Azim Premji University

Rural Multidimensional Deprivation in Jharkhand

A data-driven analysis

2025

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

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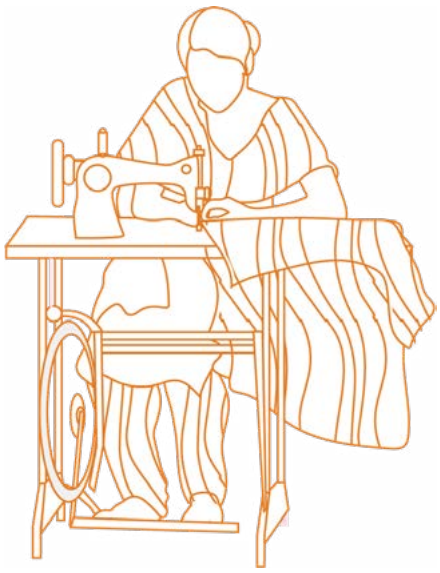

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Executive summary

This report constructs a Rural Multidimensional Deprivation Index (RDI) for measuring deprivation in Jharkhand.

An important feature of the index is that it is constructed using indicators on provisioning of basic infrastructural amenities at the village level. This is different from the usual poverty indices that are composed of financial indicators such as income or consumption; or indicators measuring development outcomes such as educational or nutritional levels.

Observing the provisioning of basic infrastructural amenities, this report makes focused policy suggestions that can be easily implemented by functionaries working on the ground.

The data for the index is sourced from the Mission Antyodaya Survey, which was carried out in 2019 at the village level across the country. The survey collects data related to provisioning and outcome of basic amenities in villages, along with demographic and socioeconomic variables. Because this is a periodic survey, it enables us to track the developmental progress of each village, district, state and the country over time. In total, there are about 182 variables that were captured in the 2019 round. The survey covers 31,175 out of 32,620 villages in Jharkhand, which is 95.6 percent of the total number of villages in the state; and 6,48,358 out of 6,67,933 villages in India, or 97.1 percent of the villages in the country.

Theoretically, the RDI is similar to the Multidimensional Poverty Index (MPI) developed by Alkire-Foster. Hence, it retains the properties of the MPI such as additivity. This means that the indicators representing the different underlying dimensions of deprivation are added up to create this index. Due to the additive nature, the RDI can be decomposed into its constituent dimensions, providing a better understanding of the exact source and extent of deprivation at any desired geographic resolution from the village-level up all the way to the state and national level.

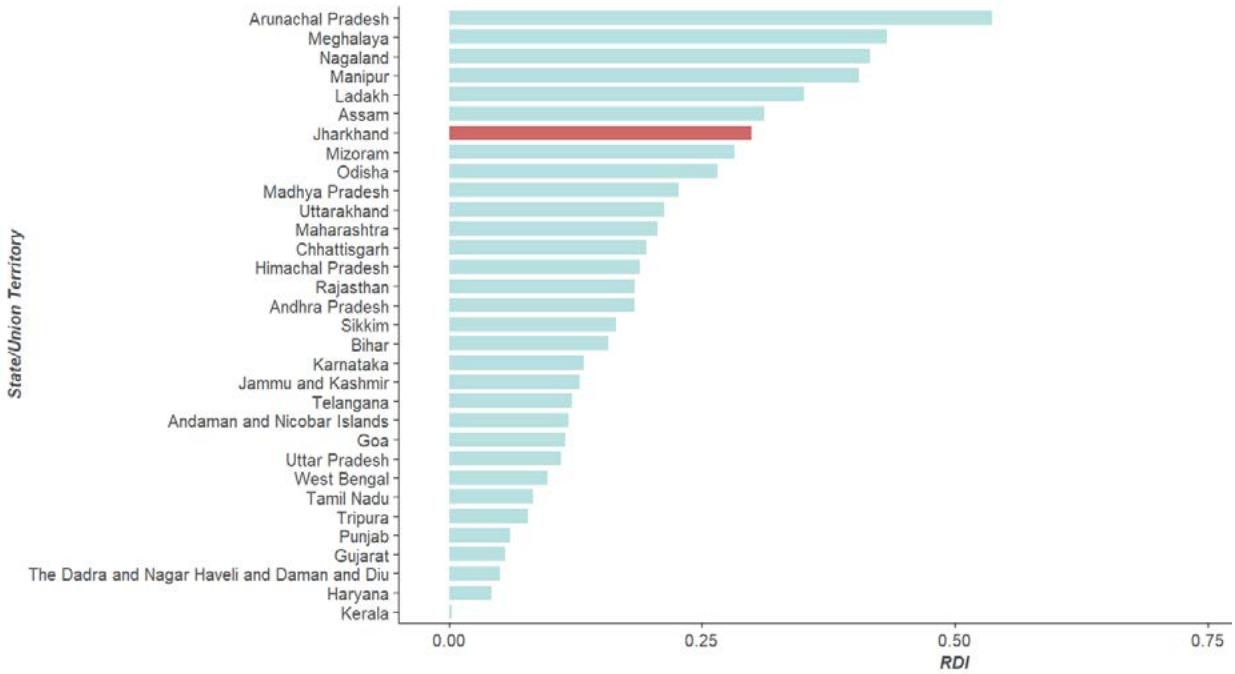
Further, like the MPI, the RDI measures both the breadth and depth of deprivation. The RDI is the product of two measures — the Headcount Ratio, which measures the proportion of villages that are multidimensionally deprived in any taluka/district/state; and the Intensity Ratio, which measures the average level of deprivation in the multidimensionally deprived villages. The former measures the extent or the breadth of deprivation in any spatial unit, whereas the latter shows the depth of multidimensional deprivation.

The RDI is calculated using 22 indicators related to provisioning of basic amenities at the village level, encompassing the dimensions of Infrastructure, Health and Education. The indicators used under each of these dimensions, as shown in the figure below, are selected after carefully evaluating their importance in multidimensional development at the village level. We categorise a village as multidimensionally deprived if it is deprived of at least 5 of the 22 listed indicators.

Infrastructure	Health	Education
• Irrigation • All-weather roads • Internal roads • Public transport • Markets • PDS • Banks • ATM • Electricity • Telephone • Internet	• Primary Healthcare Centre • Mother and child health • Anganwadi • Sanitary toilets • Drainage • Piped water	• Primary school • Middle school • High school • SSC school • Vocational training centre

Key results

Performance of Jharkhand viz-à-viz other states of India: 7th most deprived state in the country

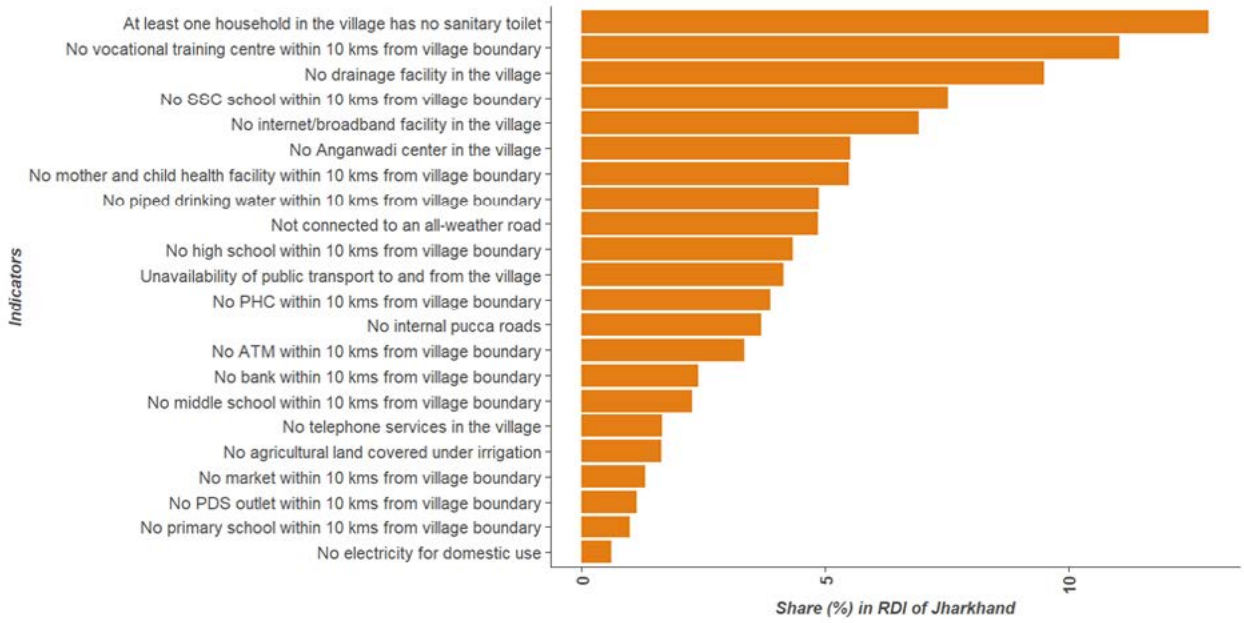


A state-wise analysis of the RDI shows that Jharkhand occupies the 7th rank in the country (more deprivation implies a higher RDI value and a higher rank). In fact, if we exclude the hilly states of Northeast India and Ladakh, then Jharkhand is the most multidimensionally deprived state in the country.

The state ranks 7th also in terms of headcount ratio, that is, the proportion of villages that are multidimensionally deprived. In terms of the intensity ratio, that is, the average level of deprivation among the multidimensionally deprived villages, it ranks 11th.

Primary contributors to Jharkhand's Multidimensional Deprivation

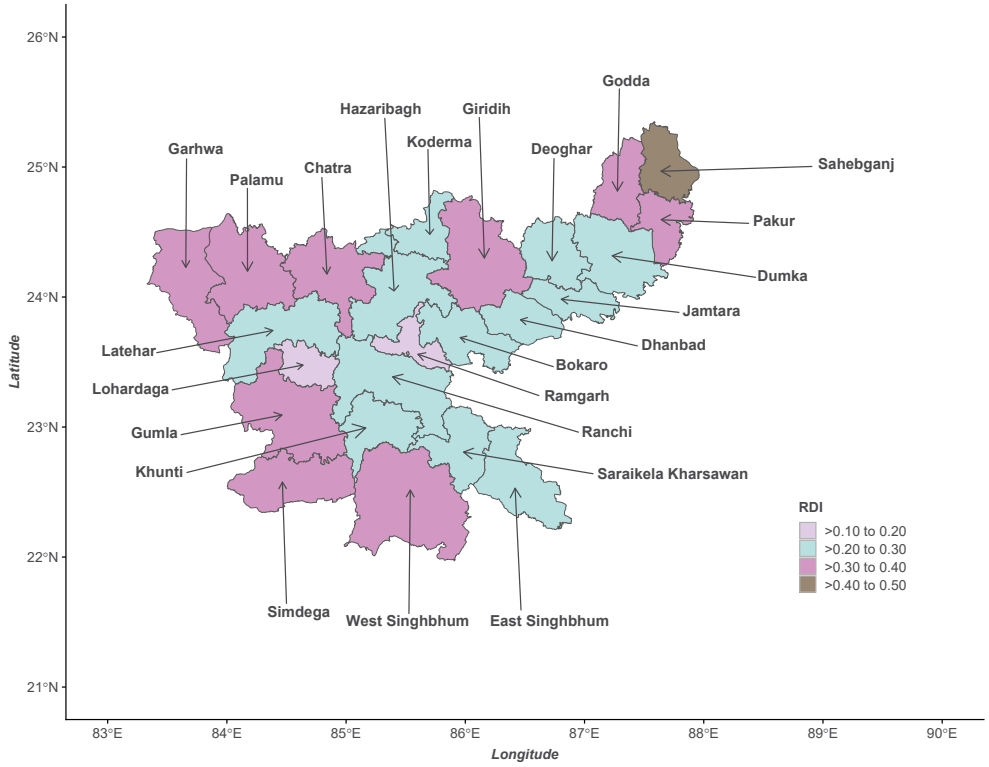
Lack of sanitary toilets, vocational training centres and drainage facilities are significant contributors to deprivation. Overall, Health indicators contribute the most to deprivation, followed by Infrastructure and Education.



We find that out of 22, 5 indicators together contribute over 40 percent of the total deprivation in the state. The indicators contributing the most to the RDI of Jharkhand are lack of sanitary toilets in households, lack of vocational training centres, lack of drainage facilities, lack of SSC schools and lack of internet/broadband connectivity.

Overall, the state is most deprived on the health front, followed by infrastructure and educational deprivation. For most of the districts, the health indicators together contribute to around 40 percent of the share in total deprivation.

Spatial distribution of the RDI: High levels of deprivation across the state



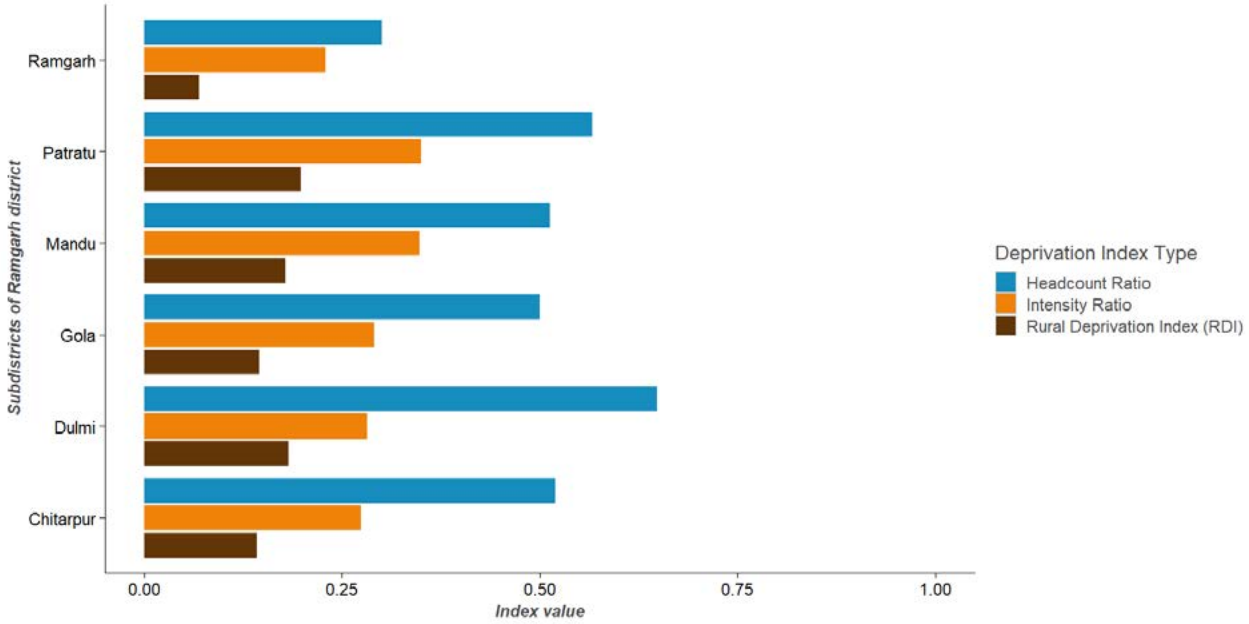
A district-wise analysis shows that many pockets of the state have high levels of deprivation, with only marginal differences between districts. Districts along the state's border, such as Sahebganj, Simdega, Gumla, Garhwa, and West Singhbhum are the most deprived, whereas those in the centre such as Ranchi, Ramgarh and Lohardaga are the least deprived.

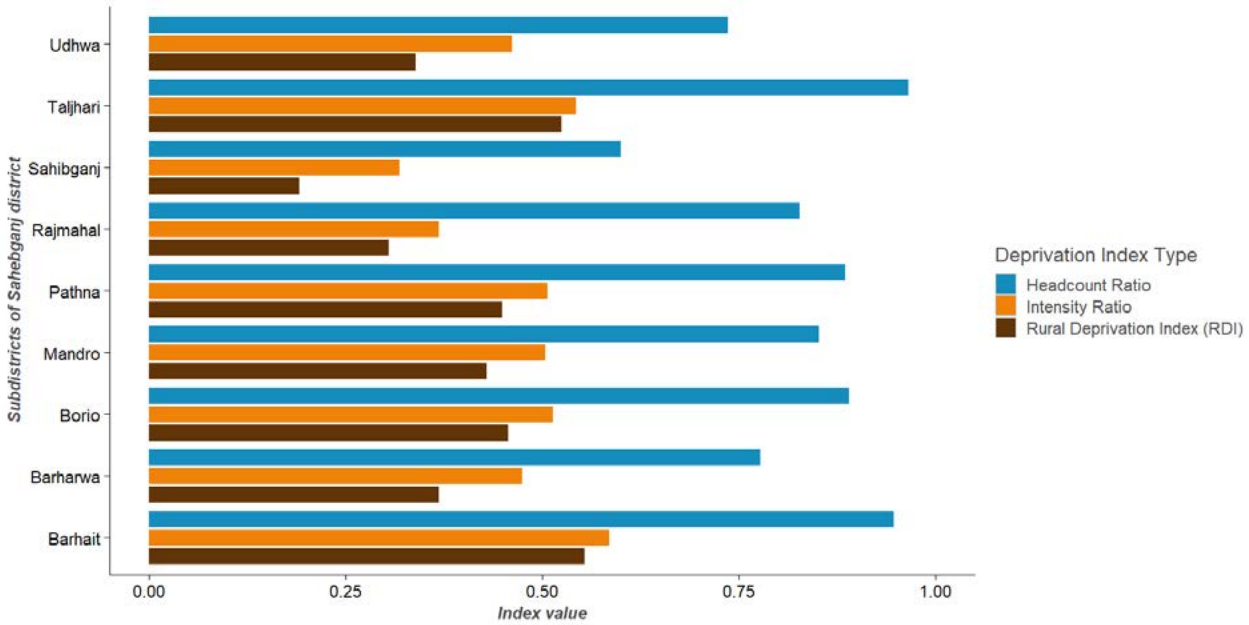
The district with the least deprivation level is Ramgarh with an RDI value of 0.17, while Sahebganj has the highest deprivation with an RDI of 0.44.

Ramgarh v/s Sahebganj - how do the best and worst districts compare?

Headcount Ratio, Intensity Ratio and RDI

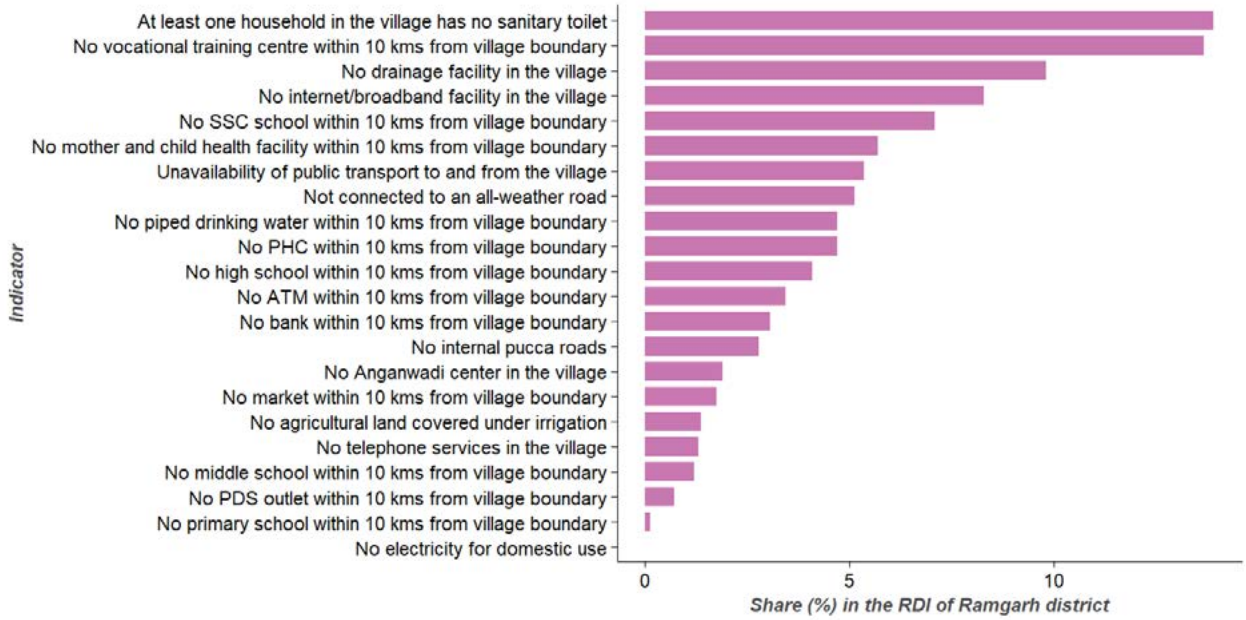
A comparison of the best and worst-performing districts reveals significant variation in deprivation levels within districts. It shows that even the better performing districts have taluks that do poorly, whereas the poorly performing districts have taluks with moderate levels of deprivation. For instance, Ramgargh, the district with the lowest deprivation in the state, has taluks with headcount ratios as high as 65 percent and as low as 30 percent. Similarly, for Sahebganj, the district with the highest level of multidimensional deprivation, the highest headcount ratio for a taluk is 96.5 percent; but it also has regions with moderate levels of headcount ratio, of around 60 percent.

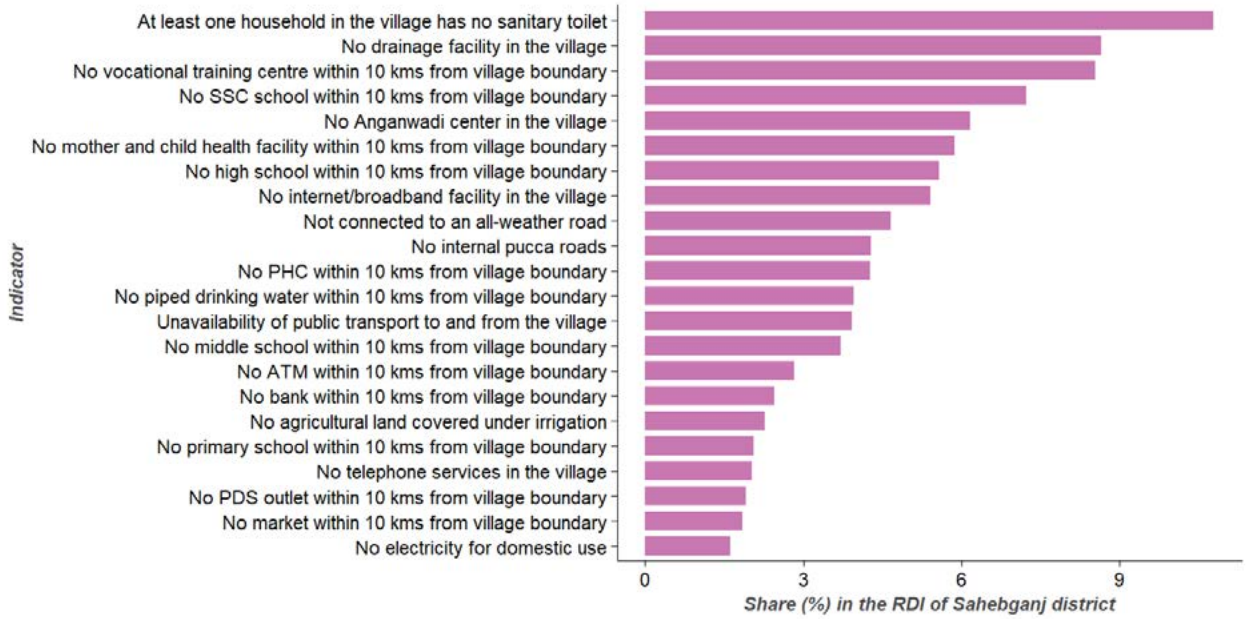




Contribution of various indicators to the districts' RDI

While all indicators contribute a fair share in the RDI of Sahebganj, reflecting that it is deprived of all of them, for Ramgarh, lack of electricity and primary schools contribute little to nil to overall RDI. However, both districts need to pay the most attention to provisioning of sanitary toilets, drainage facilities, vocational training centres and SSC schools.





Conclusion

This report finds that rural Jharkhand is highly multidimensionally deprived, across all regions of the state; and specifically in terms of provisioning of health-related amenities such as sanitary toilets and drainage facilities.

The purpose of this report is to provide an overview of the sources and regions of deprivation in the state such that it enables those working at the ground level to take appropriate actions. Furthermore, this report is an attempt to showcase how a multidimensional deprivation index can be constructed for villages and the benefits of it for policy action. We hope that those working for the development of various regions, in different roles, can construct similar indices for their regions and accordingly frame policies and take necessary steps to develop a region.

1. Introduction

Poverty eradication has been a fundamental developmental goal in post-Independence India. Although we have been able to tackle poverty to some extent over the last few years, there is a 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 state of Jharkhand, located in the East of the country.

The state of Jharkhand was formed on 15 November 2000 as the 28th state of India. The name Jharkhand is derived from two words: Jhar, meaning forests, and Khand, meaning land. It is the 15th largest state of India by area, 19th largest in terms of Gross State Domestic Product, and 14th in terms of population. The state is endowed with immense natural resources, accounting for almost 40 percent of India's mineral resources. However, the state is often regarded as resource cursed, where despite a wealth of natural resources, it lags in terms of human development as compared to the rest of the country and shows unequal standard of living. As a large part of the state is forested, rural and tribal, 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.

There have been some studies on poverty in Jharkhand, which note the high incidence of poverty in the state (Deb and Mukherjee 2024, Sharma 2019a, Sharma 2019b, Singh *et. al.* 2012). However, this report is unique in its use of highly disaggregated level of information, that is, at the gram panchayat level, based on a hitherto underutilised data source — the Mission Antyodaya Survey. This report presents results that can directly help practitioners in public policy and governance spheres. In fact, one of the objectives of the Government of India in implementing Mission Antyodaya was to highlight the gaps in provisioning of amenities. Thus, the database is ideal for measuring and analysing rural deprivation.

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 Aayog, 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 Aayog, 2023). Taking the MPI a step further, this report presents a novel way of measuring poverty.

We build a multidimensional Rural Deprivation Index (RDI) for Jharkhand 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 physical and social 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 facilities. Further, unlike other poverty measures, we do not analyse 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 Jharkhand to work for the betterment of their gram panchayats and villages, as laid under the 73rd Constitutional Amendment Act.
There are three dimensions that constitute the RDI- physical infrastructure, health and education. The index is different from existing measurements of poverty on at least the following two counts.

- 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 infrastructure facilities at the rural level. Further, it explicitly looks at provisioning of basic rural amenities, rather than the outcomes to focus on backwardness. This enables in pinpointing the precise areas that need focus from a policy perspective.
- The data is drawn from the Mission Antyodaya Survey of 2019, a publicly available village-level dataset covering important variables on provisioning of physical and social infrastructure facilities. This dataset has the advantage that it is being collected every year. This helps us track the evolution of regional deprivation at an annual frequency.

Besides these, this index has the same advantages as that of the MPI. These are:

- 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, it is actually based on a 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 block, sub-district, district and state levels. 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.
- 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 or state as well as the intensity of deprivation in those deprived villages. The RDI is essentially a combination of breadth and depth of deprivation.
- The index is focused on deprivation, meaning its magnitude does not reduce unless the deprivation level in at least one of the dimensions or geographical regions goes down. This makes the index a particularly attractive tool to measure policy effectiveness.

2. Data and Methodology

We use the Mission Antyodaya Survey data, a Gram Panchayat-level dataset on several 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 programs 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 has data for 2,67,205 out of a total of 2,69,943 Gram Panchayats in the country for the year 2019 (6,48,358 of the 6,67,933 villages of India, i.e., 97.1 % coverage). In Jharkhand, the data covers 31,175 of the total 32,620 villages (95.6 % coverage).

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 km 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 centre 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.

2.2 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 jointly examining the issue of provisioning as well as 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 — for example, if the village has a primary school or if 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 such as the linesman or the 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.

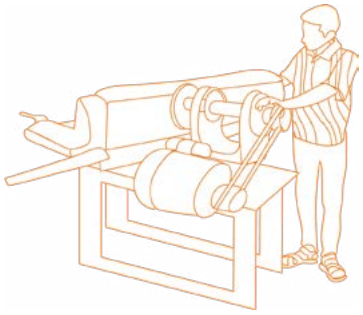
Finally, in addition to data quality, it has been argued that access to public amenities and infrastructure is also associated with better human development outcomes as well as poverty (Mohanty et al (2016), Sapkota (2014), Ali and Pernia (2003), Brenneman and Kerf (2002)). Given the significance of 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 centre/ community health centre/ Sub-centre 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 centre 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 centre/ polytechnic/ ITI/ RSETI/DDU_KY centre 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.

2.3 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 recording 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 judgement about what is the minimum number of dimensions across which a village needs to be deprived 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 centre within ten kilometres, 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.

2.4 Rural Multidimensional Deprivation Index

Let c_i be the composite deprivation score of village i. Village i will be classified as multidimensionally deprived if $c_i \geq 0.2$. 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:

$$IR = \frac{\sum_{i=1}^{v1} c_i * CD_i}{V_1}$$ Equation (2)

where V_1 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.

$$RDI_j = HR_j * IR_j$$ 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 Jharkhand at the national 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 Jharkhand 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 across states in India. With a headcount ratio of 0.7576, Jharkhand ranks 7th in terms of headcount ratio of multidimensional deprivation among 32 states and Union territories (greater the deprivation, higher the rank). The state is much above the national average of 0.4781 in terms of its headcount ratio. Thus, while 47.81% of villages in India are multidimensionally deprived, the corresponding figure for Jharkhand is much higher at 75.76%. As Figure 1 shows, only some of the north-eastern states and Ladakh fare worse than Jharkhand. Thus, if we were to exclude the states of Northeast India and Ladakh because of their different governance and geographical structure, then Jharkhand has the highest headcount ratio of multidimensional deprivation across states in India.

Although the state does slightly better in terms of intensity ratio of multidimensional deprivation, ranking 11th in the country, in absolute terms, the level of deprivation is quite high. The intensity ratio of 0.395 indicates that the average multidimensionally deprived village in Jharkhand is deprived on 39.5 percent of the indicators, that is, on about 9 out of the 22 indicators. This is worse than the national average of 0.375. If we exclude the states of Northeast India and Ladakh, then in terms of intensity ratio, Jharkhand does better than only three other states — Andhra Pradesh, Chhattisgarh and Odisha.

Figure 1: Headcount Ratio and Intensity Ratio of Multidimensional Deprivation across states and Union Territories of India.

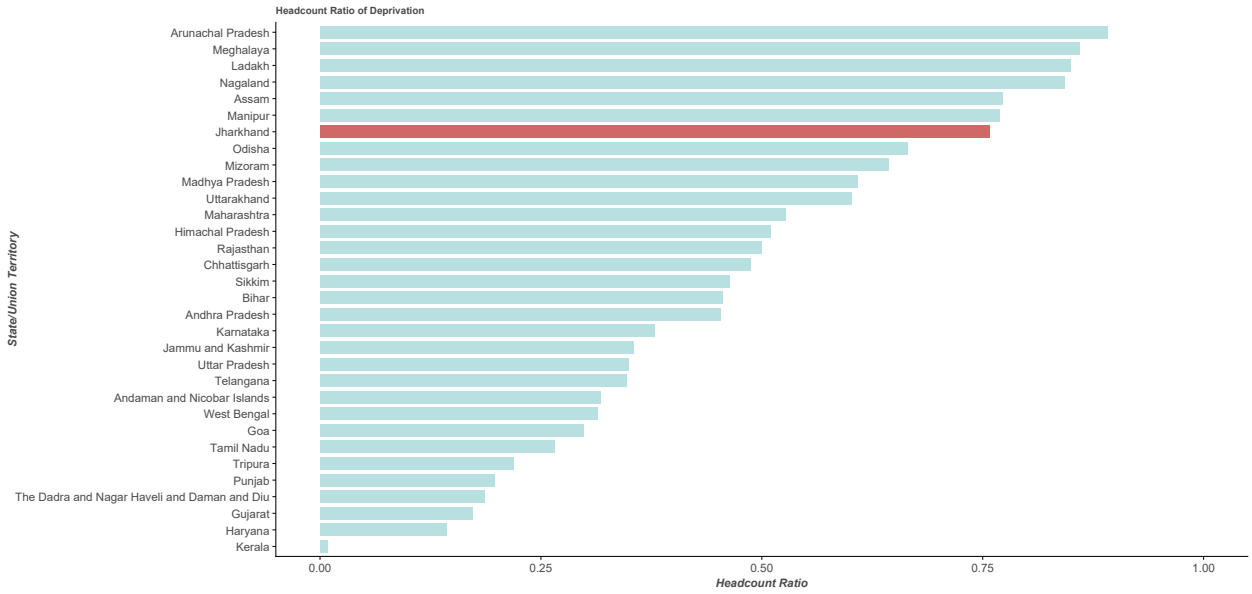
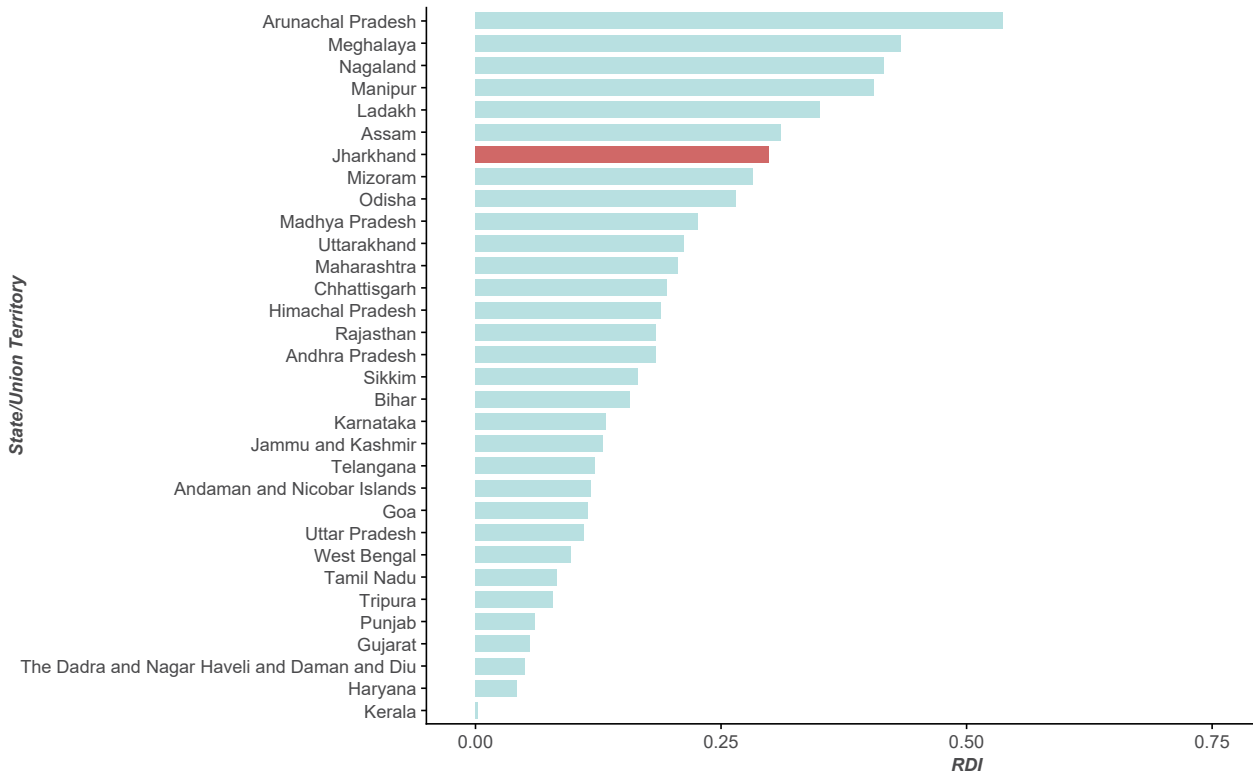


Figure 2 displays the product of the headcount and intensity ratios, that is, the RDI for states across India. The figure shows that Jharkhand occupies the 7th rank in terms of RDI. However, if we exclude the states of Northeast India and smaller Union Territories, then Jharkhand ranks first in terms of rural deprivation in the country.

Figure 2: Rural Multidimensional Deprivation Index across states and Union Territories of India



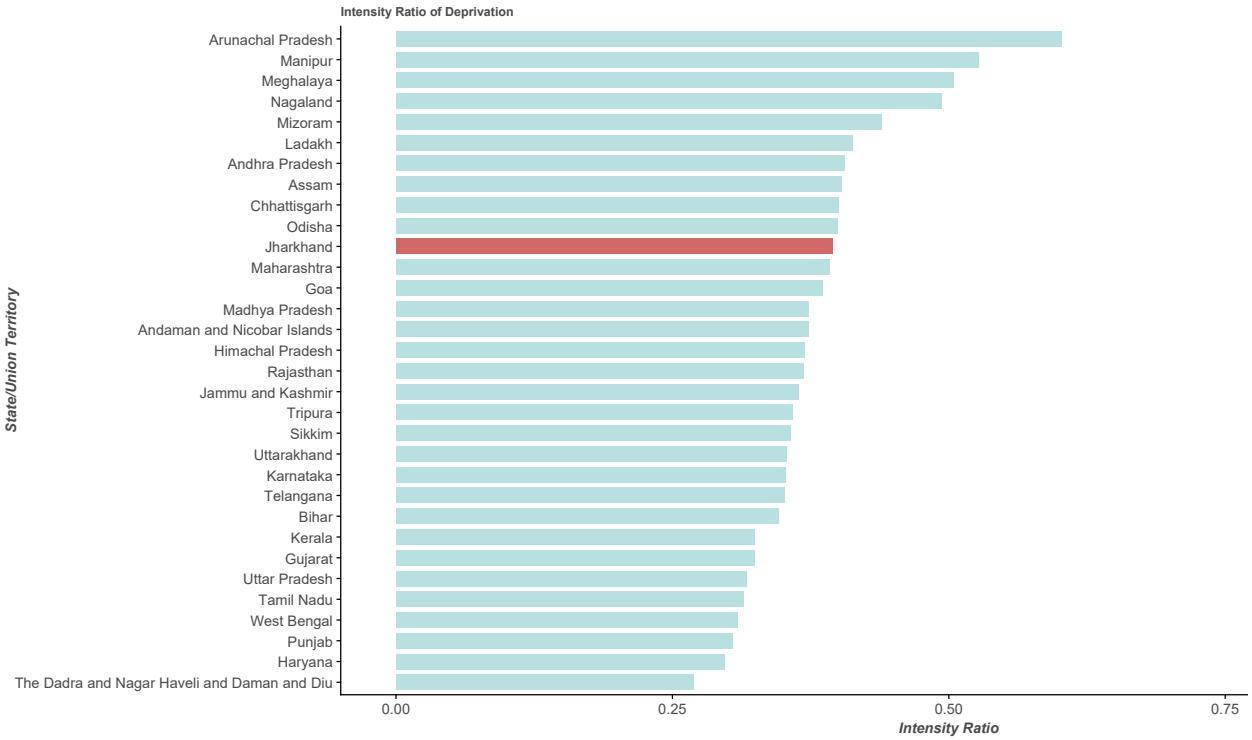
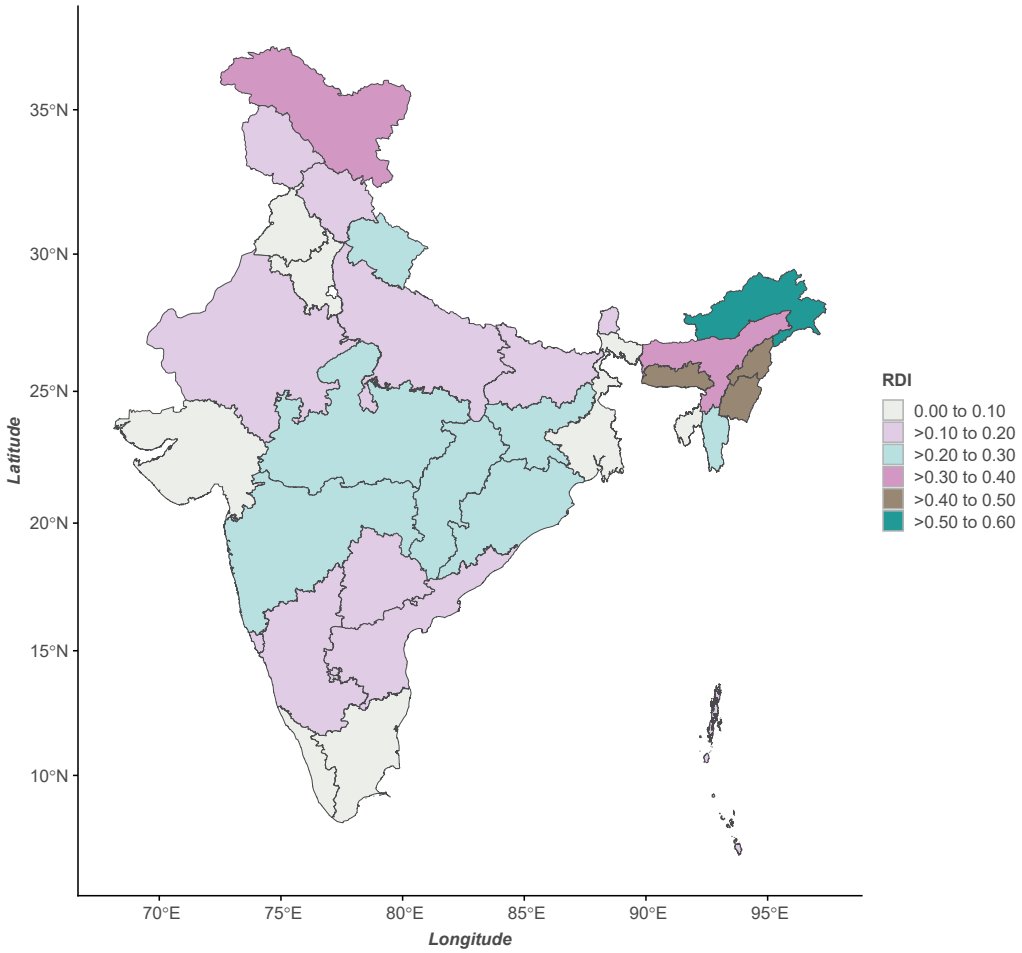


Figure 3 gives a spatial representation of the distribution of RDI across India. As is clearly visible, the north-eastern states, states of Jharkhand and Odisha in the east and Madhya Pradesh and Maharashtra in the central and western parts of India, respectively, are more deprived as compared to the rest of the country. The southern part of India and the states of Haryana, Gujarat and Punjab have lower levels of deprivation in its rural areas.

Figure 3: Spatial distribution of RDI across states of India



Overall, we see that rural Jharkhand is highly deprived as compared to the rest of the country. It is essential to have a more nuanced understanding of the nature of this deprivation, in terms of which parts of the state are more deprived and which indicators need the most attention. The following sections of the report present these analyses.

4. Level and sources of deprivation in Jharkhand

We first investigate indicator-wise deprivation in Jharkhand viz-a-viz India. Figure 4 shows the percentage of villages that are deprived under each indicator for India and Jharkhand. Jharkhand performs poorly comparatively to India in most of the indicators. The largest percentage of villages in Jharkhand are lacking in sanitary toilets and internet/broadband connections. About 89 percent of the villages have at least one household with no sanitary toilets, and for India the corresponding share is 60 percent. Some other indicators in which Jharkhand performs poorly compared to India are drainage facilities, connection to an all-weather road, public transportation, piped drinking water, SSC schools and Anganwadi. It is mainly in the infrastructure and health provisioning indicators that the state performs worse, but even in terms of education provisioning the performance is not too promising.

It is to be noted here that Jharkhand underperforms even in those indicators that are mandated to be provided or achieved in villages. For example, making India Open Defecation Free by 2019 is mandated under the Swachh Bharat Mission. However, we find that close to 90 percent villages in Jharkhand have at least one household without a sanitary toilet. Similarly, setting up of Anganwadi centres in villages is also a mandate of the state under the Integrated Child Development Services (ICDS). Despite this, we find that over 30 percent of the villages in the state do not have an Anganwadi centre. However, we do find that the state has made efforts in making primary and middle schools accessible, thus making it easier to ensure that all children between six and 14 years of age attend school, as per the Right to Education (RTE) Act.

Figure 4: Percentage of deprived villages in Jharkhand and in India under each indicator

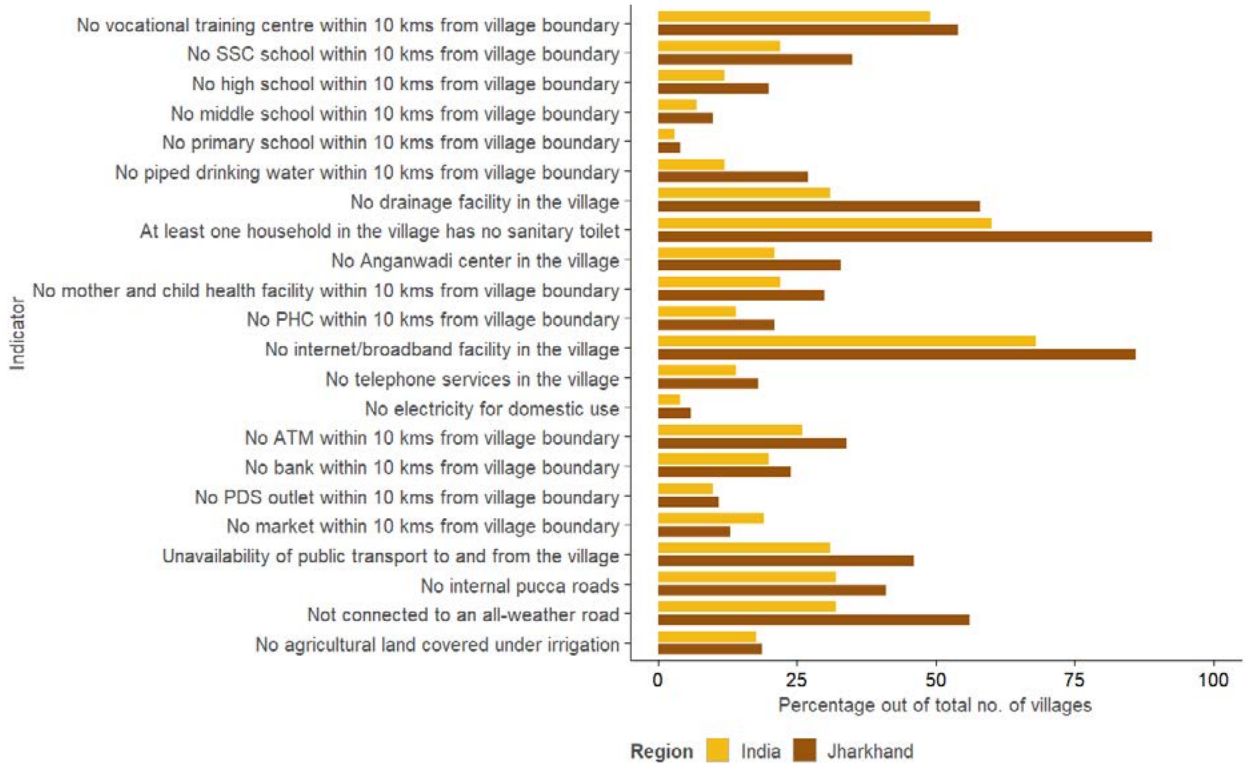


Table 2 shows the number of people deprived under each indicator in Jharkhand and their share in the state's total rural population. These population numbers show the enormity of deprivation. For example, on the health front, over 293 lakh people, or 85 percent of the rural population in the state live in villages where at least one household has no access to a sanitary toilet and over 50 percent of the people live in villages without a drainage facility. Infrastructure deprivation can be seen especially in the case of internet connections, as over 265 lakh people live in villages without a broadband connection. On the education front, over 170 lakh people live in villages without a vocational training centre within 10 km of the village boundary. These numbers show that Jharkhand needs to eliminate gaps in provisioning of amenities under all three dimensions across the state to achieve better results.

Table: 2 Rural population in Jharkhand and the extent of deprivation under each indicator

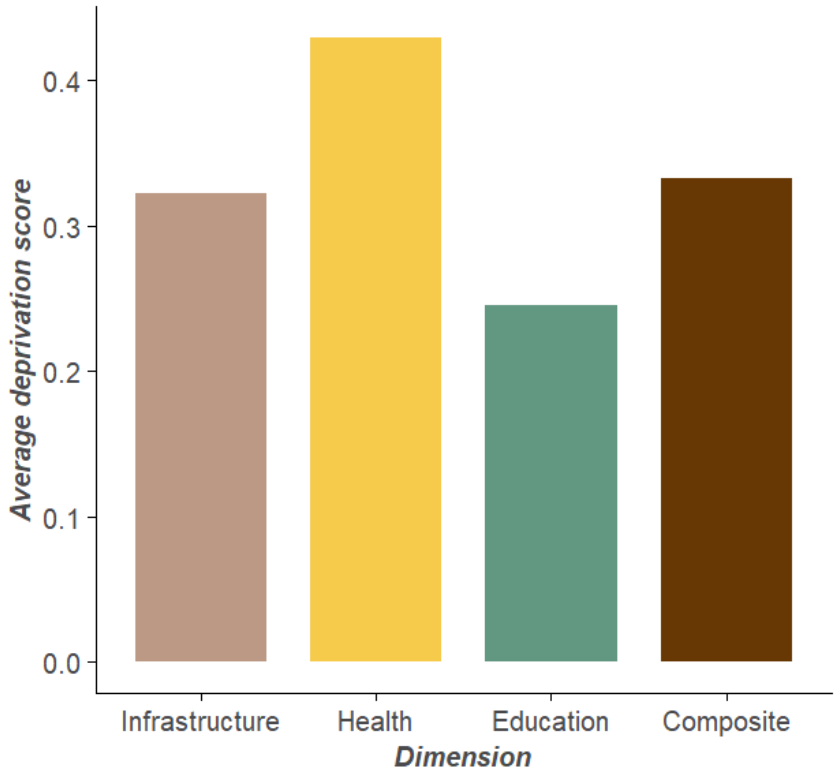
No.	Dimension	Indicator of deprivation	Population deprived (in lakh)	Share of the deprived population in total rural population of the state (in %)
1	Infrastructure	None of the agricultural areas in the village are covered under irrigation.	49.27	14.51
2		The village is not connected to an all-weather road.	154.65	45.55
3		The village has no internal pucca roads (covered or partially covered).	114.80	33.81
4		No form of public transport (Bus/Van/ Auto) is available to and from the village.	129.16	38.04
5		The nearest market (mandi/regular market/weekly market) to the village is farther than 10 kms from the village revenue boundary.	28.29	8.33
6		The nearest fair price shop (ration shop) is farther than 10 kms from the village revenue boundary	27.06	7.97
7		The nearest bank is farther than 10 kms from the village revenue boundary.	61.18	18.02
8		The nearest ATM is farther than 10 kms from the village revenue boundary.	96.90	28.42
9		There is no electricity for domestic use in the village.	8.16	2.40
10		There are no telephone services (mobile or landline) in the village.	47.09	13.87
11		There is no internet/ broadband facility available in the village.	264.36	77.87

12	Health	The nearest primary health centre/ community health centre/ Sub-centre is farther than 10 kms from the village revenue boundary.	56.78	16.72
13		The nearest mother and child health facility is farther than 10 kms from the village revenue boundary.	86.50	25.48
14		There is no Anganwadi centre in the village.	46.33	13.65
15		The village has at least one household without a sanitary toilet.	293.32	86.40
16		There is no drainage facility in the village.	174.59	51.43
17	Health	The distance to the nearest piped tap water facility is more than 10 kms from the village revenue boundary.	79.31	23.36
18	Education	The nearest primary school is farther than 10 kms from the village revenue boundary.	7.03	2.07
19		The nearest middle school is farther than 10 kms from the village revenue boundary.	22.03	6.49
20		The nearest high school is farther than 10 kms from the village revenue boundary.	45.73	13.47
21		The nearest SSC school is farther than 10 kms from the village revenue boundary.	101.03	29.76
22		The nearest vocational training centre/ polytechnic/ ITI/RSETI/DDU_KY centre is farther than 10 kms from the village revenue boundary.	170.75	50.29

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

Owing to high levels of deprivation in access to toilets and drainage facilities, we find that overall, the highest average deprivation for Jharkhand is in the health dimension with a score of 0.429. This is followed by deprivation in infrastructure with a score of 0.322, and then education with a score of 0.245. In other words, on an average, rural Jharkhand is deprived in about 3 of the 6 health indicators, in about 4 of the 11 infrastructure indicators, and in 1 of the 5 education indicators. The composite deprivation score of 0.332 indicates that Jharkhand faces deprivation on an average in about 7.3 indicators out of the 22 indicators selected in this study.

Figure 5: Mean deprivation scores of the different dimensions for Jharkhand



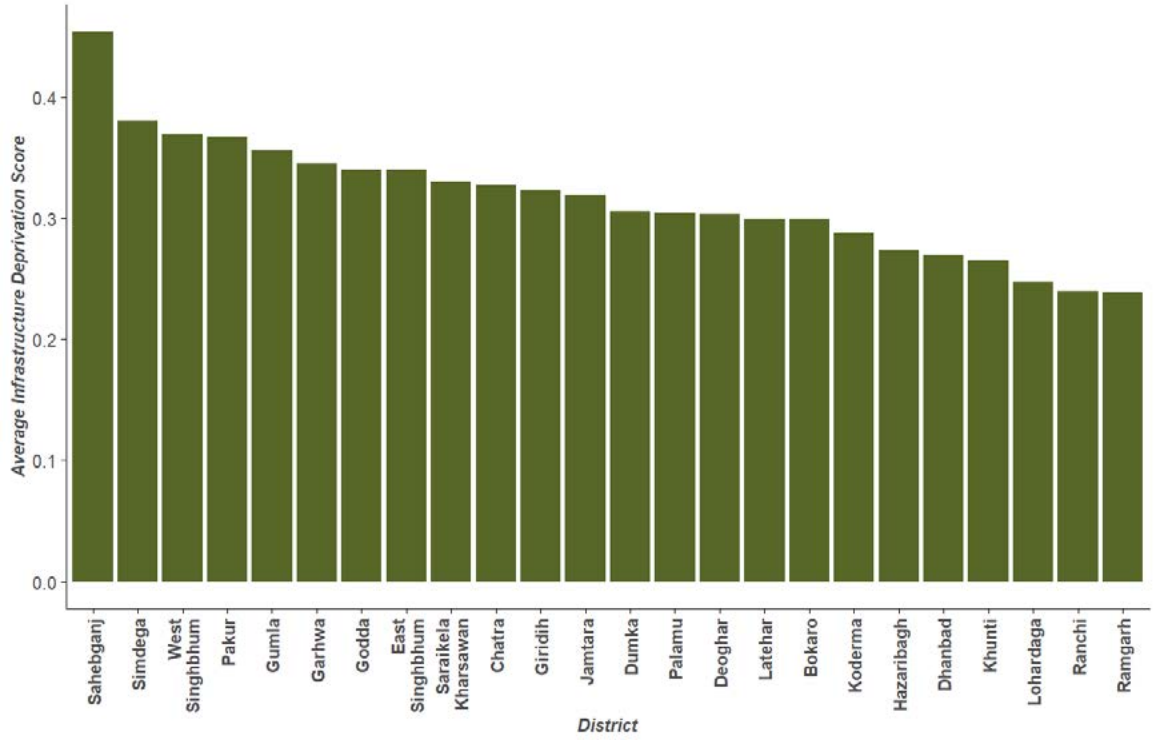
4.1 Deprivation across districts of Jharkhand

In a large and diverse state like Jharkhand, it is likely that there are regional differences in terms of deprivation patterns. Therefore, this section delves into the district-level deprivations to capture these regional differences in deprivation.

Figure 6 shows the average infrastructure deprivation scores for the districts of Jharkhand. Sahebganj district has the highest deprivation score of 0.45 and Ramgarh has the lowest deprivation score 0.24. The average village in Sahebganj is thus deprived on 5 out of 11 infrastructure indicators, whereas in Ramgarh the corresponding number is 3. In addition, the districts of Simdega, West Singhbhum, Pakur and Gumla have infrastructure deprivation scores of over 0.35, that is, they are deprived on over 3.5 indicators, on an average. Only two districts, other than Ramgarh- Ranchi and Lohardaga, have infrastructure deprivation scores lower than 0.25.

Overall, we see little variation across districts in infrastructure deprivation scores. Moreover, unlike states like Chhattisgarh or Maharashtra (see Gharat *et.al*. (2024), Krishnan *et.al.* (2024)), where there is spatial clustering of deprivation, there does not seem to be such a spatial pattern in Jharkhand at least at the district level. While Sahebganj belongs to the tribal belt of Santhal Pargana division, in the north-east of the state, Simdega and West Singhbhum belong to the South Chotanagpur and Kolhan divisions respectively, located in the south of the state.

Figure 6: Average infrastructure deprivation scores for the districts of Jharkhand.



Since the Mission Antyodaya data are compiled at the village level, it is possible to extend the analysis up to that level. For example, Figure 7 shows a spatial "heatmap" of villages in terms of their infrastructure deprivation scores in which darker shades indicate higher levels of deprivation. While intra-state differences are not large, in each district, there are pockets of deprivation with some districts showing larger tracts of deprivation than others. These deprived areas appear to be more prevalent along the borders of individual districts as well as in the districts along the state's borders.

Further analysis shows that there are 129 out of 31,175 villages (0.04 percent) with an infrastructure deprivation score of 1, indicating that these villages are deprived in every indicator related to the infrastructure dimension. Similarly, there are 394 villages (1.3 percent) with an infrastructure deprivation score of 0.9 or higher. This shows the utility of our approach in identifying the exact villages where the gaps are severe and thus make more efficient use of resources in bridging the gap.

Figure 7: Spatial distribution of infrastructure deprivation score across villages in Jharkhand

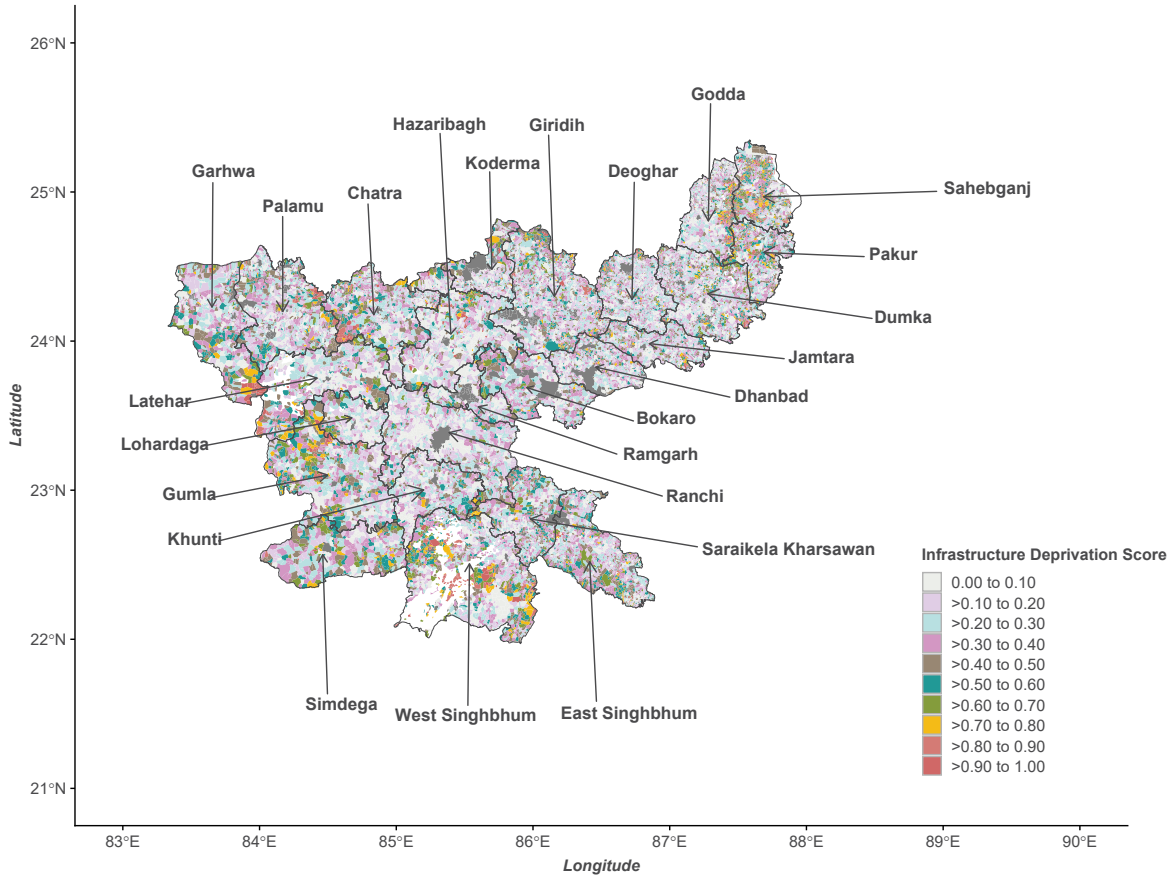
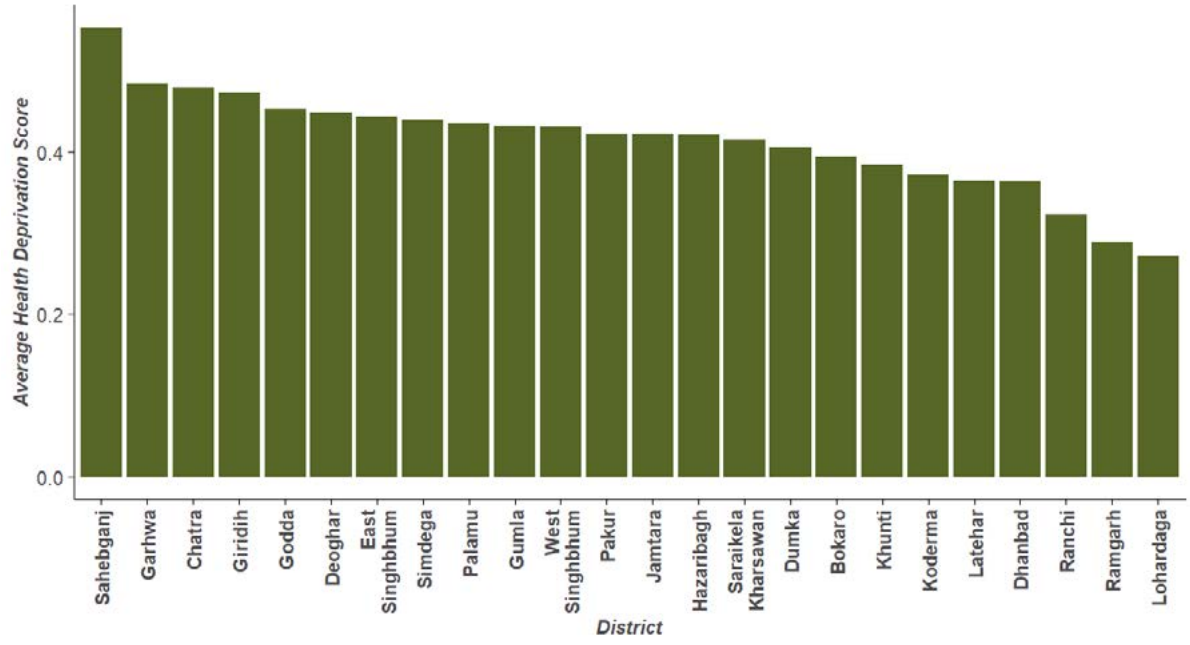


Figure 8 shows the district-wise average health deprivation scores. The district of Sahebganj also has the highest average health deprivation score (0.55), followed by Garhwa (0.48), Chatra (0.48), Giridih (0.47), and Godda (0.45). It is interesting to note that the latter districts perform better on the infrastructure front, whereas such as Simdega, West Singhbum and Pakur, fare better on the health indicators, as compared to infrastructure. The best performing districts on the health front are Ranchi, Ramgarh and Lohardaga, which also showed the lowest average infrastructure deprivation scores among all districts.

Figure 8: Average health deprivation scores for the districts of Jharkhand



The village-level spatial heatmap of health deprivation score in Figure 9 shows more numerous darker clusters than the corresponding infrastructure deprivation map in Figure 7. This indicates more severe deprivation of health amenities across villages of Jharkhand as compared to infrastructure deprivation. Even in the case of health deprivation, darker clusters are more common along the borders of individual districts and along the districts on the border. Further analysis shows that there are 731, or 2.34 percentvillages with a health deprivation score of 1, indicating that these villages are deprived in every indicator related to the health dimension.

Figure 9: Spatial distribution of health deprivation score across villages in Jharkhand

Figure 10 shows the district-wise average education deprivation score. Here again, Simdega shows the highest deprivation of 0.384, followed by Sahebganj (0.3583), Gumla (0.357), Khunti (0.3335), and West Singhbhum (0.3078). Ramgarh (0.153), Dhanbad (0.1554), and Koderma (0.1731) show the lowest deprivation scores. Surprisingly, Lohardaga, which performs well on the health and infrastructure fronts, has a relatively higher level of education deprivation.

Figure 10: Average education deprivation scores for the districts of Jharkhand

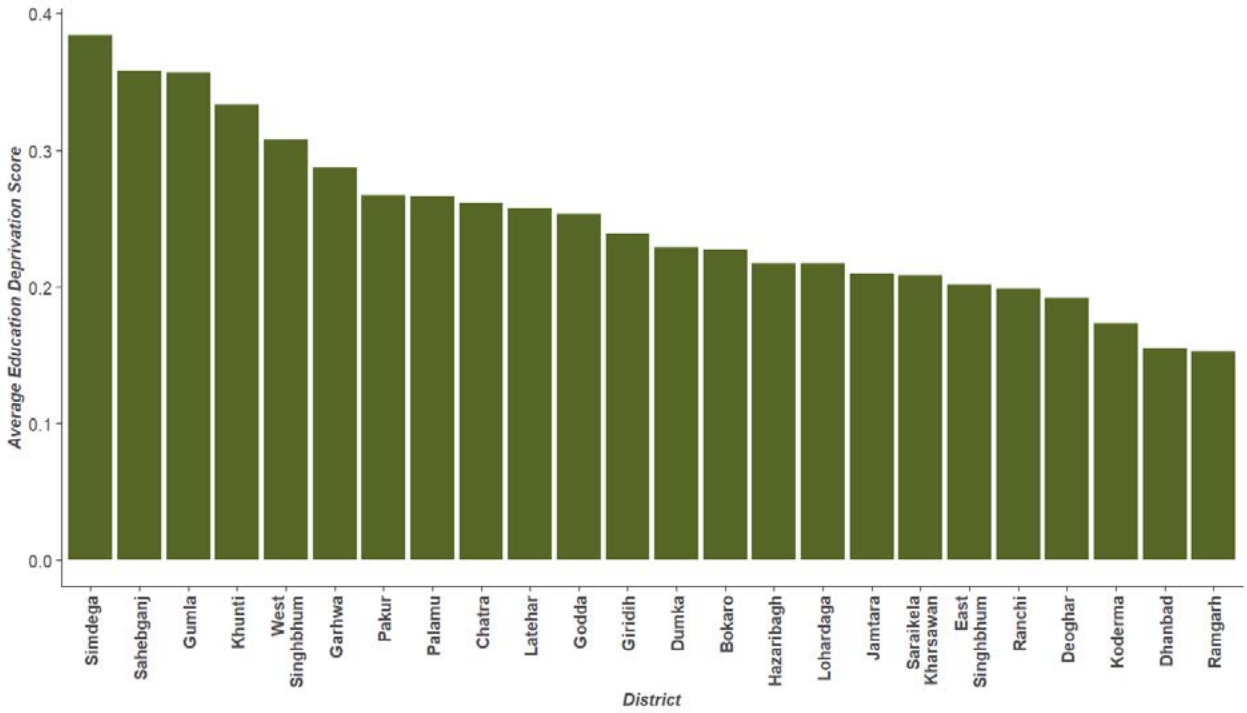
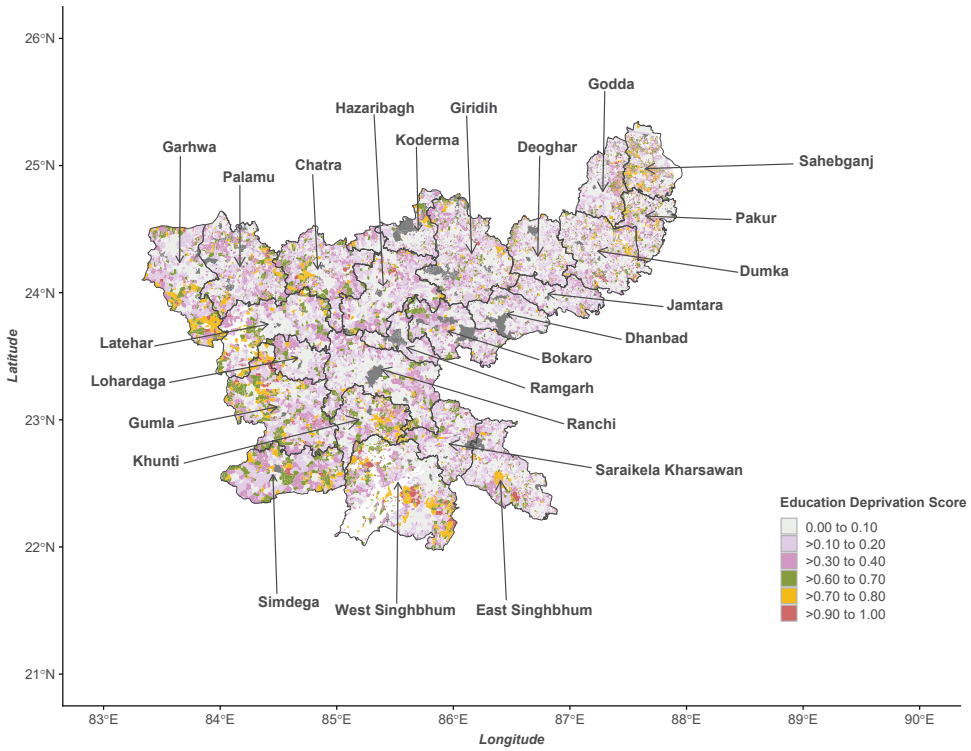


Figure 11 shows the village-level heatmap of education deprivation scores. Though there are not as many severely deprived clusters as in the case of health deprivation, there are still many in the districts in southwestern part of the state and in areas along the borders of districts. Further analysis shows that there are 614, or 1.97 percent villages, with an education deprivation score of 1, indicating that these villages are deprived in every indicator related to the education dimension.

Figure 11: Spatial distribution of education deprivation score across villages in Jharkhand



In terms of average composite deprivation score, Figure 12 shows that Sahebganj district has the highest deprivation score (0.4547), followed by Simdega (0.4011), Gumla (0.3815), Garhwa (0.3717), and West Singhbhum (0.3691). These districts are on an average deprived on 8 to 10 indicators out of the 22 indicators that make up the deprivation index. The lowest average composite deprivation scores are for Ramgarh (0.2268), Lohardaga (0.2453), Ranchi (0.2537), and Dhanbad (0.2629) districts. The average village in these districts are deprived on 5 to 6 indicators out of 22.

Figure 12: Average composite deprivation scores for the districts of Jharkhand

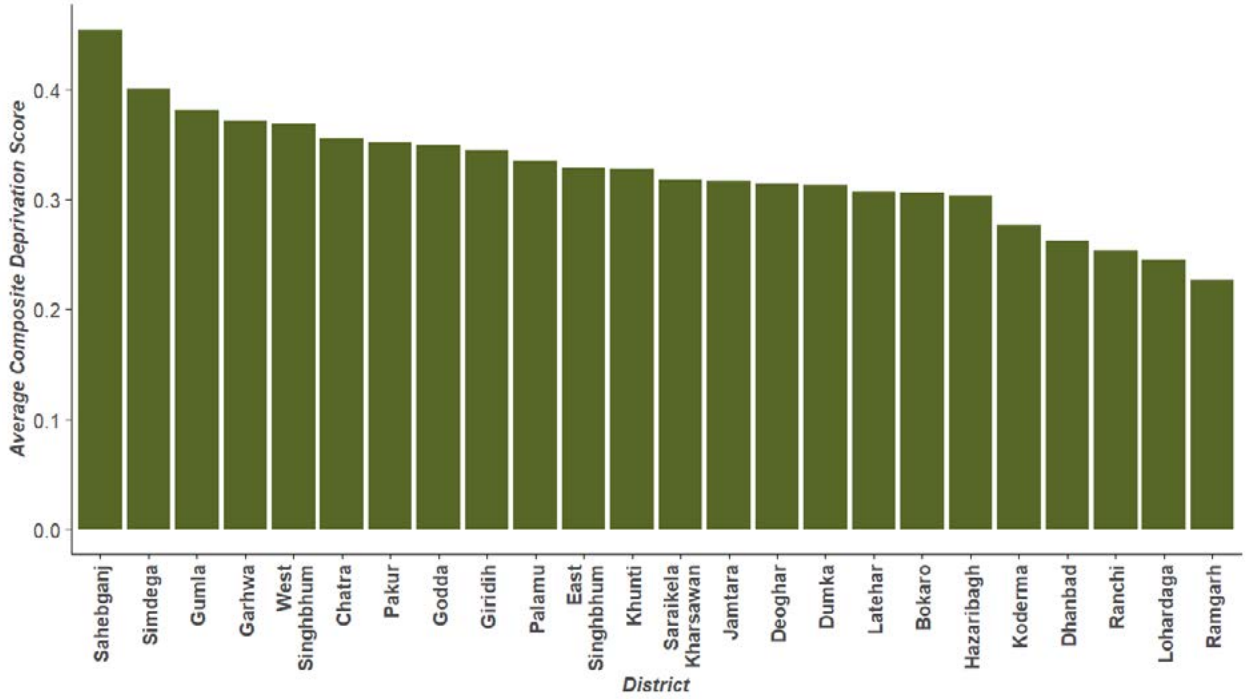
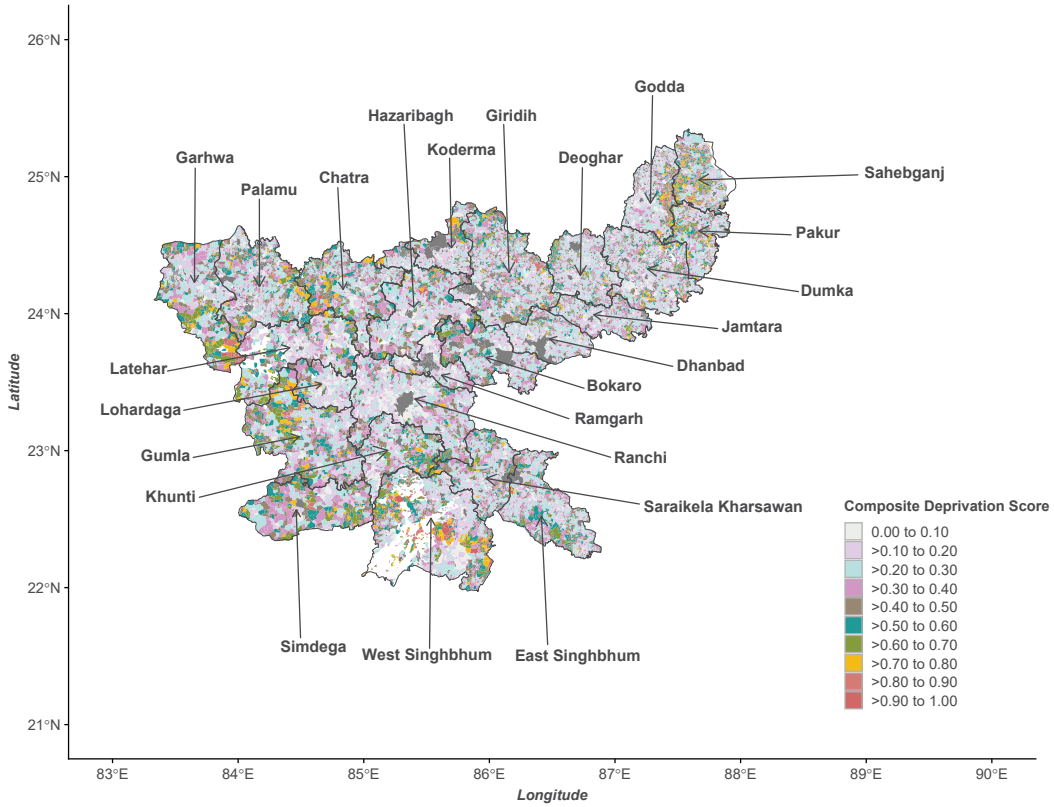


Figure 13 shows the spatial heatmap of the composite deprivation index across villages. Overall, the pattern of distribution of deprivation is similar to the other indices. That is, the districts along the state's border and regions along the borders of individual districts appear to be more deprived. Further analysis shows that there are 73 villages that have composite deprivation score of 1, indicating that these villages are deprived in every indicator considered in the calculation of the composite deprivation score. Moreover, there are 291 villages that have a composite deprivation score of 0.9 or higher. Needless to say, our method can be used to exactly identify the villages that are most deprived as per a given criterion and help address the gaps in provisioning.

Figure 13: Spatial distribution of composite deprivation score across villages in Jharkhand



Overall, our analysis so far shows that the ranking of districts on the infrastructure and education fronts are similar, that is districts doing well on infrastructure also do fairly well in education. However, on the health front, the ranking largely differs. Thus, from a policy perspective, the focus for Jharkhand should be on tacking deprivation on specific indicators in different districts, rather than focusing on all indicators for specific districts. Further, we find that even districts that are performing relatively well within Jharkhand are on an average deprived on at least 5 the 22 indicators. The village-level maps show that high levels of deprivation are spread across the state, rather than concentrated in specific geographies within the state. This further reiterates the point that the state needs to have a specific focus on the most deprived villages as well on specific indicators, rather than have state-level or district-level policies that may not give special attention to individual villages or indicators.

4.2 Analysis of Headcount Ratio, Intensity Ratio and RDI across districts in Jharkhand

In this section, we provide district-wise analysis of the deprivation indices. As shown in Table 3, there are 24 districts in Jharkhand placed under five administrative divisions. Of these, 19 districts were identified as "Aspirational Districts" in 2018 by the Government of India, which means these districts have been identified as most under-developed across the country. Under the Aspirational Districts Program, low-hanging fruits for these districts will be identified for improvement and their progress will be tracked monthly (NITI Aayog, 2024).

Table: 3 Districts and administrative divisions of Jharkhand

District	Division	Aspirational district
East Singhbhum	Kolhan	Yes
Saraikela Kharsawan	Kolhan	No
West Singhbhum	Kolhan	Yes
Bokaro	North Chotanagpur	Yes
Chatra	North Chotanagpur	Yes
Dhanbad	North Chotanagpur	No
Giridih	North Chotanagpur	Yes
Hazaribagh	North Chotanagpur	Yes
Koderma	North Chotanagpur	No
Ramgarh	North Chotanagpur	Yes
Garhwa	Palamu	Yes
Latehar	Palamu	Yes
Palamu	Palamu	Yes
Deoghar	Santhal Pargana	No
Dumka	Santhal Pargana	Yes
Godda	Santhal Pargana	Yes
Jamtara	Santhal Pargana	No
Pakur	Santhal Pargana	Yes
Sahebganj	Santhal Pargana	Yes
Gumla	South Chotanagpur	Yes
Khunti	South Chotanagpur	Yes
Lohardaga	South Chotanagpur	Yes
Ranchi	South Chotanagpur	Yes
Simdega	South Chotanagpur	Yes

Figure 14 shows that Sahebganj district has the highest headcount ratio of 0.864, followed by Simdega (0.838), and Chatra (0.830). Thus, more than 80% of villages in these districts are multidimensionally deprived. In fact, there are seven districts in the state whose headcount ratio is over 80%, nine districts with a headcount ratio of between 70% to 80%, and the remaining districts have a headcount ratio of over 50%. Therefore, most districts have a high proportion of villages that lack basic amenities in health, education, and infrastructure. The lowest headcount ratio is for Ramgarh district (0.534) followed by Lohardaga (0.548) and Ranchi (0.597). These figures are a matter of great concern, showing that the majority of rural Jharkhand is highly deprived.

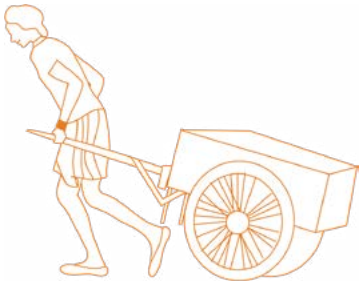


Figure 14: District-wise headcount ratio of deprived villages in Jharkhand.

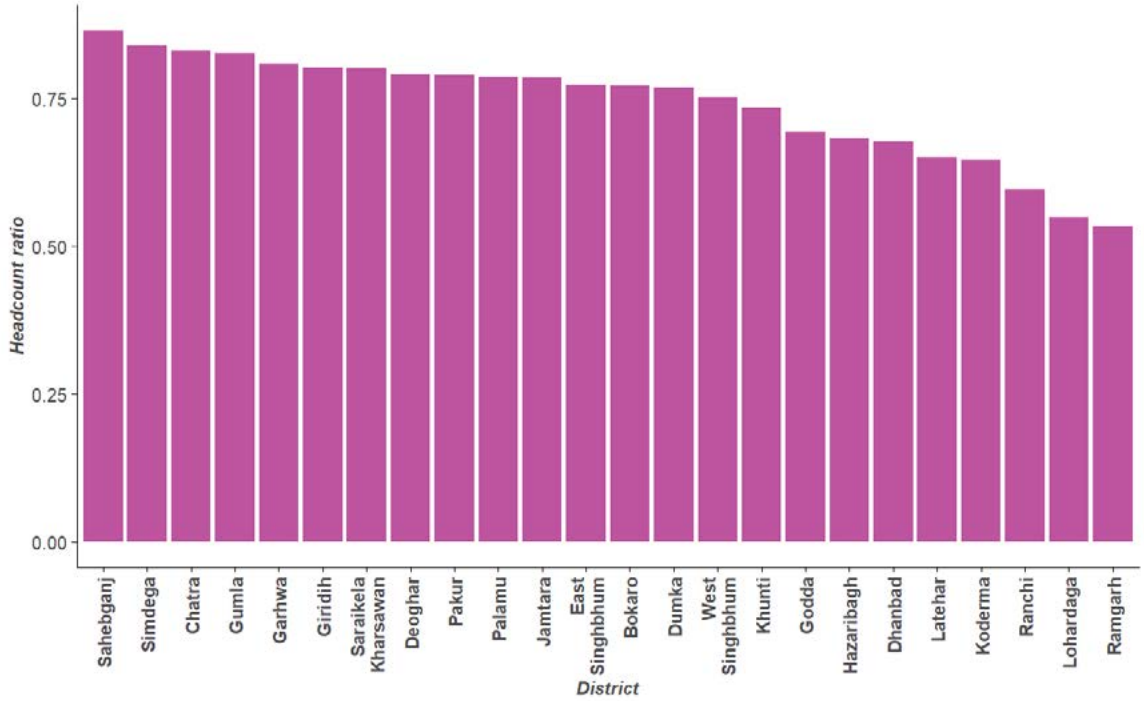


Figure 15 shows the spatial distribution of the headcount ratio across the districts. While most of the districts with relatively high headcount ratios are located in the Kolhan and Santhal Pargana regions, other regions too have a few districts with high headcount ratios. For instance, in the South Chotanagpur region, while Ranchi has a relatively low headcount ratio, Simdega and Gumla districts have among the highest headcount ratios in the state. This reiterates our observation that although Jharkhand in general is highly deprived, there is a greater need to focus on specific indicators in specific areas of the state.

Figure 15: Spatial distribution of the headcount ratio of deprived villages across districts in Jharkhand

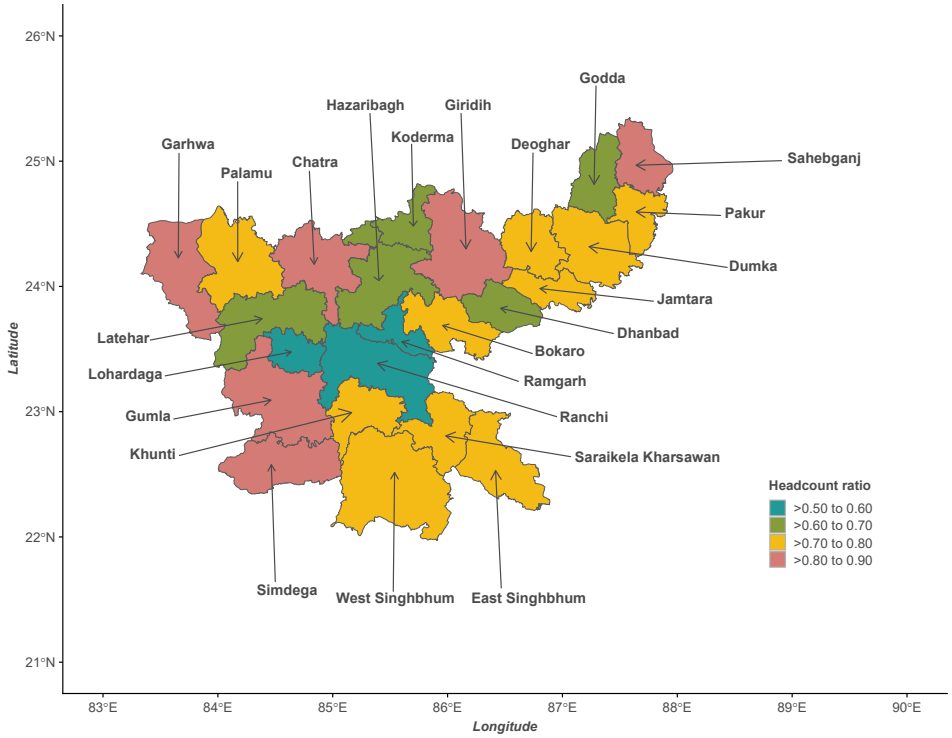


Figure 16 shows the district-wise intensity of deprivation for Jharkhand. Sahebganj and Simdega appear in the worst-performing districts even in terms of intensity of deprivation. With an intensity ratio close to 0.50, the average multidimensionally deprived village in these districts are deprived on 50%, or 11 of the 22 indicators. West Singhbum and Godda, which have a relatively low headcount ratio, have a high intensity ratio of deprivation. The multidimensionally deprived villages in these districts are thus deprived on many indicators. The best-performing districts of Jharkhand in terms of intensity of deprivation are Ramgarh, Dhanbad, and Ranchi, which are also among the districts with relatively low headcount ratios of deprivation.

Figure 16: District-wise Intensity Ratio in Jharkhand

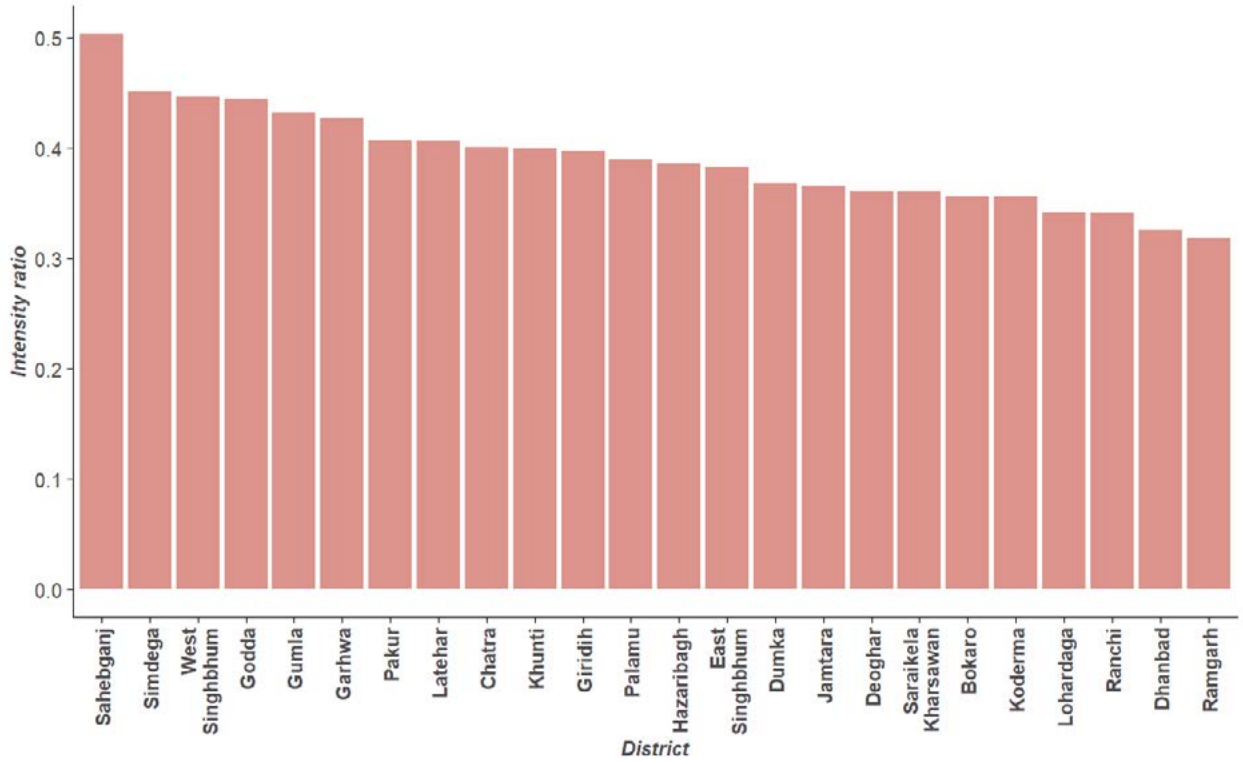
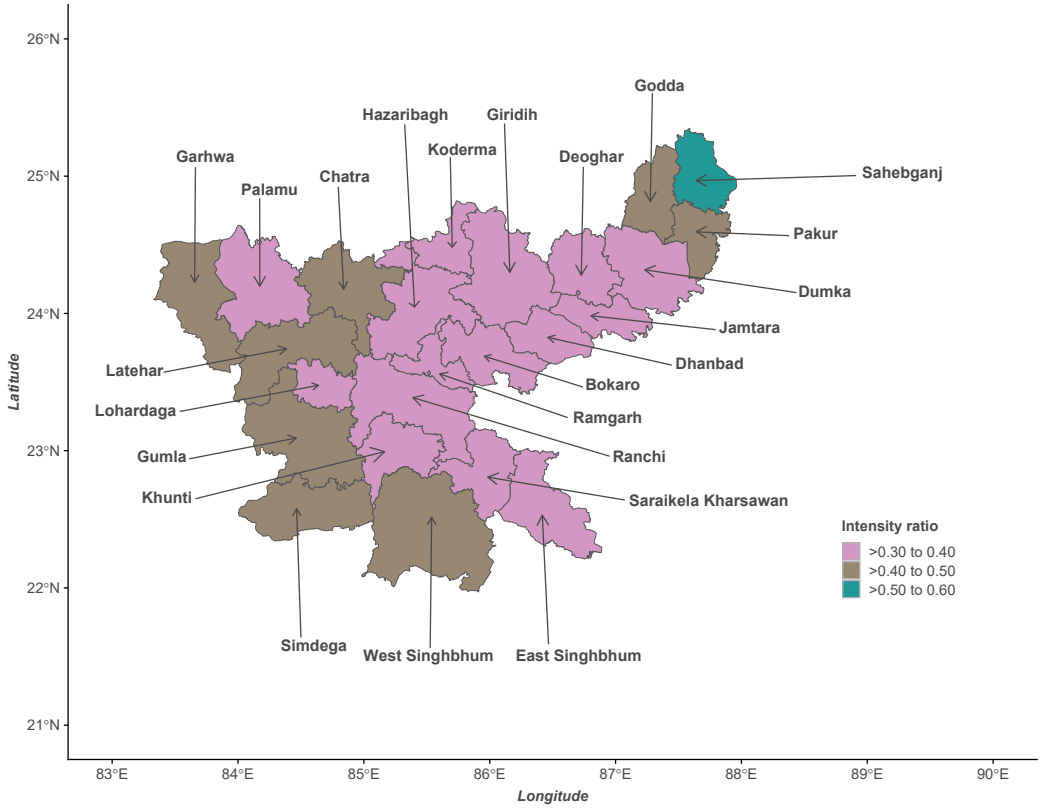


Figure 17 shows the spatial distribution of Intensity Ratios across the districts of Jharkhand. The spatial pattern is similar to that of the headcount ratio, with districts in the Santhal Pargana and South Chotanagpur regions showing the highest levels of intensity of deprivation.

Figure 17: Spatial distribution of Intensity Ratio across districts in Jharkhand



Putting the headcount and intensity ratios together, Figure 18 shows the RDI values for the districts of Jharkhand. Sahebganj district has the highest RDI (0.435), followed by Simdega (0.378), Gumla (0.356), Garhwa (0.344), and West Singhbhum (0.335). The lowest RDI is for Ramgarh district (0.169), followed by Lohardaga (0.188), and Ranchi (0.203).

Figure 18: District-wise RDI in Jharkhand.

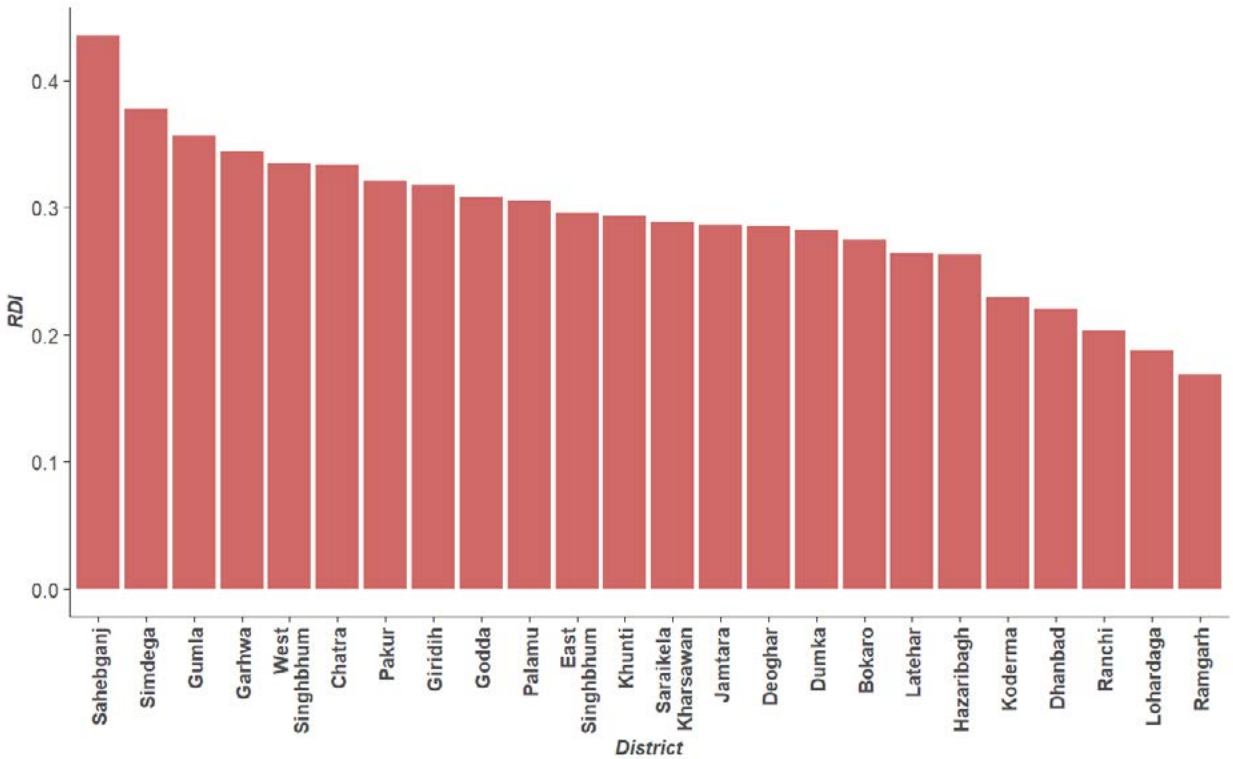
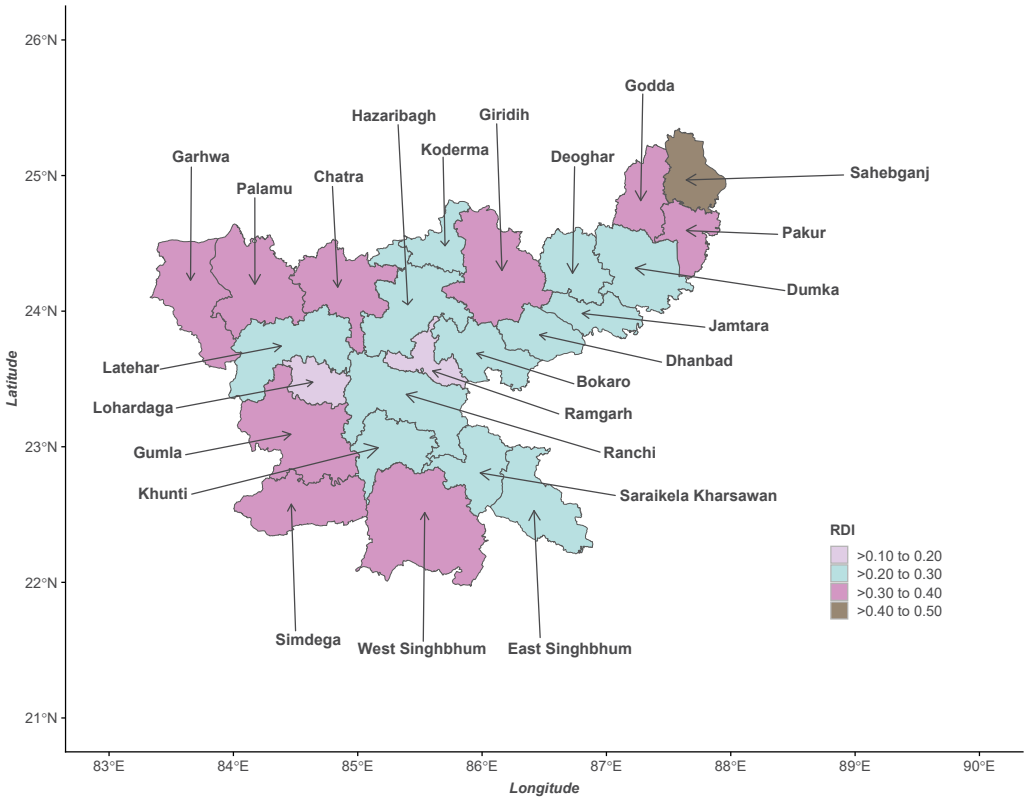


Figure 19 shows the spatial patterns in the distribution of RDI values across the districts of Jharkhand. The overall spatial pattern is similar to those of the headcount and intensity ratios. The districts along the border (especially those in South Chotanagpur and Santhal Pargana) have larger levels of multidimensional deprivation, while the districts closer to the capital city of Ranchi such as Ranchi, Ramgarh and Lohardaga show lower levels of deprivation.

Figure 19: Spatial distribution of RDI across districts in Jharkhand



The additive nature of the deprivation index used in this study allows for not only the analysis of regional patterns, but also for the decomposition of relative contributions of individual indicators to the overall deprivation in a geographical unit. For example, Figure 20 shows the share of individual indicators in the average RDI of Jharkhand state. The largest contributing indicator is the lack of sanitary toilets with a share of 12.9% in the state's RDI, followed by the lack of vocational training centres (11%), and the lack of drainage facilities (9.5 percent). Among the other indicators, the following have a share of over 5 percent in the state's RDI: the lack of SSC schools (7.52 percent); the lack of internet/broadband (6.93 percent); the lack of Anganwadi centres (5.52 percent); and the lack of mother/child healthcare facility (5.48 percent).

It is alarming that despite policies to make India Open Defecation Free, lack of sanitary toilets remains an important hurdle in Jharkhand. Further, even though the government has made it mandatory to set up Anganwadi centres in every village, we find that this indicator too contributes a large share to the overall deprivation in the state. Overall, in line with the earlier findings, we find that Jharkhand needs to work on its health indicators on a priority basis.

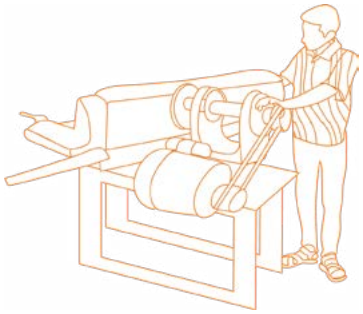
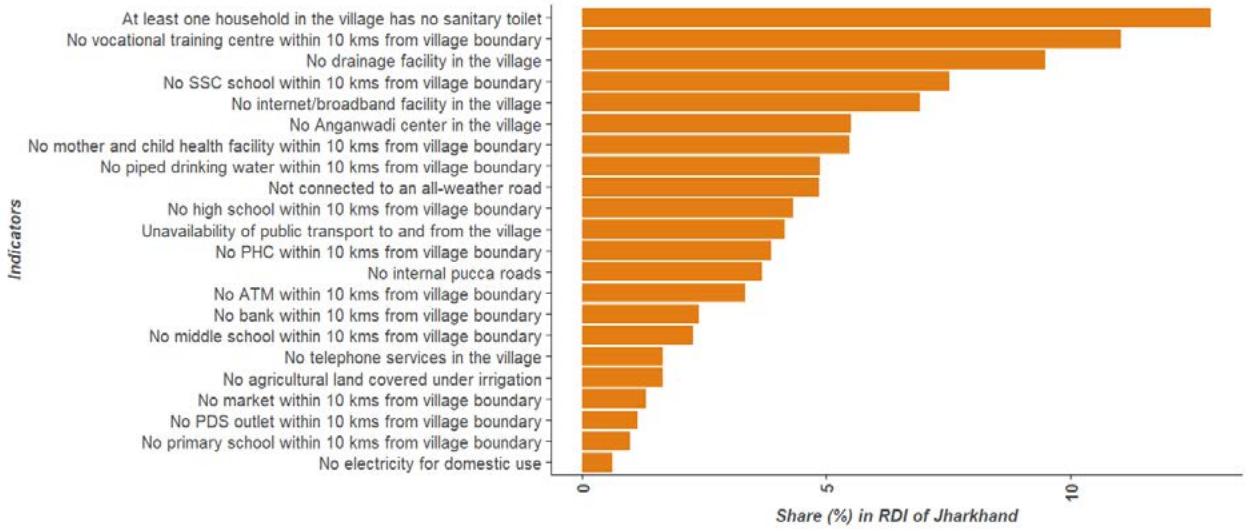


Figure 20: Share of the 22 indicators in the RDI of Jharkhand



Looking at division-wise average deprivation indices, Table 4 shows that the Santhal Pargana region shows the poorest performance in terms of headcount ratio, intensity ratio, and RDI. The North Chotanagpur division shows the best performance in terms of RDI.

Table: 4 Division-wise average deprivation indices for Jharkhand.

Division	Headcount ratio	Intensity of deprivation	RDI
Santhal Pargana	0.782	0.408	0.320
Kolhan	0.776	0.404	0.312
Palamu	0.748	0.407	0.305
South Chotanagpur	0.709	0.393	0.284
North Chotanagpur	0.706	0.363	0.258

In the ensuing sections, we provide a more detailed analysis of district-wise deprivation in Jharkhand.

5. Sub-District-wise deprivation in Jharkhand

The analysis so far shows that Jharkhand has high levels of multidimensional deprivation, with moderate differences across districts within the state. This section analyses the intra-district differences in deprivation as well as the sources of deprivation for each district in the state. Such an analysis will provide a better understanding of the intricacies of district deprivations and help district officers in targeting specific talukas and indicators in their districts.

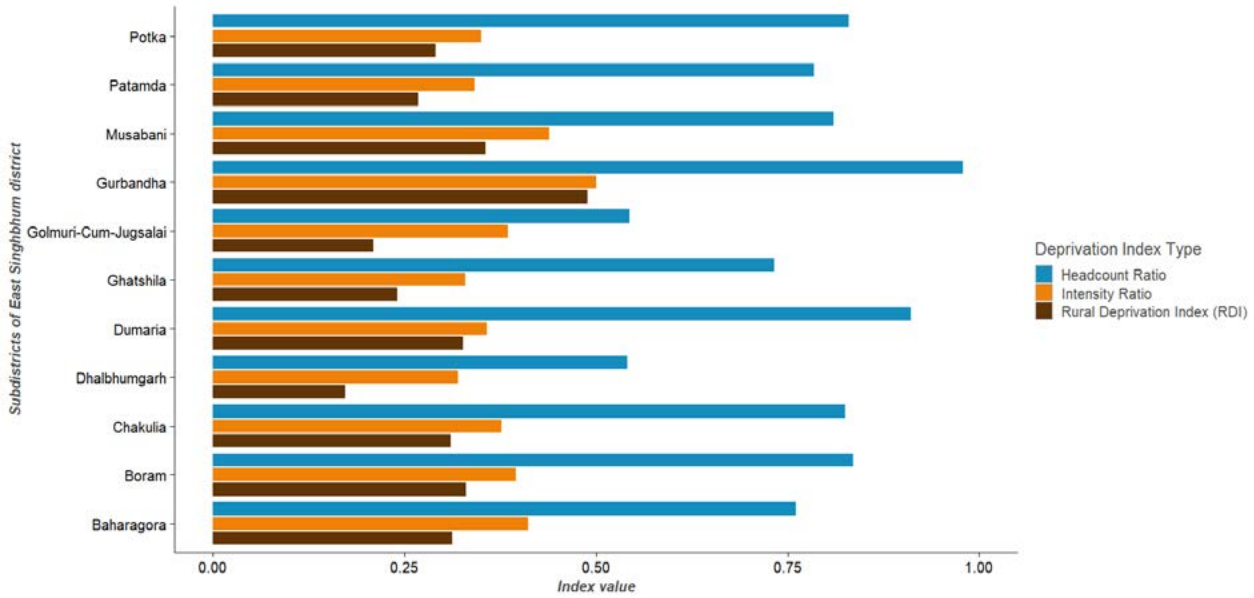
5.1 Kolhan Division

East Singhbhum district

The East Singhbhum district has 11 taluks/ subdistricts. Figure 21 shows that Gurbandha taluk has the highest RDI among all taluks of East Singhbhum district, indicating severe deprivation in this taluk. Dhalbhumgarh

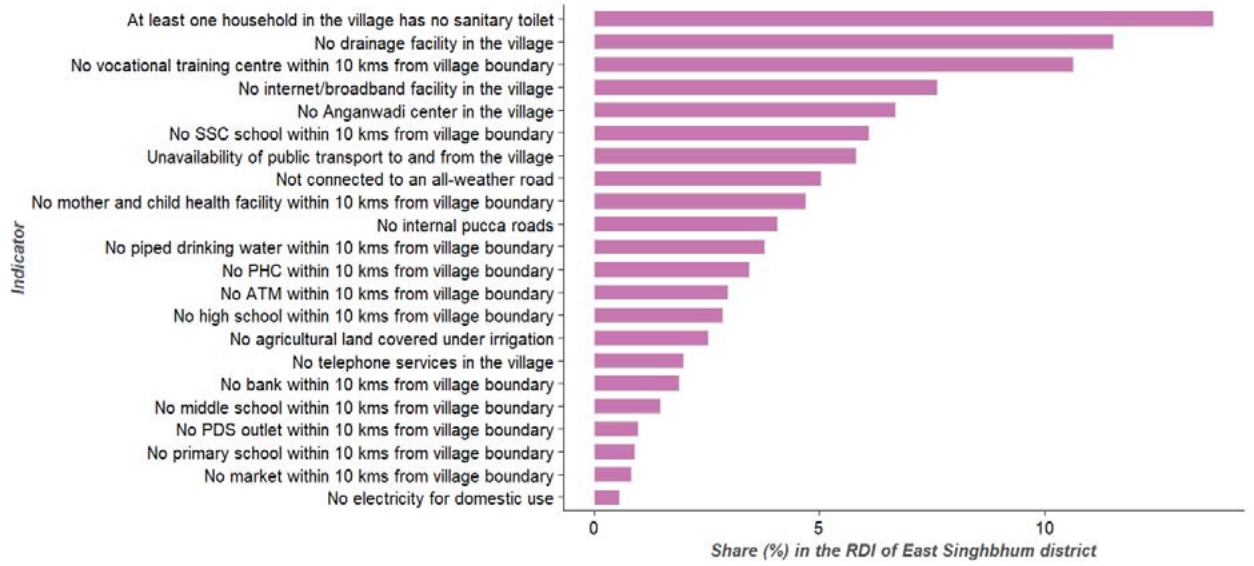
taluk has the lowest RDI, headcount ratio and intensity of deprivation. In general, the taluks of East Singhbhum have large headcount ratios of over 75 percent, indicating the severity of absence of amenities.

Figure 21: Deprivation indices for the subdistricts of East Singhbhum district



As shown in Figure 22, the indicators that have the largest share in the RDI of East Singhbhum district are: lack of sanitary toilets in households (13.73% share in the district RDI); lack of drainage facilities (11.52%); and lack of vocational training centres (10.62%). These three indicators together have a share of almost 36% in the RDI of East Singhbhum. Some other major contributing indicators are the lack of internet/broadband facilities (7.62%), lack of anganwadis (6.7%), and lack of SSC schools (6.1%). Among the three Dimensions of deprivation, health deprivation has the largest share in the RDI of East Singhbhum (43.9%), followed by infrastructure deprivation (34.2%), and education deprivation (21.9%). As far as contribution of the indicators go, we find that for the East Singhbhum district, they are similar to that of the state.

Figure 22: Contribution of the 22 indicators to the RDI of East Singhbhum district.



Saraikela Kharsawan district

Figure 23 shows the taluk-wise deprivation indices for the nine taluks of Saraikela Kharsawan district. In terms of the RDI, the worst performing taluk is Kukru (RDI of 0.440), and the one with the lowest RDI is

Kharsawan. While all taluks in this district have a headcount ratio of over 50 percent, there are three taluks with a headcount ratio of over 90 percent, namely, Kukru, Ichagarh, and Gobindpur (Rajnagar). Clearly, the latter demand greater attention of the district in providing basic infrastructural amenities.

Figure 23: Deprivation indices for the subdistricts of Saraikela Kharsawan district.

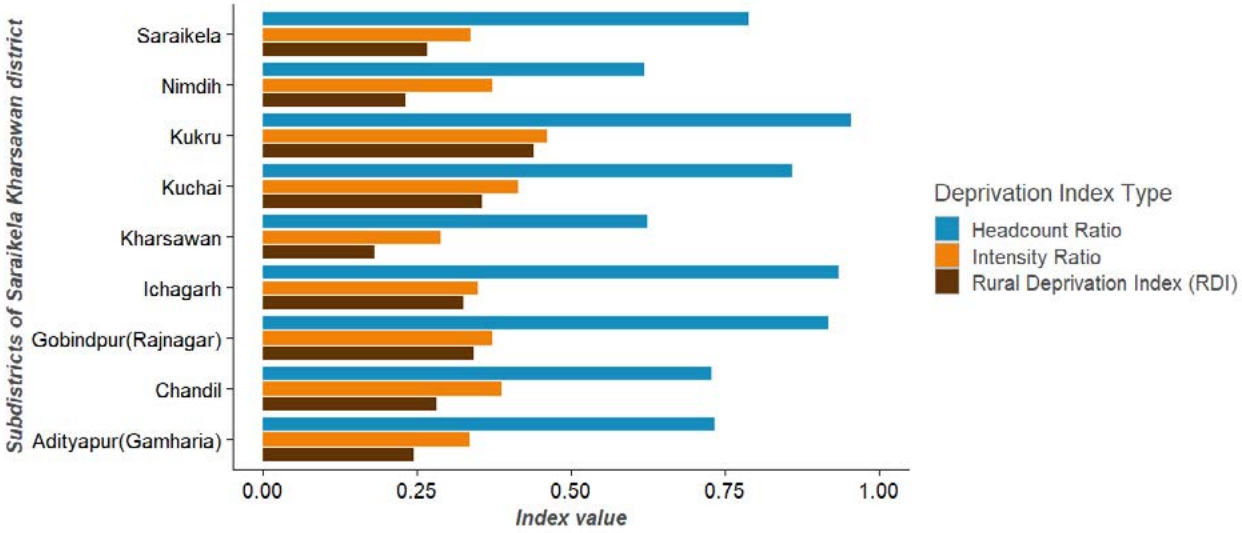
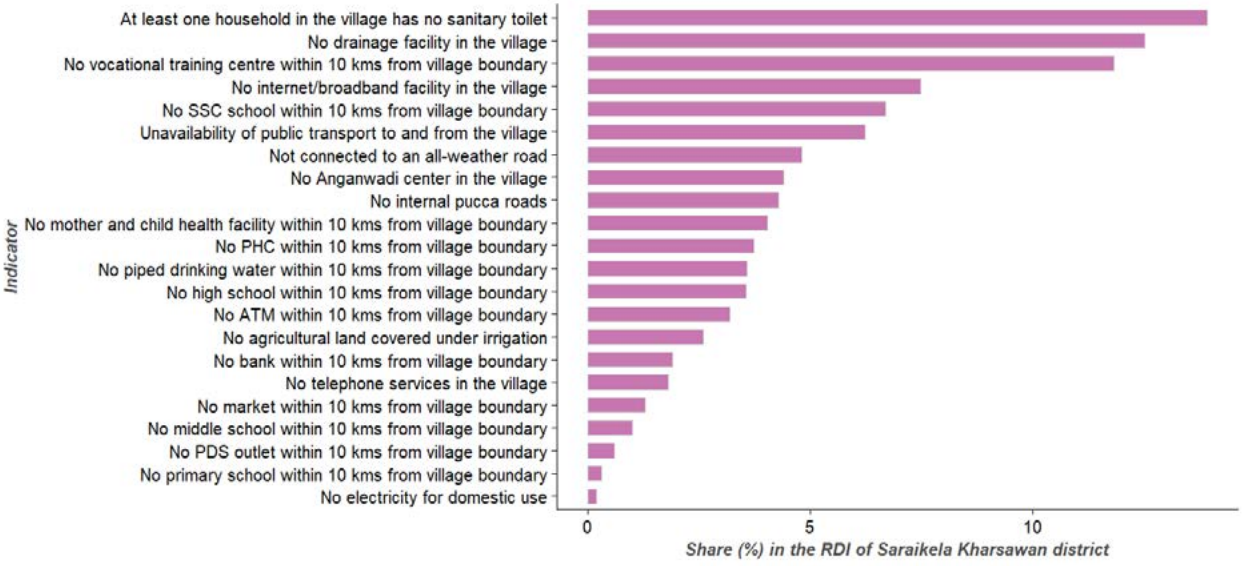


Figure 24 shows the percentage contributions of various indicators to the RDI of Saraikela Kharsawan district. Similar to the state-level contributions, the largest contributing factors to the RDI of the district are lack of sanitary toilets in households (13.92 percent share in RDI); lack of drainage facilities (12.53 percent); and lack of vocational training centres (11.83 percent). Together, these three indicators have a share of 38.3 percent in the RDI of the district. The lack of internet/broadband (7.5 percent), the lack of SSC schools (6.7 percent), and the lack of transportation to and from villages (6.2 percent) are some of the other major contributing indicators to the RDI of the district. Among the three dimensions of deprivation, health deprivation has the largest share in the RDI of East Singhbhum (42.2 percent), followed by infrastructure deprivation (34.4 percent), and education deprivation (23.4 percent).

Figure 24: Contribution of the 22 indicators to the RDI of Saraikela Kharsawan district



West Singhbhum district

The West Singhbhum district, which performs poorly in terms of RDI, comprises of 18 taluks. As can be seen from Figure 25, Tonto taluk scores a headcount ratio of 100 percent indicating that all villages in this taluk are

multidimensionally deprived. Moreover, in total, there are seven taluks in this district that have a headcount ratio of 90 percent or higher (Tonto, Manjhari, Gurdi, Goilkera, Kumardungi, Anandpur and Tantnagar). However, there are also some better performing taluks in this district, including Hat Gamharia (RDI of 0.03), Jhinkpani (RDI of 0.08), and Khuntpani (RDI of 0.09). Thus, there is immense intra-district disparity in this region, demanding that specific taluks be given immediate attention in the provision of basic amenities.

Figure 25: Deprivation indices for the subdistricts of West Singhbhum district

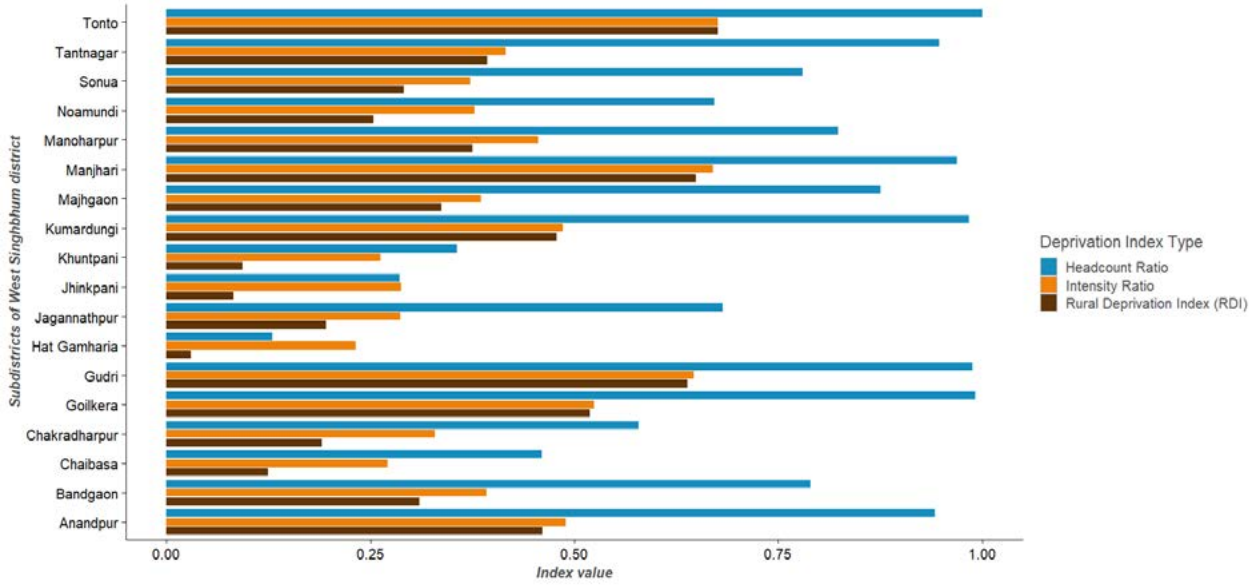
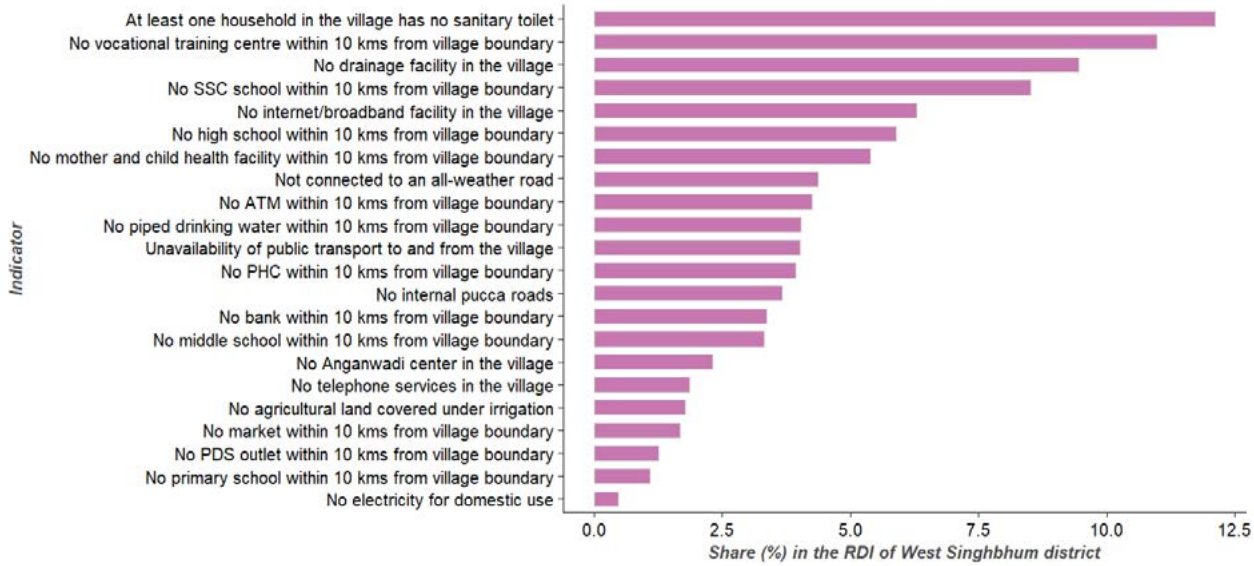


Figure 26 shows the percentage contributions of various indicators to the RDI of West Singhbhum. The indicators contributing the highest to the RDI of the district are lack of sanitary toilets in households (12.11 percent share in RDI), lack of vocational education centres (10.98 percent) and lack of drainage facilities in villages (9.46 percent). These three factors contribute almost 33 percent to the RDI of the district. The lack of SSC schools (8.5 percent), the lack of internet/broadband (6.3 percent), and the lack of high schools (5.9%) are some other major contributing indicators to the RDI of West Singhbhum. Among the three dimensions of deprivation, health deprivation contributes the largest to the RDI of West Singhbhum (37.2 percent), followed by infrastructure deprivation (33 percent) and education deprivation (29.8 percent).

Figure 26: Contribution of the 22 indicators to the RDI of West Singhbhum district



5.2 North Chotanagpur Division

Bokaro district

Figure 27 shows the deprivation indices for the nine taluks of Bokaro district. Gomia is the worst performing one with an RDI of 0.384, an intensity ratio of 0.422, and a headcount ratio of 0.91. It is followed by Chandankiyari taluk with an RDI of 0.318, an intensity ratio of 0.368, and a headcount ratio of 0.856. The best performing taluk is Chandrapura with an RDI of 0.0381, a deprivation intensity of 0.266, and a headcount ratio of 0.143. Except for Chandrapura, all the other taluks in this district have a headcount ratio of over 50 percent, calling for attention.

Figure 27: Deprivation indices for the subdistricts of Bokaro district

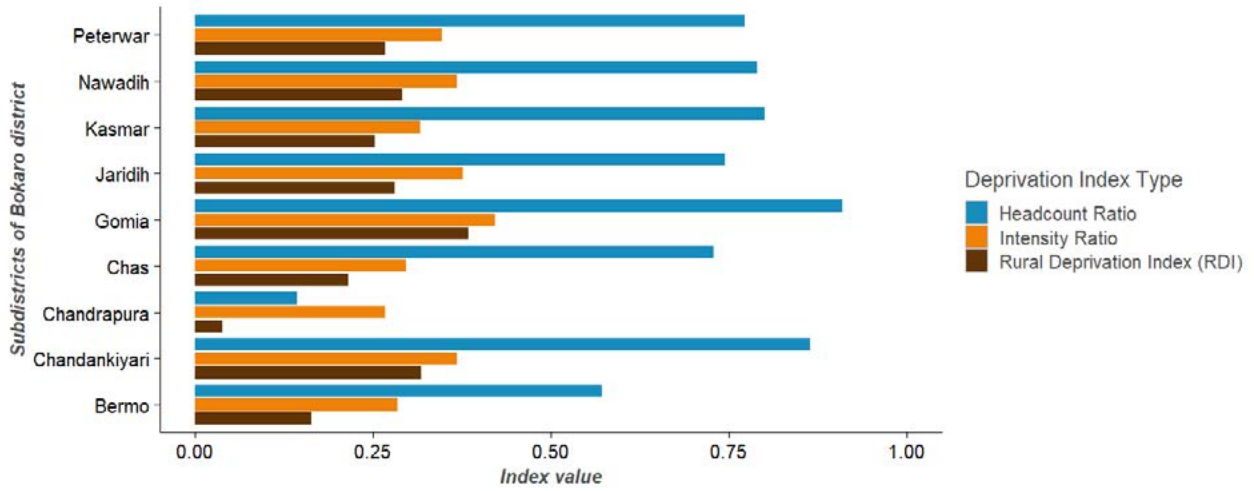
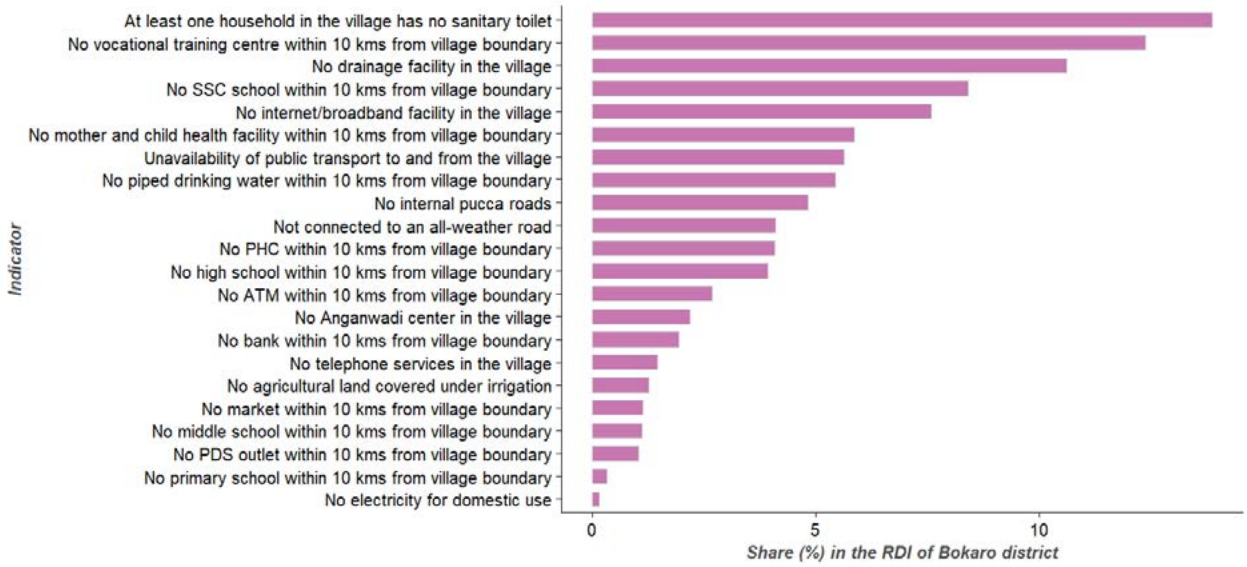


Figure 28 shows that the top three contributing indicators to the RDI of Bokaro district are lack of sanitary toilets (13.86 percent), lack of vocational training centres (12.37 percent); and lack of drainage facilities (10.61 percent). These three indicators together have a share of 36.8 percent in the RDI of Bokaro district. The lack of SSC schools (8.4 percent), the lack of internet/broadband (7.6 percent), the lack of mother/child healthcare facilities (5.6 percent) are some other major contributing indicators to the district's RDI. Considering the three broad dimensions, deprivation of health amenities has a share of about 42 percent in the RDI of Bokaro,

followed by deprivation of infrastructure amenities (31.8 percent), and deprivation of educational amenities (26.2 percent).

Figure 28: Contribution of the 22 indicators to the RDI of Bokaro district



Chatra district

The Chatra district has 12 taluks. Figure 29 shows that the worst performing taluks in this district in terms of RDI are: Lawalaung (0.527), Kunda (0.483), Pratappur (0.41) and Mayur Hand (0.403). In terms of headcount ratio, these districts all have a score higher than 0.90, that is over 90 percent of villages in these taluks are multidimensionally deprived. In terms of intensity of deprivation, these districts have a score of over 0.40, with a maximum score of 0.527 recorded by Lawaluang. The Chatra taluk, which is the best performing taluk in the district, also has a high a headcount ratio of 0.624 and an RDI of 0.221. Thus, all taluks in this district are lagging in terms of basic amenities in its villages.

Figure 29: Deprivation indices for the subdistricts of Chatra district

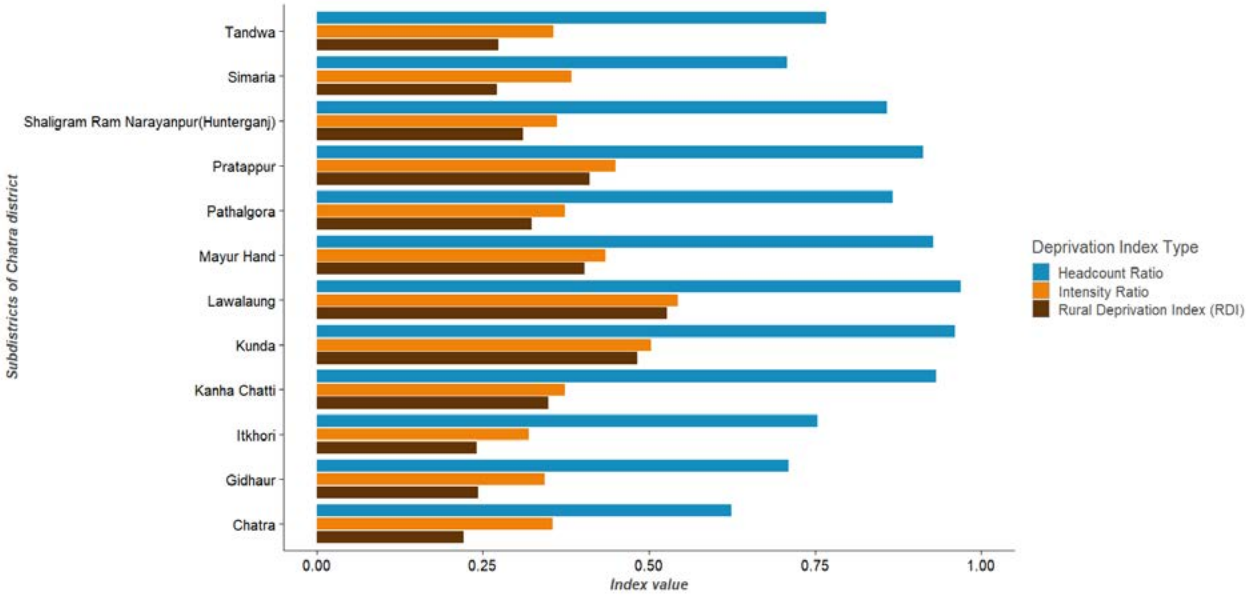
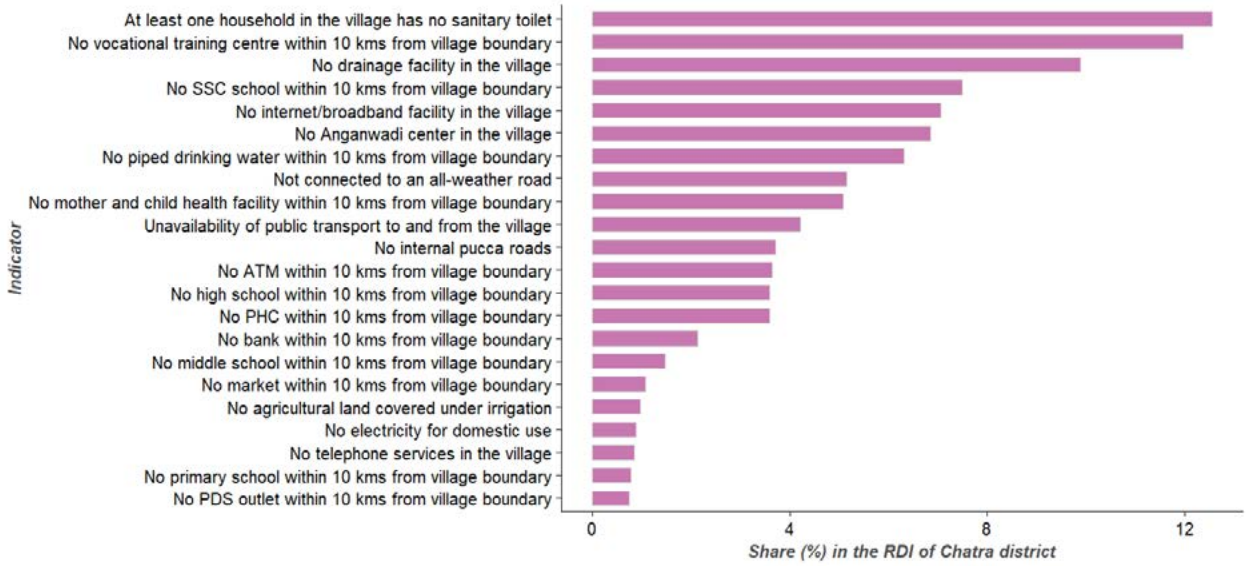


Figure 30 shows the share of different indicators in the RDI of Chatra district. The top three contributing indicators are lack of sanitary toilets (12.54 percent), lack of vocational training centres (11.96 percent), and lack of drainage facilities (9.87 percent). These three indicators together have a share of 34.4 percent in the RDI of Chatra district. The lack of SSC schools (7.49 percent), lack of broadband/ internet connections (7.06 percent),

and the lack of Anganwadi centres (6.85 percent) are the other major contributing indicators to the district's RDI. Among the three dimensions of deprivation, the largest share is that of deprivation of health amenities with about 44.3 percent share in the district's RDI, followed by deprivation of infrastructure amenities (30.4 percent) and educational amenities (25.3 percent).

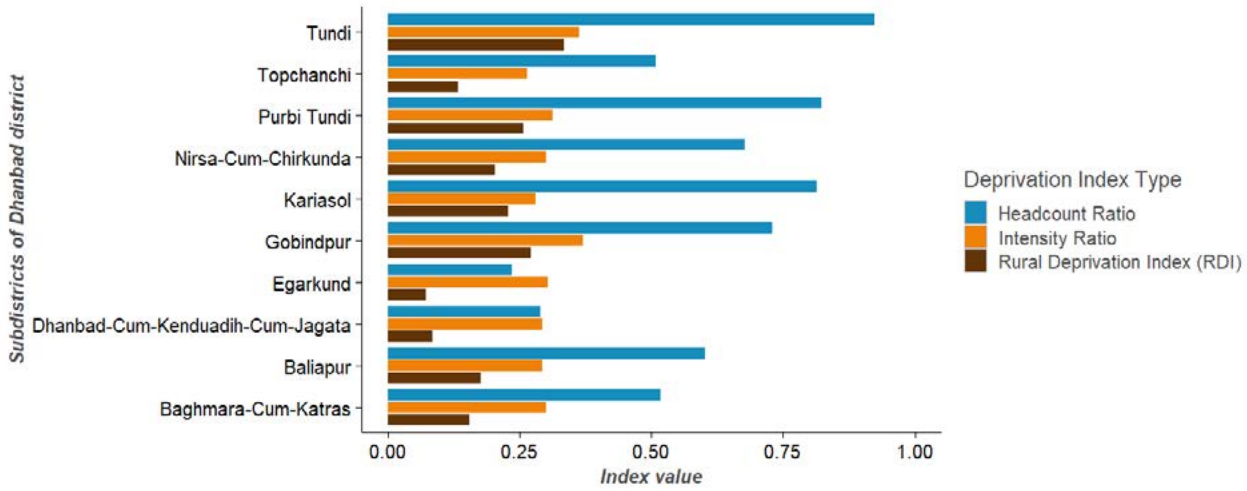
Figure 30: Contribution of the 22 indicators to the RDI of Chatra district



Dhanbad district

Figure 31 shows the taluk-wise deprivation figures for the 10 taluks of Dhanbad district. Tundi taluk has the highest RDI (0.336), followed by Gobindpur (0.271), and Purbi Tundi (0.258). Many of the taluks show high headcount ratios, for example, Tundi (0.923), Purbi Tundi (0.824), and Kariasol (0.814). Except for two, all the taluks in this district have a headcount ratio of over 50 percent and an RDI of over 0.1. The best performing taluks are Egarkund (RDI of 0.0718) and Dhanbad-Cum-Kenduadih-Cum-Jagata (RDI of 0.0852).

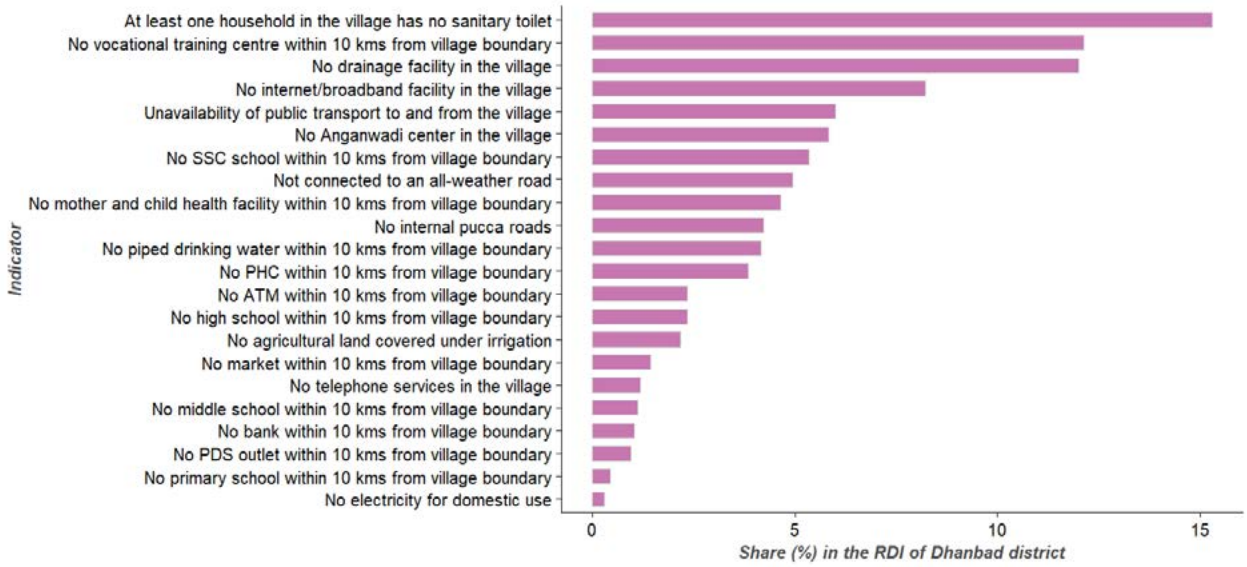
Figure 31: Deprivation indices for the subdistricts of Dhanbad district.



Like the other districts in the state, the top contributing indicators to the RDI of Dhanbad are lack of sanitary toilets in households (15.29% share in RDI), lack of vocational training centres (12.12%), and lack of drainage facilities in the village (12%). These three indicators together have a share of about 39.4% in the RDI of Dhanbad. The lack of internet/broadband facilities (8.2%), lack of transportation to and from villages (5.99%), and the lack of SSC schools (5.34%) are some other major contributing indicators to the district's RDI. In terms of the

three broad dimensions of deprivation, the deprivation of health amenities has the largest share in the RDI of Dhanbad district (45.8%), followed by deprivation of infrastructure (32.8%) and educational amenities (21.4%).

Figure 32: Contribution of the 22 indicators to the RDI of Dhanbad district.



Giridih district

There are 13 taluks in the Giridih district, and their deprivation indices are shown in Figure 33. In terms of the RDI, the worst performing taluks are Tisri (0.442), Deori (0.383), and Pirtanr (0.375). Badogar is the best performing taluk, with an RDI of 0.218. In general, we find that the Giridh district is highly deprived across all its taluks, as all of them have a headcount ratio of over 50 percent and an RDI score of more than 0.2. It is recommended that the state pays special attention to Giridih district.

Figure 33: Deprivation indices for the subdistricts of Giridih district

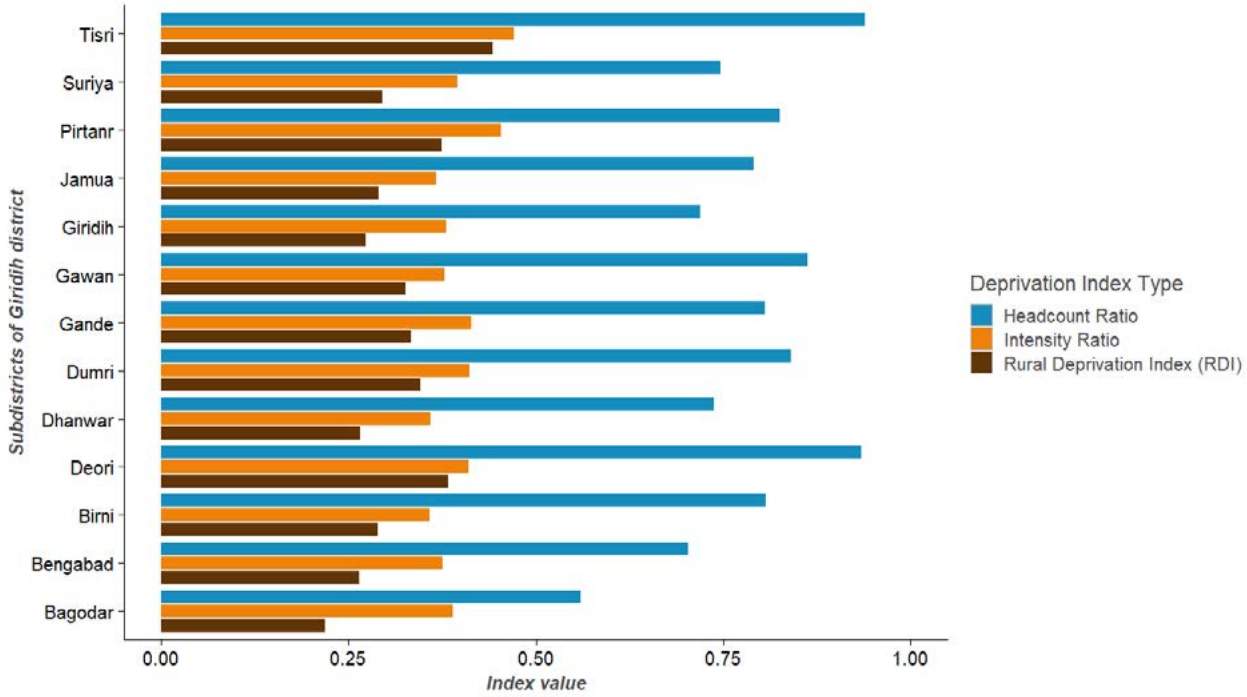
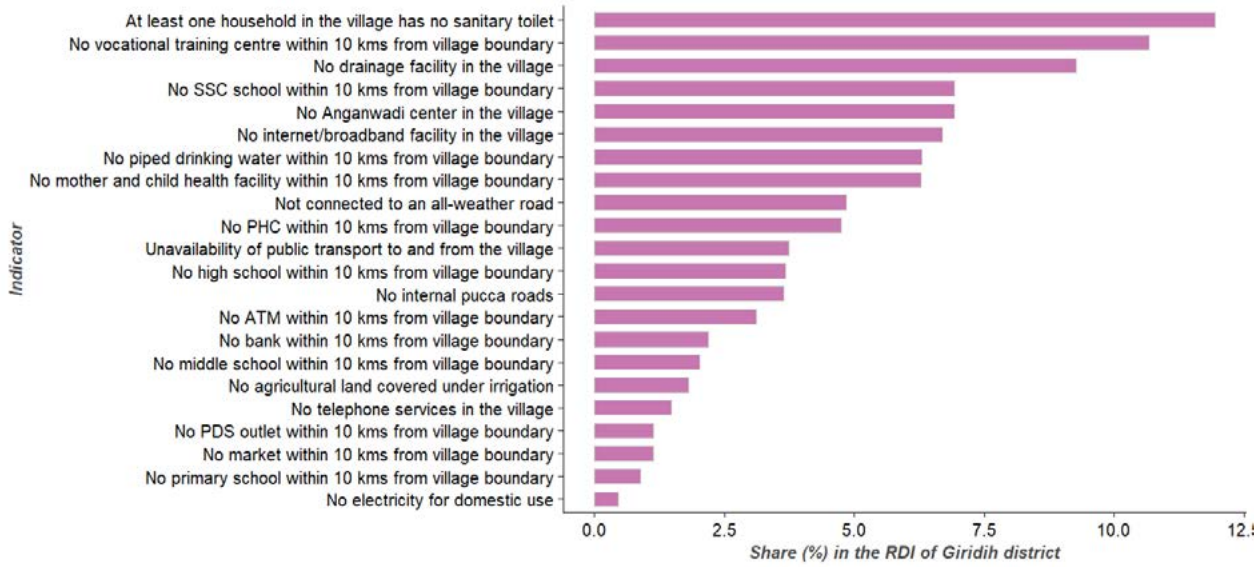


Figure 34 shows the percentage contribution of different indicators to the RDI of Giridih district. The top contributing indicators are lack of sanitary toilets in households (11.94 percent share in RDI), lack of vocational training centres (10.68 percent) and lack of drainage facilities in villages (9.26 percent). Thus, these three

indicators together have a share of about 32 percent in the RDI of Giridih. The lack of SSC schools (6.94 percent), the lack of Anganwadis (6.93 percent) and the lack of broadband/internet services (6.69 percent) are the other major contributing indicators to the district's RDI. In terms of the three broad dimensions of deprivation, the deprivation of health amenities has the largest share in the RDI of Giridih district (45.5 percent), followed by deprivation of infrastructure (30.3 percent) and deprivation of educational amenities (24.2 percent). Clearly, the district's primary focus ought to be on the health front.

Figure 34: Contribution of the 22 indicators to the RDI of Giridih district



Hazaribagh district

There are 16 taluks in Hazaribagh district, whose deprivation indices are shown in Figure 35. In terms of multidimensional deprivation, Bahri taluk is the worst performing with an RDI of 0.426, followed by Chalkusa (0.34) and Keredari (0.328). The graph also shows that most of the taluks have high headcount ratios. The largest headcount ratio is that of Barkatha taluk (0.905), followed by Chalkusa (0.875), Barhi (0.816), Keredari (0.816), and Padma (0.814). The largest deprivation intensity is that of Barhi (0.522), followed by Ichak (0.435), and Keredari (0.401). The lowest RDI is that of Katamdag (0.128), followed by Hazaribag (0.135) and Churchu (0.141). These three taluks also show the lowest headcount ratios among all the taluks of Hazaribagh district.

Figure 35: Deprivation indices for the subdistricts of Hazaribagh district

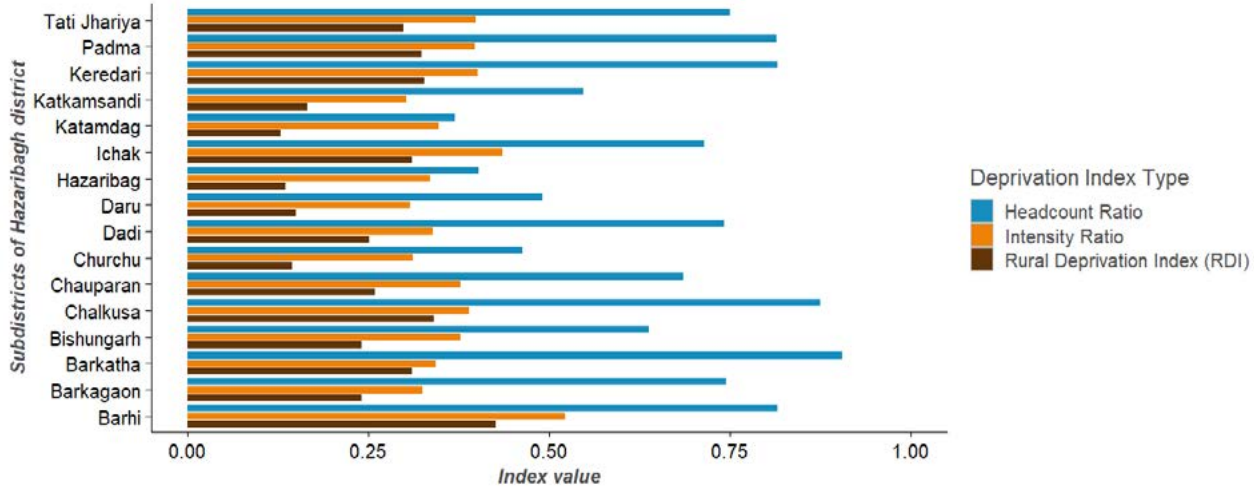
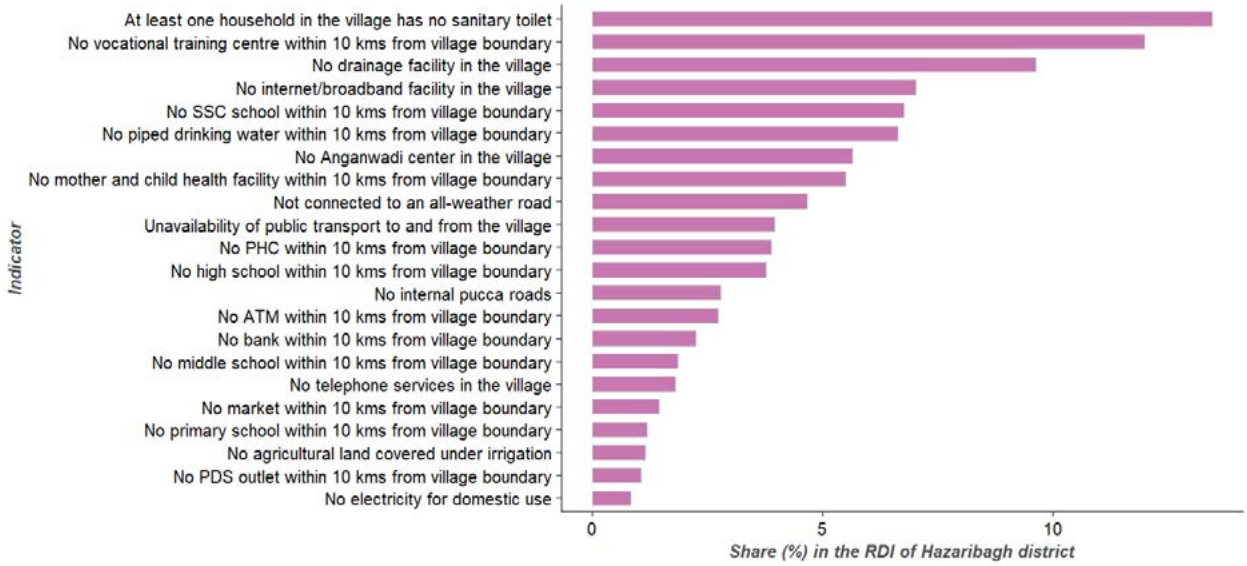


Figure 36 shows the contributions of the 22 indicators to the RDI of Hazaribagh district. The largest share is that of the lack of sanitary toilets in villages (13.44 percent of the district RDI), followed by the lack of vocational training centres (11.97 percent), and lack of drainage (9.63 percent). Thus, these three indicators together have about 35 percent share in the RDI of the Hazaribagh district. The lack of internet/broadband

services (7 percent), the lack of SSC schools (6.76 percent), and the lack of piped drinking water (6.62 percent) are the next big contributing factors to the district's RDI. When the three broad deprivation dimensions are considered, the largest share in the RDI is that of the health dimension (44.7 percent share), followed by infrastructure (29.7 percent) and education (25.6 percent).

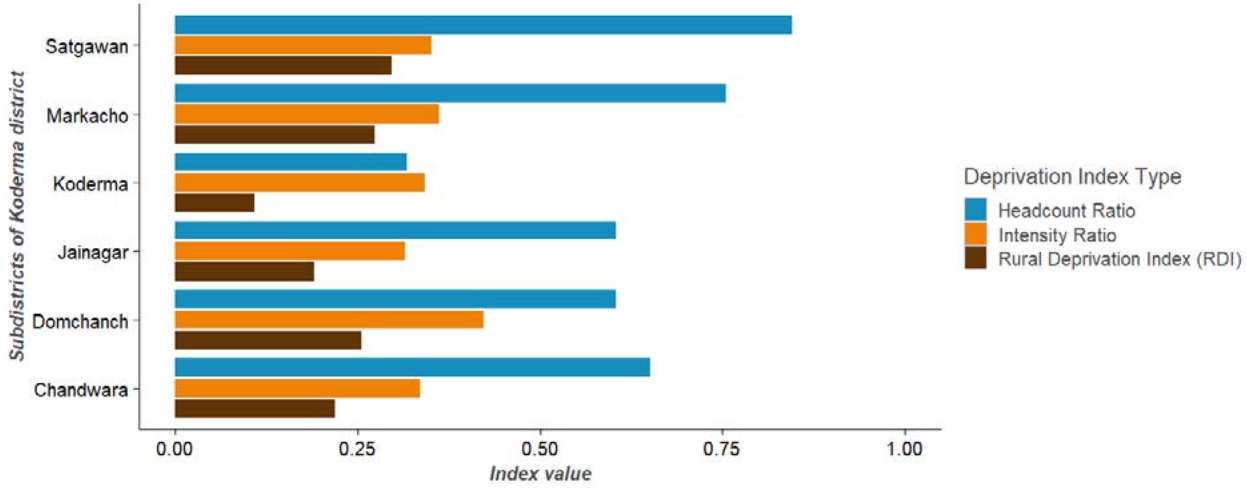
Figure 36: Contribution of the 22 indicators to the RDI of Hazaribagh district



Koderma district

There are six taluks in Koderma district. Figure 37 shows that the highest RDI in Koderma district is shown by Satgawan taluk (0.297) and the lowest RDI is that of Koderma taluk (0.109). In comparison to other districts, Koderma is among the better performing districts in the state. As Figure 37 shows, most of the taluks in this district have a headcount ratio of below 70 percent, except for Satgawan and Markacho taluks, whose headcount ratios are 84.6 percent and 75.4 percent, respectively.

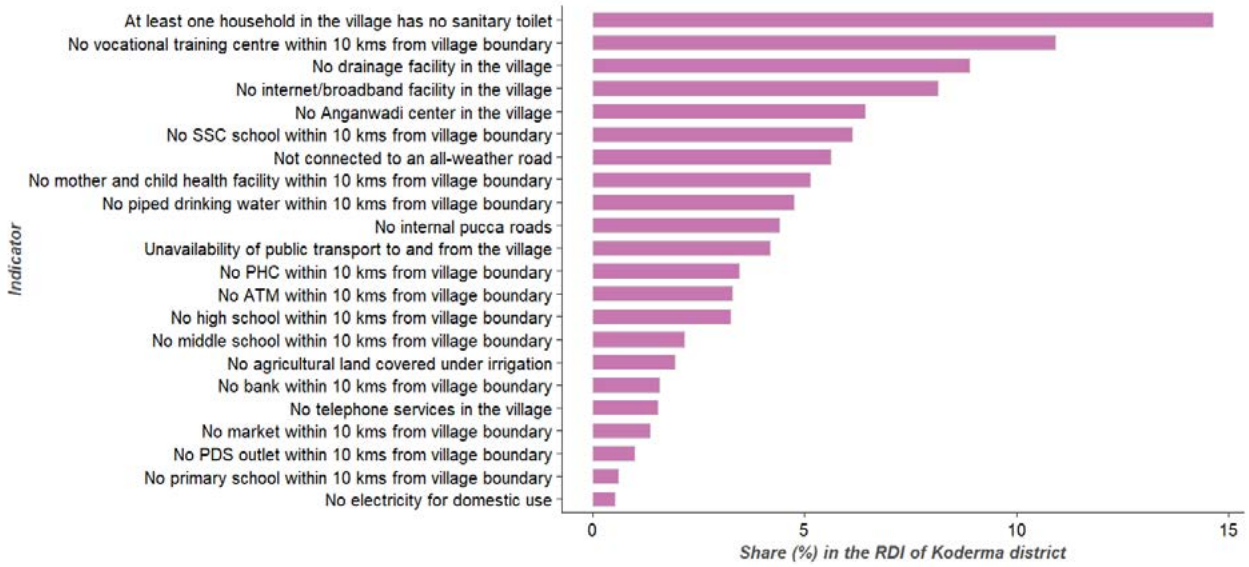
Figure 37: Deprivation indices for the subdistricts of Koderma district



Even though Koderma is among the better performing districts in the state, its deprivation arises out of similar set of indicators as in the other districts. Figure 38 shows that the lack of sanitary toilets in villages, the lack of vocational training centres and lack of drainage are the indicators that contribute the largest to the RDI of Koderma district. These have shares of 14.63 percent, 10.92 percent and 8.91 percent respectively in the district's RDI, together contributing 34.5 percent to the total RDI share. The lack of internet/broadband (8.15 percent), the lack of Anganwadis (6.43 percent), and the lack of SSC schools (6.12 percent) are the next big contributing factors to the district's RDI. In terms of the three broad dimensions of deprivation, health

deprivation has a share of 43.3 percent in the RDI of Koderma district, followed by infrastructure deprivation with 33.6 percent share and education deprivation with a share of 23.1 percent.

Figure 38: Contribution of the 22 indicators to the RDI of Koderma district



Ramgarh district

Ramgarh is the best performing district in Jharkhand, with the lowest level of RDI. The district has six taluks, and their deprivation indices are shown in Figure 39. As expected, the taluks of Ramgarh district show relatively lower RDI values, with the highest RDI being 0.198 for Patratu taluk and the lowest RDI being 0.0689 for Ramgarh taluk. The highest headcount is 0.649 for Dulmi taluk, followed by Patratu taluk at 0.567.

Figure 39: Deprivation indices for the subdistricts of Ramgarh district

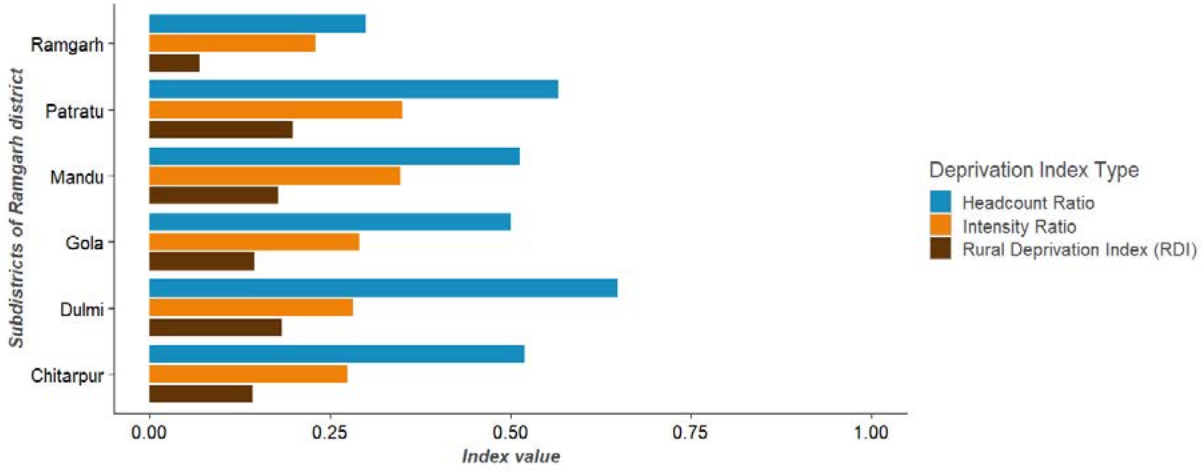
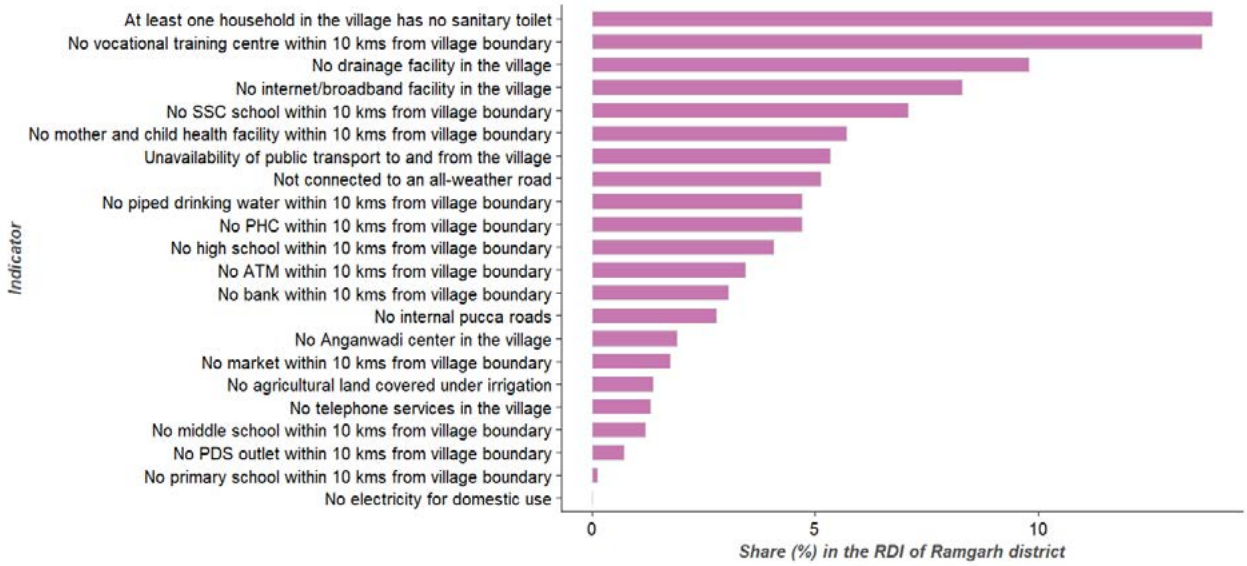


Figure 40 shows that the lack of sanitary toilets contributes about 13.9 percent to the RDI of Ramgarh district, followed by the lack of vocational training centres (13.7 percent) and lack of drainage facilities (9.8 percent). These three indicators together have about 37.4 percent share in the district RDI. The lack of internet/broadband services (8.29 percent), the lack of SSC schools (7.08 percent), and the lack of mother/child healthcare centres (5.7 percent) are the next big contributing factors to the district's RDI. When looking at the share of the three broad deprivation dimensions in Ramgarh's district RDI, health deprivation indicators have about 40.7 percent share, followed by infrastructure indicators with 33.2 percent share and education indicators with a 26.2 percent share.

Figure 40: Contribution of the 22 indicators to the RDI of Ramgarh district



5.3 Palamu Division

Garhwa district

Garhwa is a large district, with 20 taluks. Their deprivation indices are shown in Figure 41. Bhandaria (0.612), Ketar (0.566), and Chinia (0.542) are the worst performing taluks in this district in terms of RDI. In terms of the headcount ratio, there are four taluks that have a score of 1, that is, all villages in these taluks are multidimensionally deprived. These taluks are Bargah, Dhurki, Ketar, and Sagma. Some other poor performing taluks in terms of headcount ratio are: Chinia (0.967); Kharaundhi (0.95); Bhandaria (0.944); Majhiaon (0.936), and Kandi (0.921). The figure shows that many taluks in the district have both substantially higher headcount ratio as well as intensity ratio. The best performing taluks in terms of RDI are Bhawanthpur (0.153), Garhwa (0.16), and Dandai (0.182).

Figure 41: Deprivation indices for the subdistricts of Garhwa district

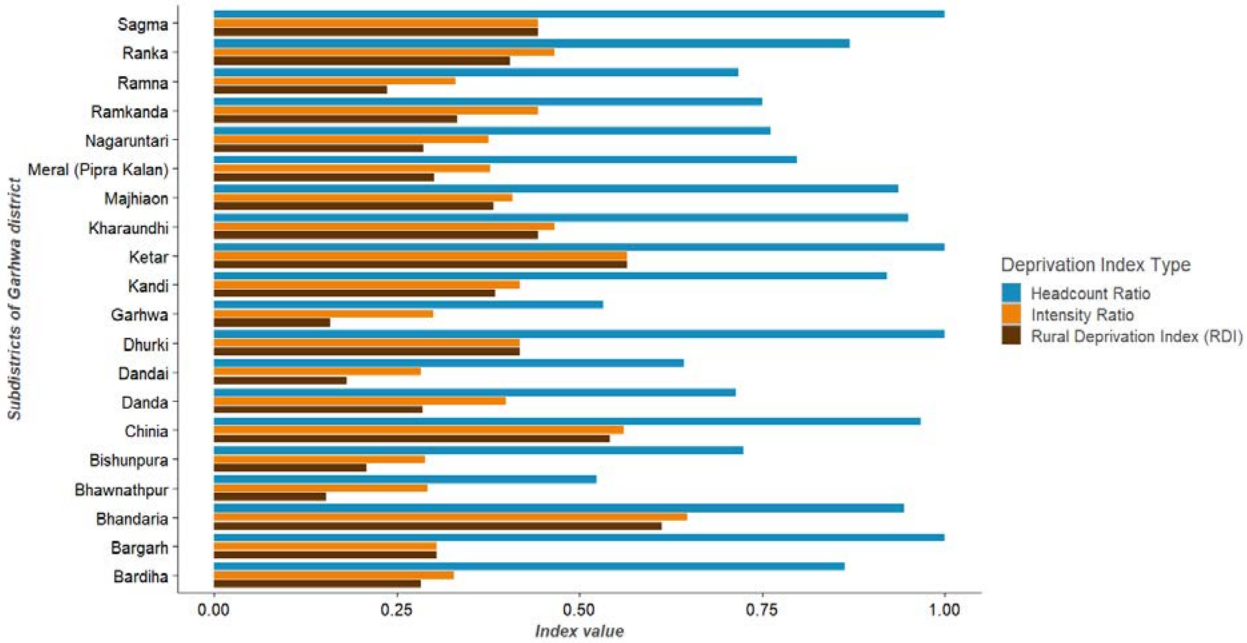
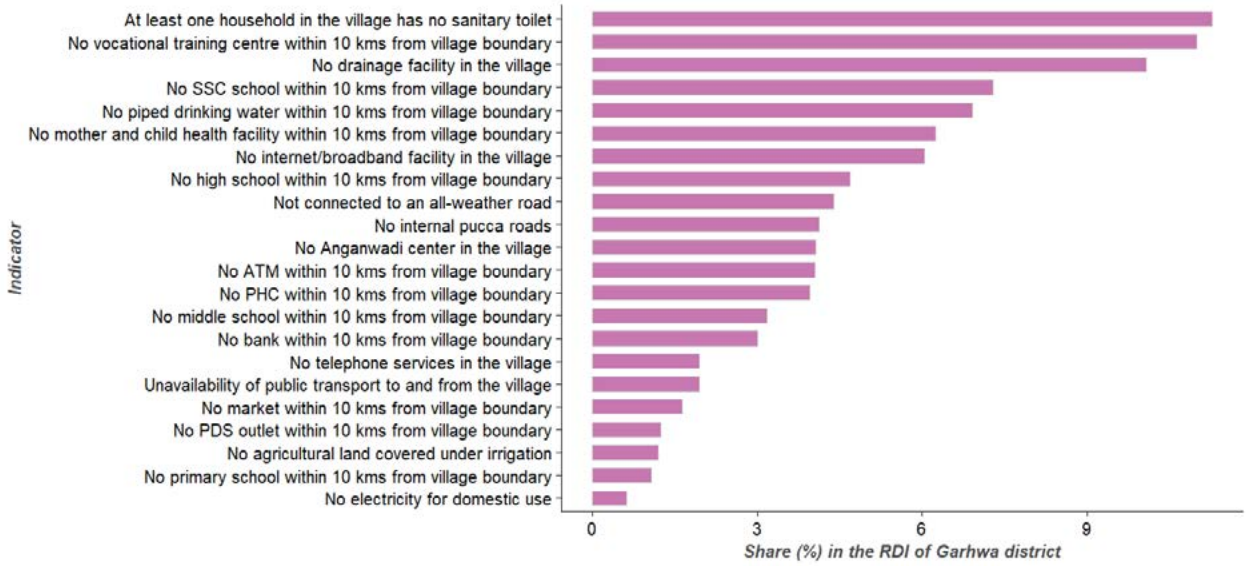


Figure 42 shows that the lack of sanitary toilets contributes about 11.3 percent to the RDI of Garhwa district, followed by the lack of vocational training centres (11 percent), and the lack of drainage (10.1 percent). Together, these three indicators have a share of about 32.4 percent in the RDI of Garhwa district. Some other major contributing indicators are the lack of SSC schools (7.3 percent share), lack of piped drinking water (6.9 percent), the lack of mother/child healthcare centres (6.24 percent) and the lack of internet/broadband facilities (6.05 percent). Overall, the health dimension has a share of about 42.5 percent in the district's RDI, followed by infrastructure (30.2 percent), and the education dimension (27.2 percent).

Figure 42: Contribution of the 22 indicators to the RDI of Garhwa district



Latehar district

Deprivation indices for the nine taluks of Latehar district are shown in Figure 43. In terms of RDI, Garu taluk has the highest deprivation (RDI of 0.45), followed by Mahuadanr (0.369), and Bariyatu (0.342). Garu also shows the highest headcount ratio and highest intensity of deprivation among all taluks. The best performing taluk is Balumath (RDI of 0.116), followed by Latehar taluk (0.13). Except for these two taluks, we find that all taluks in this district have a headcount ratio of over 60% and an RDI of above 0.2.

Figure 43: Deprivation indices for the subdistricts of Latehar district

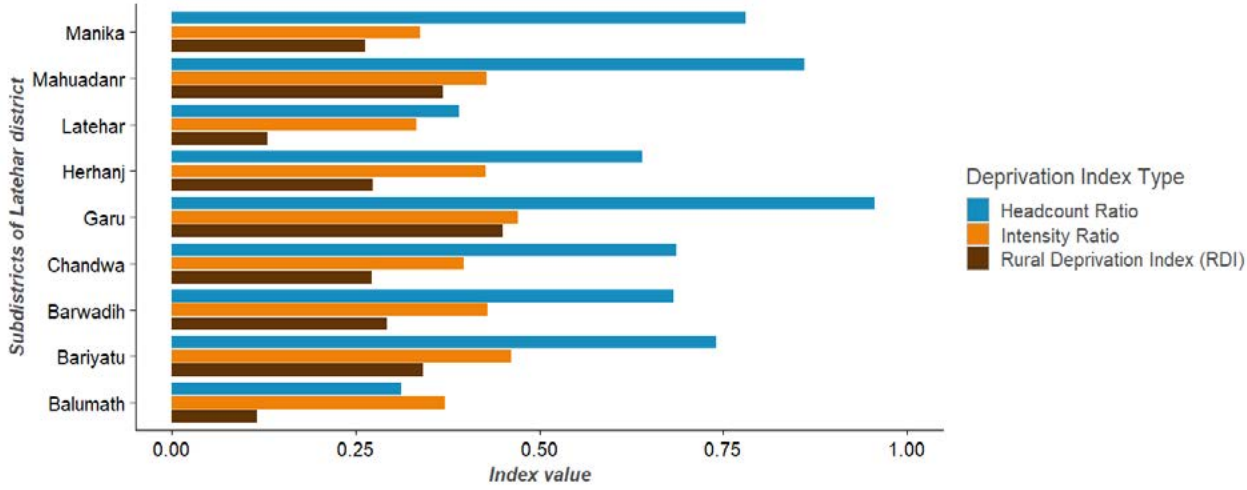


Figure 44 shows that the lack of vocational training centres has a share of about 11.96% to the RDI of Latehar district, followed by the lack of sanitary toilets (10.87 percent), and the lack of drainage in villages (9.29 percent). Thus, these three indicators together have a share of about 32 percent in the district's RDI. Some other major contributors to the RDI of Latehar are the lack of SSC schools (9.13 percent), the lack of internet/broadband

services (6.63 percent), the lack of mother/child healthcare centres (5.59 percent) and the lack of high schools (5.52 percent). In terms of the dimensions of deprivation, the health dimension has a share of 37.7 percent in the district's RDI, followed by infrastructure dimension with a share of 32.4 percent and education deprivation with a share of 29.9 percent.

Figure 44: Contribution of the 22 indicators to the RDI of Latehar district

Palamu District

Palamu is another district with many taluks. The deprivation indices of the 21 taluks of this district are shown in Figure 45. In terms of the RDI, Manatu taluk has the highest deprivation with an RDI score of 0.459, followed by Pandu (0.415), and Nawadiha Bazar/Nawadiha (0.403). In terms of the headcount ratio, there are two taluks that have a headcount ratio of 1 (Pandu and Ramgarh), and there are three taluks with headcount ratio of above 0.9 but less than 1 (Manatu, Untari Road, and Nawadiha Bazar/Nawadiha). The best performing taluks in terms of the RDI are Medininagar (Daltonganj) with an RDI of 0.125, followed by Satbarwa (0.191), and Bishrampur (0.192). Except for Medininagar, all the sub-districts of Palamu have over 50% of villages that are multidimensionally deprived.

Figure 45: Deprivation indices for the subdistricts of Palamu district

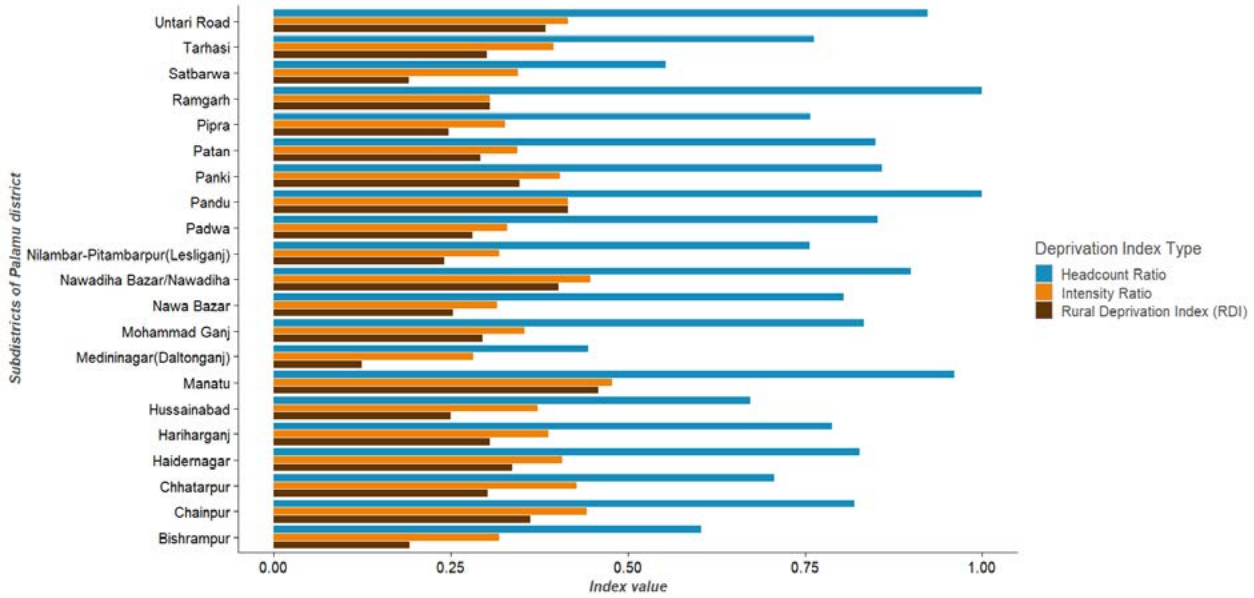
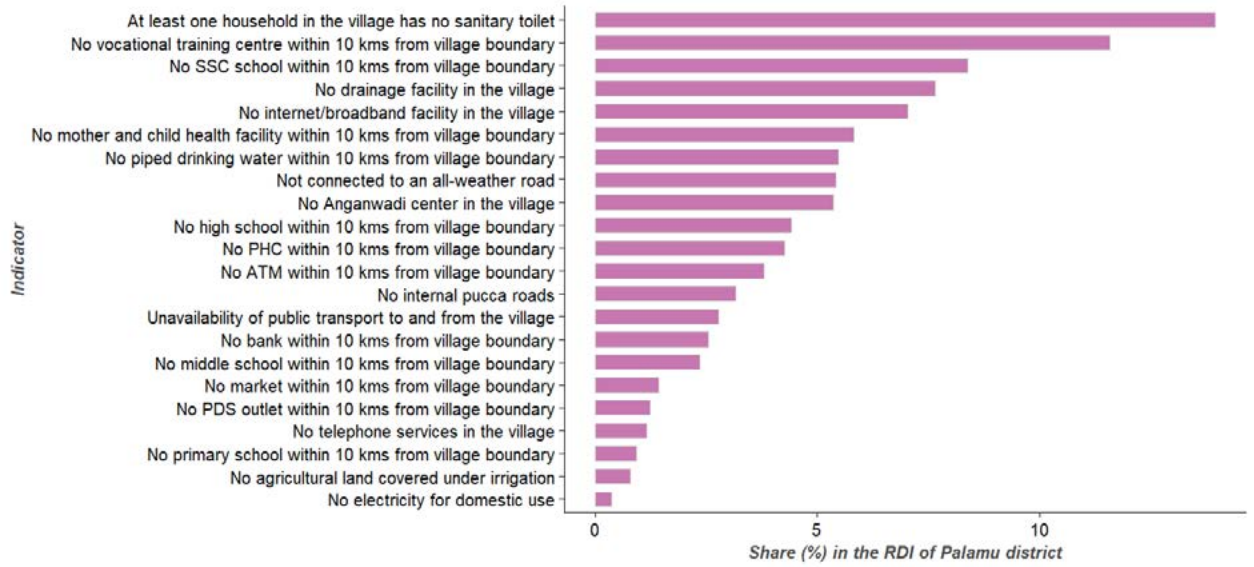


Figure 46 shows that the largest share in the RDI of Palamu district is that of the lack of sanitary toilets (share of 13.96 percent) followed by the lack of vocational training centres (11.57 percent) and the lack of SSC schools (8.39 percent). Together, these three indicators contribute about 34 percent to the district's RDI. Some other indicators with substantial share in the district's RDI are the lack of drainage facilities (7.65 percent share); lack of internet/broadband services (7.05 percent); and the lack of mother/child healthcare facilities (5.82 percent). In terms of the three dimensions of deprivation, the health deprivation indicators form about 42.6 percent of the district's RDI, followed by infrastructure deprivation with a share of 29.8 percent and education deprivation with 27.7 percent share.

Figure 46: Contribution of the 22 indicators to the RDI of Palamu district



5.4 Santhal Pargana Division

Deoghar district

The deprivation indices for the 10 taluks of Deoghar district are shown in Figure 47. In terms of RDI, Devipur has the highest deprivation (RDI of 0.404), followed by Sarath (0.343) and Deoghar taluk (0.330). The least

deprivation is seen in Karon taluk (RDI of 0.209), followed by Madhupur (0.215) and Sarwan (0.227). In general, all taluks of this district are highly deprived, with headcount ratios of all taluks being above 65 percent.

Figure 47: Deprivation indices for the subdistricts of Deoghar district

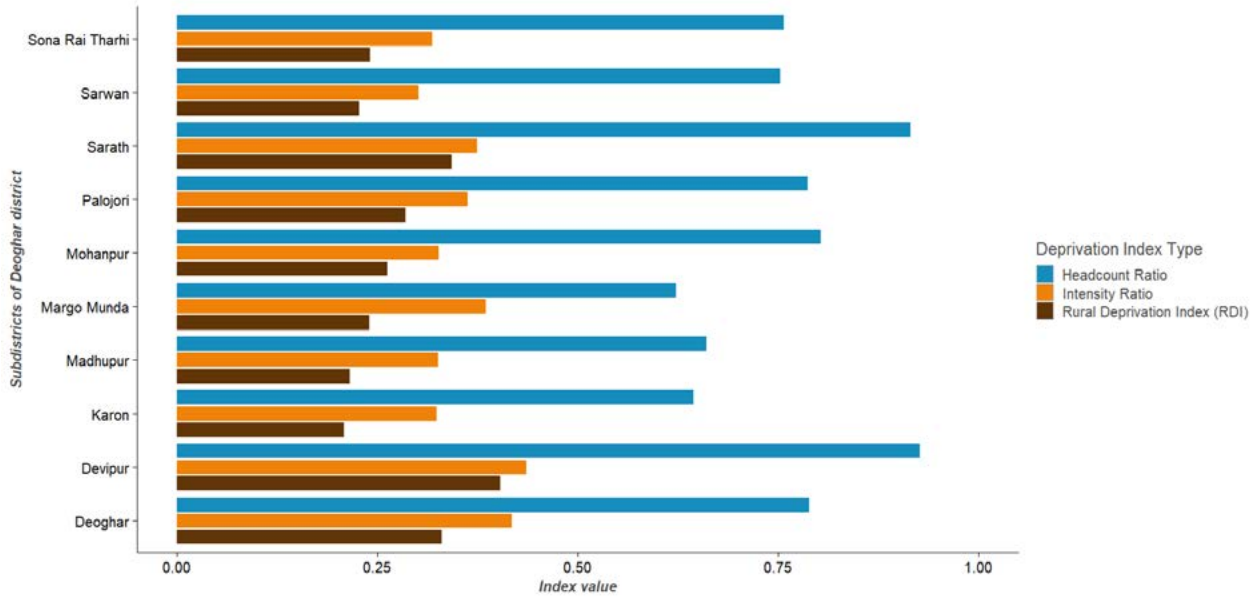
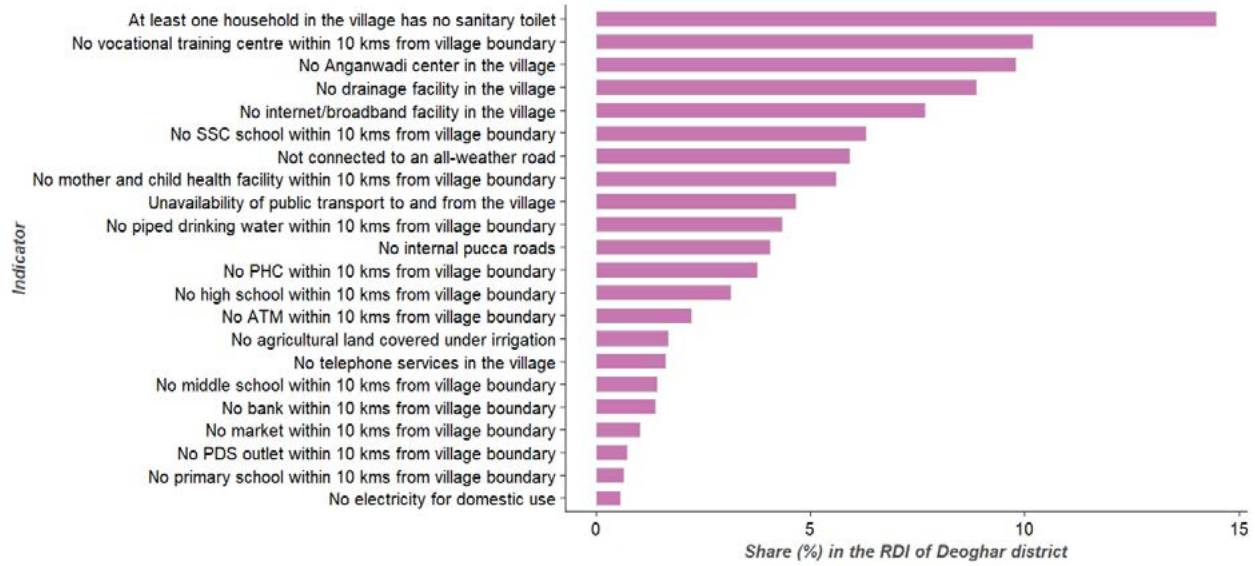


Figure 48 shows that with a share of 14.46 percent, the lack of sanitary toilets is the largest contributor to Deoghar district's RDI. This is followed by the lack of vocational training centres (10.18 percent share), and the lack of Anganwadis (9.79 percent). Thus, these three indicators together form about 34.4 percent of the district's RDI. Among other indicators, lack of drainage facilities has a share of 8.87 percent, lack of internet/ broadband services contribute a share of 7.68 percent and the lack of SSC schools contribute 6.3 percent to the district RDI. Overall, the health dimension of deprivation has a share of about 46.8 percent in the district's RDI, followed by infrastructure with a share of 31.5 percent and education with a share of 21.7 percent.

Figure 48: Contribution of the 22 indicators to the RDI of Deoghar district



Dumka district

Dumka district has 10 taluks, whose deprivation indices are shown in Figure 49. Considering the headcount ratio, Gopikandar taluk records the highest figure of close to 1, followed by Kathikund (0.893), Jarmundi (0.818) and Ramgarh (0.807). In terms of the RDI, the worst performing districts are Gopikandar (0.379), followed

by Kathikund (0.352), and Shikaripara (0.319). As can be seen from the Figure, all taluks of this district have a headcount ratio of above 50 percent, with many of them having headcount ratios of over 75 percent.

Figure 49: Deprivation indices for the subdistricts of Dumka district

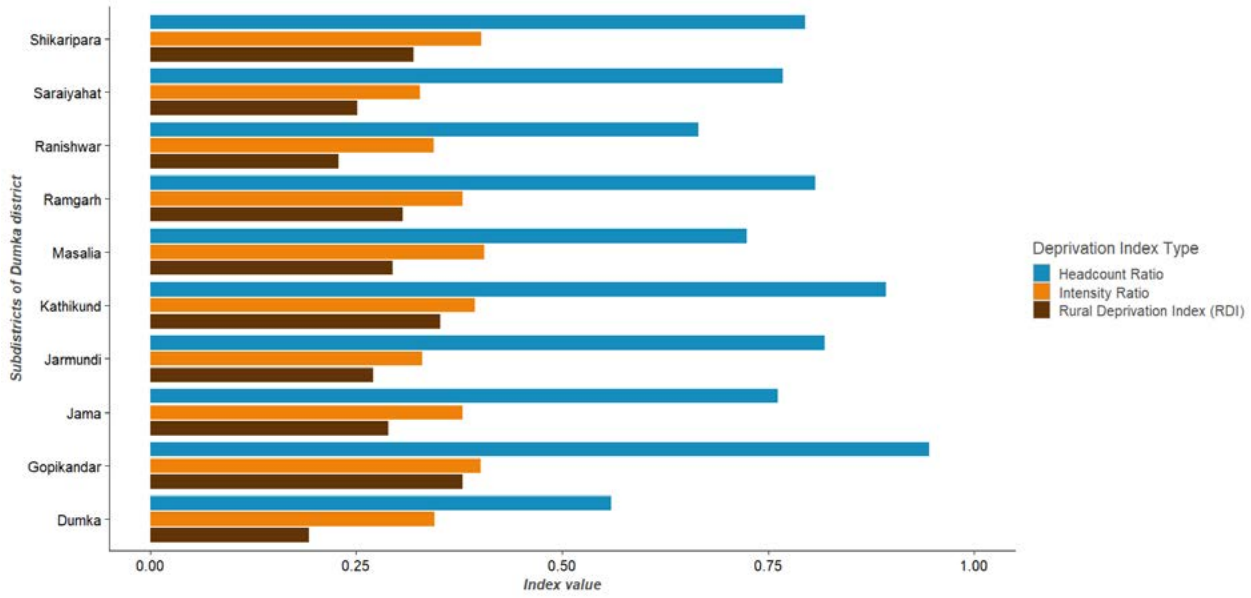
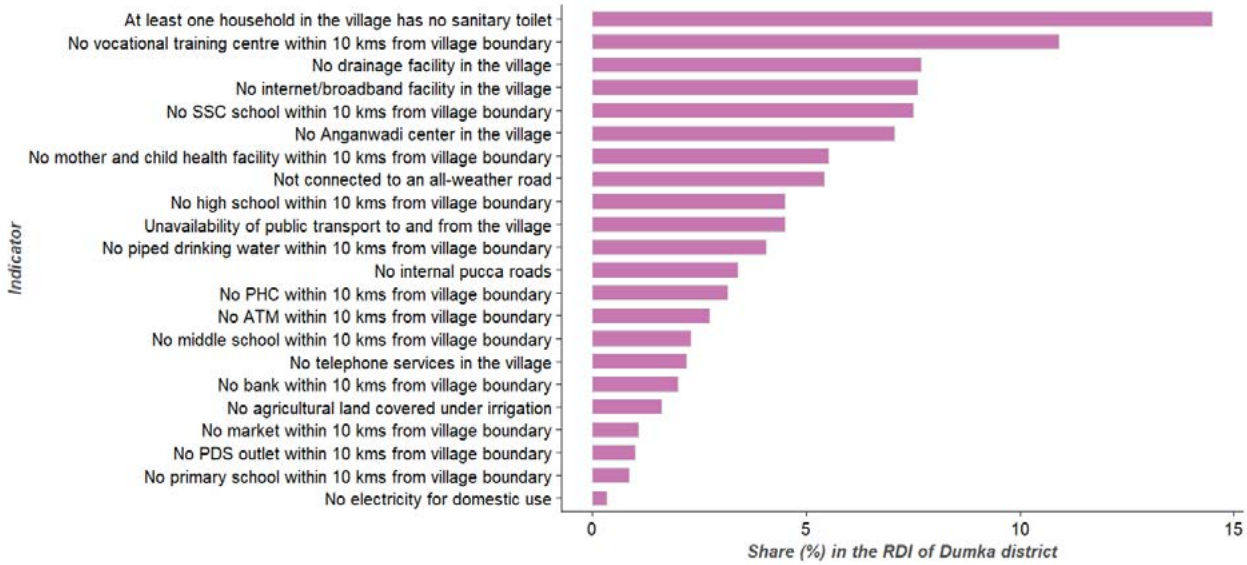


Figure 50 shows that the lack of sanitary toilets in villages is the largest contributor to the RDI of Dumka district with a share of 14.48%, followed by the lack of vocational training centres (10.9% share) and the lack of drainage facilities (7.68% share). Together, these three indicators have a share of about 33% in the RDI of the district. Some other major contributing indicators are the lack of internet/broadband services (7.61% share), the lack of SSC schools (7.06% share) and the lack of mother/child healthcare facilities (5.52% share). Overall, the health deprivation indicators together have a share of 42% in the RDI of Dumka, followed by infrastructure deprivation indicators (32% share) and education deprivation indicators (26% share).

Figure 50: Contribution of the 22 indicators to the RDI of Dumka district.

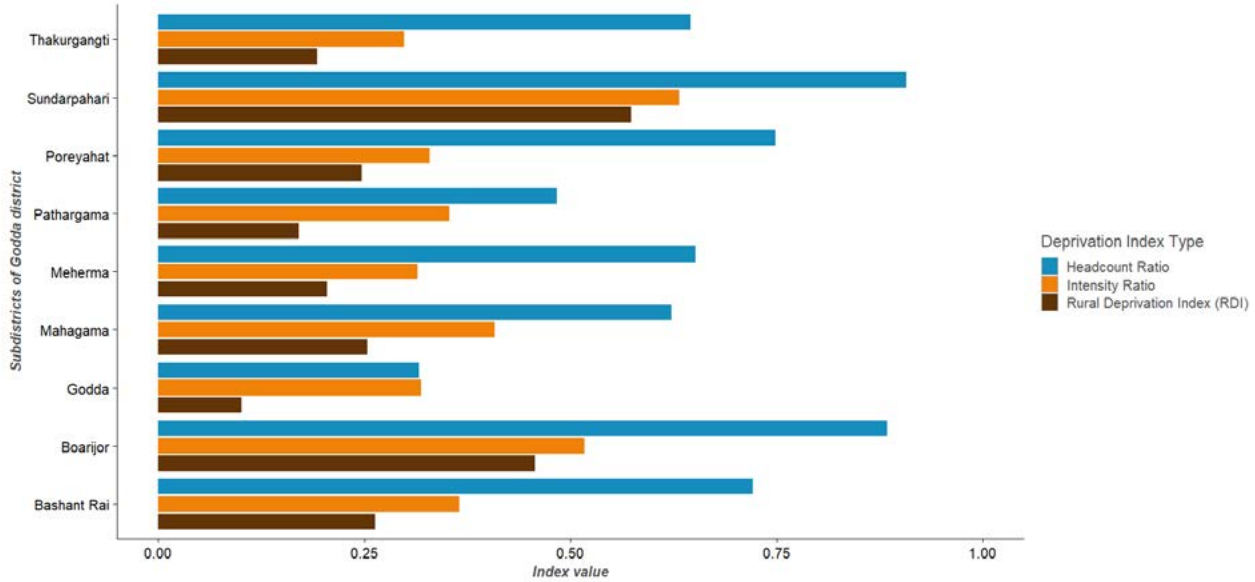


Godda district

Figure 51 shows the deprivation indices for the nine taluks of Godda district. In terms of headcount ratio, Sundarpahari taluk performs the worst (0.907), followed by Boarijor (0.884) and Poreyahat (0.721). Sundarpahari

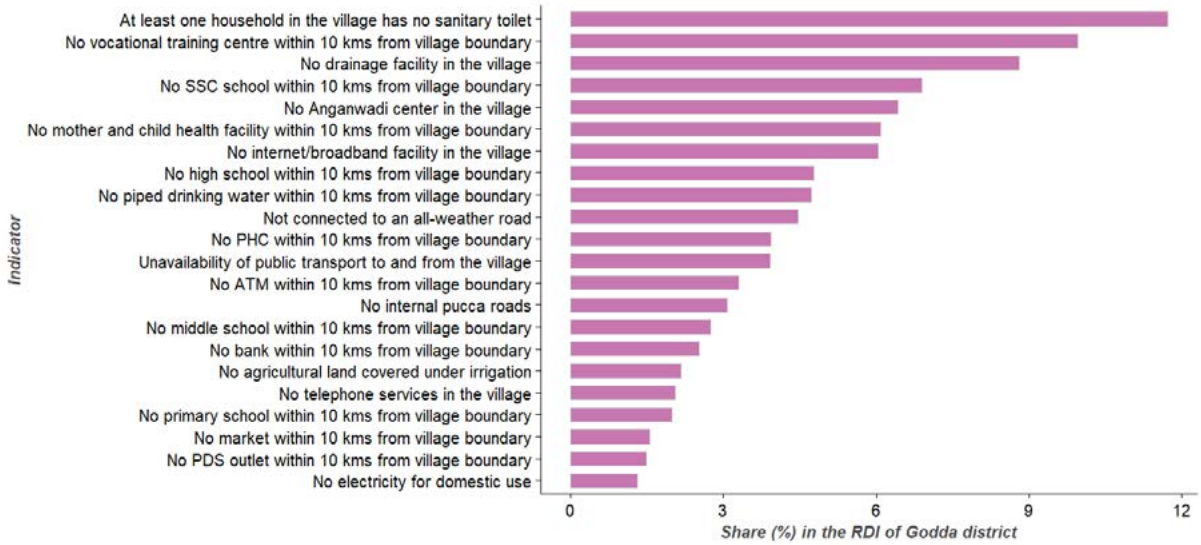
and Boarijor perform poorly even in terms of the intensity of deprivation and the RDI. The best performing taluks are Godda taluk (RDI of 0.101) and Pathargama (0.171).

Figure 51: Deprivation indices for the subdistricts of Godda district



As shown in Figure 52, the lack of sanitary toilets is the largest contributing factor to the RDI of Godda district with a share of 11.71 percent, followed by the lack of vocational training centres (9.96 percent share) and the lack of drainage facilities (8.8 percent share). Together, these three indicators have a share of about 31 percent in the district's RDI. In addition, the lack of SSC schools (6.9 percent share), the lack of Anganwadis (6.43 percent share), the lack of mother/child healthcare (6.1 percent share) and the lack of internet/broadband services (6 percent share) are the other major contributing factors to the district RDI. Overall, the health deprivation indicators have a share of 42 percent in the district RDI, followed by infrastructure (32 percent share) and education (26 percent share).

Figure 52: Contribution of the 22 indicators to the RDI of Godda district



Jamtara district

Figure 53 shows the deprivation indices for the six taluks of Jamtara district. Fatehpur has the highest headcount ratio among all the taluks (0.923), followed by Narayanpur (0.872), and Kundhit (0.836). In terms of RDI, Narayanpur has the highest deprivation, followed by Fatehpur and Nala. Jamtara taluk has the lowest

deprivation with an RDI of 0.118, headcount ratio of 0.387, and intensity ratio of 0.307. Except for Jamtara taluk, all other taluks in the district have high levels of multidimensional deprivation.

Figure 53: Deprivation indices for the subdistricts of Jamtara district

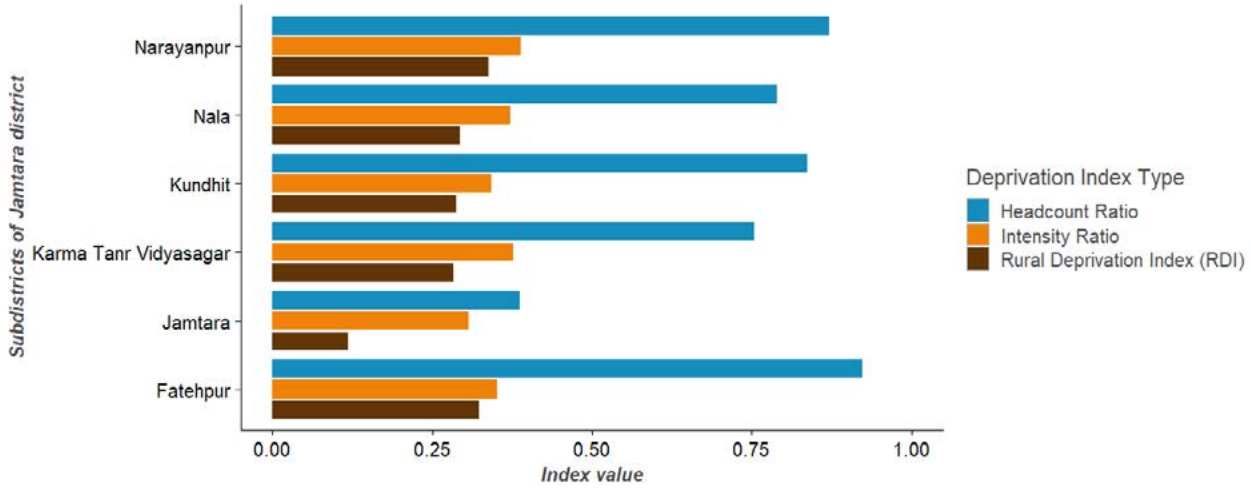
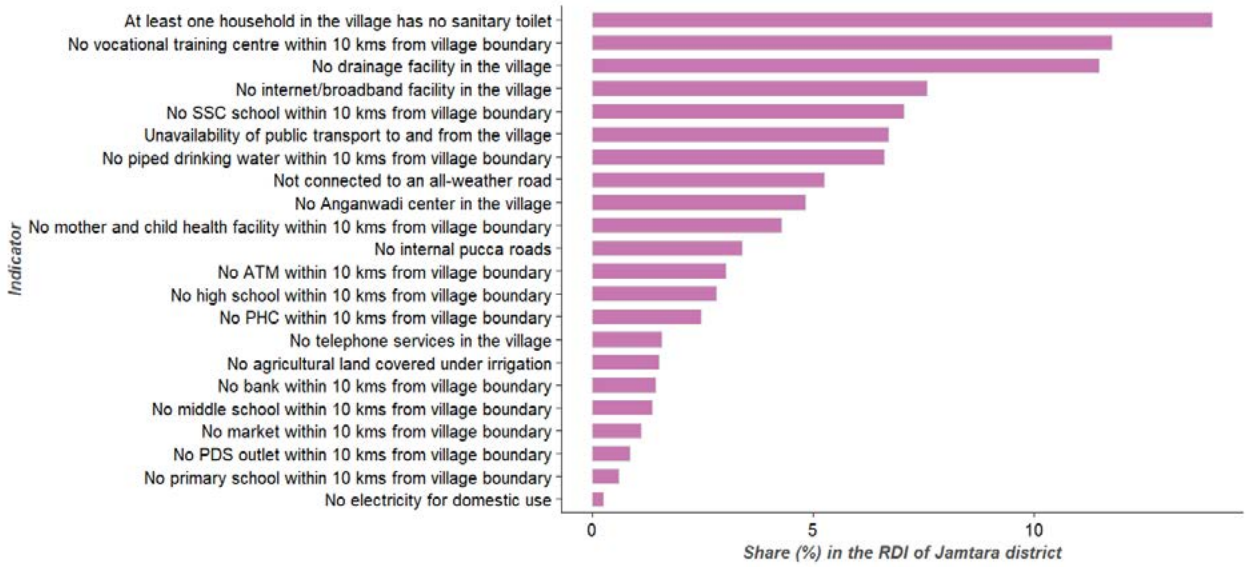


Figure 54 shows the top three contributors to the RDI of Jamtara district. Similar to many other districts in the state, the lack of sanitary toilets (14 percent share in RDI), followed by the lack of vocational training centres (11.77 percent), and the lack of drainage facilities (11.47 percent) are the top three contributors to the district's deprivation. These three indicators together have a share of about 37 percent in the district's RDI. Some other major contributing indicators to the district's RDI are lack of internet/broadband services (7.6 percent share), the lack of SSC schools (7.1 percent), the lack of public transportation to and from the villages (6.71 percent) and the lack of piped drinking water (6.61 percent). Overall, the health deprivation indicators together have a share of 43.7 percent in the district's RDI, followed by the infrastructure deprivation indicators (32.7 percent share) and the education deprivation indicators (23.6 percent share).

Figure 54: Contribution of the 22 indicators to the RDI of Jamtara district



Pakur district

Figure 55 shows the deprivation indices for the six taluks of Pakur district. The taluks have high values of headcount ratios, with the highest headcount ratio shown by Amarpara taluk (0.967), followed by Maheshpur (0.842) and Hiranpur (0.815). In terms of RDI, the highest deprivation is seen in Amarpara, followed by Maheshpur and Litipara. Pakur taluk shows the least deprivation in terms of RDI, intensity ratio and headcount ratio.

Figure 55: Deprivation indices for the subdistricts of Pakur district

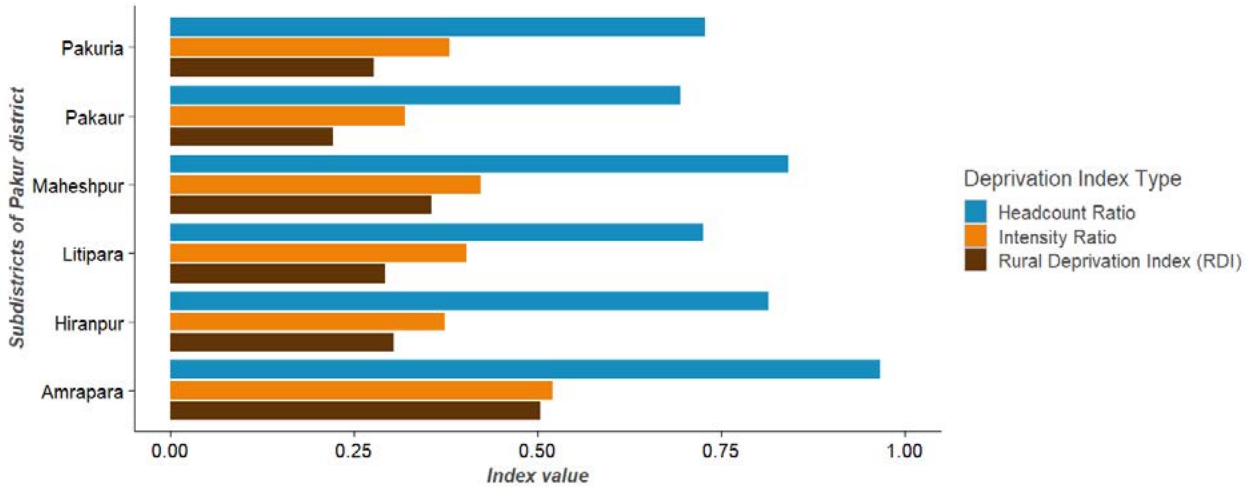
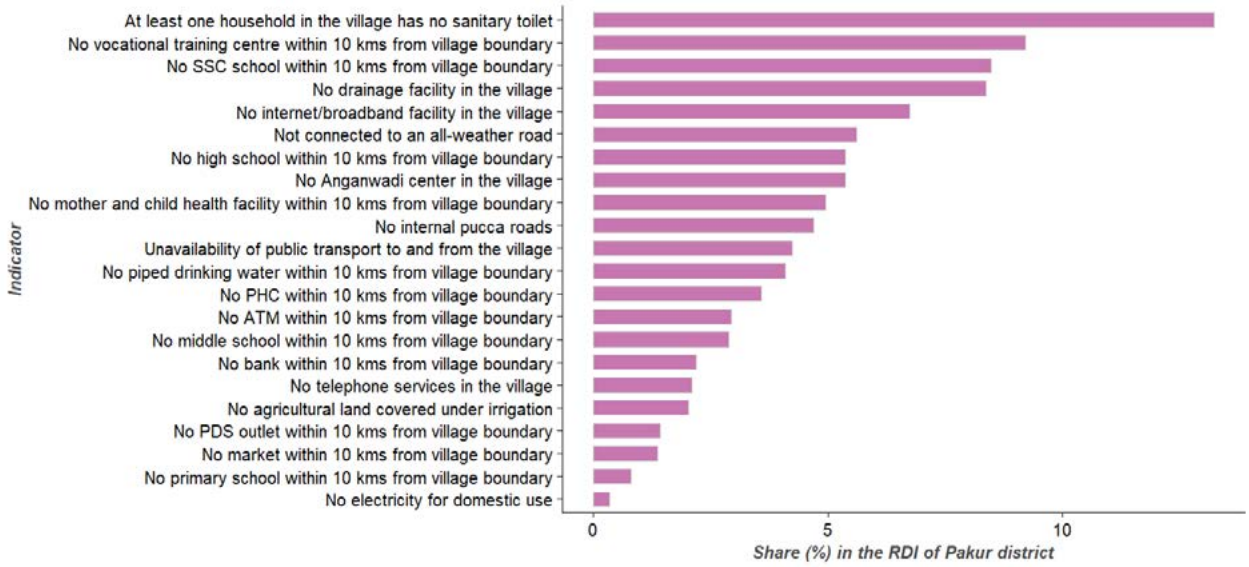


Figure 56 shows that the largest share in the RDI of Pakur district is that of the lack of sanitary toilets (13.2 percent share), followed by the lack of vocational training centres (9.2 percent share) and the lack of SSC schools (8.47 percent share). Together these three indicators form about 31 percent of the district's RDI. In addition, the lack of drainage has a share of 8.4 percent in the district RDI, followed by the lack of internet/ broadband services (6.7 percent share). In terms of the three dimensions of deprivation, the health deprivation indicators together form about 39.6 percent of the district's RDI, followed by infrastructure deprivation indicators (33.7 percent share), and education deprivation indicators (26.8 percent share).

Figure 56: Contribution of the 22 indicators to the RDI of Pakur district



Sahebganj district

There are nine taluks in Sahebganj district, and their deprivation indices are shown in Figure 57. In terms of headcount ratio, Taljhari (0.965) has the highest headcount, followed by Barhait (0.947), and Borio (0.89). In fact, there are six taluks in this district with a headcount ratio of 0.80 or higher. In terms of RDI, Barhait has the highest index value, followed by Taljhari and Borio. The best performing taluk is Sahibganj with an RDI of 0.191, intensity of 0.319, and headcount of 0.6. In general, all taluks of this district are highly deprived and call for attention from the state for provisioning of basic amenities.

Figure 57: Deprivation indices for the subdistricts of Sahebganj district

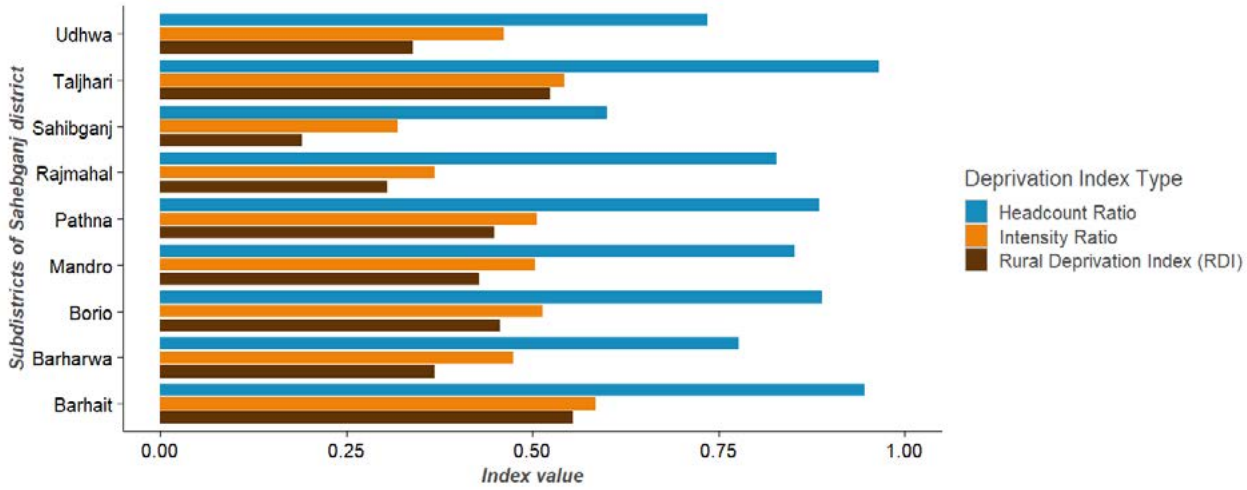
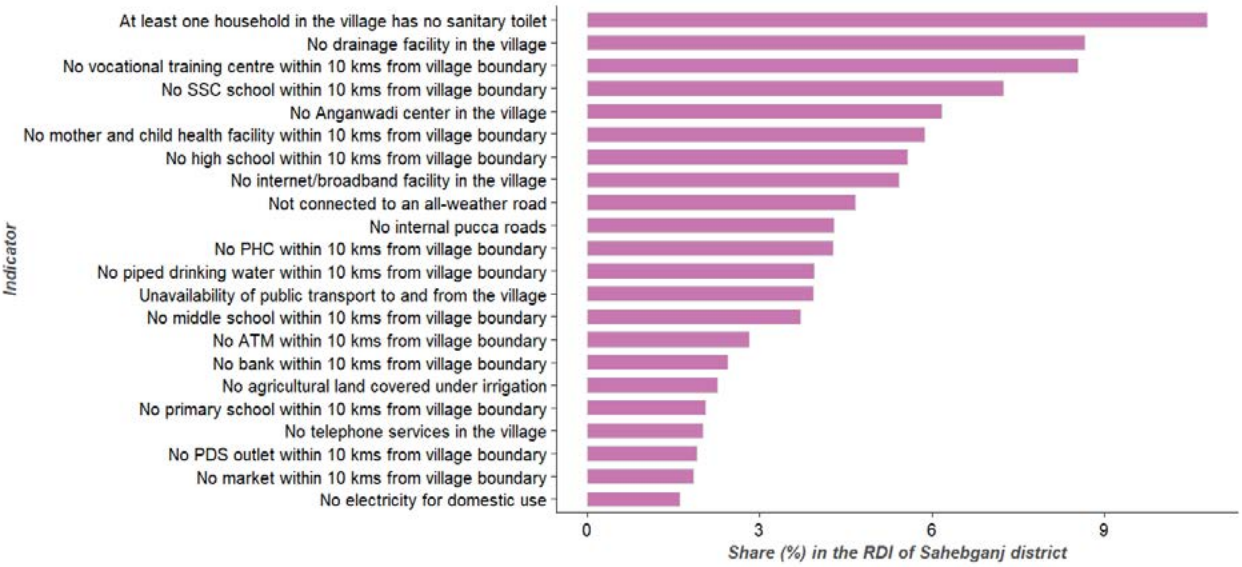


Figure 58 shows that the lack of sanitary toilets, with a share of 10.78 percent, is the largest contributor to the RDI of Sahebganj district, followed by the lack of drainage facilities (8.66 percent) and the lack of vocational training centres (8.53 percent share). These three indicators together have about 28 percent share in the RDI of the district. Some of the other indicators that have large share in the district's RDI are the lack of SSC schools (7.23 percent), the lack of Anganwadis (6.16 percent) and the lack of mother/child healthcare facilities (5.42 percent). Overall, the health deprivation indicators together have a share of about 39.7 percent in the district's RDI, followed by infrastructure deprivation indicators (33.2 percent share) and education deprivation indicators (27.1 percent share).

Figure 58: Contribution of the 22 indicators to the RDI of Sahebganj district



5.5 South Chotanagpur Division

Gumla District

There are 12 taluks in Gumla district, and their deprivation indices are shown in Figure 59. Headcount ratios of most taluks are substantially high. In fact, there is one taluk (Albert Ekka/Jari) whose headcount ratio is 1 and three taluks (Bishnupur, Palkot, and Dumri) whose headcount ratios are over 0.9 but less than 1. These taluks also have the highest RDI. Bharno taluk has the lowest RDI (0.192), deprivation intensity (0.329), and

headcount (0.586). Overall, Gumla is a among the highly deprived districts of the state, with all its sub-districts too showing high levels of deprivation.

Figure 59: Deprivation indices for the subdistricts of Gumla district.

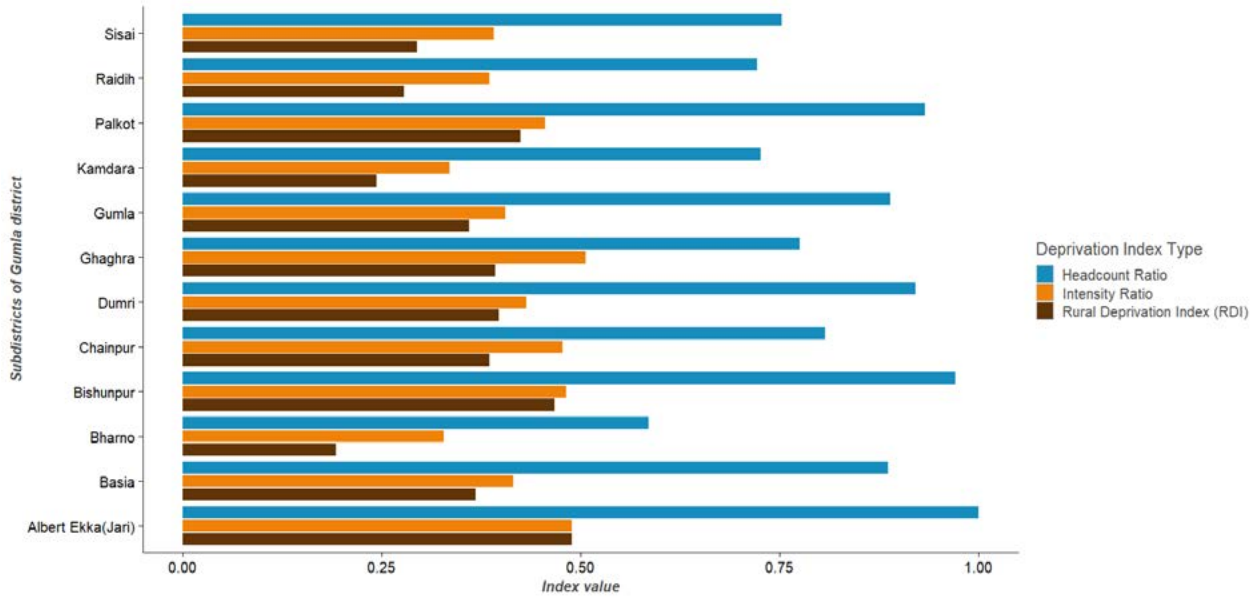
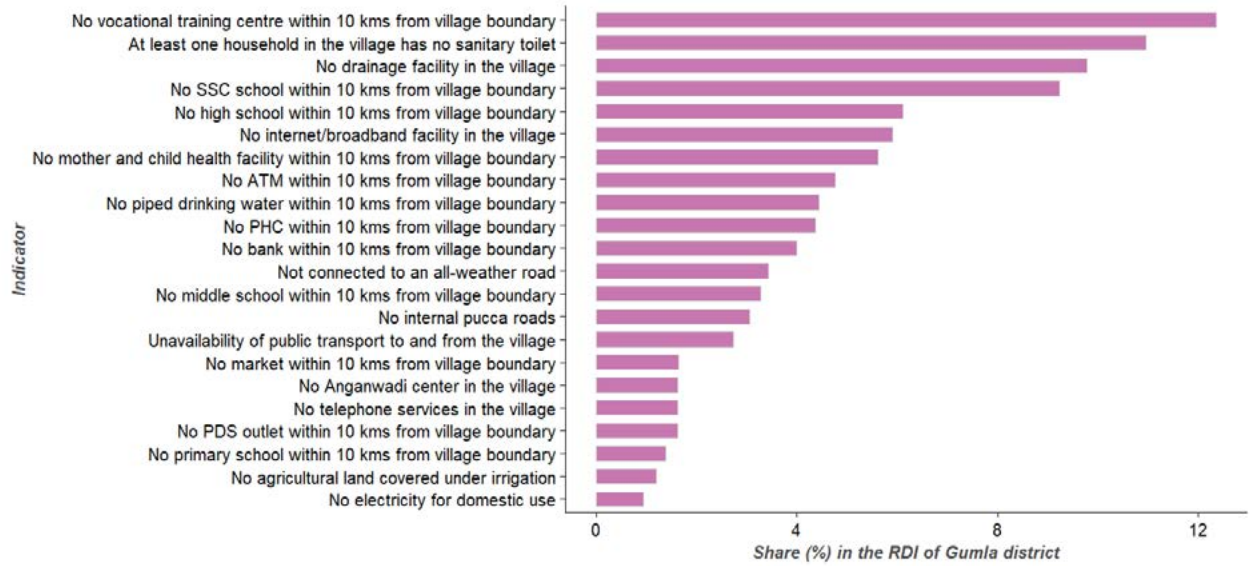


Figure 60 shows that the lack of vocational training centres has the largest share in the RDI of Gumla district (12.35%), followed by the lack of sanitary toilets (10.95%) and the lack of drainage facilities (9.78%). Together, these three indicators have a share of about 33% in the district's RDI. In addition, the lack of SSC schools (9.23%), lack of high schools (6.1% share), and the lack of internet/broadband services (5.9%) are the other indicators that have a large contribution to the district's RDI. Overall, the indicators related to health deprivation have a combined share of about 37% in Gumla's RDI, followed by the indicators of infrastructure deprivation (31%), and education deprivation indicators (32% share). The minor differences in the contribution of the shares of individual indicators indicate that the district is deprived of all indicators, rather than lagging in specific indicators. Policies that can target all the indicators across the district are needed in Gumla.

Figure 60: Contribution of the 22 indicators to the RDI of Gumla district.



Khunti district

Deprivation indices for the six taluks of Khunti are shown in Figure 61. Erki (Tamar II) taluk has the highest headcount ratio (0.906), followed by Khunti taluk (0.845). These two taluks also have the highest RDI. Rania taluk has the lowest RDI, headcount, and intensity of deprivation.

Figure 61: Deprivation indices for the subdistricts of Khunti district.

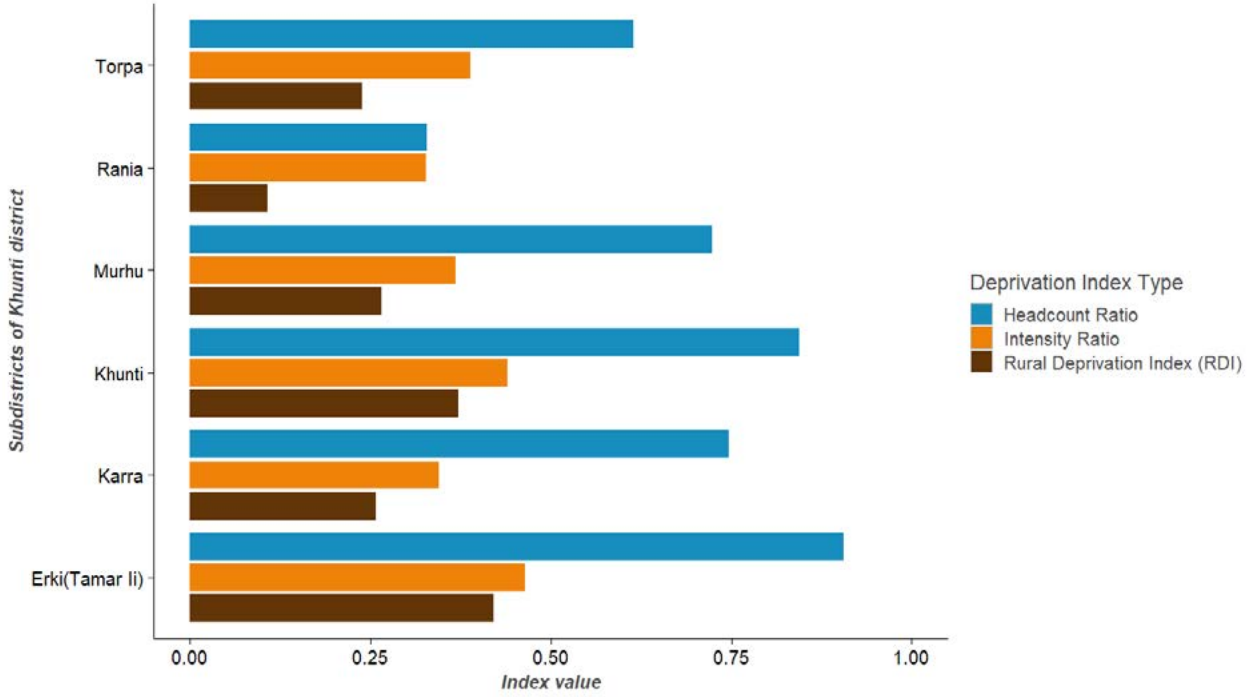
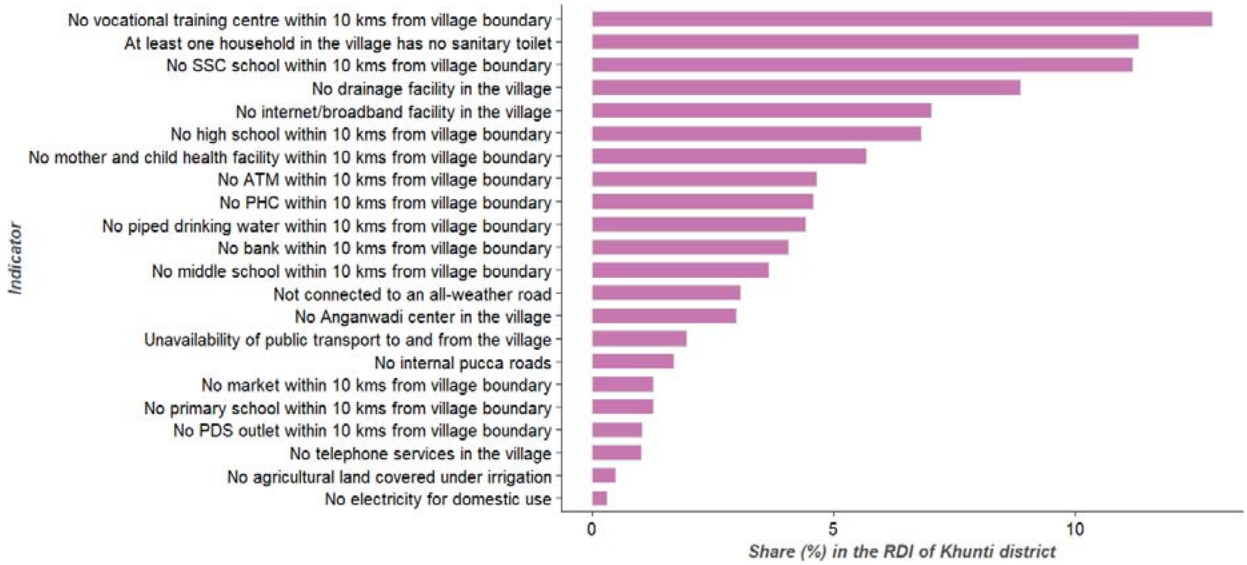


Figure 62 shows the contributions of the 22 selected indicators to the RDI of Khunti district. The largest share is that of the lack of vocational training centres (12.82%), followed by the lack of sanitary toilets (11.31%) and the lack of SSC schools (11.2%). These three indicators together have a share of about 35% in the district's RDI. Other indicators with substantial share in the district's RDI are the lack of drainage facilities (8.86%), the lack of internet/broadband services (7%) and the lack of high schools (6.8%). Overall, the health deprivation indices together have a share of 38%, the education deprivation indices have a share of 36% and the infrastructure deprivation indices have a share of 26.5%. Thus, education-related deprivation has a relatively larger share in Khunti district than in other districts, thanks to the lack of both high schools and SSC schools in many villages in the district.

Figure 62: Contribution of the 22 indicators to the RDI of Khunti district.



Lohardaga District

The Lohardaga district has seven taluks and is among the lesser deprived districts of the state. The deprivation indices are shown Figure 63. Peshrar taluk has the highest headcount ratio (0.918), followed by Kairo (0.731). The other taluks have a relatively lower headcount ratio, bringing down the overall deprivation level in the district. The lowest RDI is shown by Lohardaga taluk (0.064).

Figure 63: Deprivation indices for the subdistricts of Lohardaga district.

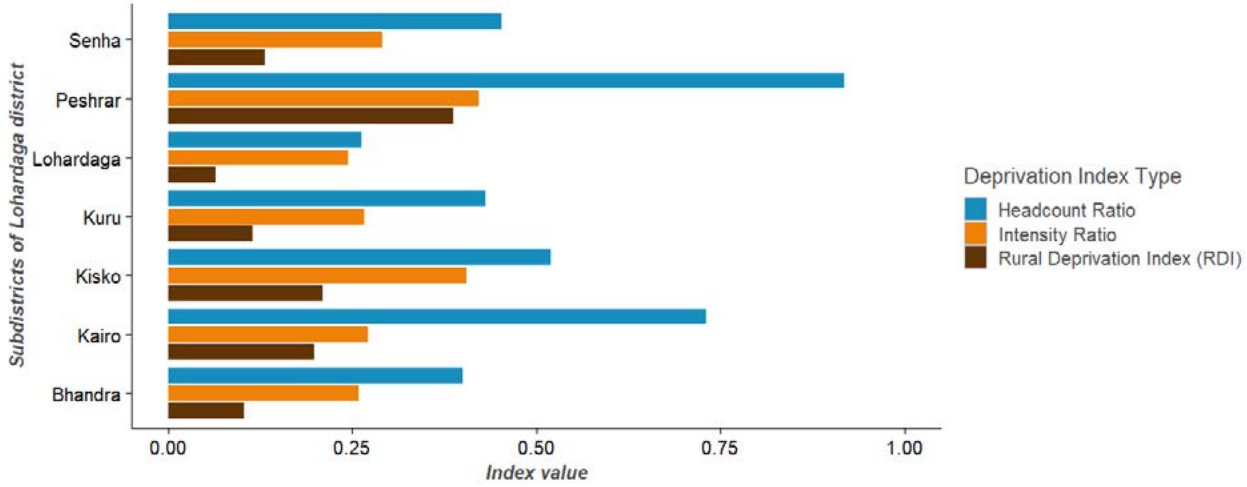
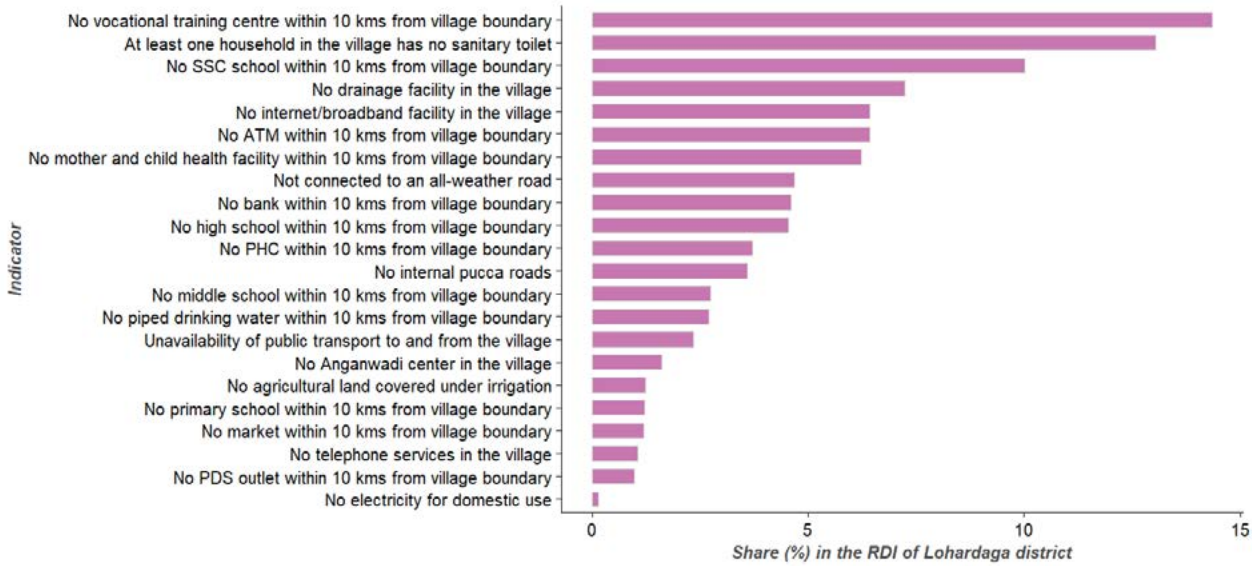


Figure 64 shows the contributions of the 22 selected indicators to the RDI of Lohardaga district. The lack of vocational training centres has the largest share (14.3%) in the district's RDI, followed by the lack of sanitary toilets (13%), and the lack of SSC schools (10%). These three indicators together have a share of about 37% in the RDI of Lohardaga. Some other major contributors to the district's RDI are the lack of drainage services (7.2%), the lack of ATMs (6.4%); and the lack of internet/broadband services (6.4%). Overall, the health deprivation indicators together have a share of 34.5% share in the district's RDI, followed by the lack of education deprivation indicators (32.8%) and infrastructure deprivation indicators (32.6%). On the positive side, we find that very few villages in the district are deprived of an electricity connection, thus bringing down the contribution of infrastructure to the district's RDI.

Figure 64: Contribution of the 22 indicators to the RDI of Lohardaga district.



Ranchi district

The Ranchi district too is among the better performing districts of the state. The district has 18 taluks, and their deprivation indices are shown in Figure 65. Although overall the district performs well, there are some taluks with high headcount ratios in the district. The taluks with relatively higher headcount ratios are Lapung (0.899), Rahe (0.848), Tamar (0.822), Sonahatu (0.781) and Angara (0.768). These taluks also perform poorly in terms of RDI, ranging between 0.264 and 0.361. The best performing taluks in terms of RDI are Nagri (0.039) and Ratu (0.049), who also have a headcount ratio of less than 0.2.

Figure 65: Deprivation indices for the subdistricts of Ranchi district.

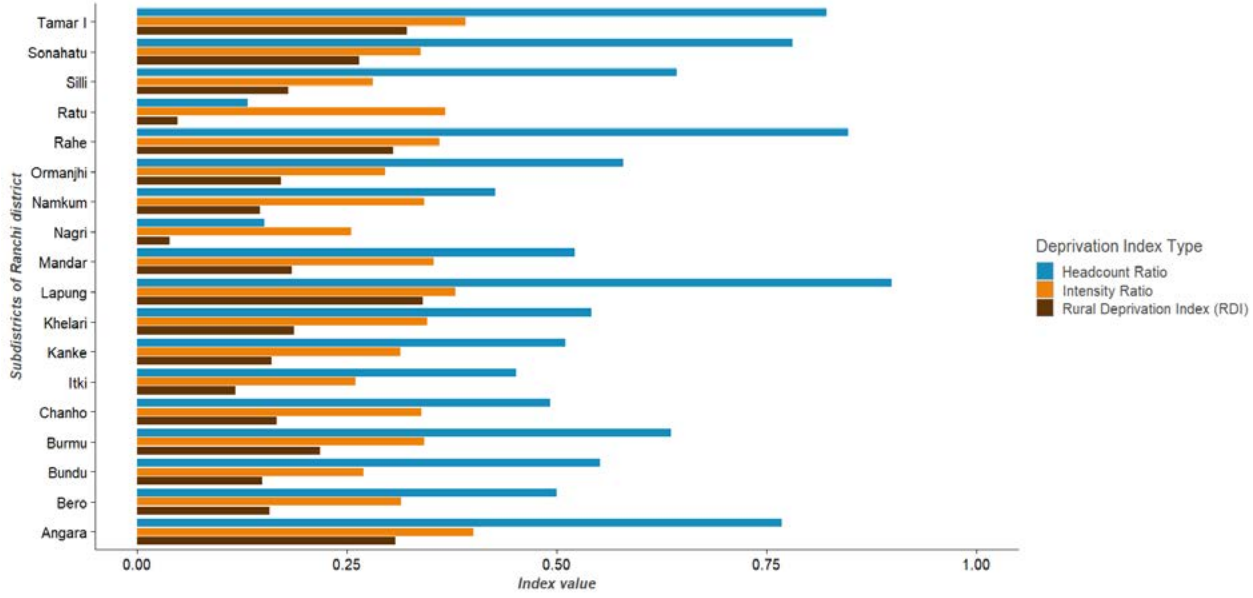
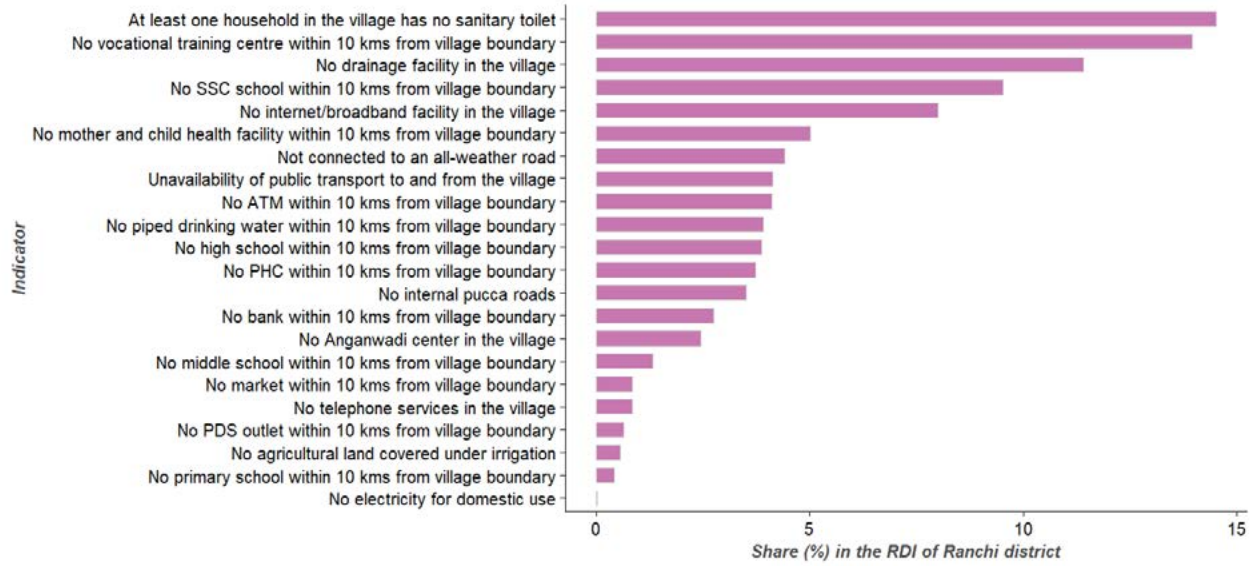


Figure 66 shows that the lack of sanitary toilets has a share of 14.5% in the RDI of Ranchi district, followed by 13.96% share of the lack of vocational training centres and 11.4% share of the lack of drainage facilities in villages. Together, these three indicators have a share of about 41% in the district's RDI. In addition, there are some other indicators with substantial share in the RDI of Ranchi district. These include the lack of SSC schools (9.5%), lack of internet/broadband connections (8%) and the lack of mother/child healthcare facilities (5%). Overall, the share of health deprivation indicators in the RDI of Ranchi district is 41%, followed by 30% share of infrastructure deprivation indicators, and 29% share of education deprivation indicators.

Figure 66: Contribution of the 22 indicators to the RDI of Ranchi district.



Simdega District

There are 10 taluks in Simdega district, and their deprivation indices are shown in Figure 67. Kersai taluk has a headcount ratio of 1, and there are four districts whose headcount ratio are higher than 0.9 but less than 1. Thus, most of the taluks in the district have a high share of deprived villages. The lowest RDI is shown by Kolebira (0.154), which also has the lowest intensity and headcount ratios.

Figure 67: Deprivation indices for the subdistricts of Simdega district.

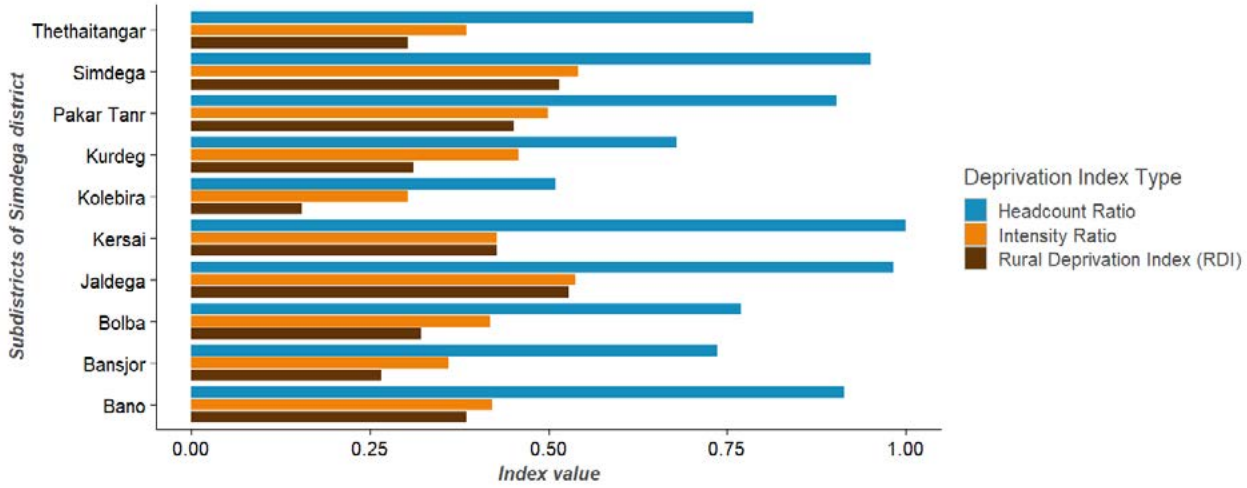
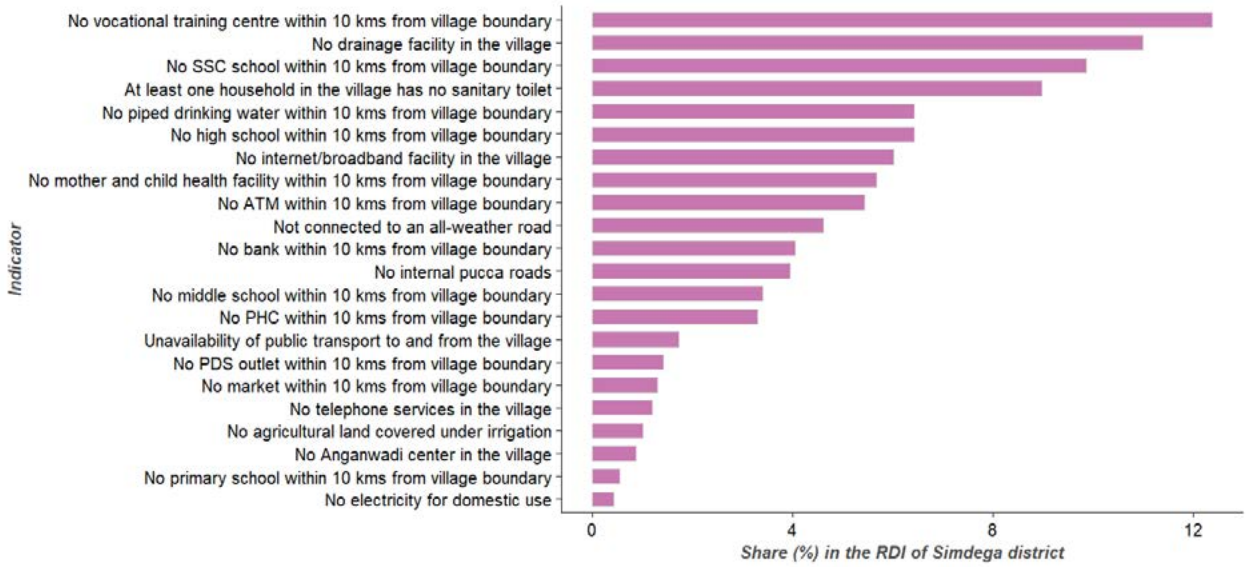


Figure 68 shows that the lack of vocational training centres has a share of about 12.37% in the RDI of Simdega district, followed by the lack of drainage facilities (11% share) and the lack of SSC schools (9.86%). These three indicators have a combined share of about 33% in the district's RDI. Some of the other indicators that have substantial share in the RDI of the district are the lack of sanitary toilets (9%), the lack of piped drinking water (6.43%), the lack of high schools (6.42%) and the lack of internet/broadband services (6%). Among the three dimensions of deprivation, the health deprivation indicators have a combined share of about 36% in the district's RDI, followed by education deprivation with a share of 33% and infrastructure deprivation with 31% share.

Figure 68: Contribution of the 22 indicators to the RDI of Simdega district.



6. Conclusion

The Mission Antyodaya database is a rich source of information on the status of provisioning of amenities in rural India. Using this data source, we construct a rural multidimensional deprivation index (RDI) for Jharkhand that enables us to quantify the gaps in provisioning of basic public amenities in villages by geographical area as well as by the type of amenities. We focus on provisioning of public amenities related to physical infrastructure such as roads, health infrastructure such as primary health centres and educational infrastructure such as schools. The method used to construct the index highlights the advantages of a structured approach in measuring multidimensional deprivation.

Based on the data analysed, we find that the performance of rural Jharkhand in the provisioning of basic public amenities is quite poor. Jharkhand's deprivation level is among the highest in the country, both in terms of breadth as well as depth of deprivation. Several villages in the state are deprived on all the 22 indicators that constitute the multidimensional deprivation index and a large number of taluks have a headcount ratio of 100%, that is, all its villages are multidimensionally deprived.

Further analysis indicates the existence of a low-level equilibrium in the state. That is, while there is some difference in the level of deprivation between districts, overall, all districts perform poorly in terms of provisioning of amenities. Districts in the Santhal Pargana region perform the worst, while those in proximity to Ranchi in the centre, perform marginally better. However, even districts that overall have lower levels of multidimensional deprivation, have certain taluks that do quite poorly. These results thus indicate that the state needs an overall push in terms of development, rather than a focused development plan in certain geographic areas.

The indicator-wise analysis shows that overall, the state is most deprived in terms of health indicators, followed by infrastructure and education parameters. For most of the districts, the health indicators together contribute around 40% of the share in total deprivation. Within health indicators, lack of sanitary toilets and drainage facilities stand out as the least provisioned amenities in the villages. For a country that is making huge efforts in achieving an Open Defecation Free society, such a large gap in the provisioning of sanitary toilets in the state is indeed concerning. Another indicator that is mandated by the state under the ICDS, that is, setting up Anganwadis in every village is also a major contributor to deprivation. These results indicate that Jharkhand has failed in the provisioning of even those amenities that are mandated under different state policies.

Our results suggest that serious attention is required for the entire rural Jharkhand paying attention to provisioning of the public amenities. Provision of sanitary toilets in all households and drainage facilities in villages need to be prioritized to ensure better health outcomes in the state. Furthermore, provisioning of amenities mandated by the government, such as the establishment of Anganwadis in villages also need to be taken up at the earliest. Special attention could be paid to villages that are deprived on all indicators and provision at least some of the basic, state mandated amenities in them. Better transport and road infrastructure can open many economic possibilities. Afterall, one cannot expect positive development outcomes if the provisioning of facilities to enable those outcomes are themselves missing.

Finally, we hope that the methodology and analysis we used here is replicated for other states or regions of India so that practitioners working for the development of those areas can take advantage of such analysis in prescribing policies and/or taking necessary and focused action for the betterment of those regions.

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Appendices

Appendix 1: 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	0.009	0.324	0.003	32
India	0.478	0.375	**0.179**	NA

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

Appendix 2: Rural Multidimensional Deprivation Across Districts of Jharkhand

District	Headcount Ratio of Rural Multidimensional Deprivation	Intensity Ratio of Rural Multidimensional Deprivation	Rural Multidimensional Deprivation Index	Rank
Sahebganj	0.865	0.504	0.435	1
Simdega	0.838	0.451	0.378	2
Gumla	0.826	0.432	0.357	3
Garhwa	0.807	0.427	0.344	4
West Singhbhum	0.751	0.446	0.335	5
Chatra	0.831	0.401	0.333	6
Pakur	0.789	0.407	0.321	7
Giridih	0.802	0.397	0.318	8
Godda	0.693	0.445	0.308	9
Palamu	0.786	0.389	0.306	10
East Singhbhum	0.772	0.383	0.295	11
Khunti	0.735	0.400	0.294	12
Saraikela Kharsawan	0.800	0.361	0.289	13
Jamtara	0.785	0.365	0.286	14
Deoghar	0.791	0.361	0.285	15
Dumka	0.768	0.368	0.282	16
Bokaro	0.771	0.356	0.275	17
Latehar	0.650	0.406	0.264	18
Hazaribagh	0.683	0.385	0.263	19
Koderma	0.645	0.356	0.230	20
Dhanbad	0.676	0.326	0.220	21
Ranchi	0.597	0.341	0.203	22
Lohardaga	0.548	0.342	0.188	23
Ramgarh	0.534	0.318	0.169	24

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

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 has the potential to improve policymaking, work on-the-ground, and teaching.

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