

## Women Disempowerment in India at Sub-National Level: A Socio -Economic Analysis

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### Abstract

*The study presents a comparative picture of disempowerment of women in India in 2015-16 with the same in 2005-06, using a comprehensive multidimensional approach that amalgamates several dimensions of women disempowerment. Using NFHS4 data we observe that women's perception regarding 'wife beating', 'lack of access to mobile phones' and 'afraid of husbands' are contributing heavily towards incidence of women disempowerment. A comparison with 2005-2006 ( NFHS3) shows that at all India level even if the incidence of severe and considerable disempowerment has reduced, but a sizeable proportion of women who were not previously disempowered in 2005-06, has become mildly disempowered in 2015-16. However, some states like Punjab, West Bengal, Gujarat and Rajasthan were successful in reducing women disempowerment.*

**Keywords:** *Disempowerment, Multidimensional, Wife beating, Mobile phones*

### 1. Introduction

Women empowerment, the fifth goal of the Sustainable Development (SDGs) and previously the third Millennium Development Goal (MDG) is a continuous process that enables women to participate in every aspects and decision makings of their lives, which in turn, directly affect their welfare. It is one of the crucial and essential aspects to eradicate gender inequality and to ensure overall development of a nation. Empowerment is a composite concept which is an amalgamation of three basic components, viz; Agency, Resources and Achievement (Kabeer 2005). According to Kabeer (2005), agency implies the process to exercise choices, resources are those paths through which choices will run and achievement means the ultimate result of the choices. Thus agency approach actually indicates the power of 'decision making'. And resources are the ingredients required to make possible to achieve that power, and achievement declares the ultimate outcome after exercising that power in one's own life, it can be a success or a failure. Power of decision making enables the functioning of the individual who entails his/her capability. However, agency and well being are different concepts (Sen 1987). It is a multidimensional phenomenon just analogue to the aspect of multidimensional poverty. Identification of dimensions for its measurement is a delicate task and necessitates careful attention while constructing empowerment index or scales relating to empowerment (Malhotra et.al. 2002). Therefore, instead of gauging the empowerment, it is important to identify the situations of denial of making choices, areas where lack of resources are observed and finally the magnitude of the failure of desired achievements or in gross terms, we can define it as measuring of 'Disempowerment.' It is necessary to first identify the domains and factors of disempowerment and then process of empowering the disempowered can be assessed. The objective of the present study is to focus on measuring the disempowerment of women of India using a comprehensive multidimensional approach based on National Family Health Survey (NFHS3 and 4) data. Our second objective is to compare the change in disempowerment level between the two-time points corresponding to NFHS3 and 4.

Several researches have been done on measuring empowerment of women in India and abroad. Kishor and Gupta (2004) developed a percentage based method for making comparison of empowerment using NFHS 2 and NFHS 1 data. Wiklander (2012) used a binary choice probit model which estimates the marginal effects on different empowerment variables in rural India, including decision making power, mobility of freedom, expression of views, freedom from domestic violence and having property rights. Perception towards violence on women also indicates the 'achievement' aspect of empowerment. Agreement or disagreement of a woman on beating of the wife by the husband signifies the attitude towards other women according to Upadhyay and Karasek (2012). They used DHS (District Level Health Survey) data for empowerment measure and along with decision making variables they also included husband's influence for ideal number of children and attitude towards refusing sex. Crissman et.al.(2012) considered that sexual empowerment of women as the prime issue that needs to be addressed in Ghana. Another study in Ghana by Boateng et.al.(2014) examined the relationship between wealth and women's involvement in household decision-making in the context of healthcare, large household purchases, daily house hold purchases and mobility. In the context of India, using NFHS3 data Biswas (2016) constructed an empowerment index and concluded that self-confidence and various awareness creating factors mainly influence empowerment of women belonging from east India. Another study by Chakrabarti and Biswas (2012) using NFHS3 data focused on the relationship between various decision making and mobility variables responsible for achievement level of empowerment. The concept of women's autonomy is widely discussed in the empowerment literatures. Level of education, health conditions and autonomy of decision making significantly affect women's empowerment as suggested by Bhattacharya and Banerjee (2012). Apart from education and health factors, influence of religion and region is observed on women's empowerment by Jejeebhoy and Sathar (2001) using samples from two Indian states and Pakistan's Punjab Province. Using primary data in West Bengal, Banerjee and Ghosh (2012) showed that self-employment has the major influence on women's empowerment.

Disempowerment of women may arise from major structural forces of a society in various ways: cultural disempowerment, economic disempowerment, political disempowerment, resource distribution disempowerment (Kawewe 2001). Based on a case study of Nigerian women, Garba (1999) concluded that endogenous strategies which involve external source enable disempowered women to empower themselves. There are some studies on measuring the disempowerment level of women. A notable work by Alkire et.al (2013) constructed a unique empowerment index (5DE) based on five dimensions including decisions about agriculture production, ownership of productive resources, authority to control how to use income, whether supervise in community and how she allocates time between production sector and domestic works and also for her leisure activities. This 5DE index shows that the percentage of women who are empowered as well as the intensity of disempowerment. Another study by Ahmad and Khan (2016) focuses on assessing disempowerment of women of Pakistan. Bhuyan (2006) focussed on the deprivation of women in political decision making in India. A case study by Sarin (2001) on forest women of Uttarakhand, India revealed that due to imposition of various forest management policies the local women become severely disempowered in decision making for use of forest resources that are usually managed by them. The study by Ganle et.al. (2015) on the rural women of Ghana, revealed that some women became empowered from the access of micro-credit and some left disempowered due to failure of repayment of loans, wrong investment, lack of control on the use of the credit and on the income generated from the investment. Mishra (2014) represents a multidimensional aspect of measuring disempowerment using the NFHS3 data using only eight indicator variables. Our main contribution is that we take a comprehensive multi-

dimensional approach of measuring disempowerment of women. In our study, we introduce use of mobile phones as an indicator while measuring disempowerment. Relation of use of mobile phones and female empowerment has been discussed by many previous authors (Porter et al;(2020), Batool(2019), Chew et al;(2015)). In recent year's use of mobile phones have increased by many folds in India. As per DoT, India, number of mobile phone subscribers was 996.13 million and 1059.33 million in 2015 and 2016 respectively<sup>1</sup>. However, NFHS4 data showed that only 46% of women have a mobile phone while this percentage is only 37% for rural women<sup>2</sup>. Access to mobile phone opens up various opportunities to women. Thus, our objective is to check that, to what extent unavailability of mobile phones contributes towards disempowerment of women using the headcount or percentages of women under this category. Also, this study will contribute to literature by comparing the disempowerment level of Indian women over time. We identify fifteen indicator variables that are common in NFHS3 and NFHS4 data set. Based on these indicators, we compare the disempowerment level of women across states of India for 2005-2006 (NFHS3) and 2015-16 (NFHS4) using a unique D-curve methodology developed by Jayaraj and Subramanian (2010). We believe that this methodology was not used earlier for comparison of women disempowerment level over time. The rest of the paper is arranged in the following way: Section-II will describe the data and methodology. Section-III discusses the details of indicator variables chosen for our study. The results and discussions are presented in Section-IV. Section-V concludes the major findings.

### 2.1: Data:

We use the NFHS3 (2005-06) and NFHS4 (2015-16) data for our analysis<sup>3</sup>. The data contain information of all the 36 regions (States and Union territories) of India. We exclude all the Union territories and create 3 groups based on regions as: North (Gujarat, Rajasthan, Uttar Pradesh, Madhya Pradesh, Punjab and Haryana), South (Kerala, Tamil Nadu, Andhra Pradesh, Karnataka and Maharashtra) and East (Bihar, West Bengal, Odisha, Assam, Chhattisgarh and Jharkhand) follow Mishra (2014). The data on women (the total number of observations) were 6,99,686 and 1,24,385 in NFHS4 and NFHS3 respectively. However, after removal of missing responses for variables relevant for our study, we include a total of 29,625 women in the NFHS4 and 27,956 women in NFHS3 in our analysis. Table 1 presents the socioeconomic description of the sample:

**Table 1: Descriptive Statistics of Socio-Economic Characteristics of Women:**

Variables	Categories/Labels	Mean	Standard Deviation	Mean	Standard Deviation
		2015-16		2005-06	
Type of place of Residence	Urban	0.304	0.460	0.476	0.499
	Rural	0.695	0.460	0.515	0.500
Religion	Hindu	0.835	0.371	0.818	0.386
	Muslim	0.115	0.319	0.109	0.312
	Other	0.050	0.218	0.073	0.259
Caste	SC	0.207	0.405	0.183	0.386
	ST	0.136	0.342	0.062	0.242
	OBC	0.449	0.497	0.373	0.484
	General	0.209	0.406	0.383	0.486
Frequency of reading newspaper or magazine	Not at all	0.714	0.452	0.599	0.490
	Less than a week	0.111	0.314	0.134	0.341
	At least once a week	0.079	0.271	0.103	0.304
	Almost Everyday	0.095	0.294	0.164	0.370

<b>Frequency of listening to radio</b>	Not at all	0.888	0.315	0.560	0.496
	Less than a week	0.041	0.199	0.153	0.360
	At least once a week	0.042	0.200	0.104	0.305
	Almost Everyday	0.028	0.166	0.183	0.387
<b>Frequency of watching television</b>	Not at all	0.285	0.451	0.260	0.439
	Less than a week	0.076	0.264	0.099	0.299
	At least once a week	0.100	0.300	0.108	0.310
	Almost Everyday	0.540	0.498	0.533	0.499
<b>Wealth Index</b>	Poorest	0.238	0.426	0.122	0.328
	Poorer	0.217	0.412	0.149	0.357
	Middle	0.194	0.396	0.179	0.383
	Richer	0.188	0.390	0.240	0.427
	Richest	0.163	0.369	0.309	0.462
<b>Age Category of Women</b>	Below 20	2.871	0.804	0.023	0.151
	21-30	0.332	0.471	0.377	0.485
	31-40	0.400	0.490	0.426	0.494
	Above 40	0.246	0.431	0.174	0.379
<b>Highest Educational Level</b>	No Education	0.401	0.490	0.377	0.485
	Primary	0.159	0.365	0.159	0.366
	Seconadry	0.375	0.484	0.368	0.482
	Higher	0.065	0.247	0.097	0.296

## 2.2: Methodology

### Construction of Disempowerment Index

Disempowerment index is a multidimensional latent variable and it is measured using various dimensions and indicators. Following Chakravarty and Ambrosio (2006) and Jayaraj and Subramanian (2010) we construct the measure of multidimensional disempowerment faced by women in any region or country. If  $n_j$  is the number of women who are disempowered in exactly  $j$  dimensions,  $j = 0, 1, \dots, K$ , where  $n$  be the total population size and  $H_j$  is the proportion of the population that is deprived in exactly  $j$  dimensions.

Where  $H_j = n_j/n$  for  $j=1,2, \dots, K$ ,

Then the disempowerment index is defined as<sup>4</sup>

$$\pi_\alpha = \sum_{j=1}^K \binom{j}{k}^\alpha H_j \text{ for } \alpha \geq 0 \quad 1.$$

$H_j$  is the proportion of the population that is deprived in exactly  $j$  dimensions.

$$\pi_\alpha = \frac{1}{K} \frac{n_1}{n} + \frac{2}{k} \frac{n_2}{n} + \dots + \frac{k}{k} \frac{n_k}{n} = \sum_{j=1}^K \binom{j}{k}^\alpha H_j \text{ and } H_j = n_j/n \text{ and } j = 1, \dots, K$$

Here  $\alpha$  measures the magnitude of disempowerment.

In this case as  $\alpha$  increases from 1 to higher values,  $\pi_\alpha$  gives greater weight to the disempowerment rates of women who are disempowered in more and more decisions, that is, the more disempowered women and, at very high  $\alpha$  values, it measures the magnitude of extreme disempowerment (Mishra, 2014).

### D-curve Approach of comparing disempowerment over time

For graphical comparison of disempowerment of women in various states of India over time, we have used the D-Curve (deprivation distribution profile) methodology as developed by

Jayaraj and Subramanian (2010). The curve is obtained by plotting cumulative proportions or headcount ratios of each dimension with cumulative fractions of dimensions in which people are deprived or disempowered. Let  $H_j$  implies the proportion of the women disempowered in exactly  $j$  dimensions out of total  $K$  dimensions.

Let  $Q_j = \sum_{l=0}^j H_l$  where  $0 \leq j \leq K$

Thus, each coordinate of the D-curve will reflect  $(j/k, Q_j)$  where  $j = 0, 1, \dots, K$ . Thus the points will be  $(0, H_0), (1/K, H_0 + H_1), (2/K, H_0 + H_1 + H_2), \dots, (K-1/K, H_0 + H_1 + \dots + H_{K-1}), (K/K, H_0 + H_1 + \dots + H_K = 1)$ . The D-curve will be smoother as the number of dimensions increases. D-curve is a non-decreasing curve going from a point on or vertically above the origin of the unit square to the point (1,1). If all the women are disempowered in zero dimensions then the D-curve will coincide with the upper left corner of the unit square. Alternatively, if all the women are disempowered in all the dimensions then it will coincide with the lower right corner of the unit square.

If two D-curves are drawn for two different sets of headcount ratios then one can dominate the other, only if that D-curve lies wholly above the other D-curve. This criterion is called D-dominance. The D-curve approach is similar to the Lorenz concept of measuring income inequality.

#### Details of the Indicator Variables:

In the present analysis, in order to calculate the disempowerment level of women across states of India, we take a comprehensive multi-dimensional approach. To this end, for comparing disempowerment level of Indian women between 2005-06 and 2015-16, we identify five dimensions comprising of only 15 indicator variables that are common in NHFS3 and NFHS4, and drop the following indicator variables: 'Are (were) you afraid of your husband: most of the time, sometimes or never?', 'Do you own a mobile phone of your own?', 'Do you have any property alone or jointly?'. Table 2 and 3 describes our indicator variables along with data level and percentage of responses.

**Table2: Details of Disempowerment Dimensions and Indicator variables**

Dimensions	Indicator Variables	Related References
<b>Freedom of Mobility</b>	Who usually makes decisions about visits to your family or relatives?	Kishor and Gupta (2004), Upadhyay and Karasek (2012), Mishra (2014), Boateng et.al. (2014), Wiklander (2010), Chakrabarty and Sharma Biswas(2012), Bhattacharya and Banerjee (2012)
	Are you usually allowed to go to the market?	
	Are you usually allowed to go to places outside this village?	
<b>Decision making autonomy</b>	Who usually makes decisions about making major household purchases?	Upadhyay and Karasek (2012), Mishra (2014), Boateng et.al. (2014), Wiklander (2010) Chakrabarty and Sharma Biswas(2012), Bhattacharya and Banerjee (2012), Kishor and Gupta (2004).
	Who usually makes decisions about health care for yourself ?	
	Who decides how your husband's earnings will be used?	
	Do you have money of your own that you alone can decide how to use?	
<b>Couple Interaction dominated by husband</b>	Are (were) you afraid of your husband : most of the time, sometimes or never? <sup>5</sup>	Wiklander (2010), Sharma Biswas (2017)
	Husband tries/tried to limit your contact with family	

	husband does/did not permit you to meet your female friends	
<b>Attitude towards physical violence</b>	In your opinion, is a husband justified in hitting or beating his wife in the following situations:	Upadhyay and Karasek (2012), Crissman, Adanu, Harlow (2012), Sharma Biswas (2017)
	If she goes out without informing	
	If she neglects child	
	If she argues with husband	
	If she refuses sex	
<b>Financial Ownership</b>	Do you have a bank or savings account that you yourself use?	Wiklander (2010), Sharma Biswas (2017)
	Do you have any mobile phone that you yourself use?	
	Do you own this or any other house either alone or jointly with someone else?	

**Table 3: Indicator variables along with their percentages of responses:**

Indicator Variables	Percentage of Responses			
	Alone or with Husband (0)	not at all / Other(1)	Alone or with Husband (0)	not at all / Other(1)
	2015-16		2005-06	
Who usually makes decisions about visits to your family or relatives?	77.27	22.73	70.43	29.57
Are you usually allowed to go to the market?	55.71	44.29	63.89	36.11
Are you usually allowed to go to places outside this village?	49.3	50.7	47.25	52.35
Who usually makes decisions about making major household purchases?	76.98	23.02	62.53	37.47
Who usually makes decisions about health care for yourself ?	76.76	23.24	69.32	30.68
Who decides how your husband's earnings will be used?	74.14	25.86	74.13	25.87
Do you have money of your own that you alone can decide how to use?	41.09	58.91	48.07	51.93
	Percentage of Responses			
	2015-16		2005-06	
	No (0)	Yes(1)	No (0)	Yes(1)
Are (were) you afraid of your husband : most of the time, sometimes? <sup>6</sup>	19.21	80.79	-----	-----
Husband tries/tried to limit your contact with family	84.14	15.86	92.37	7.63
husband does/did not permit you to meet your female friends	78.49	21.51	86.49	13.51
Beating of Wife by husband:				
If she goes out without informing	74.64	25.36	72.31	27.69

If she neglects child	30.32	69.68	66.26	33.74
If she argues with husband	70.49	29.51	71.92	28.08
If she refuses sex	86.33	13.67	86.09	13.91
If she refuses to cook food	80.42	19.58	81.42	18.58
	<b>Percentage of Responses</b>			
	<b>Yes (0)</b>	<b>No(1)</b>	<b>Yes (0)</b>	<b>No(1)</b>
Do you have a bank or savings account that you yourself use?	51.83	48.17	20.64	79.36
Do you have any mobile phone that you yourself use?	40.27	59.73	----	----
Do you own this or any other house either alone or jointly with someone else?	43.52	56.48	----	----

From Table-3, in case of freedom of mobility, from NFHS 4 survey, we observe that more than 50 percent of the total women cannot go to places outside the villages and it was around 52 percent for NFHS3 survey round. Although most of the women have freedom for visit to family or going to market. In case of decision making autonomy, according to NHHS4 round around 59 percent of the women do not have money that she alone can decide how to use and it was 52 percent for NFHS3 round, indicating a worsening of income earning capability of women over time. This finding is consistent with the observation that the percentage of women who work has declined over time, from 36% of women being employed in 2005-06 to 24% in 2015-16<sup>7</sup>. For decisions regarding, large household purchase, own health care and spending of the husband earning, most of the women have reported sufficient autonomy. Next, we observe that approximately 81 percent of the women said they are afraid of husband/partner most of the time, sometimes whereas most of the women agree on the fact that their husbands do not limit their contact with family or do not impose any restriction on meeting female friends. Another very interesting observation is that around 70 percent (in NFHS4 survey) and 34 percent (NFHS3 survey) of the women justify beating wife if she neglects the child. Also, wife- beating is justified by more than 25% of women in both rounds of NHFS survey for indicators like 'if wife argues with husband and 'if wife goes outside without informing.' These observations actually show that the patriarchal family system has taught Indian girls from their childhood a picture of 'ideal wife' who should be the primary care giver in the family and should always obey her husband. As a result, even now, women justify wife-beating when a wife doesn't satisfy the criteria of 'an ideal wife.' If this attitude persists, the empowerment of Indian women will remain a distant dream. In case of the dimension of financial empowerment, around 60 percent of the women do not have a mobile phone and 57 percent of the women do not own any house either alone or jointly although more than 50 percent of the total women has their own savings account in case of NFHS4, whereas more than 79 percent of the women had recorded that they do not have any savings account in 2005-06.

### 3. Results and Analysis

#### 3.1: A Comparison of Disempowerment levels between 2005-06 and 2015-16

The present section will try to gauge the change in disempowerment level of Indian women between 2005-06 and 2015-16. In this case, we are compelled to consider only 15 indicator variables on which information is available for both rounds of NFHS.

#### D- Curve approach for Comparison of Disempowerment level:

Present subsection uses D-curve approach to compare the change in disempowerment level across regions and all India level. As already mentioned this approach is based on cumulative disempowerment head count ratio of women across various indicators. Table 4 gives the coordinates of D-curve for All India and different regions

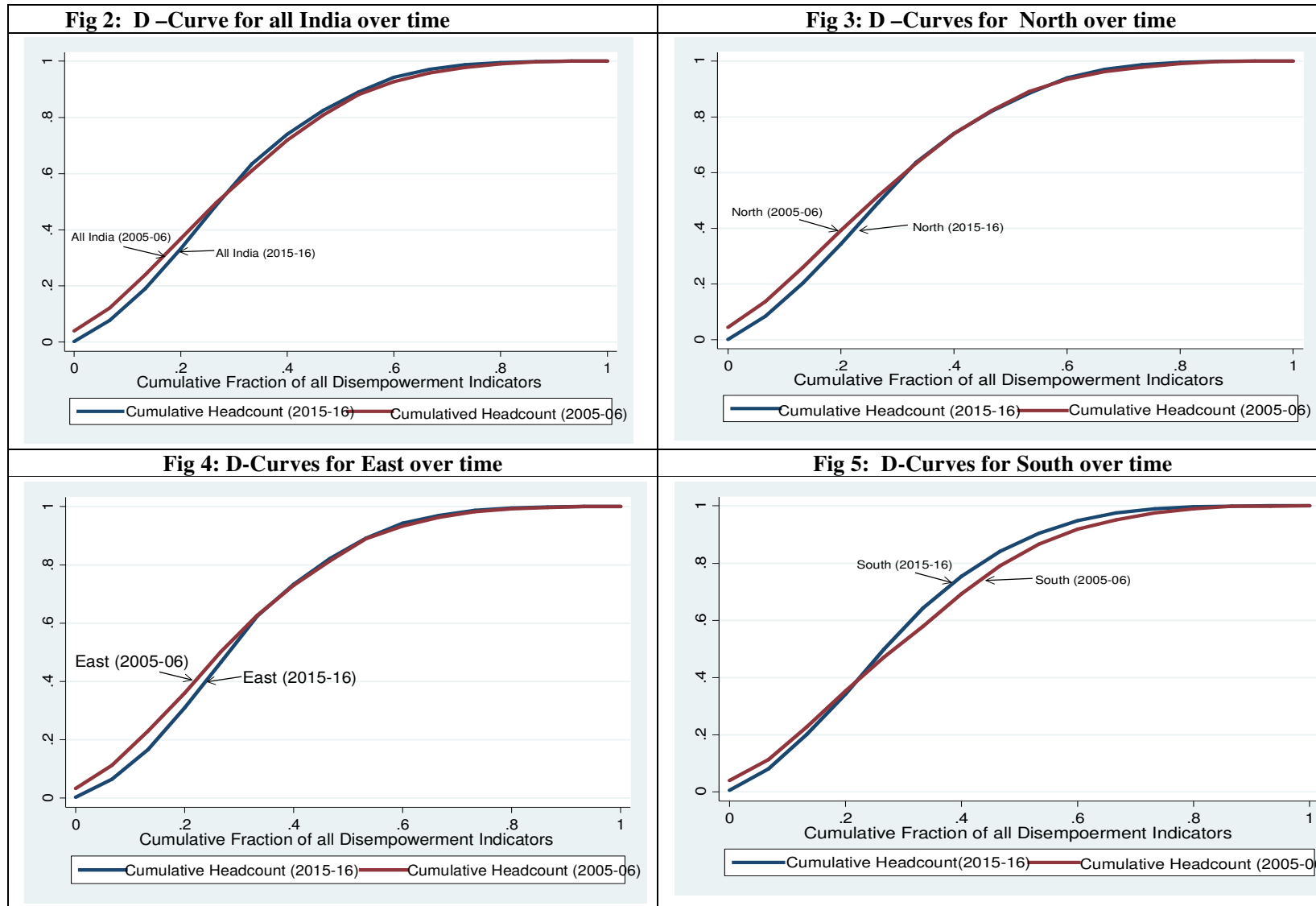
**Table 4: Co-ordinates for D-curves for all Regions for 2005-06 and 2015-16**

Cumulative (j/15)th Fraction of the indicators in which disempowerment occurs. J=1,2, 15	Cumulative Headcount ratio of disempowerment							
	All India		North		South		East	
	2005-06	2015-16	2005-06	2015-16	2005-06	2015-16	2005-06	2015-16
0/15	0.0397	0.0031	0.0454	0.0019	0.0397	0.0064	0.0326	0.0026
1/15	0.1217	0.0776	0.1378	0.0852	0.1142	0.0806	0.1123	0.0647
2/15	0.2398	0.1912	0.2609	0.2033	0.2277	0.2019	0.2305	0.1664
3/15	0.3686	0.3327	0.3934	0.3436	0.3528	0.3428	0.3603	0.3102
4/15	0.4957	0.4865	0.5182	0.4944	0.4717	0.4995	0.5024	0.4662
5/15	0.6104	0.6341	0.6332	0.6375	0.5795	0.6429	0.6266	0.6233
6/15	0.7183	0.7411	0.7396	0.7406	0.6920	0.7534	0.7299	0.7334
7/15	0.8080	0.8250	0.8219	0.8196	0.7915	0.8416	0.8145	0.8214
8/15	0.8811	0.8908	0.8906	0.8846	0.8673	0.9042	0.8894	0.8905
9/15	0.9276	0.9430	0.9337	0.9400	0.9183	0.9492	0.9333	0.9429
10/15	0.9578	0.9713	0.9618	0.9707	0.9508	0.9754	0.9628	0.9694
11/15	0.9777	0.9880	0.9774	0.9875	0.9751	0.9893	0.9818	0.9878
12/15	0.9909	0.9956	0.9912	0.9957	0.9899	0.9966	0.9920	0.9948
13/15	0.9982	0.9988	0.9984	0.9988	0.9987	0.9989	0.9973	0.9986
14/15	0.9999	1.0000	0.9999	1.0000	0.9997	1.0000	1.0000	1.0000
15/15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Source: Authors' estimation following the methodology developed by Jayaraj and Subramanian (2010)



Figures 2,3, 4 and 5 give the comparison of ‘D-curves’ for all India.



From figures 2,3, 4 and 5, we observe that D-curves have intersected and as a result clear 'D-dominance' across time periods are not observed. Thus, from the D-curves, we cannot conclude that disempowerment over time has increased or decreased. Thus, for further analysis, following Jayaraj (2010) we have categorized the intensity of multidimensional disempowerment level in the following manner across the states:

- None-disempowered: Women who are not disempowered in any of the selected indicators.
- Mildly-disempowered: Women who are disempowered in one to three indicators.
- Moderately-disempowered: Women who are disempowered in four to seven indicators.
- Considerably-disempowered: Women who are disempowered in eight to eleven indicators.
- Severely-disempowered: Women who are disempowered in twelve or in all the dimensions.

Table 5 gives the head-count rates of women for above-mentioned disempowerment categories.

**Table 5: Headcount Ratios for magnitudes of disempowerment:**

	2005-06					2015-16				
	None-Disempowered	Mildly-Disempowered	Moderately-Disempowered	Considerably-Disempowered	Severely-Disempowered	None-Disempowered	Mildly-Disempowered	Moderately-Disempowered	Considerably-Disempowered	Severely-Disempowered
<b>North</b>	<b>0.042</b>	<b>0.326</b>	<b>0.436</b>	<b>0.169</b>	<b>0.027</b>	<b>0.003</b>	<b>0.374</b>	<b>0.453</b>	<b>0.158</b>	<b>0.012</b>
Gujarat	0.033	0.332	0.423	0.180	0.031	0.005	0.424	0.427	0.139	0.005
Rajasthan	0.044	0.269	0.452	0.195	0.040	0.001	0.365	0.474	0.151	0.009
Uttar Pradesh	0.055	0.405	0.418	0.112	0.010	0.001	0.320	0.496	0.172	0.010
Madhya Pradesh	0.049	0.371	0.412	0.147	0.021	0.001	0.262	0.519	0.198	0.020
Punjab	0.034	0.291	0.451	0.201	0.022	0.007	0.511	0.373	0.107	0.002

Haryana	0.038	0.289	0.458	0.178	0.036	0.000	0.364	0.427	0.183	0.025
<b>South</b>	<b>0.035</b>	<b>0.304</b>	<b>0.450</b>	<b>0.187</b>	<b>0.024</b>	<b>0.007</b>	<b>0.316</b>	<b>0.516</b>	<b>0.151</b>	<b>0.010</b>
Kerala	0.025	0.302	0.503	0.160	0.010	0.009	0.277	0.579	0.131	0.005
Tamil Nadu	0.019	0.293	0.534	0.149	0.006	0.008	0.365	0.470	0.144	0.013
Andhra Pradesh	0.033	0.282	0.430	0.217	0.038	0.008	0.282	0.529	0.174	0.007
Karnataka	0.021	0.224	0.425	0.278	0.051	0.003	0.228	0.548	0.204	0.016
Maharashtra	0.078	0.416	0.360	0.129	0.017	0.005	0.429	0.455	0.104	0.007
<b>East</b>	<b>0.033</b>	<b>0.344</b>	<b>0.448</b>	<b>0.160</b>	<b>0.016</b>	<b>0.003</b>	<b>0.322</b>	<b>0.507</b>	<b>0.157</b>	<b>0.011</b>
Bihar	0.025	0.319	0.503	0.139	0.015	0.000	0.192	0.524	0.253	0.030
West Bengal	0.041	0.291	0.465	0.176	0.026	0.007	0.404	0.458	0.125	0.007
Odisha	0.015	0.236	0.440	0.282	0.027	0.003	0.222	0.551	0.211	0.014
Assam	0.034	0.448	0.414	0.099	0.004	0.003	0.383	0.467	0.139	0.009
Chhattisgarh	0.016	0.333	0.517	0.129	0.006	0.003	0.377	0.510	0.107	0.003
Jharkhand	0.065	0.435	0.350	0.134	0.016	0.002	0.352	0.532	0.110	0.004
<b>All India</b>	<b>0.040</b>	<b>0.329</b>	<b>0.439</b>	<b>0.170</b>	<b>0.022</b>	<b>0.003</b>	<b>0.330</b>	<b>0.492</b>	<b>0.163</b>	<b>0.012</b>

Source: Authors' estimation following the methodology developed by Jayaraj and Subramanian (2010)

Table 5 records that there has been a considerable decrease in the headcount of women under the categories of considerable and severe disempowerment in 2015-16 compared to 2005-06, but the HCR has marginally increased in the period 2015-16 for those women who are mildly and moderately disempowered at all India level. The most alarming observation is that the HCR of women under none disempowerment category decreased considerably in 2015-16 for all the states. Thus, even if the HCR of women showing extreme disempowerment has gone down, but few women who were previously empowered has become disempowered in 2015-16 at the all India level. Thus, following figure 3, we cannot unambiguously say that disempowerment level has decreased at all India level

between 2005-06 and 2015-16. All the three regions Northern, Southern and Eastern have also recorded a decrease in HCR under the categories of considerable and severe disempowerment. Only in case of the Eastern region, the magnitude has also decreased for the category under mildly disempowered whereas the disempowerment magnitude has recorded a rise in case of the category of mild and moderate in Northern and Southern regions of India. In Northern, among all the states, women of Uttar Pradesh and Madhya Pradesh has reflected an increase for the categories of moderately and considerably disempowerment. Punjab has recorded a fair level of drop in disempowerment at moderate, considerably and severely disempowerment categories but the magnitude has increased in the category of mildly disempowerment and it is the highest among all the states in Northern region. In Southern region, all the states have registered an increase under the categories of mildly and severely disempowerment except Kerala. The magnitude has decreased for the category of moderately disempowerment only in Tamil Nadu. Women of Bihar and Assam facing an increase in their disempowerment for the categories of moderate, considerable and severe in the Eastern region whereas the magnitude has increased for the mildly disempowerment category in case of West Bengal and Chhattisgarh. Next we calculate the multidimensional disempowerment index using the two data sets: NFHS3 and NFHS4 by using equation 1. Table-6 summarizes the two period indices for all the selected states and for all India and Table- 7 gives a more clear view of the change in the rate of disempowerment index in all the States.

**Table 6: Comparison of the Measures of Multidimensional Disempowerment Index (With 15 indicator variables for both the time periods)**

	$\pi(\alpha=0)_{2005-06}$	$\pi(\alpha=0)_{2015-16}$	$\pi(\alpha=1)_{2005-06}$	$\pi(\alpha=1)_{2015-16}$	$\pi(\alpha=2)_{2005-06}$	$\pi(\alpha=2)_{2015-16}$	$\pi(\alpha=3)_{2005-06}$	$\pi(\alpha=3)_{2015-16}$	$\pi(\alpha=4)_{2005-06}$	$\pi(\alpha=4)_{2015-16}$	$\pi(\alpha=5)_{2005-06}$	$\pi(\alpha=5)_{2015-16}$
<b>North</b>	<b>0.958</b>	<b>0.997</b>	<b>0.326</b>	<b>0.315</b>	<b>0.146</b>	<b>0.131</b>	<b>0.077</b>	<b>0.065</b>	<b>0.046</b>	<b>0.036</b>	<b>0.029</b>	<b>0.022</b>
Gujarat	0.967	0.995	0.335	0.292	0.153	0.114	0.083	0.054	0.051	0.029	0.034	0.017
Rajasthan	0.956	0.999	0.356	0.313	0.171	0.128	0.096	0.062	0.059	0.034	0.040	0.020
Uttar Pradesh	0.945	0.999	0.277	0.334	0.109	0.142	0.051	0.070	0.028	0.039	0.016	0.023
Madhya Pradesh	0.951	0.999	0.299	0.358	0.126	0.159	0.064	0.082	0.037	0.047	0.024	0.030
Punjab	0.966	0.993	0.346	0.259	0.156	0.093	0.082	0.041	0.048	0.021	0.030	0.011
Haryana	0.962	1.000	0.343	0.331	0.158	0.149	0.085	0.080	0.051	0.049	0.033	0.032
<b>South</b>	<b>0.965</b>	<b>0.993</b>	<b>0.340</b>	<b>0.326</b>	<b>0.154</b>	<b>0.135</b>	<b>0.082</b>	<b>0.065</b>	<b>0.048</b>	<b>0.035</b>	<b>0.031</b>	<b>0.021</b>
Kerala	0.975	0.991	0.327	0.321	0.137	0.126	0.067	0.057	0.036	0.029	0.021	0.016
Tamil Nadu	0.981	0.992	0.331	0.315	0.138	0.130	0.065	0.064	0.034	0.036	0.019	0.021
Andhra Pradesh	0.967	0.992	0.361	0.339	0.174	0.143	0.097	0.069	0.059	0.037	0.039	0.022
Karnataka	0.979	0.997	0.405	0.369	0.208	0.165	0.121	0.085	0.077	0.048	0.052	0.029
Maharashtra	0.922	0.995	0.275	0.285	0.114	0.108	0.059	0.049	0.035	0.026	0.022	0.015

<b>East</b>	<b>0.967</b>	<b>0.997</b>	<b>0.315</b>	<b>0.328</b>	<b>0.134</b>	<b>0.137</b>	<b>0.068</b>	<b>0.067</b>	<b>0.039</b>	<b>0.037</b>	<b>0.024</b>	<b>0.022</b>
Bihar	0.975	1.000	0.318	0.402	0.133	0.195	0.065	0.108	0.036	0.065	0.022	0.042
West Bengal	0.959	0.993	0.335	0.295	0.152	0.114	0.081	0.053	0.048	0.028	0.031	0.016
Odisha	0.985	0.997	0.386	0.366	0.188	0.163	0.104	0.083	0.063	0.047	0.041	0.029
Assam	0.966	0.997	0.270	0.307	0.099	0.122	0.045	0.057	0.023	0.031	0.013	0.018
Chhattisgarh	0.984	0.997	0.308	0.298	0.120	0.113	0.055	0.051	0.028	0.026	0.016	0.014
Jharkhand	0.935	0.998	0.272	0.302	0.113	0.113	0.059	0.049	0.035	0.024	0.022	0.013
<b>All India</b>	<b>0.960</b>	<b>0.997</b>	<b>0.324</b>	<b>0.328</b>	<b>0.143</b>	<b>0.138</b>	<b>0.075</b>	<b>0.068</b>	<b>0.044</b>	<b>0.038</b>	<b>0.028</b>	<b>0.023</b>

Source: Authors' estimation following the methodology developed by Jayaraj and Subramanian (2010)

**Table 7: Percentage change in disempowerment index and State ranks during the period 2005-06 to 2015-16**

	% change $\pi(\alpha=0)$	% change $\pi(\alpha=1)$	% change $\pi(\alpha=2)$	% change $\pi(\alpha=3)$	% change $\pi(\alpha=4)$	% change $\pi(\alpha=5)$	States'sRank (Ascending Order) based on $\pi(\alpha=3)$	
							(2005-06)	(2015-16)
<b>North</b>	<b>4.15</b>	<b>-3.49</b>	<b>-10.06</b>	<b>-15.53</b>	<b>-20.31</b>	<b>-24.69</b>	--	---
Gujarat	2.92	-12.79	-25.43	-35.31	-43.41	-50.40	10	5
Rajasthan	4.42	-11.98	-25.36	-35.31	-43.01	-49.28	12	7
Uttar Pradesh	5.74	20.80	30.62	36.71	39.99	40.90	2	10
Madhya Pradesh	5.09	19.53	26.30	28.37	27.90	26.07	5	12
Punjab	2.82	-25.08	-40.50	-50.04	-56.85	-62.35	9	1
Haryana	3.96	-3.46	-5.43	-5.31	-4.46	-3.35	11	11
<b>South</b>	<b>2.96</b>	<b>-4.19</b>	<b>-12.74</b>	<b>-20.61</b>	<b>-27.34</b>	<b>-33.04</b>	--	--
Kerala	1.59	-1.85	-8.09	-14.32	-19.79	-24.58	7	6
Tamil Nadu	1.12	-4.97	-5.13	-1.67	4.11	11.41	6	8
Andhra Pradesh	2.56	-6.34	-18.07	-28.59	-37.41	-44.72	13	9
Karnataka	1.87	-8.80	-20.36	-30.19	-38.03	-44.22	5	14
Maharashtra	7.97	3.60	-5.58	-15.89	-25.19	-32.87	4	2
<b>East</b>	<b>3.06</b>	<b>4.29</b>	<b>1.94</b>	<b>-1.64</b>	<b>-5.41</b>	<b>-9.00</b>	--	--
Bihar	2.56	26.56	46.62	64.70	81.11	95.65	6	15

West Bengal	3.57	-11.93	-24.79	-34.58	-42.43	-49.15	8	4
Odisha	1.22	-5.12	-13.12	-20.12	-25.56	-29.60	14	13
Assam	3.27	13.80	22.77	28.68	31.96	33.56	1	6
Chhattisgarh	1.29	-3.39	-5.50	-7.01	-8.35	-9.58	3	3
Jharkhand	6.67	10.85	-0.18	-15.50	-29.68	-41.31	4	2
<b>All India</b>	<b>3.81</b>	<b>1.16</b>	<b>-3.67</b>	<b>-8.80</b>	<b>-13.65</b>	<b>-18.14</b>		

Source: Authors' estimation following the methodology developed by Jayaraj and Subramanian (2010)

From table 5 and 6 we observe that the disempowerment index has decreased at all India level over the time period of 2005-06 to 2015-16 except for  $\alpha = 0$  and 1. All the states have registered a higher percentage increase in disempowerment index at  $\alpha = 0$  and for higher values of  $\alpha$ , all the states have experienced a decrease in disempowerment index except Bihar, Madhya Pradesh, Uttar Pradesh and Assam. The highest percentage decrease in disempowerment is observed in Punjab. D-curve for Punjab as given in figure 6 also corroborates this fact. After Punjab, Gujarat, Rajasthan and West Bengal are also showing larger decrease in disempowerment in 2015-16. The percentage drop in disempowerment is more in South than North and East. In the East region, women of West Bengal<sup>8</sup> recorded the maximum percentage decrease in disempowerment than other States of East in 2015-16. Table 8 also reports the change in rank of states on the basis of disempowerment index for  $\alpha = 3$ . The states of Uttar Pradesh, Madhya Pradesh, Tamil Nadu, Bihar, Assam, and Chhattisgarh have recorded lower rank in 2015-16 reflecting higher disempowerment form 2005-06. Punjab secured the first position in 2015-16 from 9<sup>th</sup> in 2005-06, which reflects increase in welfare and development towards women empowerment. The cause of this higher rank of Panjab may be attributed to the change in some of the key factors that stimulate women empowerment, such as the gap between male and female literacy rates decreased from 17.58% in 1971 to 9.70 % in 2011 (Saiyed, R Pathania,2015), percentage of women turnout voters in General Election 2014 is 71% in the state compared to all India percentage of 66%<sup>9</sup>, the development of SHGs in Punjab which had played a major role in entrepreneurship development programmes among rural women (Sharma, 2017). The result that the downward slide in the ranks of Uttar Pradesh<sup>10</sup>, Madhya Pradesh and Bihar, is in line with the findings of Mishra(2014). It is also observed that these states have also secured the bottom three positions in the list of HDI index of all States in India in 2015<sup>11</sup>.

Figure 6: D-curve for Punjab over time recording 'D-Dominance' for 2015-16 over 2005-06.

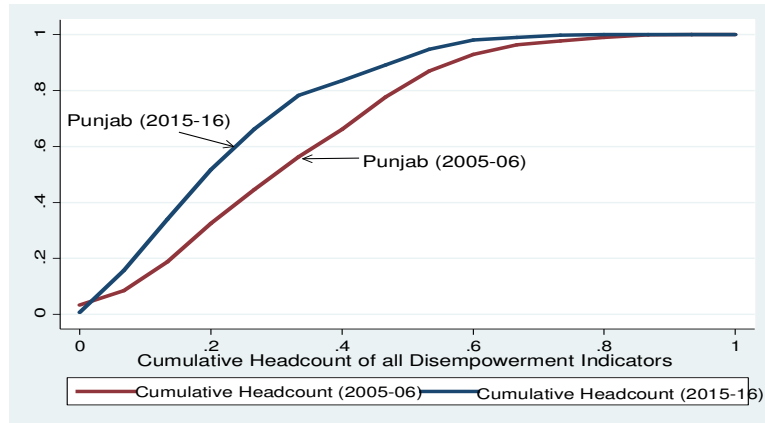
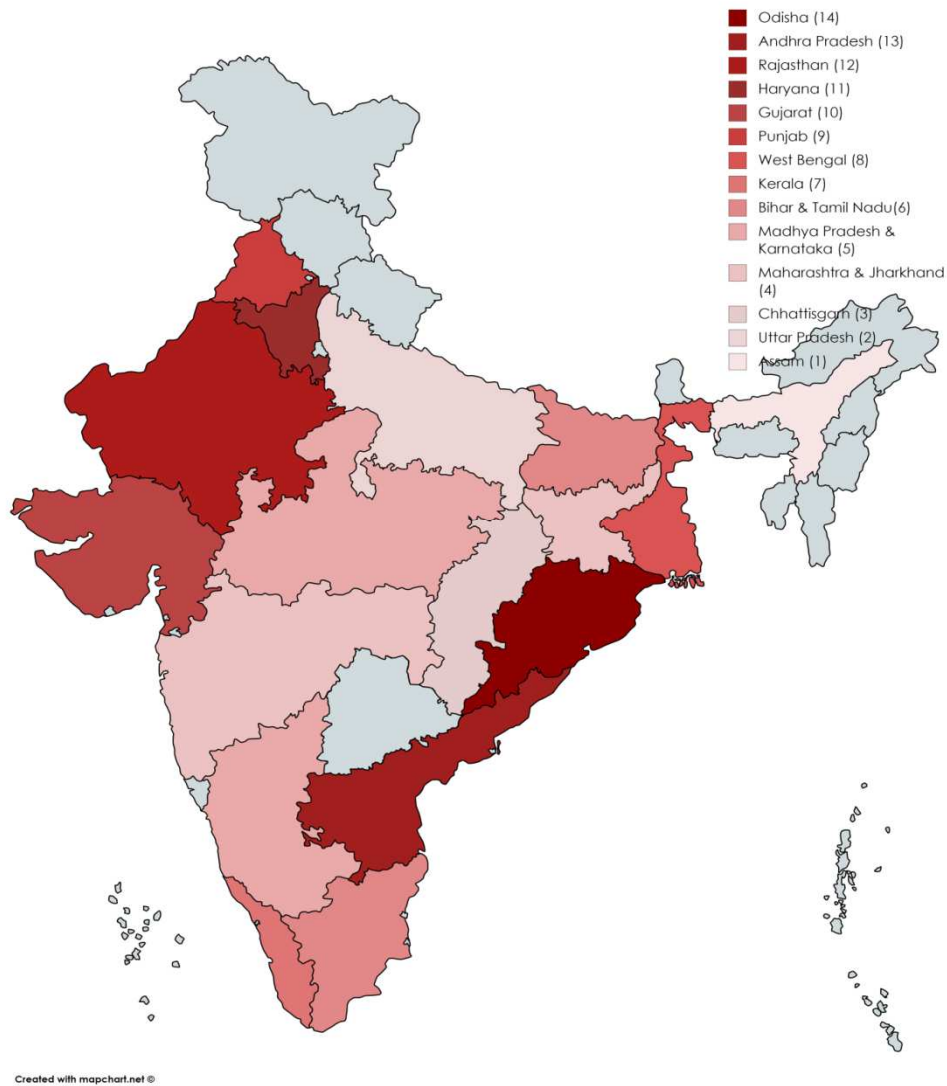
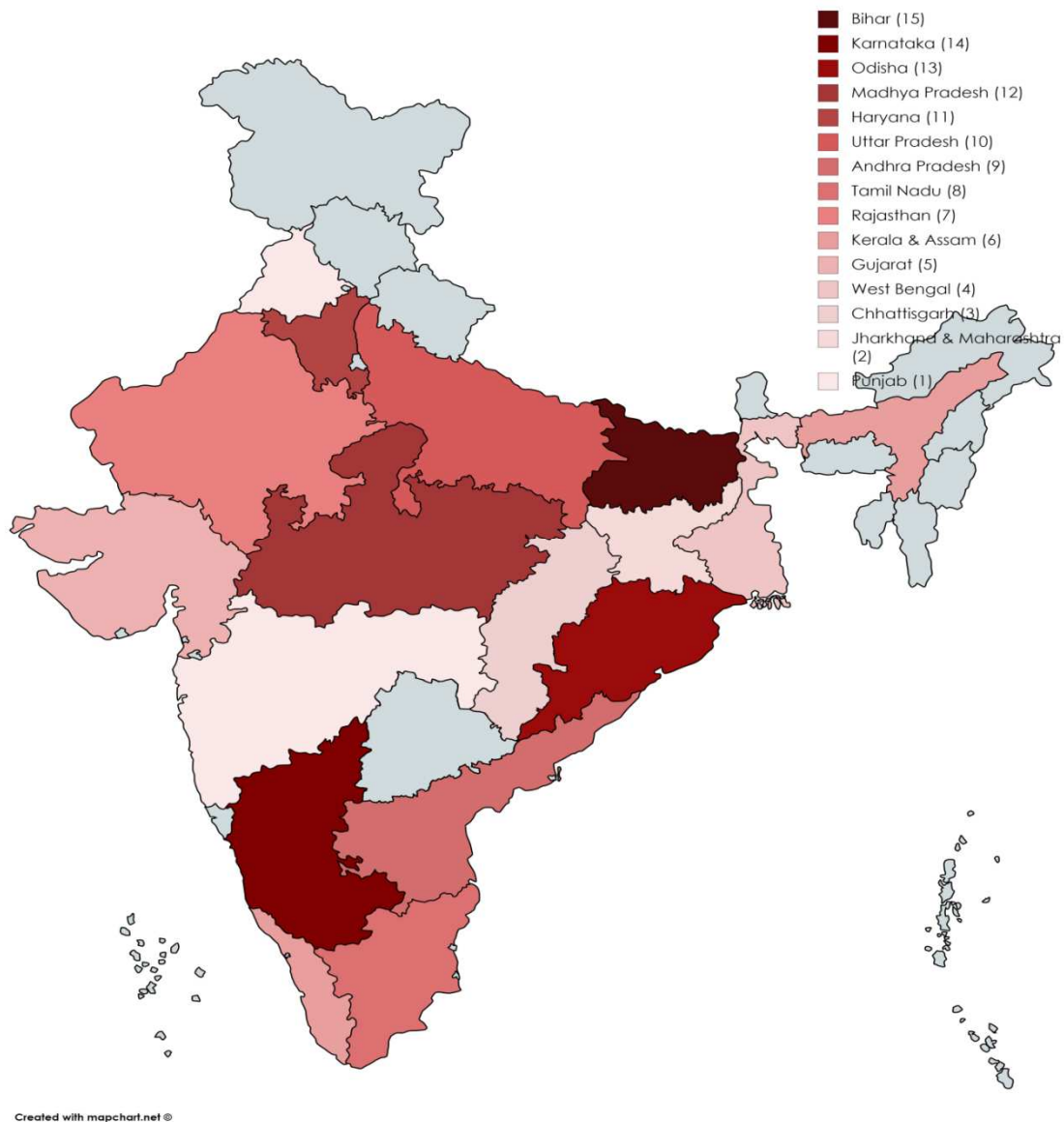


Figure 7: State wise magnitude of disempowerment based on disempowerment index at  $\pi(\alpha = 3)$  in 2005-06



The darker shade reflects more disempowerment. The states are arranged in ascending order of disempowerment based on the ranking of Table 7.

**Figure 8: State wise magnitude of disempowerment based on disempowerment index at  $\pi(\alpha = 3)$  in 2015-16**



The darker shade reflects more disempowerment. The states are arranged in ascending order of disempowerment based on the ranking of Table 7.

Various parameters such as employment status, family structure, type of residence, religion and caste, household asset and infrastructure are some specific causes of empowerment as reported by many earlier researchers. The causes of this variation in disempowerment can be explained with the following tables 8 and 9, where some details of women related parameters were taken from NFHS fact sheet and from National Crime Records Bureau. We observe that the magnitude of disempowerment has increased in Bihar, Uttar Pradesh, Madhya Pradesh and in Karnataka. The reasons may be that the percentage of women who are literate is less than the all India level in case of Bihar, Uttar Pradesh and Madhya Pradesh for both the time periods (Table 8). But in case of Punjab



the percentage of women who are literate is higher than the all India level in both the time periods. Punjab has recorded the largest drop (37.5 % drop) in the percentage of women who are anemic from 2005 to 2015 among all the selected states. From table 9 we observe the rates of different types of crime. The rate of dowry death has recorded the highest increase from 2005-06 to 2015-16 in Uttar Pradesh. Haryana has recorded the highest increase in the rate of Kidnapping and abduction of women and girls. In case of the rate of sexual harassment, Maharashtra has recorded the largest increase among the selected states. Bihar and Karnataka is also showing increase in all of the mentioned crime rates.

**Table 8: Some women related parameters in percentage**

	2005-06				2015-16			
	Women who are literate	Women with 10 or more years of schooling	Women with 20-24 years married before age 18 years	All women age 15-49 years who are anemic	Women who are literate	Women with 10 or more years of schooling	Women with 20-24 years married before age 18 years	All women age 15-49 years who are anemic
Gujarat	63.8	23.5	38.7	55.3	72.9	33.0	24.9	54.9
Rajasthan	36.2	11.7	65.2	53.1	56.5	25.1	35.4	46.8
Uttar Pradesh	44.9	18.3	58.6	49.9	61.0	32.9	21.1	52.4
MadhyaPradesh	44.4	14.0	57.3	55.9	59.4	23.2	32.4	52.5
Punjab	68.7	38.4	19.7	38.0	81.4	55.1	7.6	53.5
Haryana	60.4	29.6	41.2	56.1	75.4	45.8	19.4	62.7
Kerala	93	48.7	15.4	32.8	97.9	72.2	7.6	34.3
Tamil Nadu	69.4	31.8	22.3	53.2	79.4	50.9	16.3	55.0
Andhra Pradesh	54.9	7.8	27.1	54.8	62.9	34.3	33.0	60.0
Karnataka	59.7	27.8	41.8	51.2	71.7	45.5	21.4	44.8
Maharashtra	70.3	30.7	39.4	48.4	80.3	42.0	26.3	48.0
Bihar	37.0	13.2	69.0	67.4	49.6	22.8	42.5	60.3
West Bengal	58.8	15.7	54.0	63.2	70.9	26.5	41.6	62.5
Odisha	52.2	15.6	37.2	61.1	67.4	26.7	21.3	51.0
Assam	63.0	19.3	38.6	69.3	71.8	26.2	30.8	46.0
Chhattisgarh	44.9	12.3	55.0	57.5	66.3	26.5	21.3	47.0
Jharkhand	37.1	15.1	37.9	69.5	59.0	28.7	37.9	65.2
<b>All India</b>	<b>55.1</b>	<b>22.3</b>	<b>47.4</b>	<b>55.3</b>	<b>68.4</b>	<b>35.7</b>	<b>26.8</b>	<b>53.1</b>

#Source: NFHS3 and NFHS4 Fact Sheet

<http://rchiips.org/NFHS/factsheet.shtml>

[http://rchiips.org/NFHS/factsheet\\_NFHS-4.shtml](http://rchiips.org/NFHS/factsheet_NFHS-4.shtml)

**Table 9: Some rates of crime against women:**

	2005-06				2015-16			
	Kidnapping and Abduction of Women and Girls	Dowry Deaths	Cruelty by husband and Relatives	Sexual harassment	Kidnapping and Abduction of Women and Girls	Dowry Deaths	Cruelty by husband and Relatives	Sexual harassment
Gujarat	2.1	0.1	7.5	0.2	3.4	0.0	14.0	1.8
Rajasthan	3.2	0.6	9.7	1.0	7.5	1.3	41.6	1.9
Uttar Pradesh	1.6	0.9	2.5	1.6	5.6	2.3	8.5	5.8
MadhyaPradesh	1.3	1.1	4.5	1.2	8.8	1.8	14.3	6.9
Punjab	1.9	0.4	2.8	0.2	5.9	0.6	11.9	3.0
Haryana	2.2	0.9	9.1	2.6	12.9	1.9	28.3	5.5
Kerala	0.7	0.1	9.8	0.5	0.8	0.0	20.2	6.3
Tamil Nadu	1.6	0.3	2.5	1.0	2.3	0.2	5.5	0.6
Andhra Pradesh	2.0	0.6	10.9	3.1	1.8	0.7	23.9	4.2
Karnataka	1.1	0.5	3.4	0.1	3.8	0.8	8.9	1.8

Maharashtra	3.0	0.3	6.0	0.9	6.9	0.5	13.5	8.4
Bihar	1.4	1.1	1.8	0.0	6.9	2.3	7.6	0.2
West Bengal	1.4	0.5	8.2	0.1	6.6	1.1	44.6	1.5
Odisha	1.7	0.9	4.3	0.5	7.7	1.7	17.2	4.2
Assam	6.1	0.3	7.7	0.1	18.1	1.4	71.5	3.2
Chhattisgarh	1.1	0.4	3.2	0.6	8.1	0.7	4.9	4.0
Jharkhand	2.1	0.9	2.0	0.1	4.2	1.6	10.2	3.3
<b>All India</b>	<b>2.1</b>	<b>0.6</b>	<b>5.3</b>	<b>0.9</b>	<b>6.6</b>	<b>1.3</b>	<b>18.7</b>	<b>4.0</b>

#Source:<https://ncrb.gov.in/sites/default/files/Crime%20in%20India%202016%20-%20Full%20Publication.pdf>  
[https://ncrb.gov.in/sites/default/files/crime\\_in\\_india\\_table\\_additional\\_table\\_chapter\\_reports/Table%201.8\\_2005.pdf](https://ncrb.gov.in/sites/default/files/crime_in_india_table_additional_table_chapter_reports/Table%201.8_2005.pdf)

#### 4. Conclusion

Our study presents an exhaustive picture of disempowerment of women in India by comparing disempowerment of women in 2015-16 with 2005-06, using a comprehensive approach that incorporates a wide range of dimensions of women disempowerment. Firstly, using NFHS4 data set, we observe that women's perception regarding wife beating, afraid of the husband and lack of access to mobile phones are contributing severely towards incidence of women disempowerment. Next, using NFHS4 and NFHS3 data with common fifteen indicator variables, we compare the change in disempowerment level across the states of India. The D-Curve presentation using cumulative headcounts of disempowered women clearly depicts the scenario of all the regions for both the time periods and show that we cannot say that disempowerment on India has gone down over time. We observe that in case of overall India, the incidence, severity and considerable disempowerment has decreased in 2015-16. This may be attributable to various schemes like self-help groups run by females, Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (RGSEAG)- SABLA, Indira Gandhi Matritva Sahyog Yojana (IGMSY), Support to Training and Employment Programme for Women (STEP), Rashtriya Mahila Kosh (RMK), SWADHAR: Scheme for Women in Difficult Circumstances, Working Women Hostel Scheme, Kishori Shakti Yojana (KSY), Ujjawala - Scheme to Combat Trafficking, Beti Bachao Beti Padhao, Kanyashree Scheme in West Bengal and many others. However, we observe that some women who were not at all disempowered in 2005-2006, have become mildly disempowered in 2015-16 as we observed it from the head count ratio of Table 5. This is a matter of concern. Further, in the states like Punjab, West Bengal, Gujarat and Rajasthan the disempowerment has gone down. But the picture of Bihar, Uttar Pradesh, Madhya Pradesh and Karnataka show an increase in incidence of disempowerment over years. Another matter of concern is the attitude of women towards other women, which is reflected through response of women where they justify wife-beating of husbands for negligence of women in child care and household chores. Also, the percentage of women who are afraid of their husband is very high. This implies women of India are still confined in the age old belief that a wife should be submissive and primarily responsible for household chores, child bearing and child rearing activities. This is reflected in the fact that the value of unpaid care work as percentage of GDP contributed by women is 3.1% whereas for men it is only 0.4%. Also, women spend 312 minutes per day in urban areas and 291 minutes per day in rural areas on such unpaid care work whereas men spend only 29 minutes in urban and 32 minutes in rural areas on unpaid care work<sup>12</sup>. Thus, the removal of women disempowerment from India needs women to be aware of their self-esteem, they should understand their own worth and they must always stand beside another woman to remove any kind of gender inequality.

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<sup>1</sup> <http://dot.gov.in/sites/default/files/Telecom%20Statistics%20India-2017.pdf>

<sup>2</sup> <http://rchiips.org/Nfhs/NFHS-4Reports/India.pdf>

<sup>3</sup> The National Family Health Survey (NFHS) is a large-scale, multi-round survey conducted in a representative sample of households throughout India. The Ministry of Health and Family Welfare (MOHFW), Government of India, designated the [International Institute for Population Sciences \(IIPS\)](#) Mumbai, as the nodal agency, responsible for providing coordination and technical guidance for the survey. IIPS collaborated with a number of Field Organizations (FO) for survey implementation. Retrieved from <http://rchiips.org/nfhs/>

<sup>4</sup> This index satisfies symmetry, range monotonicity, range sensitivity, strong range sensitivity and decomposability property. Jayaraj and Subramanian (2010) showed that for  $\alpha=3$ , above index satisfies all the properties. They summarized the prominent features of  $\pi_\alpha$  when  $\alpha = 0, 1, 2, 3$  and  $\infty$  i.e;  $\pi_0$  satisfies axioms of symmetry and decomposability,  $\pi_1$  satisfies axioms of symmetry, decomposability and monotonicity,  $\pi_2$  satisfies axioms of symmetry, decomposability, monotonicity and transfer or sensitivity but not strong sensitivity axiom, lastly  $\pi_3$  and  $\pi_\infty$  satisfies all the axioms.

<sup>5</sup> We coded zero (0) for 'never afraid' and one (1) for 'most of the time' and 'sometimes'

<sup>6</sup> We coded zero (0) for 'never afraid' and one (1) for 'most of the time' and 'sometimes'

<sup>7</sup> Source Economic Survey of India 2017-18

<sup>8</sup> Percentage of establishments under women entrepreneur by major source of finance in West Bengal in 2014 is 10.33, higher than Gujarat (6.6%) and Maharashtra (8.25%) (Sixth Economic Census, 2014).

<sup>9</sup> <http://mospi.nic.in/publication/women-and-men-india-2014>

<sup>10</sup> Percentage of crime against women to total crime within State is 10% in Uttar Pradesh, higher than the all India percentage. Source: [ncrb.gov.in/.../CII2016/.../Crime%20in%20India%20-%202016%20Complete%20PDF%...](http://ncrb.gov.in/.../CII2016/.../Crime%20in%20India%20-%202016%20Complete%20PDF%...)

<sup>11</sup> <https://globaldatalab.org/shdi/shdi/>

<sup>12</sup> Source: <https://www.oxfamindia.org/Mind-Gap-State-of-Employment-in-India>