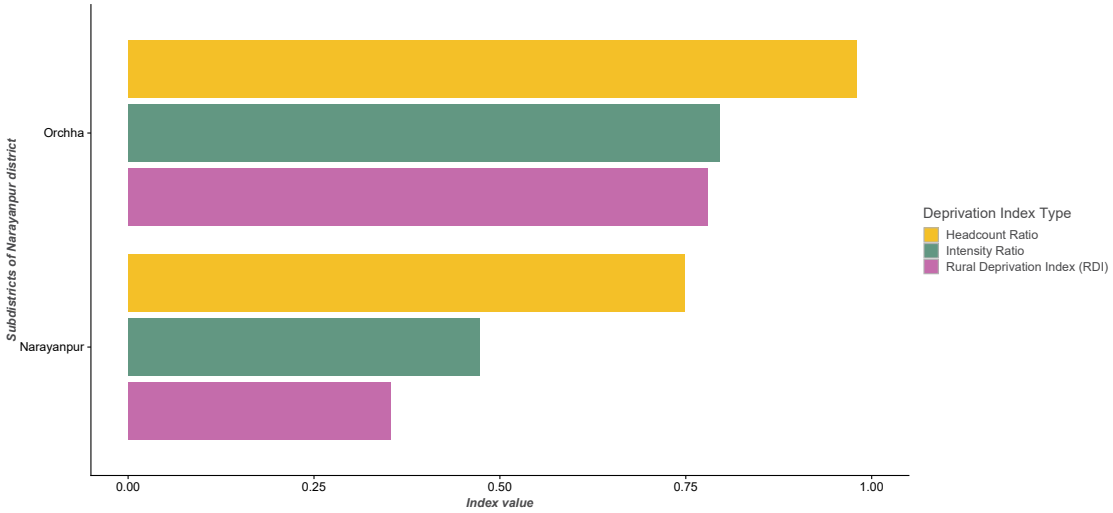
Figure 25f: Contribution of various factors to the RDI of Bijapur District



Narayanpur District

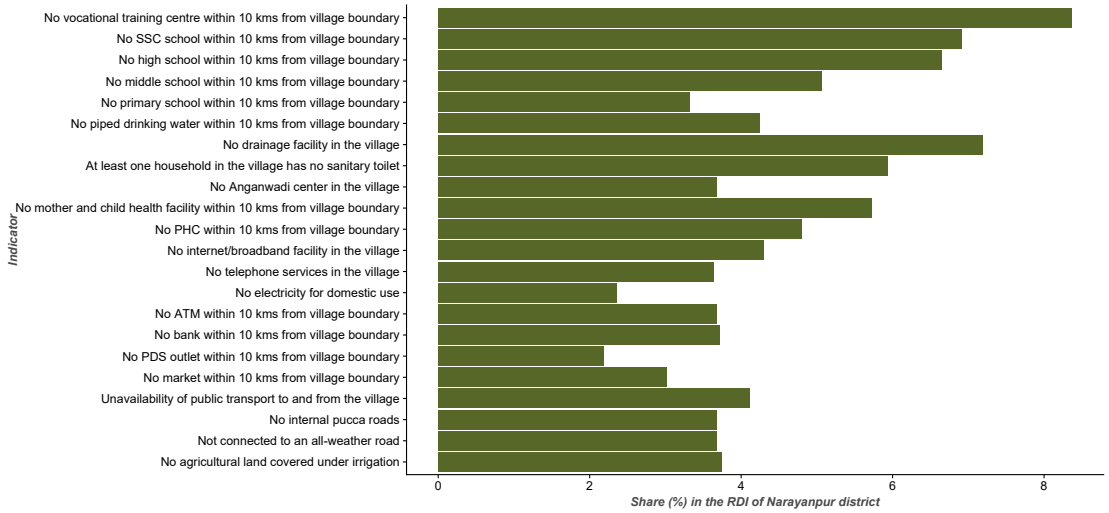
Narayanpur is another highly deprived district in the state, ranking third on the deprivation index table (see Appendix Table 4A). As Figure 25g shows, both its talukas have a high headcount ratio. Orchha in particular does quite poorly in providing access to public amenities to its population.

Figure 25g: Rural Multidimensional Deprivation in Narayanpur District



Similar to Bijapur, we find that a number of indicators have a significant share in the RDI of the district. This district too thus needs to build amenties in all areas of infrastructure, health and education.

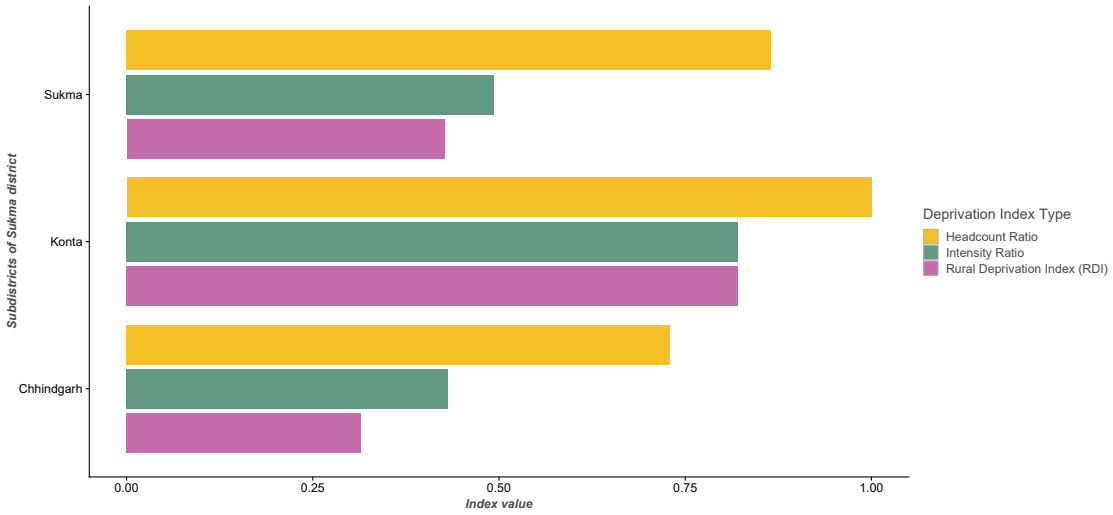
Figure 25h: Contribution of various factors to the RDI of Narayanpur District



Sukma District

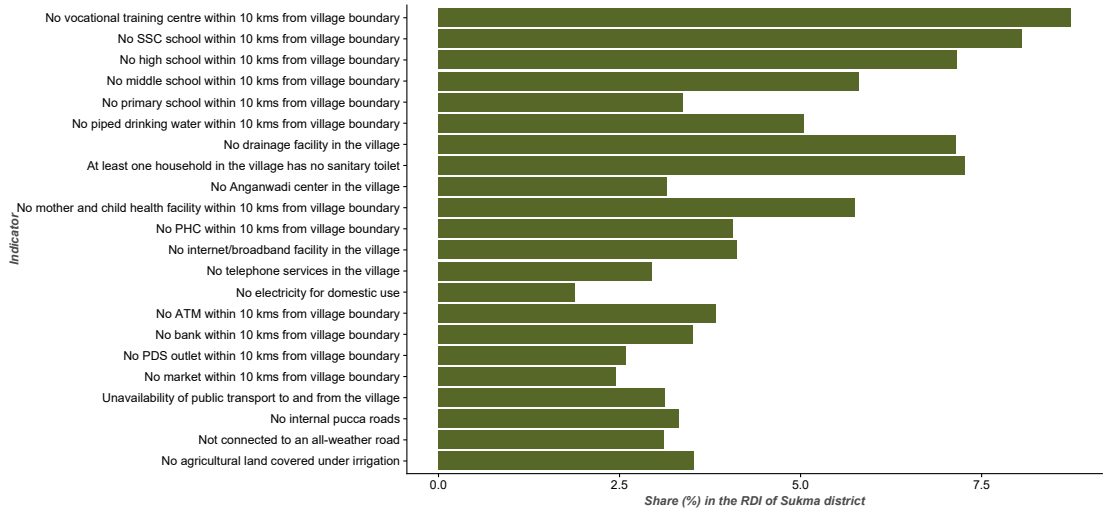
Sukma is the second most deprived district in the state, just behind Bijapur. As Figure 25i shows, all its talukas have a headcount ratio of multidimensional deprivation of close to 75% or higher and an RDI score of at least 0.30. The taluka of Konta calls for special attention, with almost all its villages categorized as multidimensionally deprived.

Figure 25i: Rural Multidimensional Deprivation in Sukma District



Like Bijapur and Narayanpur, multidimensional deprivation in Sukma is also due to a number of different indicators across health, education and infrastructure dimensions. Efforts are thus needed across the board to uplift villages in this district.

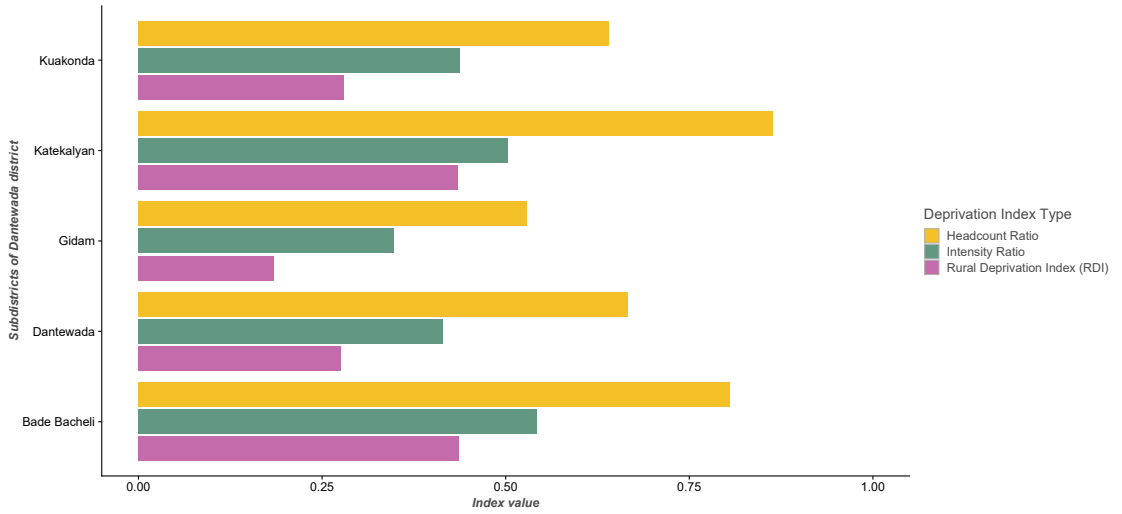
Figure 25j: Contribution of various factors to the RDI of Sukma District



Dantewada District

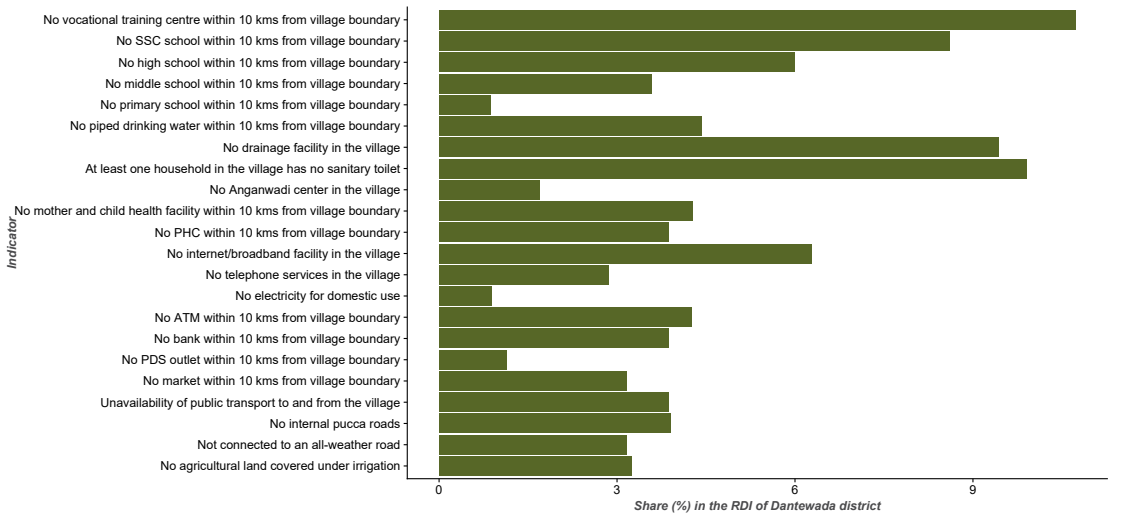
Dantewada is the fourth-highest deprived district in the state, with an RDI score of 0.31. As Figure 25k shows, more than 50% of the villages in each of its talukas are multidimensionally deprived.

Figure 25k: Rural Multidimensional Deprivation in Dantewada District



Furthermore, as Figure 25l shows, a number of factors contribute to this high level of multidimensional deprivation such as lack of vocational training centres, SSC schools, drainage facilities and sanitary toilets.

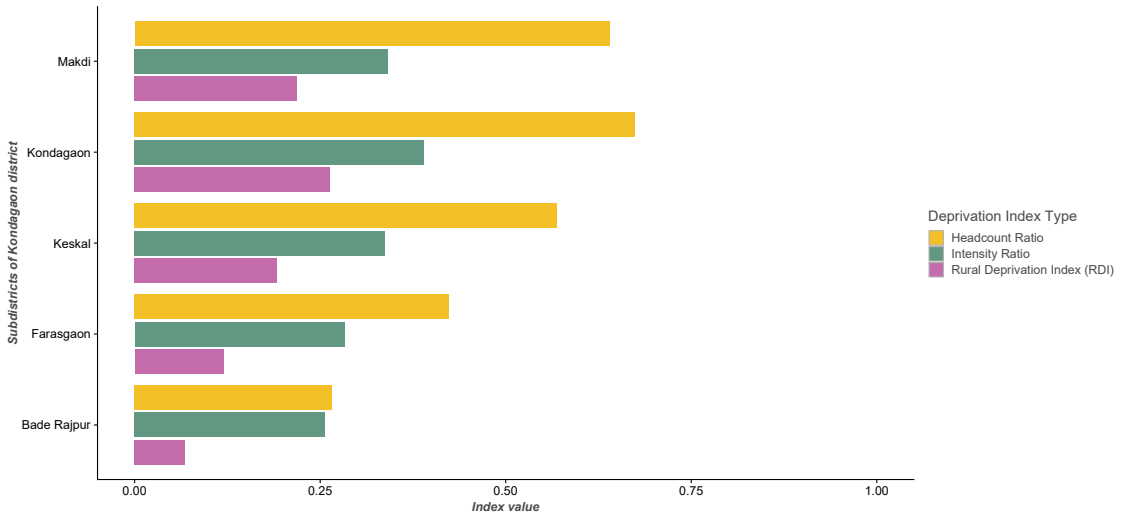
Figure 25l: Contribution of various factors to the RDI of Dantewada District



Kondagaon District

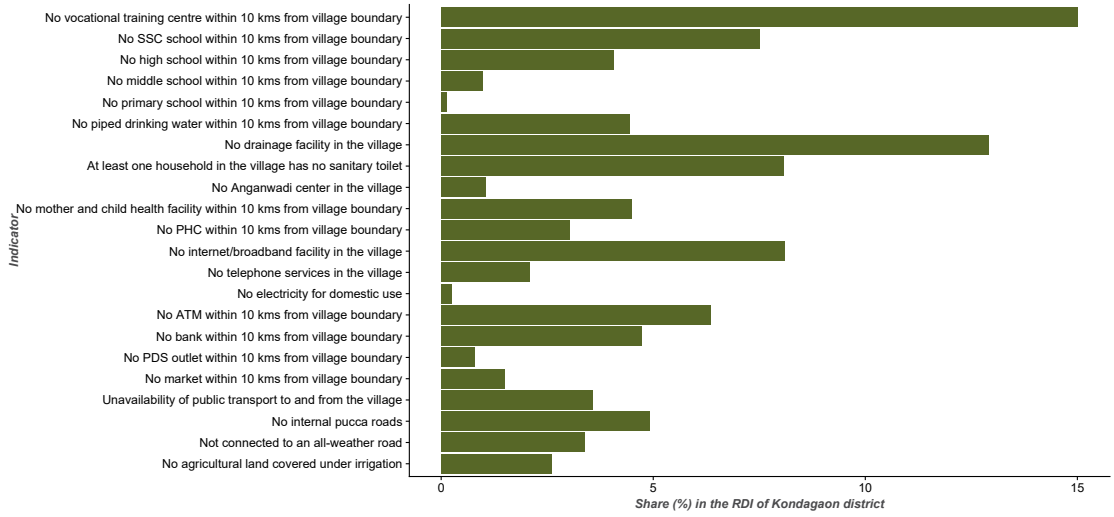
Kondagaon district does better than most other districts in this division. Nevertheless, it does have a high level of multidimensional deprivation relative to other districts in the state, ranking 12th out of the 28 districts considered. As Figure 25m shows, Bade Rajpur and Farasgaon have better developmental indicators when compared to other talukas in this region. The others, namely, Makdi, Kondagaon and Keskal, have all have a headcount ratio of deprivation of over 50%. In other words, most of the villages in these three areas are multidimensionally deprived.

Figure 25m: Rural Multidimensional Deprivation in Kondagaon District



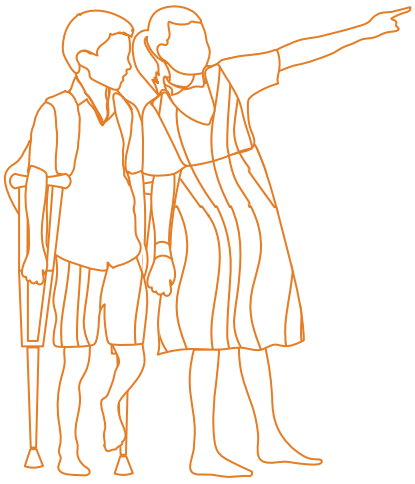
As Figure 25n shows, the primary reasons for deprivation in this district can be attributed to lack of vocational training centres, drainage facilities, sanitary toilets and internet connections. Focusing on providing these amenities can go a long way in developing this region.

Figure 25n: Contribution of various factors to the RDI of Kondagaon District



Our district-wise analysis thus highlights the following about multidimensional deprivation in the state:

1. There is significant variation in the level of multidimensional deprivation between districts of Chhattisgarh.
2. There is little variation in deprivation within the top and bottom three districts. That is, all talukas in the top three districts do poorly, and all talukas in the bottom three districts have a low level of RDI. However, there is ample variation in multidimensional within other districts of the state. This calls for a meticulous taluka-wise planning to reduce deprivation in the state.
3. The indicator-wise analysis shows that in most cases, the similar set of indicators contribute most to the district RDI.
4. The state thus needs to focus on spatial planning of amenities, rather than have a dimension-wise approach.



6. Conclusion

This report studied poverty in rural Chhattisgarh by looking at it in a novel way. We built a rural multidimensional deprivation index, based on access to public amenities in the areas of infrastructure, education, and health. Our analysis highlights some important facts about the level and distribution of multidimensional deprivation in the state and their implications for policy.

Firstly, our analysis shows that rural Chhattisgarh on an average, performs poorly when compared to the national rural average. More importantly, it's intensity ratio, that is, the average level of deprivation among the multidimensionally deprived, is much higher than that of states such as Odisha and Jharkhand, which have a higher headcount ratio and RDI than Chhattisgarh.

Secondly, we find strong evidence of intra-state disparity, reiterating our state-level results of multidimensional deprivation. The analysis shows that the Bastar division, which is highly populated by tribals and has a large forest cover, is the most deprived in the state across all dimensions of deprivation. The districts of Bijapur, Sukma and Narayanpur are particularly characterized with high levels of deprivation across indicators and dimensions. Moreover, deprivation in these districts is not restricted to specific pockets but is widespread across its talukas and villages. In contrast, the Durg district has low levels of deprivation, across its talukas. Other parts like the Raipur and Surguja divisions have low to moderate levels of deprivation, with changing grades of deprivation across talukas and districts.

These results reveal that geography, demography and urban agglomeration play a critical role in growth and development. The Bastar region is highly forested, with majority of its population being tribal. On the other hand, rural areas of Durg and Raipur are surrounded by the big cities of Durg and Raipur, respectively. These cities have historically been well-connected to the rest of the country and have hence grown faster than the rest of the state. Further, these areas also have a smaller tribal population and forest cover. It is this uneven distribution of demography and geography that is determining the unequal distribution of poverty in the state.

From a policy perspective, the benefit of this unequal distribution of development is that the state can focus on specific areas that need the most attention, i.e., the Bastar division. Furthermore, since this region is deprived across all indicators, it needs an overall push. The state could direct a larger outlay of development funds towards Panchayats in these districts to enable them to develop and bring them on par with the rest of the state. The Panchayats, on the other hand, need to devise a plan such that amenities across education, health and infrastructure domains are built in these villages.

Finally, the reason for the underlying deprivation in the state is not on account of a specific dimension. We find that deprivation in the state stems from all three dimensions of infrastructure, health and education. However, there is variation in the contribution of specific indicators within these dimensions to overall deprivation. For instance, the single largest contributor to multidimensional deprivation in the state and in most of the districts is the lack of vocational training centres, followed by lack of drainage facilities in villages, sanitary toilets in households and secondary schools in the village vicinity. Indicators such as access

to electricity, PDS outlets, primary schools and Anganwadi centres contribute little to multidimensional deprivation. The most deprived districts in the Bastar region, however, are an exception to this state-wide trend. We find that deprivation in these districts stems from all the indicators.

Our results on the contribution of different indicators to multidimensional deprivation provides important insights on existing policies and lessons to be learnt from them. It is important to note that many of these indicators are inter-linked. For instance, absence of banks will mean that there are hardly any ATMs available in the vicinity. Absence of an internet connection in the village can hinder smooth functioning of several other activities. Absence of public transport facilities will have a negative impact on attendance in vocational training courses even in nearby villages. Similarly, drainage facilities, piped water and sanitary toilets are likely to be inter-linked. This is the reason why regions like Bastar are lagging on all amenities. This shows that it is imperative for governments in the most deprived areas to work simultaneously on building multiple amenities.

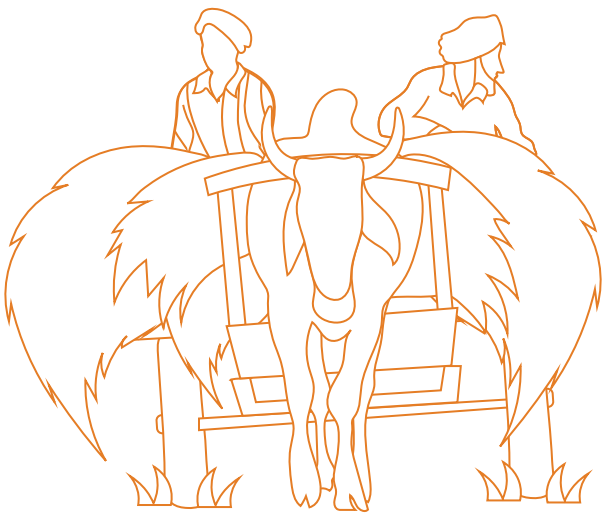
In case of areas that have low levels of multidimensional deprivation, but yet are deprived of amenities like vocational centres and internet connections, existing government policies have an important role to play. For instance, we find that amenities such as Anganwadi centres, primary, middle and high schools and electricity are available in majority of the districts and that they contribute little to overall multidimensional deprivation in the state. Policies of the Government such as ICDS, RTE and various rural electrification programmes have ensured that villages have at least the basic facilities in these domains. In contrast, lack of vocational training centre is the single largest contributor to deprivation as there are no existing polices mandating the presence of these centres in rural areas. Hopefully, under the National Education Policy, vocational training centres will get a boost in rural areas. This can also go a long way in inhibiting youth unemployment in rural India. Similarly, as Swachh Bharat Abhiyan gains further momentum, more households will have sanitary toilets.

These results thus show that more government policies are needed that mandate the provision of basic public services in rural areas for people to benefit from them. It is truly the interaction of government policy at the national level with devolution of finances at the local level that can ensure development of rural India.

Besides being useful for immediate policy action, this report also has other merits. Because this study is based on data that is publicly available, the methodology that we have used here can be replicated further down to understand growth impediments at the block as well as village level. Government efforts can thus be directed accordingly. Moreover, different combinations of indicators and weights can be used to study the sensitivity of them to the level of deprivation.

However, it should be noted that the index built here is based on only provisioning of amenities and not the outcome of those. For instance, we only look at whether there is an Anganwadi centre in a village and not at how that Anganwadi centre is run and how it benefits the village. The latter of course plays a key role in development, but the former is a pre-requisite for the latter. Further, as argued in this report, it is complex to study the outcomes and it calls for a more micro level understanding of the working at the village level. The results in this report should thus be understood keeping in mind the indicators that have gone into building the index. The level of deprivation here does not reflect the quality of public amenities or the governance of a village or a district.

We believe this study is a starting point to initiate a data-driven, evidence-based dialogue on development in different parts of rural Chhattisgarh, understanding it from the perspective of provisioning of public amenities at the village level. Because provisioning of public amenities is easier to identify and fix than the quality of the services themselves, we also believe that immediate necessary action can be taken based on the results from this report.



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Appendix

Section A- Data on RDI across Indian States and Districts of Chhattisgarh

Table 3A: Rural Multidimensional Deprivation Across States of India

State	Headcount Ratio of Rural Multidimensional Deprivation	Intensity of Rural Multidimensional Deprivation	Rural Multidimensional Deprivation Index	Rank
Arunachal Pradesh	0.892	0.602	0.537	1
Meghalaya	0.859	0.504	0.433	2
Nagaland	0.842	0.494	0.416	3
Manipur	0.769	0.527	0.405	4
Ladakh	0.849	0.413	0.351	5
Assam	0.773	0.403	0.311	6
Jharkhand	0.758	0.395	0.299	7
Mizoram	0.644	0.439	0.282	8
Odisha	0.665	0.400	0.266	9
Madhya Pradesh	0.608	0.373	0.227	10
Uttarakhand	0.602	0.353	0.213	11
Maharashtra	0.526	0.392	0.206	12
Chhattisgarh	0.487	0.400	0.195	13
Himachal Pradesh	0.51	0.370	0.188	14
Andhra Pradesh	0.453	0.406	0.184	15
Rajasthan	0.499	0.368	0.184	16
Sikkim	0.463	0.356	0.165	17
Bihar	0.455	0.346	0.157	18
Karnataka	0.378	0.352	0.133	19
Jammu & Kashmir	0.355	0.364	0.129	20
Telangana	0.347	0.351	0.122	21
Andaman & Nicobar Islands	0.317	0.373	0.118	22
Goa	0.299	0.385	0.115	23
Uttar Pradesh	0.349	0.317	0.111	24
West Bengal	0.314	0.309	0.097	25
Tamil Nadu	0.265	0.314	0.083	26
Tripura	0.219	0.359	0.079	27

Punjab	0.198	0.305	0.060	28
Gujarat	0.172	0.324	0.056	29
The Dadra & Nagar Haveli and Daman & Diu	0.186	0.269	0.050	30
Haryana	0.143	0.298	0.042	31
Kerala	0.324	0.003		32
India	0.375	0.179		**NA**

Source: Computed by the authors using Mission Antyodaya Survey, 2019. All figures are rounded off to 3 decimal points.

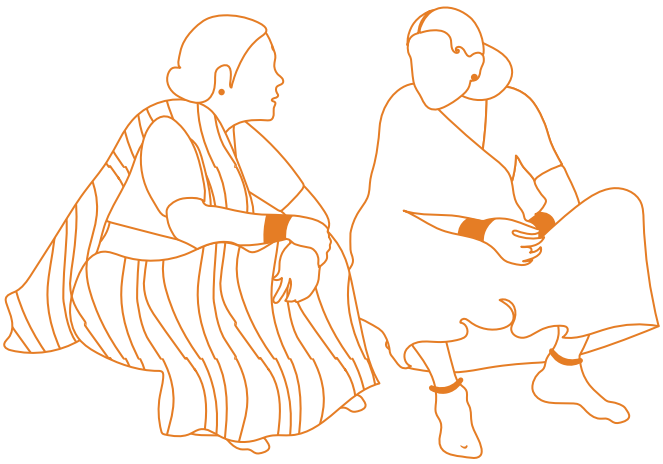


Table 4A: Rural Multidimensional Deprivation Across Districts of Chhattisgarh				
District	*Headcount Ratio of Rural Multidimensional Deprivation*	*Intensity Ratio of Rural Multidimensional Deprivation*	*Rural Multidimensional Deprivation Index*	*Rank*
Bijapur	*0.969*	*0.738*	*0.715*	*1*
Sukma	*0.917*	*0.705*	*0.646*	*2*
Narayanpur	*0.882*	*0.679*	*0.599*	*3*
Dantewada	*0.686*	*0.451*	*0.309*	*4*
Korea	*0.695*	*0.433*	*0.301*	*5*
Balrampur	*0.685*	*0.376*	*0.257*	*6*
Kanker	*0.594*	*0.379*	*0.225*	*7*
Korba	*0.552*	*0.379*	*0.209*	*8*
Gariyaband	*0.521*	*0.390*	*0.203*	*9*
Surguja	*0.578*	*0.347*	*0.200*	*10*
Jashpur	*0.571*	*0.349*	*0.199*	*11*
Kondagaon	*0.555*	*0.347*	*0.193*	*12*
Raigarh	*0.549*	*0.338*	*0.186*	*13*
Gaurella-Pendra-Marwahi	*0.572*	*0.323*	*0.185*	*14*
Bastar	*0.443*	*0.403*	*0.179*	*15*
Surajpur	*0.467*	*0.370*	*0.173*	*16*
Mungeli	*0.459*	*0.345*	*0.159*	*17*
Mahasamund	*0.405*	*0.371*	*0.150*	*18*
Kabirdham	*0.425*	*0.330*	*0.140*	*19*
Baloda Bazar	*0.444*	*0.311*	*0.138*	*20*
Bilaspur	*0.400*	*0.306*	*0.122*	*21*
Rajnandgaon	*0.360*	*0.320*	*0.115*	*22*
Dhamtari	*0.316*	*0.357*	*0.113*	*23*
Janjgir-Champa	*0.351*	*0.292*	*0.103*	*24*
Bemetara	*0.293*	*0.295*	*0.087*	*25*
Balod	*0.194*	*0.278*	*0.054*	*26*
Raipur	*0.157*	*0.263*	*0.041*	*27*
Durg	*0.144*	*0.259*	*0.037*	*28*
Chhattisgarh	*0.487*	*0.400*	*0.195*	*NA*
Source: Computed by the authors using Mission Antyodaya Survey, 2019. All figures are rounded off to 3 decimal points.				

Section B- Analysis of the Dharamjaigarh Block(Taluka Udaipur (Dharamjaigarh), District Raigarh)

This section presents a detailed analysis of the Dharamjaigarh block, located in the taluka of Udaipur in Raigarh district. The analysis is based on data on 191 villages located in the block.

Table 5A below shows that the largest proportion of villages are deprived of access to ATM facilities, followed by access to an internet connection in the village. A dimension-wise bird's eye-view shows that this block is highly deprived of facilities on the educational front. Although all villages have a primary school within a radius of 10 kms from the village boundary, more than 60% of the villages do not have a high school, SSC school or a vocational training center in close proximity. On the health front, access to mother and child health care facilities are lacking in over 60% of the villages, which clearly is a cause for concern.

	Table 5A: Proportion of Villages Deprived under each Indicator in Dharamjaigarh		
No.	**Dimension**	**Indicator of Deprivation**	**Proportion of Villages Deprived (%)**
1	Infrastructure	None of the agricultural areas in the village are covered under irrigation.	3.66
2		The village is not connected to an all-weather road.	56.02
3		The village has no internal pucca roads (covered or partially covered).	3.14
4		No form of public transport (Bus/Van/Auto) is available to and from the village.	5.24
5		The nearest market (mandi/regular market/weekly market) to the village is farther than 10 kms from the village revenue boundary.	52.36
6		The nearest fair price shop (ration shop) is farther than 10 kms from the village revenue boundary	36.13
7		The nearest bank is farther than 10 kms from the village revenue boundary.	69.63
8		The nearest ATM is farther than 10 kms from the village revenue boundary.	81.15
9		There is no electricity for domestic use in the village.	0.00
10		There are no telephone services (mobile or landline) in the village.	5.76
11		There is no internet/ broadband facility available in the village.	78.53

12	Health	The nearest primary health center/ community health center/ Sub-center is farther than 10 kms from the village revenue boundary.	11.52
13		The nearest mother and child health facility is farther than 10 kms from the village revenue boundary.	65.97
14		There is no Anganwadi center in the village.	0.52
15		The village has at least one household without a sanitary toilet.	14.14
16		There is no drainage facility in the village.	47.12
17		The distance to the nearest piped tap water facility is more than 10 kms from the village revenue boundary.	10.99
18	Education	The nearest primary school is farther than 10 kms from the village revenue boundary.	0.00
19		The nearest middle school is farther than 10 kms from the village revenue boundary.	32.98
20		The nearest high school is farther than 10 kms from the village revenue boundary.	62.83
21		The nearest SSC school is farther than 10 kms from the village revenue boundary.	75.92
22		The nearest vocational training center/ polytechnic/ ITI/ RSETI/DDU_KY center is farther than 10 kms from the village revenue boundary.	76.44
Source: Computed by the authors using data from Mission Antyodaya Survey, 2019.			

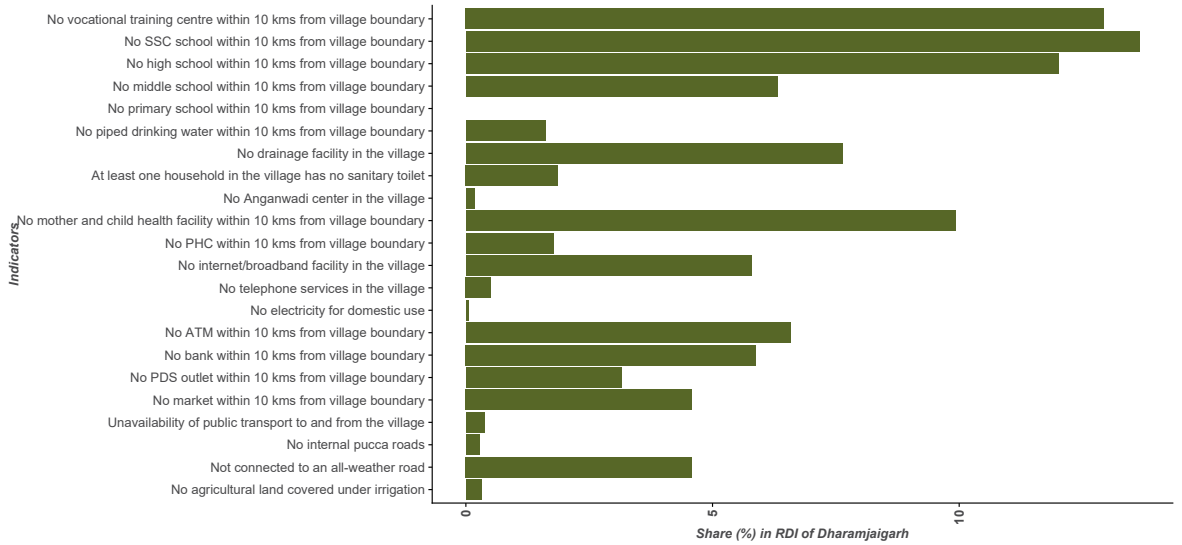
Table 6A presents the key statistics of deprivation for the block. It re-asserts the results of Table 5A and shows that out of the three dimensions, the block is the most deprived on the educational front. On average, villages in the block are deprived of 50% of the education indicators, 36% of the infrastructure indicators and 25% of the health indicators. The composite deprivation score of 0.37 implies that an average village in Dharamjaigarh is deprived on 37% of the indicators listed, that is, on eight out of 22.

Overall, 79% of the villages in the block, that is, 151 out of 191 villages in the block are multidimensionally deprived. In other words, 151 villages of the block have a composite deprivation score of above 0.2. The average deprivation score of these multidimensionally deprived villages is 0.44, that is, they are deprived on 10 of the 22 indicators. This is a large number, reflecting that efforts need to be directed towards building the essential public amenities in these multidimensionally deprived villages. Overall, the block has an RDI score of 0.34, which is higher than both the district and the state average.

	Table 6A: Deprivation Scores and RDI for Dharamjaigarh	
No.	Deprivation Statistic	Value
1	Mean Infrastructure Deprivation Score	0.36
2	Mean Health Deprivation Score	0.25
3	Mean Education Deprivation Score	0.50
4	Mean Composite Deprivation Score	0.37
5	Headcount Ratio of Multidimensional Deprivation	0.79
6	Intensity Ratio of Multidimensional Deprivation	0.44
7	Rural Multidimensional Deprivation Index (RDI)	0.34
Source: Computed by the authors using data from Mission Antyodaya Survey, 2019.		

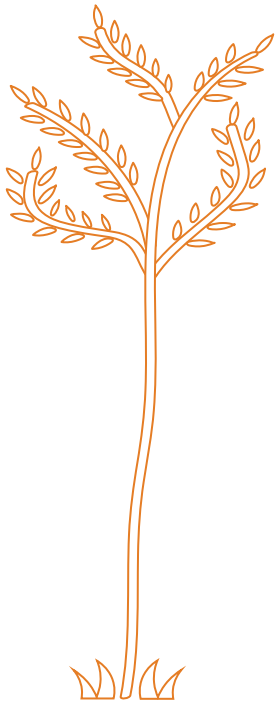
Figure 26A shows the contribution of each indicator to the RDI of the block. As seen in the previous results, the indicators on education contribute the most to the block's multidimensional deprivation. Although all villages in the block have a primary school in their vicinity, lack of particularly high schools, SSC schools and vocational training centers are exceptionally high in the block. Besides these, lack of mother and child health care centers also contribute a significant share in the block's deprivation index.

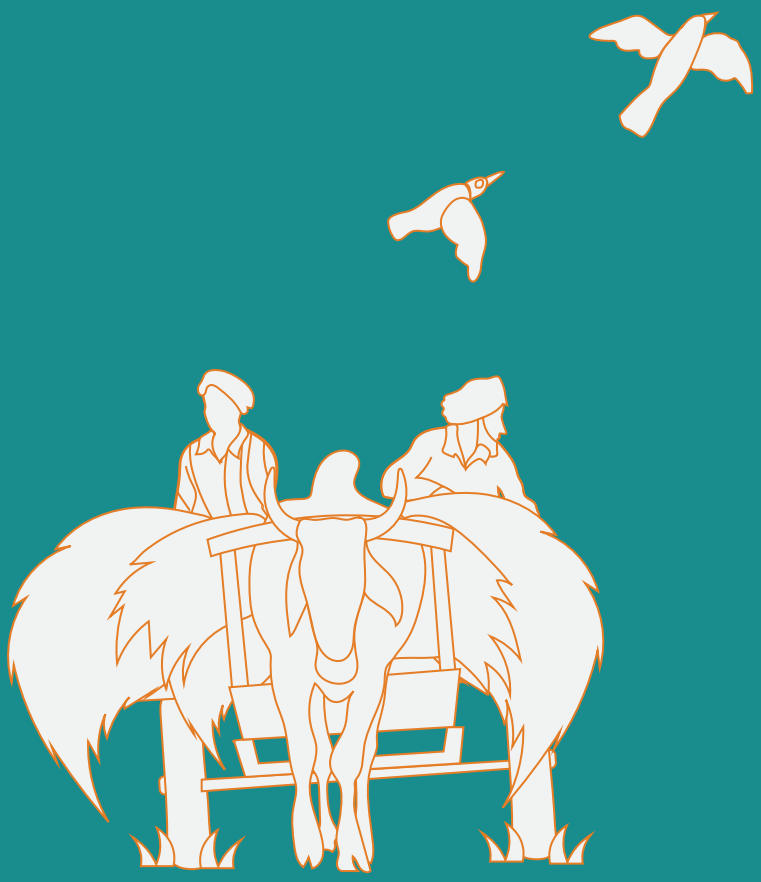
Figure 26a: Contribution of Each Indicator to the RDI of Dharamjaigarh



About Development Dialogues with Data Initiative

Development Dialogues with Data is an initiative at the School of Development, Azim Premji University which brings insights from granular quantitative, spatial data for the benefit of teaching and practice of development. The initiative promotes usage of basic data analysis and visualization tools to depict quantitative data in ways which are easier for non-researchers to comprehend and also has the potential to improve policy-making, work on-the-ground, and teaching.





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