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Dimensions of Child Deprivation in Madhya Pradesh, India

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Abstract

This paper constructs a multi-dimensional composite index to measure the deprivation faced by children in the context of their well-being in terms of survival. Physical growth, cognitive development, and protection from social, cultural, and economic hazards. Application of the index to Madhya Pradesh, using the data available from the National Family Health Survey 2015-2016 and 2019-2021, reveals that the deprivation faced by the children is quite pervasive in Madhya Pradesh, although there is improvement in the situation over time. The paper also reveals that there is marked variation in the deprivation faced by children of different population sub-groups with the situation alarming in Scheduled Tribes children. The paper calls for a social protection approach to mitigate child deprivation and promote child well-being.

Introduction

Madhya Pradesh is one of the poorly developed states of India. Among the 36 states and Union Territories of the country, Madhya Pradesh ranks a poor 28 in terms of the per capita income. Poor social and economic development of the state is also reflected in the well-being of the children. The infant mortality rate in the state was 43 infant deaths per 1000 live births in the year 2020 while the under-5 mortality rate was 51 under-five deaths for every 1000 live births (Government of India, 2022a). Madhya Pradesh is the only state/Union Territory in the country where the infant mortality rate is more than 40 infant deaths per 1000 live births while the under-five mortality rate is more than 50 under-five deaths for every 1000 live births as late as in 2020. On the other hand, the life tables based on the sample registration system suggests that out of every 1000 new-born in the state, around 75 fail to survive to their 20th birthday (Government of India, 2022b). The persistence of exceptionally high risk of death during childhood suggests that the children of the state face extreme forms of deprivation that has implications for their well-being.

Children are not full economic and social agents. They cannot secure resources necessary for their well-being (Chaurasia, 2016). They have no or very limited freedom in making decisions related to their own welfare (White et al 2002). They depend upon family elders including parents in meeting the basic needs necessary for their well-being. Their well-being is also contingent upon the production of public goods and services, especially,

in education and health (Gordon et al 2003a, 2003b; Minujin et al 2005; Notten and de Neubourg 2011; Waddington 2004; White et al 2002). These and many other dependencies of children get manifested in poor social and economic settings. Poverty, at the early stages of life, has enduring consequences on those children who survive into the adulthood. It condemns them to recurrent poverty spells and a life full of hardship (Grinspun 2004).

The United Nations Convention on the Rights of the Child has laid down principles of non-discrimination in the best interest of the child along with common standards for various rights of children. The Convention considers different cultural, social, economic, and political realities in which children live (United Nations 1989). By ratifying the Convention in 1992, India has committed herself to protecting and advancing the rights of the child; to develop and undertake all actions and policies in the best interests of children; and to hold herself accountable before the international community. The rights of the child in India are enshrined in the fundamental rights and the directive principles of state policy as inscribed in the Constitution of India. Rights of children have also been reaffirmed through the National Policy on Children first announced in 1974 and later revised in 2013 (Government of India 1974; 2013). The mainstreaming of child rights issues in the development discourse of the country is reflected in the Integrated Child Protection Scheme (Government of India 2007). However, protecting rights of the child in India remains a major development challenge. Traditional structures of patriarchy and other social groupings continue to justify extreme forms of chastisement of children including adolescents (Kushwah and Prasad 2009).

Mitigating child deprivation requires an understanding of the child well-being context which varies by social, cultural, economic, and environmental considerations. Child well-being is a multi-dimensional construct and different domains of child well-being have been identified under different perspectives (Brown 1997; Hauser et al 1997; Land et al 2001; Pollard et al 2002; Raidy and Winjie 2002; Child Trend 2003). These include, among others, child rights perspective (Ben-Arieh 2001); child needs perspective (Ryan and Deci 2001); child development perspective (Mickelwright and Stewart 1999); and child outcomes perspective (Maryland Partnership for Children, Youth and Families 2002). Different domains of child well-being can also be identified following the capabilities approach first propounded by Sen (1985) and later discussed in Nussbaum and Sen (1993) and Nussbaum (2000). In terms of Sen's capability approach, domains of child well-being can be defined in terms of child endowments, child capacities and child opportunities (Chaurasia 2010).

This paper analyses the deprivation faced by children of Madhya Pradesh in the context of their well-being. Deprivation may be defined as circumstances or situations that are highly likely to have adverse implications to the well-being of an individual. People are deprived if they lack access to facilities and services necessary for their well-being. People are poor if they lack resources to escape deprivation (Townsend, 1987). Child deprivation, then, means circumstances or situations or both that are highly likely to have adverse implications to child well-being. Children are deprived if they lack access to services and facilities necessary for their well-being. Children are poor if they lack resources to escape deprivation. Mitigating the deprivation is critical to child well-being and to realise their full potential (Minujin et al 2006). Deprivation measures reflect the degree to which well-being

needs of children are actually met (de Neubourg 2012). Mitigating child deprivation is necessary to address child poverty.

The measurement and analysis of the deprivation faced by the children of the state is based on a composite child deprivation index that has been developed for the purpose. The index captures the multi-dimensional perspective of child deprivation and explores how child deprivation varies across different population sub-groups and across districts of the state. The paper presents a comprehensive, multidimensional picture of child deprivation in the state and provides the empirical evidence that is may be required for increased investment in children.

The paper is divided into six sections in addition to this introduction. The next section describes the composite child deprivation index used in the analysis. The third section describes the data used for measuring child deprivation. The fourth section presents findings of the analysis. The last section summarises the findings of the analysis and discusses their implications in the context of increased investment in children of the state.

Measuring Child Deprivation

The United Nations Convention on the Rights of the Child (United Nations, 1989) provides a framework to measure and monitor child deprivation. It identifies four rights: 1) right to survival and health; 2) right to physical growth and development; 3) right to cognitive development; and 4) right to protection from a range of social, economic, cultural, and environmental hazards as critical to child well-being. This means that child deprivation should be measured and monitored in terms of services and facilities that address the survival, growth; development; and protection needs of children. Moreover, household standard of living has a strong impact on all the four rights of children.

The United Nations Convention on the Rights of the Child defines a child as a person who has not yet reached her or his 18th birthday. The National Policy on Children in India (Government of India, 2013) also defines a person as child if she or he has not reached 18 years of age. The relative importance of different domains of child well-being, however, is different for children of different ages. The survival context of child well-being is the most critical to children below one year of age whereas the protection context may be the most important for children aged at least 15 years. Therefore, an age-specific approach needs to be adopted to measure child deprivation. Children may be grouped into the following six age categories as well-being needs of children of different age groups are different:

1. Less than one year (0 years)
2. 1 year and older but less than 3 years (1-2 years)
3. 3 years and older but less than 6 years (3-5 years)
4. 6 years and older but less than 11 years (6-10 years)
5. 11 years and older but less than 15 years (11-14 years)
6. 15 years and older but less than 20 years (15-19 years)

The foregoing considerations call for a two-dimensional framework for measuring child deprivation as shown in table 1. This framework identifies that child well-being

context that is the most relevant for children of different age groups – the darker the colour of the cell the more important the domain of child well-being. Using this framework, a domain- and age-specific objective criteria for measuring child deprivation is presented in table 2 which recognises that relevance of different domains of well-being is different for children of different age groups.

The application of the deprivation criteria outlined in table 2 requires identification of objectively measurable indicators for each component of the framework. An indicator is a measure of a condition or status or behaviour that can be tracked over time, across individuals or across geographical or administrative units (Child Trends 1997). Friedman (1997) has suggested a three-point simple criterion for identifying an indicator. Ben-Arieh et al (2001) have advocated a two-dimensional approach, the first of which is related to the validity and the relevance while the second is related to the policy and the programme. Moore (1995; 1997; 1999) has suggested a thirteen-point criterion, many of which are like those suggested by Ben-Arieh et al (2001). An important consideration in the selection of indicators is the availability of data, although indicators may also be selected through the policy perspective or based on some underlying theory (Hanafin and Brooks 2005). It is recommended that all the three approaches should be considered while selecting indicators of child well-being (Bauer et al 2003). Other considerations for selecting indicators include comparability (consistency over time, nationally and internationally), ease of understanding, strength of data source, significance, accessibility, validity, and coverage (Jennifer, 2009). In practice, however, selection of indicators is essentially a prerogative of the researcher, although, this prerogative is influenced, to a significant extent, by data considerations.

Table 1: The theoretical construct of child well-being.

Age	Domains of child well-being				
	Survival	Physical growth	Cognitive development	Protection	Household living standard
< 1					
1-2					
3-5					
6-10					
11-14					
15-19					

Source: Author

Based on the above considerations, a set of 24 indicators have been identified, four in each of the six age groups, that correspond to the objective criteria of measuring child deprivation. These indicators are given in table 3 along with the threshold level of each indicator to classify a child as deprived or not deprived.

The most common approach to measure child deprivation is the 'counting' approach (Atkinson 2003). This approach involves classifying a child into two categories – deprived and not deprived - based on a pre-decided threshold. One extreme of this approach is that a child may be classified as deprived in all indicators of well-being while the other extreme is that the child is not classified as deprived in any indicator. Since deprivation is indicator specific, deprivation with respect to different indicators needs to

be combined into a single composite index of child deprivation. The construction of such a composite index is, however, not straightforward and efforts in this direction have often been found to be controversial (Ravallian 2010a, 2010b) or challenging (Atkinson 2003). A composite index of child deprivation is unavoidable when one investigates the breadth, or the complexity of child deprivation (Apablaza and Yalonetzky 2011). A composite index of child deprivation is a good way of enforcing the uniqueness of the multiple domains of child deprivation as it presents multidimensional perspective of deprivation in one aggregate that can be used for planning and programming to mitigate child deprivation.

Table 2: Objective criteria for analysing child deprivation.

Age group	Domain of child well-being				
	Survival	Physical growth	Cognitive development	Protection	Living standard
<1 year	Birth weight Breastfeeding Care after birth				Living status
1-2 years	Basic vaccination	Linear growth			Living status
3-5 years		Parenteral growth	Early childhood education	Civil registration	Living status
6-10 years			Schooling	Social security	Living status
11-14 years			Schooling	Social security	Living status
15-19 years		Nutrition	Schooling	Social security	Living status

Source: Author

There are two approaches of aggregating children who are classified as deprived with respect to selected well-being indicators (Mickelwright 2001). The first is to count the number of indicators in which a child is classified as deprived and then count the number of children who are deprived in one, more than, all, and in no indicator. The second approach sums across children to estimate the prevalence of deprivation with respect to each indicator and then combines indicator-specific prevalence deprivation into a composite index of child deprivation. The second approach is similar to the human poverty index proposed by Anand and Sen (1997).

There are many studies that have measured and analysed child deprivation following the first approach (Nyangara et al 2008; Bradshaw 2009; de Neubourg et al 2012; Alkire and Roche 2012; Foundation for Child Development 2013; Roche 2013; UNICEF 2014;). There are also many studies that have followed the second approach (Kanamori and Pullum 2013, Dreze and Khera 2012, Chaurasia 2010). The present paper uses the second approach.

Following Anand and Sen (1997), the deprivation index for children of age i, D_i, is defined as

$$D_i = \left(\frac{\sum_{j=1}^{n} D_{ij}^{\alpha}}{n} \right)^{1/\alpha}$$

where n is the number of indicators, and α is the power of the mean and is greater than 1. When $\alpha=1$, D_i is equal to the simple arithmetic mean which implies that the impact of a

unit increase (or decrease) in all indicators of well-being is the same irrespective of the progress in terms of different indicators. This contradicts the logical assumption that as deprivation with respect to a well-being indicator increases, the weight of that indicator in deciding the deprivation index should also increase. To ensure that this assumption holds, α must be greater than 1. The use of power mean also addresses the problem of additive compensability associated with arithmetic mean. There is, however, an escapable arbitrariness in selecting α. When $\alpha = 3$, the impact of the indicator in which the deprivation is the highest on the index D_i is four times the impact of the indicator in which the deprivation is the lowest.

Table 3: Threshold level used for classifying children as deprived.

Indicator		Child is classified as deprived if
1	The weight of the child at birth	Less than 2.5 Kg
2	Child check-up within two days of birth by a trained health personnel	No check-up
3	Initiation of breastfeeding within one hour of birth	No breastfeeding within 1 hour
4	Standard of living index of the household	Less than first quintile
5	Vaccination status of the child	Not received all basic vaccinations
6	Height-for-age of the child	Low height-for-age
7	Child received Vitamin A in the last six months	Not received
8	Standard of living index of the household	Less than first quintile
9	Weight-for-height of the child	Low weight-for-height
10	Availability of the birth certificate	Not available
11	Schooling status of the child	Not attending school regularly
12	Standard of living index of the household	Less than first quintile
13	Schooling status of the child	Not attending school regularly
14	Orphan status of the child	Child is orphan
15	Child is having a bank account	Not having a bank account
16	Standard of living index of the household	Less than first quintile
17	Schooling status of the child	Not attending school
18	Orphan status of the child	Child is orphan
19	Marital status of the child	Ever married
20	Standard of living index of the household	Less than first quintile
21	Schooling status of the child	Not attending school regularly
22	Body mass index (BMI) of the child	Less than 18.5
23	Marital status of the child	Ever married
24	Standard of living index of the household	Less than first quintile

Source: Author

It may be noticed that D_{ij} for each i and j are headcounts of children classified as deprived with respect to a specific well-being indicator. However, the index D_i cannot be thought of the proportion of children deprived in the well-being space. If the proportion of children who are deprived happens to be the same with respect to all indicators of well-being, then D_i will be equal to this common proportion. D_i may be interpreted as the degree

of overall deprivation faced by children of a particular age group that is equivalent to having D_{ij} proportion of children classified as deprived with respect to different well-being indicators relevant to the age group (Anand and Sen, 1997).

Table 4: Goal posts used for normalising indicators of well-being.

Indicator		Minimum	Maximum
1	Proportion of children with low weight at birth	0.0	62.6
2	Proportion of children not checked-up within two days of birth by a trained health personnel	27.5	100.0
3	Proportion of children not initiation breastfeeding within one hour of birth	5.3	100.0
4	Proportion of children living in households with the poorest standard of living index	0.0	100.0
5	Proportion of children who did not receive all basic vaccinations	0.0	100.0
6	Proportion of children low height-for-age	0.0	83.3
7	Proportion of children not received Vitamin A in the last six months	0.0	72.2
8	Proportion of children living in households with the poorest standard of living index	0.0	100.0
9	Proportion of children low weight-for-height	0.0	55.5
10	Proportion of children not having birth certificate	7.1	96.9
11	Proportion of children 3-5 years not attending school regularly	63.2	100.0
12	Proportion of children living in households with the poorest standard of living index	0.0	100.0
13	Proportion of children 6-10 years not attending school regularly	0.0	43.7
14	Proportion of children orphan	0.0	12.0
15	Proportion of children not having bank account	0.0	63.5
16	Proportion of children living in households with the poorest standard of living index	0.0	100.0
17	Proportion of children 11-14 years not attending school regularly	0.0	51.8
18	Proportion of children orphan	0.0	16.9
19	Proportion of children ever married	0.0	4.1
20	Proportion of children living in households with the poorest standard of living index	0.0	100.0
21	Proportion of children 15-19 years not attending school regularly	8.9	80.6
22	Children with body mass index (BMI) less than 18.5	9.1	84.0
23	Proportion of children ever married	0.0	28.4
24	Proportion of children living in households with the poorest standard of living index	0.0	100.0

Source: Author

The composite child deprivation index D for all children aged 0-19 years may now be defined as weighted average of D_i with weights equal to the proportionate share of children of age i to children of all ages (0-19 years). If p_i is the proportion of children in age group i, then,

$$D = \sum_{i=1}^{k} p_i * D_i$$

$$\sum_{i=1}^{k} p_i = 1$$

The index *D* depicts the 'big picture' of the deprivation faced by children that considers all age groups and different domains of child well-being. Although, the index *D* masks the spatiotemporal variation in individual indicators of well-being, yet it leads to a simple and straightforward comparison across space and over time which may be the starting point for deeper analysis.

The construction of the index *D* requires normalisation of the indicators used in its construction by setting the goal posts. These goal posts are given in table 4. They have been arrived at by analysing the variation in indicators across districts of the state using the exploratory data analysis methods.

Data Source

The present analysis is based on the data available through the fourth (2015-2016) and the fifth round (2019-2021) of the National Family Health Survey (NFHS). The NFHS programme has been instituted by the Government of India, Ministry of Health and Family Welfare and is implemented by the International Institute for Population Sciences, Mumbai. The objective of NFHS is to provide data related to fertility, mortality including infant and child mortality, nutrition, and use of reproductive and child health services in addition to household level characteristics. The survey also provides data pertaining to the key population characteristics including education, marital status, and work status of the population. Details regarding the NFHS including the method of selection of the households for the survey are discussed elsewhere and are not repeated here (Government of India, 2022c). Since its inception in 1992, the NFHS has become the primary source of data related to health and family welfare situation in the country, especially its maternal and child health component. Women and children are regarded as the most vulnerable groups of the population as regards survival and health.

The NFHS covered all districts of Madhya Pradesh, as they existed at the time of the fourth round and the fifth round of the survey. There were 50 districts in the state at the time of the fourth round of the survey whereas the number of districts increased to 51 in the fifth round of the survey. The fourth round of NFHS covered 52,042 households in the state while the fifth round covered 43,552 households. All children identified in the selected households were covered during the two rounds of the survey.

State level estimates of the 24 indicators of child deprivation used in the present study to construct a composite child deprivation index are presented in table 5. Different indicators of child deprivation or, equivalently, child well-being depict different perspectives of child deprivation that prevails in the state. At the same time, the deprivation faced by children of different age-groups is also different. This means that simple averaging of child deprivation as reflected by different indicators or in different domains of child well-being is not possible and a composite index based on the simple averaging of the deprivation reflected through different indicators of child well-being may lead to erroneous conclusions. Because of this very reason, we have used the weighted or power mean to combine the deprivation faced by children as reflected through different indicators of child well-being into a composite index of child deprivation.

Table 5: Indicators of child deprivation in Madhya Pradesh. Evidence from National Family Health Survey 2015-2016 and 2019-2021

Indicator	2015-2016	2019-2021
Children below 1 years of age		
Proportion of children having birth weight less than 2.5 Kg	22.2	21.7
Proportion of children who were not checked-up by a trained health personnel within 2 days of birth	80.5	80.2
Proportion of children not initiated breastfeeding within 1 hour of birth	65.2	59.7
Proportion of children with the poorest standard of living index	32.8	35.6
Children aged 1-2 years		
Proportion of children who have not received all basic vaccinations	47.1	31.8
Proportion of children low height-for-age	46.6	40.2
Proportion of children who did not receive Vitamin A in the last six months	25.0	10.6
Proportion of children with the poorest standard of living index	33.7	34.4
Children aged 3-5 years		
Proportion of children low weight-for-height	20.8	19.2
Proportion of children who do not have birth certificate	51.9	41.9
Proportion of children not going to school regularly	88.1	84.9
Proportion of children with the poorest standard of living index	36.6	35.0
Children aged 6-10 years		
Proportion of children not attending school regularly	11.9	10.4
Proportion children who are orphan	4.1	3.8
Proportion of children not having bank account	13.9	4.4
Proportion of children with the poorest standard of living index	38.3	38.0
Children aged 11-14 years		
Proportion of children not attending school regularly	9.9	8.9
Proportion children who are orphan	6.3	6.2
Proportion of children who are ever married	0.9	0.8
Proportion of children with the poorest standard of living index	36.2	36.7
Children aged 15-19 years		
Proportion of children not attending school regularly	48.8	40.9
Proportion children having body mass index (BMI) less than 18.5	46.1	43.4
Proportion of children ever married	9.4	6.6
Proportion of children with the poorest standard of living index	29.8	32.5

Source: Author

Child Deprivation in Madhya Pradesh

The composite child deprivation index, D, for all children (0-19 years) in Madhya Pradesh is estimated to be 0.360 in 2019-21 and 0.399 in 2015-16 which suggests that, although there has been some improvement in the child well-being scenario in the state over time. The analysis also suggests that the decrease in the composite child deprivation index D in the state has not been large enough to reflect a marked improvement in the well-being of state children in the recent past and the deprivation faced by the children of the state remains quite pervasive.

Across different population sub-groups, the index *D* varies widely. It has been found to be higher in female compared to male children, in rural compared to urban children and in Scheduled Tribes children compared to children of other social classes. On the other hand, there is only a marginal difference between the deprivation faced by Hindu children and the deprivation faced by Muslim children. The good sign, however, is that deprivation faced by children of all population sub-groups has decreased over time, although, the decrease has been different in different population sub-groups - most rapid in Scheduled Tribes children, but the least rapid in children of other social classes.

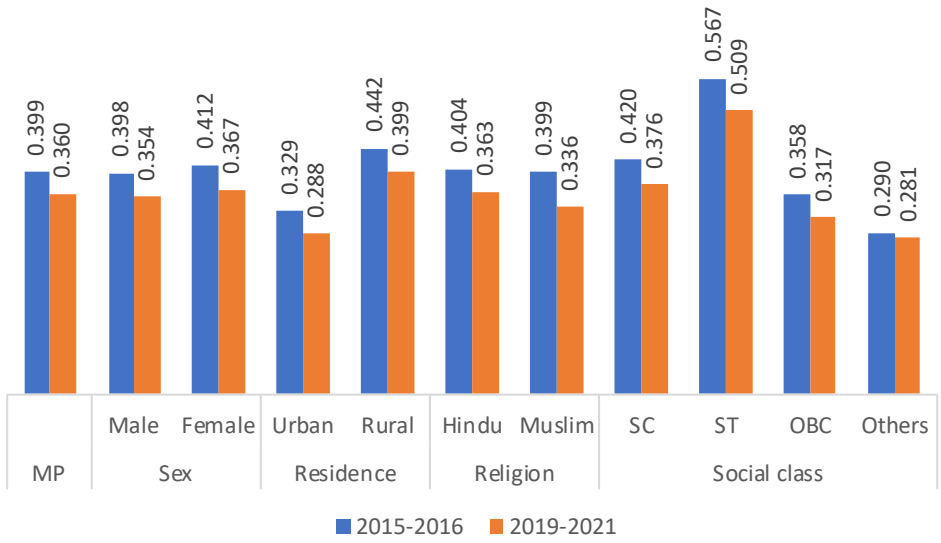

Figure 1: The composite child deprivation index, D, in Madhya Pradesh.
Source: Author

The deprivation faced by children is also different in different domains of child well-being - relatively the highest in the survival domain but the lowest in the protection domain (Figure 2). The decrease in the index *DJ* has been the most rapid in the protection domain whereas the deprivation in the living standards domain has increased, instead decreased, between 2015-16 and 2019-21. The decrease in the index *DJ* has also been marginal in the survival domain. It is also clear from the figure that the deprivation faced by children of the state is not confined to any one domain of child well-being. There is substantial gap in meeting the basic needs of children in all domains of child well-being.

The deprivation also varies the age of the child (Figure 3) - highest in children below 1 year of age but the lowest in children aged 6-10 years. Moreover, the index *DJ* increased in the age group 15-19 years compared to the age group 11-14 years. On the other hand, there has been virtually little change in the index *DJ* in the age group 11-14 years between 2015-2016 and 2019-2021. The decrease in the index *DJ* has comparatively been the most rapid in children aged 1-2 years between 2015-2016 and 2019-2021.

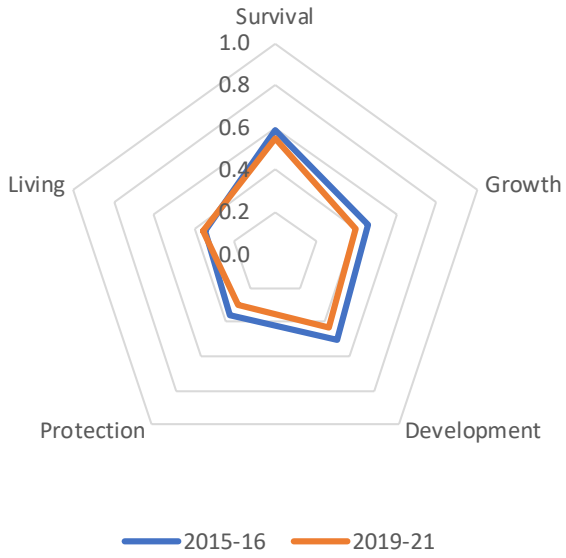

Figure 2: Deprivation in different domains of child well-being in Madhya Pradesh.
Source: Author

Across districts of the state, the deprivation faced by children varies widely (Figures 4 and 5). The composite child deprivation index *D* was the highest in district Jhabua in both 2015-2016 and 2019-2021. On the other hand, the composite child deprivation index *D* was the lowest in district Hoshangabad in 2015-2016 but in district Indore in 2019-2021. In 6 districts – Satna, Rewa, Dewas, Hoshangabad, Jabalpur and Narsimhapur – child deprivation increased as the index *D* increased between 2015-2016 and 2019-2021. There are 8 districts – Sheopur, Panna, Sidhi, Singrauli, Jhabua, Dindori, Alirajpur, and Barwani – where child deprivation remains very high, albeit decreasing. On the other hand, there are 6 districts – Gwalior, Neemuch, Bhopal, Raisen, Sehore and Indore – where child deprivation remains very low.

The deprivation faced by children of different age-groups varies widely across districts. The deprivation in children below 1 year of age was relatively the highest in district Sidhi in 2015-2016 but in district Indore in 2019-2021 (Table 7). By comparison, deprivation in children below 1 year of age was the lowest in district Jabalpur in 2015-2016 but in district Agar Malwa in 2019-2021. Ten districts where deprivation in children below 1 year of age was very high in 2015-2016 are Datia, Rewa, Sidhi, Shahdol, Vidisha, Bhopal, Shajapur, Ratlam, Jhabua, and Alirajpur. In 2019-2021, ten districts where deprivation in children below 1 year of age was very high are Bhind, Chhatarpur, Satna, Shahdol, Anuppur, Rajgarh, Shajapur, Indore, Dhar, and Balaghat. Districts Shajapur and Shahdol are the only two districts where deprivation in children below 1 year of age has remained very high. In district Satna, deprivation in children below 1 year of age was very low in 2015-16 but very high in 2019-2021 as reflected through the increase in the index *DI*.

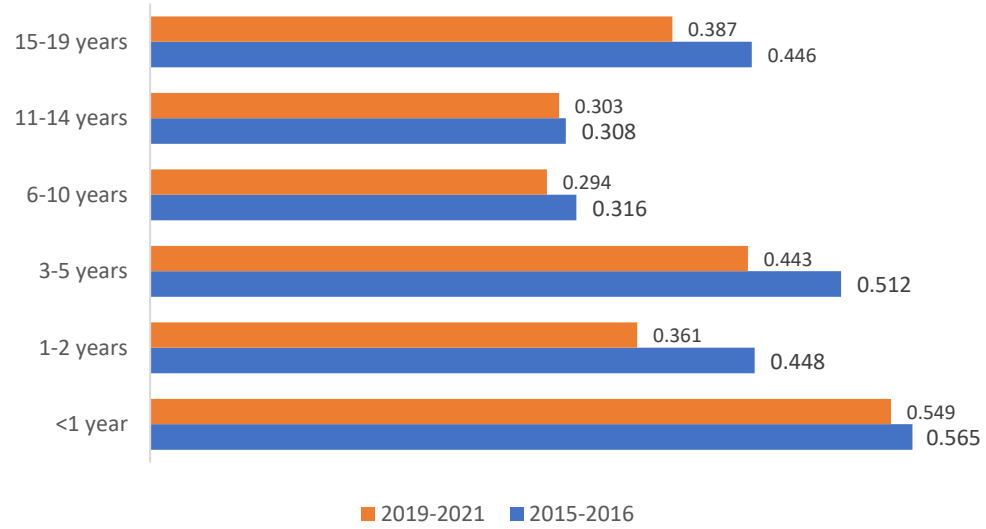

Figure 3: Deprivation in children of different age groups (Index D_i).
Source: Author

The deprivation index D_i, in children aged 1-2 years, ranged between 0.349 in district Sehore to 0.662 in district Jhabua in 2015-2016, and from 0.255 in district Jabalpur to 0.523 in district Dindori in 2019-2021 (Table 8). Deprivation in children 1-2 years of age was very high in Datia, Tikamgarh, Panna, Sidhi, Shahdol, Dindori, Vidisha, Jhabua, Alirajpur and Barwani districts in 2015-2016, but in Sheopur, Panna, Satna, Rewa, Sidhi, Singrauli, Katni, Umaria, Dindori, and Jhabua districts in 2019-2021. In Panna, Sidhi, Jhabua, and Dindori districts, very high level of deprivation faced by children 1-2 years of age appears to have persisted during the period 2015-2016 through 2019-2021. By contrast, deprivation faced by children 1-2 years of age was very low in Ujjain, Indore, Dewas, Sehore, Khandwa, Betul, Chhindwara, Seoni, Balaghat, and Jabalpur districts in 2015-2016, but in Ujjain, Indore, Bhind, Tikamgarh, Neemuch, Ratlam, Shajapur, Khargone, Burhanpur and Jabalpur districts in 2019-2021. There are only two districts – Ujjain and Indore – where the deprivation faced by children of 1-2 years of age was relatively very low in 2015-2016 and in 2019-2021. The index D_i decreased very rapidly in district Burhanpur.

The index D_i, in children aged 3-5 years varied from 0.311 in district Mandsaur to 0.599 in district Alirajpur in 2019-2021 but from 0.374 in district Indore to 0.700 in district Jhabua in 2015-2016 (Table 9). In Rajgarh, Sidhi, Singrauli, Umaria, Shahdol, Dindori, Mandla, Jhabua, Alirajpur, and Barwani districts deprivation faced by children aged 3-5 was very high in 2015-2016 but in Sheopur, Panna, Rewa, Sidhi, Singrauli, Jabalpur, Dindori, Jhabua, Alirajpur, and Ashoknagar districts in 2019-2021. In Sidhi, Singrauli, Dindori, Jhabua and Alirajpur districts, deprivation faced by children aged 3-5 years remained very high in both 2015-16, and 2019-21. On the other hand, deprivation faced by children aged 3-5 years was very low in Gwalior, Datia, Shivpuri, Neemuch, Bhopal, Ujjain, Indore, Hoshangabad, Narsimhapur, and Khargone districts in 2015-2016, but in Neemuch, Mandsaur, Agar Malwa,

Ratlam, Ujjain, Indore, Dewas, Sehore, Narsimhapur and Chindwara districts in 2019-2021. In Neemuch, Ujjain, Indore, and Narsimhapur districts, deprivation faced by children aged 3-5 years remained very low in 2015-2016 and in 2019-2021. There has been a rapid increase in the deprivation faced by children aged 3-5 years in district Shivpuri between 2015-16 and 2019-21. In Datia, Sagar, Satna, Hoshangabad, and Jabalpur districts also, deprivation faced by children aged 3-5 years increased between 2015-2016 and 2019-2021.

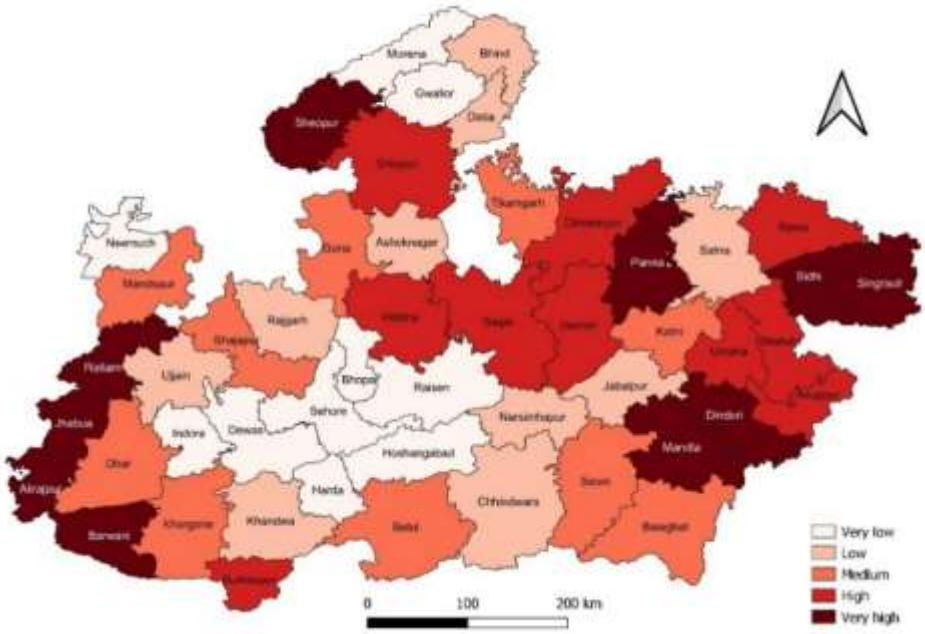

Figure 4: Child deprivation in districts of Madhya Pradesh, 2015-2016.
Source: Author

The index D_i, in children aged 6-10 years, was the highest in district Jhabua and the lowest in district Indore in both 2015-2016 and in 2019-2021 (Table 10). In Sagar, Panna, Sidhi, Singrauli, Dindori, Mandla, Ratlam, Jhabua, Alirajpur and Barwani districts deprivation in children aged 6-10 years was very high in 2015-2016 whereas in Morena, Panna, Rewa, Singrauli, Dindori, Katni, Shahdol, Jhabua, Alirajpur, and Barwani districts, child deprivation was very high in 2019-2021. In six districts – Panna, Singrauli, Dindori, Jhabua, Alirajpur, and Barwani – deprivation in children aged 6-10 years remained very high in both 2015-2016 and 2019-2021. By contrast, in Bhind, Gwalior, Bhopal, Raisen, Sehore, Indore, Dewas, Hoshangabad, Harda, and Khandwa districts, deprivation in children aged 6-10 years was very low in 2015-2016 whereas in Datia, Tikamgarh, Bhopal, Neemuch, Sehore, Agar Malwa, Shajapur, Ratlam, Harda, and Khandwa districts, it was very low in 2019-2021. In Bhopal, Sehore, Indore, Harda, and Khandwa districts, deprivation in children aged 6-10 years has been very low in both 2015-2016 and 2019-2021. In district Hoshangabad, deprivation in children aged 6-10 years increased very rapidly between 2015-2016 and 2019-2021.

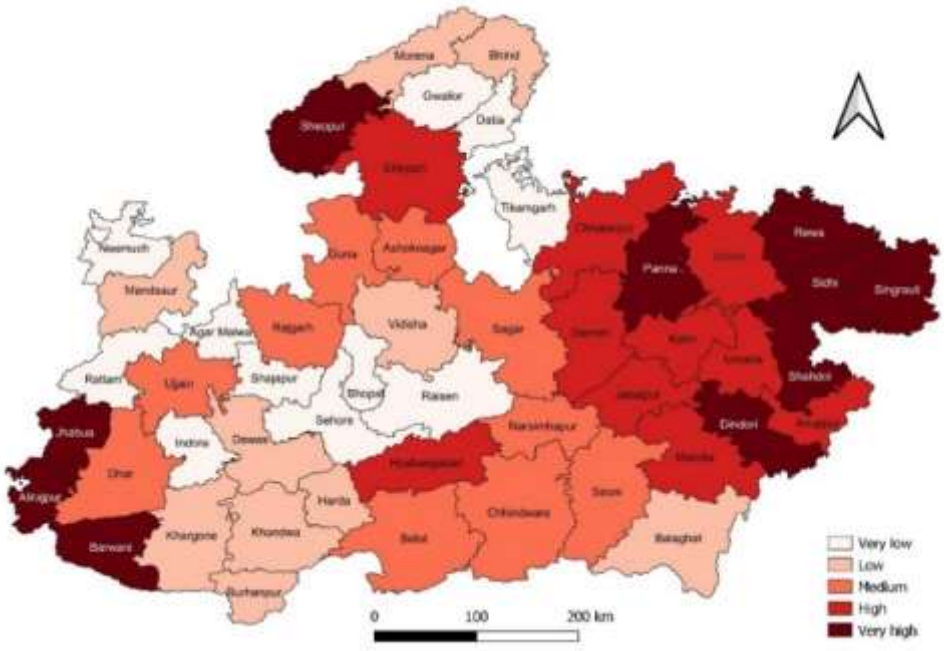

Figure 5: Child deprivation in districts of Madhya Pradesh, 2019-2021.
Source: Author

In children aged 11-14 years, the index D_i ranged from 0.169 in district Neemuch to 0,616 in district Alirajpur in 2015-2016 and from 0.165 in district Shajapur to district Alirajpur in 2019-2021 (Table 11). In Sidhi, Singrauli, Umaria, Shahdol, Dindori, Mandla, Ratlam, Jhabua, Alirajpur, and Barwani districts, deprivation in children aged 11-14 years was very high in 2015-2016 whereas child deprivation was very high in Panna, Satna, Rewa, Jabalpur, Dindori, Hoshangabad, Ujjain, Jhabua, Alirajpur and Barwani districts in 2019-2021 according to NFHS. In Dindori, Jhabua, Alirajpur and Barwani districts of the state, deprivation faced by children aged 11-14 years has remained very high in both 2015-2016 and in 2019-2021.

In children aged 15-19 years, the deprivation index D_i ranged from 0.334 in district Gwalior to 0.666 in district Jhabua in 2015-2016 but from 0.254 in district Raisen to 0.503 in district Dindori in 2019-2021 (Table 12). In Sheopur, Shivpuri, Tikamgarh, Shajapur, Dindori, Mandla, Jhabua, Alirajpur, Barwani and Khargone, deprivation was very high in 2015-2016 whereas, in 2019-21, deprivation was very high in Sheopur, Agar Malwa, Rewa, Sidhi, Dindori, Panna, Jhabua, Alirajpur, Barwani, and Damoh districts. In Sheopur, Dindori, Jhabua, Alirajpur and Barwani districts, the deprivation faced by children aged 15-19 years have remained very high. In district Rewa, deprivation faced by children aged 15-19 years was very low in 2015-2016 but very high in 2019-2021. On the other hand, the deprivation faced by children aged 15-19 years decreased markedly in district Tikamgarh where the index *DI* decreased from 0.532 in 2015-2016 to 0.352 in 2019-2021.

Summary and Conclusions

The evidence available from the fourth round and the fifth round of NFHS reveals that the deprivation faced by children of the state is quite pervasive and there has been only a marginal improvement in the situation if data from the National Family Health Survey is any indication. There is also marked variation in the deprivation faced by children across different population sub-groups and across districts which indicates that population-specific and district level factors contribute substantially to the deprivation faced by children of the state. Very little is currently known about these factors. The analysis also reveals that the deprivation faced by children with respect to the standard of living domain appears to have increased over the years. This essentially implies that the resources necessary for children to escape the deprivation are getting limited over time. This trend has implications for mitigating deprivation faced by state children. The situation appears to be alarming in Scheduled Tribes children of the state. More than half of the Scheduled Tribes children of the state appears to be deprived in at least one of the 24 indicators of child well-being.

The present analysis calls for concerted efforts to mitigate the deprivation faced by children in the context of their well-being which appears to be quite pervasive in Madhya Pradesh. One approach that may contribute to mitigating the deprivation faced by the children of the state is the social protection approach. There is now an increased recognition that social protection policies and programmes can play an important role in promoting and securing child well-being, particularly when considered in concert with the broader development framework. The first requirement to this direction is a strong policy response. Madhya Pradesh does not have an explicit policy directed towards well-being of children. A child-sensitive social protection policy is the need of the time for Madhya Pradesh to reflect the resolve and the commitment of Madhya Pradesh towards the well-being of its children.

References

Alkire S, Roche JM (2012) Beyond Headcount: Measures That Reflect the Breadth and Components of Child Poverty. In A Minujin and S. Nandy (Eds) *Global Child Poverty and Well-Being. Measurement, Concepts, Policy and Action.* Bristol, The Policy Press.

Anand S, Sen A (1997) Concepts of human development and poverty A multidimensional perspective. New York, United Nations development Programme. Human Development Papers.

Apablaza M, Lubetzky G (2011) Measuring the Dynamics of Multiple Deprivations among Children: The Cases of Andhra Pradesh, Ethiopia, Peru and Vietnam. *Young Lives Research in Progress.* Oxford: University of Oxford

Atkinson AB (2003) Multidimensional Deprivation. Contrasting Social Welfare and Counting Approaches. *Journal of Economic Inequality* 1:51–65.

Bauer G, Davies JK, Pelikan J, Noack H, Broesskamp U, Hill C (on behalf of the EUPHID Consortium) (2003) Advancing a theoretical model for public health and health promotion indicator development: proposal from the EUPHID Consortium. *European Journal of Public Health* 13 (3): 107-113.

Ben-Arieh A, Hevener-Kaufman N, Bowers-Andrews A, Goerge RM, Joo-Lee B, Aber JL (2001) *Measuring and Monitoring Children's Well-Being*. Dordrecht, The Netherlands, Kluwer Academic Publishers.

Bradshaw J, Brook K, Huby M, Rhodes D, Sinclair I, Gibbs I, Noble M, McLennan D, Wilkinson K (2009) *Local Index of Child Well-Being. Summary Report*. London, Communities and Local Government.

n BV (1997) Indicators of children's well-being: A review of current indicators based on data from the federal statistical system. In RM Hauser, BV Brown and WR Prosser (Eds) *Indicators of Children's Well-being*. New York, Russell Sage Foundation.

Chaurasia Aalok Ranjan (2010) Spatial and social class variations in child deprivation in Madhya Pradesh, India. *Indian Journal of Human Development* 4(2): 369-390.

Chaurasia Aalok Ranjan (2016) Child deprivation in Gujarat. *Social Change* 46(3): 371-392.

Child Trends (1997) Building Common Definitions and Moving Towards Common Constructs'. The First National Level Meeting of the Planning Phase of the Project on State-Level Child Outcomes, Washington DC, November 6-7, 1996. Washington DC, Child Trends. Available from: <http://www.childtrends.org> [Accessed: 20 January 2016].

Child Trends (2003) Child Trends Data Bank. Washington DC, Child Trends. Available from: http://www.childtrendsdatabank.org/ [Accessed: 20 January 2016].

de Neubourg C, Chzhen Y, Main G, Martorano B, Menchini L (2012) Child deprivation, multidimensional poverty and monetary poverty in Europe. Florence, UNICEF Innocenti Research Centre. Innocenti Working Paper No. 2012-2.

Dreze J, Khera R (2010) Regional patterns of human and child deprivation in India. *Economic and Political Weekly* XLVII (39): 42-49.

Foundation for Child Development (2013) *National Child and Youth Well-Being Index*. New York, Foundation for Child Development.

Friedman M (1997) Cited in E Carroll (2002) *The Well-Being of Children: Four Papers Exploring Conceptual, Ethical and Measurement Issues*. Dublin, Irish Youth Foundation.

Gordon D, Nandy S, Pantazis C, Pemberton S, Townsend P (2003a). *The Distribution of Child Poverty in the Developing World.* Centre for International Poverty Research, Bristol.

Gordon D, Nandy S, Pantazis C, Pemberton S, Townsend P (2003b). *Child Poverty in the Developing World.* Policy Press, Bristol.

Government of India (1974) *National Policy on Children*. New Delhi, Department of Social Welfare.

Government of India (2007) *Child Protection in the Eleventh Five Year Plan (2007-2012)*. New Delhi, Ministry of Women and Child Development.

Government of India (2013) *National Policy on Children* 2013. New Delhi, Ministry of Women and Child Development.

Government of India (2022a) *Sample Registration System Statistical Report 2020*. New Delhi, Office of the Registrar General and Census Commissioner.

Government of India (2022b) *SRS Based Abridged Life Tables 2015-19*. New Delhi, Office of the Registrar General and Census Commissioner.

Government of India (2022c) *National Family Health Survey 2019-21 (NFHS-V). India.* Mumbai, International Institute for Population Sciences.

Grinspun A (2004) Editorial. In A Grinspun (Ed) *In Focus: Children and Poverty*. Brasilia, United Nations Development Programme. International Poverty Centre.

Hanafin S, Brooks A-M (2005) *Report of the Development of a National Set of Child Well-being Indicators in Ireland*. Dublin, The National Children's Office.

Hauser RM, Brown BV, Prosser WR (eds) (1997) *Indicators of Children's Well-Being*. New York, Russell Sage Foundation.

Jennifer T (2009) Current measures and the challenges of measuring children's wellbeing. Government of United Kingdom, Office of National Statistics, Household, Labour Market and Social Wellbeing. Working Paper.

Kannamori MJ, Pullum T (2013) *Indicators of Child Deprivation in Sub-Saharan Africa: Levels and Trends from Demographic and Health Surveys.* Claverton, ICF International. DHS Comparative Report No. 32.

Kushwah SS, Prasad P (2009) Child survival and health: Policies and Programmes. In Aalok Ranjan (Ed) *Child Survival and Health: India 2009*. Bhopal, Shyam Institute and New Delhi, Indo American Books.

Land KC, Lamb VL, Mustillo-Kahler S (2001) Cited in E Carroll (2002) *The Well-Being of Children: Four Papers Exploring Conceptual, Ethical and Measurement Issues*. Dublin, Irish Youth Foundation.

Maryland Partnership for Children, Youth and Families (2002) *Maryland's Results for Well-Being*. Baltimore, Maryland, Maryland Partnership for Children, Youth and Families.

Mickelwright J (2001) Should UK Government measure poverty and social exclusion with a composite index? In CASE 2001. *Indicators of Progress: A Discussion of Approaches to Monitor Government's Strategy to Tackle Poverty and Social Exclusion*. London, London School of Economics. CASE Report No. 13

Mickelwright J, Stewart K (1999) Is the well-being of children converging in the European Union? York, University of York. Social Policy Research Unit.

Moore KA (1995) New social indicators of child well-being. Vienna, European Centre for Social Welfare Policy and Research.

Moore KA (1997) Criteria for indicators of child well-being. Cited in RM Hauser, BV Brown and WR Prosser (eds.) *Indicators of Children's Well-Being*. New York, Russell Sage Foundation.

Moore KA (1999) Indicators of child and family well-being: the good, the bad and the ugly. A Presentation to National Institutes of Health Office of Behavioural and Social Sciences Research.

Minujin A, Delamonica E, Davidziuk A, Gonzales ED (2006) The definition of child poverty: A discussion of concepts and measurements. *Environment and Urbanization* 18(2): 481-500.

Notten G, de Neubourg C (2011). Monitoring absolute and relative Poverty; "Not Enough" is not the same as "Much Less", *Review of Income and Wealth*, 57(2), 247-269.

Nussbaum MC (2000) *Women and Human Development. The Capabilities Approach*. Cambridge, UK. Cambridge University Press.

Nussbaum MC, Sen AK (1993) *The Quality of Life*. Oxford, The Clarendon Press.

Nyangara F, Nyberg B, Murphy R, O'Donell K (2008) *Child Status Index. A Tool for Assessing the Well-Being of Orphans and Vulnerable Children – Manual*. Chapel Hill NC, University of North Carolina at Chapel Hill. Carolina Population Centre. Measure Evaluation.

Pollard EL, Lee P (2002) Child well-being: a systematic review of the literature. *Social Indicators Research* 61: 59-78.

Reidy M, Winje C (2002) Youth indicators in use in state as of September 2002. Chicago, University of Chicago. Chapin Hall Centre for Children.

Ravallian M (2010a) Mashup indices of development. Washington DC, The World Bank. Policy Research Working Paper 5432.

Ravallian M (2010b) On multidimensional indices of poverty. Washington DC, The World Bank. Policy Research Working Paper 5580.

Roche JM (2013) Monitoring progress in child poverty reduction: Methodological insights and illustration to the case study of Bangladesh. Oxford, University of Oxford. Oxford Poverty and Human Development Initiative (OPHI). OPHI Working Paper No. 57.

Ryan RM, Deci EL (2001) On happiness and human potentials: a review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology* 52: 141-166.

Sen AK (1985) *Commodities and Capabilities*. Oxford, Oxford University Press.

Townsend P (1987) Deprivation. *Journal of Social Policy* 16(2): 125-146.

United Nations Children's Fund (1989) *United Nations Convention for the Rights of the Child*. New York, United Nations.

United Nations Children's Fund (2014) *Situation Analysis of Child Poverty and Deprivation in Uganda*. UNICEF-UGANDA.

Waddington H (2004). Linking economic policy to childhood poverty - A review of the evidence on growth, trade reform and macroeconomic policy, *CHIP Report* n. 7.

White H, Leavy J, Masters A (2002). Comparative perspectives on child poverty: a review of poverty measures. *Journal of Human Development* 4(3): 379-396.

Table 6: Child deprivation index (*D*) in districts of Madhya Pradesh, 2015-2021.

District	2015-2016		2019-2021	
	D	Rank	*D*	Rank
Sheopur	0.491	42	0.439	42
Morena	0.372	10	0.367	20
Bhind	0.381	13	0.366	19
Gwalior	0.328	3	0.323	10
Datia	0.388	17	0.315	8
Shivpuri	0.447	31	0.416	39
Tikamgarh	0.443	28	0.317	9
Chhatarpur	0.468	38	0.407	34
Panna	0.491	41	0.486	47
Sagar	0.450	33	0.389	27
Damoh	0.461	36	0.410	35
Satna	0.387	15	0.439	41
Rewa	0.452	34	0.505	48
Umaria	0.465	37	0.415	37
Neemuch	0.367	9	0.272	2
Mandsaur	0.409	21	0.351	16
Ratlam	0.540	46	0.327	11
Ujjain	0.393	18	0.378	24
Shajapur (Undivided)	0.430	25	0.292	na
Dewas	0.335	5	0.340	13
Dhar	0.411	22	0.395	30
Indore	0.324	2	0.254	1
Khargone (West Nimar)	0.413	23	0.365	18
Barwani	0.594	48	0.465	46
Rajgarh	0.397	20	0.382	25
Vidisha	0.471	39	0.357	17
Bhopal	0.361	8	0.307	5
Sehore	0.330	4	0.315	7
Raisen	0.355	7	0.287	3
Betul	0.446	30	0.399	31
Harda	0.353	6	0.344	15
Hoshangabad	0.312	1	0.404	33
Katni	0.439	26	0.415	38
Jabalpur	0.379	12	0.427	40
Narsimhapur	0.375	11	0.376	22
Dindori	0.552	47	0.523	50
Mandla	0.500	43	0.403	32
Chhindwara	0.388	16	0.378	23
Seoni	0.445	29	0.389	29
Balaghat	0.440	27	0.342	14
Guna	0.418	24	0.387	26
Ashoknagar	0.393	19	0.389	28

District	2015-2016		2019-2021	
	D	Rank	*D*	Rank
Shahdol	0.488	40	0.442	43
Anuppur	0.449	32	0.412	36
Sidhi	0.509	44	0.451	45
Singrauli	0.513	45	0.445	44
Jhabua	0.667	50	0.543	51
Alirajpur	0.634	49	0.515	49
Khandwa (East Nimar)	0.386	14	0.339	12
Burhanpur	0.457	35	0.373	21
Agar Malwa	na	na	0.310	6
Shajapur	na	na	0.291	4

Remarks: District Shajapur (undivided) in 2015-2016 was divided into Agar Malwa and Shajapur districts in 2019-2021.
Source: Author

Table 7: Deprivation index (*DI*) in children below 1 year of age in districts of Madhya Pradesh, 2015-2021

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Sheopur	0.615	35	0.482	5
Morena	0.546	16	0.591	35
Bhind	0.589	25	0.628	43
Gwalior	0.594	26	0.571	28
Datia	0.651	44	0.561	25
Shivpuri	0.529	11	0.572	31
Tikamgarh	0.612	32	0.470	3
Chhatarpur	0.613	33	0.654	48
Panna	0.532	12	0.585	34
Sagar	0.555	19	0.617	39
Damoh	0.629	39	0.539	15
Satna	0.517	9	0.683	50
Rewa	0.642	43	0.550	18
Umaria	0.503	5	0.560	24
Neemuch	0.598	28	0.549	17
Mandsaur	0.601	30	0.513	9
Ratlam	0.658	46	0.521	11
Ujjain	0.619	36	0.574	32
Shajapur (Undivided)	0.701	49	0.575	na
Dewas	0.516	8	0.568	27
Dhar	0.597	27	0.637	46
Indore	0.622	38	0.687	51
Khargone (West Nimar)	0.630	40	0.502	7
Barwani	0.581	24	0.531	13
Rajgarh	0.600	29	0.631	44
Vidisha	0.652	45	0.516	10
Bhopal	0.640	42	0.572	30
Sehore	0.543	14	0.602	37
Raisen	0.487	3	0.620	40
Betul	0.489	4	0.480	4
Harda	0.509	7	0.563	26
Hoshangabad	0.521	10	0.602	36
Katni	0.607	31	0.542	16
Jabalpur	0.458	1	0.555	21
Narsimhapur	0.577	23	0.556	22
Dindori	0.614	34	0.571	29
Mandla	0.577	22	0.458	2
Chhindwara	0.485	2	0.553	19
Seoni	0.504	6	0.484	6
Balaghat	0.554	17	0.626	42
Guna	0.541	13	0.555	20

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Ashoknagar	0.567	20	0.610	38
Shahdol	0.672	47	0.656	49
Anuppur	0.554	18	0.636	45
Sidhi	0.711	50	0.532	14
Singrauli	0.622	37	0.524	12
Jhabua	0.639	41	0.620	41
Alirajpur	0.681	48	0.574	33
Khandwa (East Nimar)	0.545	15	0.506	8
Burhanpur	0.569	21	0.557	23
Agar Malwa	na	na	0.370	1
Shajapur	na	na	0.644	47

Remarks: District Shajapur (undivided) in 2015-2016 was divided into Agar Malwa and Shajapur districts in 2019-2021.
Source: Author

Table 8: Deprivation index (*DI*) in children 1-2 years of age in districts of Madhya Pradesh, 2015-2021

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Sheopur	0.527	37	0.478	44
Morena	0.495	32	0.379	30
Bhind	0.462	25	0.318	11
Gwalior	0.419	14	0.343	21
Datia	0.541	41	0.376	27
Shivpuri	0.487	29	0.418	35
Tikamgarh	0.600	45	0.317	10
Chhatarpur	0.523	36	0.438	39
Panna	0.630	48	0.478	45
Sagar	0.494	31	0.431	38
Damoh	0.507	35	0.441	40
Satna	0.429	17	0.496	48
Rewa	0.443	23	0.471	43
Umaria	0.480	28	0.491	47
Neemuch	0.458	24	0.291	6
Mandsaur	0.431	20	0.326	14
Ratlam	0.532	38	0.289	5
Ujjain	0.394	8	0.302	9
Shajapur (Undivided)	0.495	33	0.287	na
Dewas	0.359	2	0.326	15
Dhar	0.408	11	0.332	17
Indore	0.389	7	0.294	7
Khargone (West Nimar)	0.430	18	0.297	8
Barwani	0.589	44	0.428	37
Rajgarh	0.497	34	0.377	28
Vidisha	0.578	43	0.398	32
Bhopal	0.420	15	0.342	20
Sehore	0.349	1	0.331	16
Raisen	0.442	22	0.335	19
Betul	0.361	3	0.409	33
Harda	0.431	19	0.281	4
Hoshangabad	0.411	12	0.344	22
Katni	0.493	30	0.480	46
Jabalpur	0.373	5	0.255	1
Narsimhapur	0.464	26	0.347	24
Dindori	0.623	47	0.523	51
Mandla	0.441	21	0.417	34
Chhindwara	0.368	4	0.346	23
Seoni	0.400	10	0.320	12
Balaghat	0.377	6	0.381	31
Guna	0.416	13	0.324	13

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Ashoknagar	0.469	27	0.360	25
Shahdol	0.550	42	0.454	41
Anuppur	0.426	16	0.378	29
Sidhi	0.605	46	0.461	42
Singrauli	0.536	40	0.501	49
Jhabua	0.662	50	0.522	50
Alirajpur	0.650	49	0.421	36
Khandwa (East Nimar)	0.397	9	0.332	18
Burhanpur	0.534	39	0.277	3
Agar Malwa	na	na	0.370	26
Shajapur	na	na	0.274	2

Remarks: District Shajapur (undivided) in 2015-2016 was divided into Agar Malwa and Shajapur districts in 2019-2021.
Source: Author

Table 9: Deprivation index (*DI*) in children 3-5 years of age in districts of Madhya Pradesh, 2015-2021

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Sheopur	0.572	37	0.542	44
Morena	0.495	14	0.434	16
Bhind	0.536	26	0.453	20
Gwalior	0.466	7	0.427	12
Datia	0.465	6	0.469	24
Shivpuri	0.476	8	0.530	40
Tikamgarh	0.542	29	0.496	33
Chhatarpur	0.591	40	0.480	30
Panna	0.555	34	0.550	46
Sagar	0.495	15	0.528	39
Damoh	0.534	25	0.488	31
Satna	0.510	20	0.531	41
Rewa	0.560	35	0.533	42
Umaria	0.598	43	0.513	37
Neemuch	0.448	3	0.349	2
Mandsaur	0.491	12	0.311	1
Ratlam	0.548	32	0.427	11
Ujjain	0.478	9	0.395	7
Shajapur (Undivided)	0.511	21	0.411	na
Dewas	0.488	11	0.361	3
Dhar	0.542	28	0.432	15
Indore	0.374	1	0.375	6
Khargone (West Nimar)	0.459	5	0.432	14
Barwani	0.648	46	0.504	36
Rajgarh	0.595	41	0.478	29
Vidisha	0.543	30	0.412	9
Bhopal	0.479	10	0.464	23
Sehore	0.501	16	0.426	10
Raisen	0.508	19	0.497	34
Betul	0.521	24	0.435	17
Harda	0.520	23	0.457	22
Hoshangabad	0.427	2	0.475	27
Katni	0.494	13	0.456	21
Jabalpur	0.503	17	0.561	47
Narsimhapur	0.451	4	0.411	8
Dindori	0.658	47	0.589	49
Mandla	0.601	44	0.514	38
Chhindwara	0.515	22	0.374	5
Seoni	0.561	36	0.471	25
Balaghat	0.545	31	0.440	18
Guna	0.538	27	0.473	26

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Ashoknagar	0.586	39	0.544	45
Shahdol	0.597	42	0.492	32
Anuppur	0.550	33	0.501	35
Sidhi	0.615	45	0.541	43
Singrauli	0.659	48	0.595	50
Jhabua	0.700	50	0.579	48
Alirajpur	0.695	49	0.599	51
Khandwa (East Nimar)	0.506	18	0.441	19
Burhanpur	0.577	38	0.476	28
Agar Malwa	na	na	0.370	4
Shajapur	na	na	0.429	13

Remarks: District Shajapur (undivided) in 2015-2016 was divided into Agar Malwa and Shajapur districts in 2019-2021.
Source: Author

Table 10: Deprivation index (*DI*) in children 6-10 years of age in districts of Madhya Pradesh, 2015-2021

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Sheopur	0.433	37	0.358	37
Morena	0.287	17	0.388	42
Bhind	0.223	4	0.347	33
Gwalior	0.233	6	0.243	12
Datia	0.254	14	0.194	5
Shivpuri	0.326	25	0.387	41
Tikamgarh	0.377	27	0.235	11
Chhatarpur	0.422	33	0.331	29
Panna	0.511	47	0.474	47
Sagar	0.496	45	0.293	23
Damoh	0.424	34	0.325	27
Satna	0.308	22	0.359	39
Rewa	0.426	35	0.522	50
Umaria	0.411	32	0.332	30
Neemuch	0.302	21	0.163	3
Mandsaur	0.326	24	0.271	15
Ratlam	0.490	44	0.229	10
Ujjain	0.256	15	0.312	24
Shajapur (Undivided)	0.247	11	0.172	na
Dewas	0.241	9	0.268	14
Dhar	0.317	23	0.290	19
Indore	0.162	1	0.100	1
Khargone (West Nimar)	0.331	26	0.359	38
Barwani	0.553	48	0.436	46
Rajgarh	0.250	13	0.290	21
Vidisha	0.427	36	0.283	17
Bhopal	0.234	7	0.190	4
Sehore	0.222	3	0.223	9
Raisen	0.230	5	0.290	20
Betul	0.457	40	0.321	26
Harda	0.236	8	0.217	7
Hoshangabad	0.211	2	0.356	36
Katni	0.393	29	0.394	44
Jabalpur	0.265	16	0.292	22
Narsimhapur	0.298	20	0.288	18
Dindori	0.509	46	0.519	49
Mandla	0.466	41	0.353	34
Chhindwara	0.293	19	0.315	25
Seoni	0.401	30	0.344	31
Balaghat	0.404	31	0.265	13
Guna	0.288	18	0.345	32

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Ashoknagar	0.249	12	0.331	28
Shahdol	0.436	38	0.398	45
Anuppur	0.444	39	0.356	35
Sidhi	0.482	43	0.384	40
Singrauli	0.469	42	0.394	43
Jhabua	0.704	50	0.574	51
Alirajpur	0.608	49	0.508	48
Khandwa (East Nimar)	0.244	10	0.219	8
Burhanpur	0.382	28	0.277	16
Agar Malwa	na	na	0.196	6
Shajapur	na	na	0.160	2

Remarks: District Shajapur (undivided) in 2015-2016 was divided into Agar Malwa and Shajapur districts in 2019-2021.
Source: Author

Table 11: Deprivation index (*DI*) in children 11-14 years of age in districts of Madhya Pradesh, 2015-2021

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Sheopur	0.389	31	0.385	35
Morena	0.264	12	0.235	10
Bhind	0.321	20	0.323	20
Gwalior	0.254	10	0.224	8
Datia	0.238	6	0.229	9
Shivpuri	0.418	40	0.338	23
Tikamgarh	0.254	11	0.220	6
Chhatarpur	0.349	26	0.335	22
Panna	0.399	34	0.444	46
Sagar	0.332	23	0.298	17
Damoh	0.390	32	0.358	29
Satna	0.366	27	0.442	44
Rewa	0.409	38	0.495	48
Umaria	0.421	41	0.349	25
Neemuch	0.169	1	0.185	4
Mandsaur	0.267	13	0.320	19
Ratlam	0.601	49	0.250	11
Ujjain	0.312	19	0.442	45
Shajapur (Undivided)	0.395	33	0.178	na
Dewas	0.201	2	0.332	21
Dhar	0.300	18	0.419	40
Indore	0.328	22	0.167	3
Khargone (West Nimar)	0.250	8	0.315	18
Barwani	0.541	47	0.434	42
Rajgarh	0.251	9	0.284	16
Vidisha	0.372	29	0.256	12
Bhopal	0.321	21	0.263	13
Sehore	0.237	5	0.165	2
Raisen	0.222	3	0.194	5
Betul	0.406	36	0.434	41
Harda	0.241	7	0.403	37
Hoshangabad	0.222	4	0.441	43
Katni	0.378	30	0.384	34
Jabalpur	0.334	25	0.541	51
Narsimhapur	0.285	16	0.356	28
Dindori	0.488	46	0.497	49
Mandla	0.452	45	0.366	30
Chhindwara	0.285	15	0.375	31
Seoni	0.411	39	0.376	32
Balaghat	0.400	35	0.282	15
Guna	0.372	28	0.350	26

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Ashoknagar	0.282	14	0.274	14
Shahdol	0.431	43	0.404	38
Anuppur	0.406	37	0.397	36
Sidhi	0.428	42	0.409	39
Singrauli	0.433	44	0.378	33
Jhabua	0.579	48	0.485	47
Alirajpur	0.616	50	0.523	50
Khandwa (East Nimar)	0.300	17	0.344	24
Burhanpur	0.333	24	0.356	27
Agar Malwa	na	na	0.222	7
Shajapur	na	na	0.165	1

Remarks: District Shajapur (undivided) in 2015-2016 was divided into Agar Malwa and Shajapur districts in 2019-2021.
Source: Author

Table 12: Deprivation index (*DI*) in children 15-19 years of age in districts of Madhya Pradesh, 2015-2021

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Sheopur	0.560	47	0.469	44
Morena	0.414	7	0.356	9
Bhind	0.428	12	0.333	4
Gwalior	0.334	1	0.354	8
Datia	0.511	38	0.358	10
Shivpuri	0.544	44	0.414	27
Tikamgarh	0.523	41	0.352	7
Chhatarpur	0.501	34	0.440	35
Panna	0.465	21	0.484	47
Sagar	0.443	15	0.399	20
Damoh	0.468	26	0.454	42
Satna	0.389	5	0.416	28
Rewa	0.418	10	0.485	48
Umaria	0.480	27	0.449	38
Neemuch	0.481	28	0.350	6
Mandsaur	0.516	40	0.445	36
Ratlam	0.515	39	0.431	31
Ujjain	0.492	31	0.377	16
Shajapur (Undivided)	0.546	45	0.393	na
Dewas	0.434	13	0.367	13
Dhar	0.466	23	0.435	33
Indore	0.377	3	0.322	3
Khargone (West Nimar)	0.525	42	0.367	12
Barwani	0.656	49	0.507	51
Rajgarh	0.467	25	0.450	40
Vidisha	0.506	37	0.438	34
Bhopal	0.396	6	0.309	2
Sehore	0.379	4	0.395	18
Raisen	0.447	18	0.254	1
Betul	0.445	16	0.399	19
Harda	0.417	9	0.346	5
Hoshangabad	0.335	2	0.370	14
Katni	0.463	20	0.401	22
Jabalpur	0.441	14	0.446	37
Narsimhapur	0.415	8	0.435	32
Dindori	0.557	46	0.503	50
Mandla	0.527	43	0.405	24
Chhindwara	0.467	24	0.407	25
Seoni	0.456	19	0.408	26
Balaghat	0.445	17	0.364	11
Guna	0.499	33	0.401	21

District	2015-2016		2019-2021	
	D_i	Rank	D_i	Rank
Ashoknagar	0.485	30	0.430	30
Shahdol	0.483	29	0.449	39
Anuppur	0.424	11	0.402	23
Sidhi	0.465	22	0.483	46
Singrauli	0.502	35	0.451	41
Jhabua	0.666	50	0.502	49
Alirajpur	0.612	48	0.480	45
Khandwa (East Nimar)	0.497	32	0.381	16
Burhanpur	0.504	36	0.419	29
Agar Malwa	na	na	0.459	43
Shajapur	na	na	0.377	15

Remarks: District Shajapur (undivided) in 2015-2016 was divided into Agar Malwa and Shajapur districts in 2019-2021.
Source: Author