Multi-dimensional Poverty among the Persons with Disability in India

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I. Introduction: Disability and poverty may have two-way causation. Disability may lead to poverty and poverty may also lead to higher incidence of disability. There is ample evidence from the developed countries that the poverty and disability are closely interlinked with each other (Mitra et al., 2011). In developing economies though, there are few studies which have discussed the relationship of poverty and disability but we can easily find that the disability leads to deprivation of education and employment. At the household level, the evidence can be mixed as only the survival rate of the disabled can be higher in the households with higher incomes than the poorer households. Among many pathways to poverty, employment is a key area in which the people with disabilities experience widespread exclusion which leads to disproportionately lower income (WHO, 2011). Some studies have also pointed out that lower income of the persons with disabilities can also be due to their lower productivity (e.g. Metts, 2000, Frick and Foster, 2003; Buckup, 2009). But the pathway of employment is closely related with the attainments of education, ownership of physical assets as well as the monthly per capita expenditure. The cyclical relationship between disability and poverty clearly establishes that the lack of decent employment opportunities, education etc. among the persons with disabilities lead to poverty and those belonging to the poorer households possess low level of human as well as physical assets which further reduce their chances to come out of the morass of poverty. Poor households have lower capacity to invest in education of the persons with disabilities not only due to their economic cost but also because they can hardly afford human help to make education accessible to the persons with disabilities. The things are worse in the developing economies due to near absence of supportive infrastructure. Under such conditions, due to lack of decent employment opportunities, there is hardly any economic incentive for the households to invest in education of the persons with disabilities. Thus due to these mutually reinforcing factors, it is important to examine the deprivations of the persons with disabilities on all of these dimensions in order to find their linkages to the poverty. The economic deprivations faced by the persons with disabilities are largely result of the exclusion and distributive injustices (Fraser, 2007). In the labour market, they may be excluded due to both the demand side and supply side reasons. On the demand side, the attitude of the employer and lower

productivity may lead to lower salaried employment for the persons with disabilities. Hence, the employment rate among the disabled persons is far lower than their non-disabled counterparts (WHO, 2011) which leads to lower earnings and hence higher rates of poverty. In this perspective, the present study is an attempt to trace out the poverty on multiple dimensions through the employment status of the persons with disability. This paper has been divided in to 7 sections. Apart from this introductory section, Section II discusses the data and methodology used in this study; Section III discusses the employment status and nature of employment of the persons with disability in India; Section IV and V show the deprivations of the disabled persons on account of education, assets and consumption; Section VI gives account of the multidimensional poverty measures for the persons with disability; finally, Section VII gives some policy implications on basis of the major findings of the study.

II. Data and Methodology: For any analytical study of the socio-economic conditions of the disabled persons, the major challenge is to identify them but there is no agreed international standard to measure disability and hence identifying persons with disabilities is not an easy task. It varies country to country as well as according to the research objectives (Mont, 2007). Since in the present study, we are trying to find the pathways of poverty through the labour market status of the persons with disability, present study has used the data supplied by National Sample Survey Organisation of India on 'Employment and Unemployment Situation' in the country. In this survey we can identify a person with disability who is not able to work on usual status or temporary basis (daily or weekly status[i]). On basis of the available data, following categories of the persons with disabilities have been identified:

Category A: Persons working at usual principal status, but are not able to work temporarily due to disability/sickness at daily or weekly status;

Category B: Persons not employed at usual principal status due to disability but work on daily and weekly status;

Category C: Persons in domestic duties, rentiers and pensioners (at usual status) who are able to work only occasionally (at daily or weekly basis) due to disability;

Category D: Persons in other activities including begging and prostitution (on usual status) due to disability;

Category E: Unemployed (seeking work) persons on usual principal status who work occasionally (on daily or weekly status) due to disability; and

Category F: Persons with disability who are not able to work at all i.e. without any work on usual, daily as well as weekly status.

From these categories, we can clearly identify the degree of disability as category A shows a temporary and/or a lower degree of disability in which a person is employed on usual basis while the categories B to E show relatively moderate types of disability in which a person is employed here and there in subsidiary activities or casual jobs. The category F shows severe disability as the person is not able to work at all (on usual as well as daily and weekly status).

This analysis is based upon FGT indices for measuring uni-dimensional poverty, the Alkire and Foster (2008) methodology for multidimensional poverty. Based on the availability of data, in this paper, we discuss the deprivations on three dimensions viz. education, ownership of land and per capita consumption expenditure. In case of the dimension of education, those who have attained less than primary education (i.e. less than 5 years of formal schooling), are considered to be poor; in case of land ownership, the persons owning less than one acre of land are considered to be poor while in case of consumption poverty, official poverty lines (the Expert Group Methodology[ii]), declared by Planning Commission of India in different time periods[iii] have been used.

The methodology proposed by Alkire and Foster (2008) can also be broken down in to individual dimensions to identify which deprivations are driving multidimensional poverty in different regions or groups. This characteristic makes it a powerful tool for guiding policies to address deprivations in different groups effectively. For analysing multidimensional poverty using this methodology, it is important to understand a few concepts. As in the Foster Greer Thorbecke class of income poverty measures, each value can also be squared, to emphasize the condition of the poorest of the poor. So, this methodology proposes a class of measures M_α, comprising three measures: M_0: the measure described below, suitable for ordinal and binary and qualitative data, which represents the headcount and the breadth of poverty. This is the adjusted headcount index (H) which shows the weighted sum of average deprivations (A). This can also be represented as $M_0 = H \times A$ or average deprivations can be calculated by dividing M_0 with

H i.e. $A = M_0/H$.

M_1 : M_0 times the average normalized gap (G), this is represented as HAG or $M_1=M_0\times G$ i.e. $G=M_1/M_0$. M_2 : M_0 times the average squared normalized gap (S), represented as HAS. Thus, $M_2=M_0\times S$ i.e. the severity of poverty or $S=M_2/M_0$

III. Distribution of Persons with Disability by Nature of Employment:

Due to disability, a person's choice of work is largely affected. This may affect the type, the nature as well as outcomes of the work (Meyer and Mok, 2008). But its impact on employment and earning capacity largely depends upon the type of disability. In case of extreme disabilities, a person may not be able to work at all while in case of low or moderate degree of disability, the person can work on part-time or full-time basis, in regular or casual jobs or may chose its work-place which can be home-based or away from the home. But the choice of work, which is constrained from the type of disability a person faces largely affects the economic outcomes. Hence, before analysing the economic deprivations faced by the persons with disability, it is important to knoe about the distribution of these persons according to their degree of disability. It has been displayed in Table 1. The Table shows that the number of persons with some sort of disability has increased between the period 2004-05 and 2011-12. This number has increased from 38.60 lakh in 2004-05 to 69.89 lakh in 2011-12 but a greater increase has been registered in case of the persons with lower/temporary disabilities i.e. Category A while in case of persons with severe disability or Category F, an increase of about 1 million persons has been recorded. We can also observe that out of the total sampled persons, the proportion of the persons with temporary or lower degree of disability has increased from 51.35 per cent in 2004-05 to 58.76 per cent in 2011-12 while that of the persons with severe degree of disability has come down from about 47 per cent to 40 per cent during this period.

Table 1: Distribution of Persons with some Degree of Disability

Category	2004-05			2009-10			2011-12		
	Rural	Urban	All	Rural	Urban	All	Rural	Urban	All
A	1645733 (53.01)	336117 (44.53)	1981850 (51.35)	2080257 (50.66)	528994 (44.09)	2609251 (49.17)	3243328 (60.66)	863284 (52.56)	4106612 (58.76)
B	4019 (0.13)	1504 (0.20)	5523 (0.14)	4626 (0.11)	369 (0.03)	4995 (0.09)	2490 (0.05)	2812 (0.17)	5302 (0.08)
C	37969 (1.22)	9538 (1.26)	47507 (1.23)	37954 (0.92)	11693 (0.97)	49647 (0.94)	57464 (1.07)	10306 (0.63)	67770 (0.97)

D	12358 (0.40)	2823 (0.37)	15181 (0.39)	25185 (0.61)	1714 (0.14)	26899 (0.51)	22962 (0.43)	8440 (0.51)	31402 (0.45)
E	9099 (0.29)	2117 (0.28)	11216 (0.29)	6808 (0.17)	978 (0.08)	7786 (0.15)	9320 (0.17)	2162 (0.13)	11482 (0.16)
F	1395567 (44.95)	402718 (53.35)	1798285 (46.59)	1951488 (47.52)	656112 (54.68)	2607600 (49.14)	2010834 (37.61)	755516 (46.00)	2766350 (39.58)
All	3104745 (100.00)	754817 (100.00)	3859562 (100.00)	4106318 (100.00)	1199860 (100.00)	5306178 (100.00)	5346398 (100.00)	1642520 (100.00)	6988918 (100.00)

Source: Unit level records of NSSO 61st, 66th and 68th Rounds

Further, we can observe the distribution of the persons with disability in India by nature of their work in Table 2. The Table clearly shows that out of those who are working at usual status (Category A as mentioned in Table 1), a big majority is employed in casual works and the rate of casualisation has increased between 2004-05 and 2011-12. The Table shows that in 2004-05 about 36 per cent of the workers with some disability were working in other casual works which increased to about 44 per cent in 2011-12. The proportion of these workers as self-employed workers, employers and unpaid family workers has also come down during this period while it increased in case of regular salaried employment from 2.56 per cent to 3.62 per cent. We can also observe a decline in share of unemployed persons from 0.29 per cent to 0.16 per cent but we know that the unemployment rates among the persons with disabilities do not give an exact picture as many of the them do not enter in the labour market and hence are considered as out of labour force.

Table 2: Distribution of Persons with Disability according to the Status of Employment (on Usual Principal Status)

Category	2004-05			2009-10			2011-12		
	Rural	Urban	All	Rural	Urban	All	Rural	Urban	All
Self Employed	9.33	10.07	9.48	8.25	6.55	7.86	8.27	7.35	8.06
Employers	0.70	0.49	0.66	0.66	0.19	0.56	0.39	0.37	0.38
Unpaid Family Workers	2.85	0.92	2.48	2.21	0.26	1.77	2.46	1.96	2.34
Regular Salaried Workers	1.25	7.95	2.56	0.99	8.02	2.58	1.79	9.56	3.62
Casual Labour in Public Works	0.02	0.03	0.02	0.46	0.15	0.39	0.93	0.09	0.73
Other Casual Workers	38.87	25.08	36.17	38.10	28.91	36.02	46.84	33.25	43.65
Unemployed/ seeking work	0.29	0.28	0.29	0.17	0.08	0.15	0.17	0.13	0.16

Domestic Duties	0.89	0.56	0.82	0.75	0.48	0.69	1.00	0.51	0.88
Rentiers, Pensioners etc.	0.29	0.69	0.36	0.16	0.50	0.24	0.05	0.07	0.06
Not able to work on usual status due to disability	45.10	53.56	46.76	47.64	54.71	49.24	37.67	46.19	39.67
Others, begging, Prostitution etc.	0.40	0.37	0.39	0.61	0.14	0.51	0.43	0.51	0.45
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Unit level records of NSSO 61st, 66th and 68th Rounds

Further, the rural-urban distribution shows that the relative shares of persons with disability in regular employment is higher in urban areas than the rural ones while that of the persons in casual works is higher in the rural areas than their urban counterparts. It is actually due to the differences in type of jobs available in rural and urban labour markets. The urban labour markets have a greater segment of the organised sector while the rural areas are largely dominated by the informal/unorganised sector jobs. Though, one may also argue that proportion of persons working as regular workers is higher in urban areas due to supportive infrastructure which may be bringing more of the disabled workers in full-time regular jobs but at the same time, we can also observe that the proportion of the workers who are not able to work at all is also higher in urban areas (46 per cent) than the rural ones (38 per cent) which rejects the commonly held belief that the disabled persons in the urban areas have greater mobility and hence greater employability. As compared to the rural areas, a greater proportion of the persons not able to work due to disability in urban areas also shows lower degree of family support for enabling a person to chose an employment opportunity away from home. Thus, we have seen that a large proportion of the persons who are able to work despite their disability work in casual jobs only. This may lead to lower earnings and higher rates of incidence of poverty among them. The jobs in which the persons with disability are placed also depends upon their educational attainments which can be examined in next section.

IV. Average Level of Education of the Persons with Disability

Any kind of disability may lead to lower living standard and poverty through adverse impact on education. It may prevent the school attendance of the children or their participation in formal schooling which results in lower educational attainments among them. The households too have lower incentives to investment in education of the children with disabilities due to lower expected returns from education in terms of employment

outcomes. However, the educational attainments also depend upon the severity of disability, the family and school environment as well as educational policy and the attitude of the government towards the special needs of the disabled persons. Among the adults, the education level of these persons are also affected by their position in the family hierarchy. If a person heads a household and has a decisive power may have higher level of education than the persons who are subordinated to a non-disabled head or it can also be vice versa. Hence, in the present study, we have tried to disaggregate the educational attainments of the persons with disability according to their status in the family. This can be observed from Table 3. The Table shows that the average level of education of the persons with disability is 3 years of schooling for the head as well as non-head member of the household in rural areas while in urban areas, it is 5 years for the disabled head of the family and 4 years if the person with disability is a non-head member. Though, we can observe relatively higher educational attainments for the persons belonging to Category C and D but they constitute less than 1 per cent of the all sampled persons with disability in each time period. This table also shows that for the persons with low degree of disability (category A) the average level of education is only 3 and 4 years for the head and non-head disabled member in the rural areas as compared to 6 years each in the urban areas. On the other hand, the persons with severe disability (Category F) have attained only 2 years of schooling in rural areas while it is 5 years for the head and 3 years for the non-head member in the urban areas.

Table 3: Educational Attainments of the Persons with Disability according to their Status in the Family

Category	2004-05				2009-10				2011-12			
	Rural		Urban		Rural		Urban		Rural		Urban	
	Head	Non-Head	Head	Non-Head	Head	Non-Head	Head	Non-Head	Head	Non-Head	Head	Non-Head
A	2	3	5	5	3	4	6	6	3	4	6	6
B	3	3	5	0	0	1	6	0	4	-	7	4
C	2	2	7	4	1	4	2	5	3	3	10	6
D	4	2	5	3	5	0	4	1	12	3	11	2
E	5	7	8	11	5	8	14	11	9	5	-	6
F	2	1	4	2	2	2	5	3	2	2	5	3
All	2	2	4	3	3	3	6	4	3	3	5	4

Source: Unit level records of NSSO 61st, 66th and 68th Rounds

Table 4: Education Poverty among the Persons with Disability according to their Status in the Family

Category	2004-05				2009-10				2011-12			
	Rural		Urban		Rural		Urban		Rural		Urban	
	Head	Non-Head	Head	Non-Head	Head	Non-Head	Head	Non-Head	Head	Non-Head	Head	Non-Head
A	75.37	66.92	53.18	50.06	64.05	50.93	41.10	36.60	64.87	54.16	40.19	35.87
B	64.04	55.98	41.01	99.48	100.00	89.03	62.18	100.00	28.21	--	0.00	87.61
C	84.56	69.58	44.49	46.62	91.61	61.53	73.59	66.01	56.14	55.03	10.57	46.41
D	62.36	87.62	54.12	59.05	41.92	98.55	100.00	98.70	4.54	63.65	7.74	73.10
E	20.88	19.23	0.00	0.00	0.00	26.25	0.00	10.62	0.00	86.41	--	79.78
F	76.78	84.65	61.93	75.73	80.89	84.99	43.46	67.74	78.50	82.97	53.01	65.39
All	75.80	76.23	56.56	67.57	70.37	71.40	42.52	59.19	68.16	68.90	43.90	55.50

Source: Unit level records of NSSO 61st, 66th and 68th Rounds

Actually, a big majority of the sampled workers are illiterate which has led to lower average years of schooling for all the persons taken together in each category. For examining the deprivation of this segment of population on account of education, we can examine the proportion of the persons who have attained education below primary, popularly termed as 'Education Poor'. This can be observed from Table 4. The table shows that though the proportion of the 'Education Poor' disabled persons has come down between 2004-05 and 2011-12 but it is still very high. 68 and 69 per cent of the disabled head and non-head member of the family in rural areas are either illiterate or have attained education for less than 5 years. These proportions are about 44 per cent and 56 per cent in urban areas. Further, we can see that the proportion of the education poor are lower in the categories with moderate degree of disability (categories B to E) than the other two categories. A comparison of category A and category F shows that the proportion of the education poor persons are higher for those with severe disability than those with temporary or low degree of disability. In rural areas, in category A 65 per cent of the disabled heads and 54 per cent of the non-head disabled members are education poor while these proportions are 40 per cent and 36 per cent, respectively in urban areas. On the other hand in case of persons with severe disability (Category F), 79 per cent of the disabled heads and 83 per cent of the non-head members are education poor in rural areas as compared to 53 per cent and 65 per cent, respectively in the urban areas. Thus, we can say that the deprivation on account of educational attainments is higher for the persons with severe disability and further among them, it is higher for the non-head members of the family. It confirms the belief that the households do not invest in the education of the disabled members who are not able to work at all due to disability but it can also be the other way round that as the households have not invested in their human capital attainments, they are not able to work. Education may have been an important impediment for them to be part of the labour market.

V. Deprivations on account of Consumption and Assets according to the Degree of Disability:

Apart from the above mentioned individual characteristics of the persons with disability, there are some deprivations which are faced by the household as a whole. Due to lower participation in labour market and lower educational attainments, the earnings of the

disabled members are lower and if that member is the head of the household or the main earning member of the family then whole of the household would be having lower standard of living and living below the poverty line. As the NSSO rounds do not provide the income data and the information regarding consumption and ownership of the assets is collected at the household level, therefore, in order to find the incidence of poverty among the persons with disability, the per capita expenditure and per household assets have been calculated. The incidence of consumption poverty among these persons can be observed from Table 5.

Table 5: Poverty Ratios according to the Degree of Disability

Category	2004-05		2009-10		2011-12	
	Rural	Urban	Rural	Urban	Rural	Urban
A	39.01	35.22	27.01	28.94	21.02	17.36
B	45.48	29.52	1.12	100.00	14.34	11.52
C	36.52	11.79	33.06	65.12	22.63	35.78
D	37.73	21.93	39.21	57.18	4.11	1.10
E	14.20	60.04	0.00	0.00	0.00	2.59
F	42.92	37.35	33.20	27.42	26.56	17.31
All	40.67	36.07	30.01	28.50	26.72	17.34

Source: Unit level records of NSSO 61st, 66th and 68th Rounds

The Table shows that the proportion of the persons living below the official poverty line has declined considerably from about 41 per cent in 2004-05 to 27 per cent in 2011-12 in rural areas and from 36 per cent to 17 per cent in urban areas. This fall has been registered by every category of the disabled persons mentioned here. However, the poverty ratios are still very high for the persons belonging to category A and F, in which the majority of the persons with disability fall. Interestingly, it is a little higher for the persons with temporary and low disability (Category A) than the persons with severe disability (Category F) in rural as well as urban areas. We know that all the persons living below poverty line do not face similar type of deprivations, some of them are living just close to the poverty line and some may have been living in extreme poverty. This can be examined through the distribution of per capita consumption expenditure of the sampled persons. Since, the proportion of the persons in each of the category from B to E is very low, hence, in order to find the distribution of per capita consumption expenditure across the decile classes, we have clubbed these categories together. So, this distribution can be observed under the following categories:

1. Persons with temporary or low degree of disability: Category A
2. Persons with moderate degree of disability: Category B to E
3. Persons with severe disability: Category F

The distribution of consumption expenditure for all these categories has been shown in Table 6. The table shows that the distribution of consumption expenditure among the persons with disabilities is highly unequal. Though, as seen earlier, the head count ratio of poverty on account of consumption expenditure has declined but this table shows that the distribution of consumption expenditure has worsened over a period of time, especially for the persons with low and severe disability in rural areas. We can see that in 2004-05, in rural areas about 18 per cent of the persons with low disability, 31 per cent of those with moderate degree of disability and about 25 per cent with severe disability were consuming only 10 per cent of the total consumption expenditure of their respective groups and these proportions changed to 19 per cent, 16 per cent and 26 per cent by the year 2011-12. In case of urban areas, the distribution worsened in case of persons with moderate and severe disability and improved for those with low degree of disability. The bottom 12 per cent of the persons with low disability, 16 per cent of those with moderate disability and 17 per cent of those with severe disability in urban areas are consuming merely 10 per cent of the consumption expenditure of their respective groups. On the other extreme, in the top decile group, 10 per cent of total consumption expenditure is being consumed by 1 per cent or 1.5 per cent of the persons with different degrees of disabilities in rural as well as urban areas. Further, we can observe that the persons with severe disability face greater inequality than the other categories as in rural areas 72 and 71 per cent of the persons with low and moderate disability were consuming merely 50 per cent of the total consumption expenditure of their respective groups while in case of the persons with severe disability, this share was even smaller as about 78 per cent of them live on 50 per cent of the total consumption expenditure by their own category. In urban areas, 60 per cent, 71 per cent and 72 per cent of the persons with low, moderate and severe disability were consuming 50 per cent of total consumption expenditure. Thus, we have seen that there are many inter-group and intra-group inequalities among the persons with disabilities. Some are poor and some are non-poor, within poor, some are living in extreme poverty while some are just above or below the poverty line.

Table 6: Distribution of Per Capita Consumption Expenditure according to the Degree of Disability

Decile Classes of consumption expenditure	2004-05						2009-10						2011-12					
	Rural			Urban			Rural			Urban			Rural			Urban		
	low	Moderate	Severe	low	Moderate	Severe	low	Moderate	Severe	low	Moderate	Severe	low	Moderate	Severe	low	Moderate	Severe
10	17.5	30.7	24.5	13.6	14.4	16.0	16.6	28.4	23.5	12.6	9.0	15.2	19.1	15.5	26.3	12.0	16.4	17.1
20	33.1	50.4	39.5	23.6	31.7	30.0	31.6	40.3	38.5	23.7	47.2	30.8	33.3	33.7	42.6	23.9	25.0	33.5
30	47.2	60.0	53.0	34.2	37.6	45.0	42.4	58.6	52.0	35.1	65.4	45.1	48.4	41.4	57.3	34.5	38.3	48.8
40	57.9	68.6	63.2	51.8	52.9	58.3	53.8	61.9	62.6	46.9	78.5	58.5	60.4	60.1	68.7	47.1	62.7	61.8
50	70.2	75.1	73.7	63.0	60.4	70.9	66.9	74.4	72.2	61.6	82.2	67.3	72.7	71.4	77.6	60.1	70.7	71.9
60	79.4	83.5	81.7	77.6	74.5	81.2	79.3	80.6	80.8	73.6	83.1	75.6	82.6	84.2	84.5	70.6	80.9	81.2
70	87.0	90.9	88.9	88.0	79.5	87.4	86.9	84.3	91.8	81.8	90.7	83.8	89.6	89.7	92.1	82.2	88.9	87.8
80	93.1	95.1	93.6	93.5	83.9	93.3	93.5	98.0	95.9	88.7	95.4	90.6	95.2	92.1	96.2	93.4	91.2	93.9
90	98.4	97.6	97.4	98.3	95.5	98.3	98.4	99.2	98.4	93.7	98.1	96.1	98.5	98.5	99.0	97.9	93.0	97.5
100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Unit level records of NSSO 61st, 66th and 68th Rounds

Further, we can also observe the deprivation of the persons with disability on account of ownership of land. Land is an important productive asset in rural areas. In urban areas, its ownership helps in providing collateral for meeting credit needs of the non-farm activities. Hence, in urban areas also land proves to be an indirect productive asset. However, in case of the persons with disability, the ownership of land is conspicuous by its absence. It can be observed from Table 7. In this table the persons who own less than one acre of land have been considered to be poor. Using this poverty line, we can that in 2004-05, about 85 per cent of the persons with disability in rural areas and about 97 per cent in urban areas were landless or near landless (i.e. owning land less than one acre) and these proportions increased to 86 per cent and 98 per cent, respectively in 2011-12. In case of category A and F, to which a big majority of the sampled persons belong, we can find that 90 per cent and 99 per cent of Category A and 80 per cent and 97 per cent in Category F were land poor. Thus, land poverty is very high among the persons with disability. The deprivation on account of land ownership has very serious consequences upon the earning capacity and standard of living of the persons in rural areas. This deprivation opens further pathways of deprivations on account of education as well as consumption expenditure.

Table 7: Poverty Ratios on account of Land Ownership according to the Degree of Disability

Category	2004-05		2009-10		2011-12	
	Rural	Urban	Rural	Urban	Rural	Urban
A	87.79	97.53	91.72	98.32	90.36	99.12
B	100.00	94.41	100.00	100.00	100.00	100.00
C	91.90	99.58	74.46	100.00	85.81	100.00
D	76.55	94.51	82.83	63.42	63.49	88.15
E	94.00	99.86	99.12	100.00	100.00	100.00
F	81.36	97.01	81.60	97.23	80.43	96.86
All	84.94	97.27	86.72	97.69	86.48	98.03

Source: Unit level records of NSSO 61st, 66th and 68th Rounds

Finally, a look at the distribution of the landownership among the disabled persons also shows that a big majority of them are tied to the lower decile groups and this distribution has worsened between 2004-05 and 2011-12.

Table 8: Distribution of Land Owned according to the Degree of Disability

Decile Classes of land Owned	2004-05						2009-10						2011-12					
	Rural			Urban			Rural			Urban			Rural			Urban		
	low	Moderate	Severe	low	Moderate	Severe	low	Moderate	Severe	low	Moderate	Severe	low	Moderate	Severe	low	Moderate	Severe
10	80.0	78.4	74.0	96.0	89.3	91.8	85.7	76.5	78.8	96.1	95.6	95.7	82.9	73.7	74.3	93.0	88.9	93.8
20	88.0	87.8	83.5	97.0	93.3	94.6	91.8	82.5	88.3	97.3	95.7	97.3	90.4	87.3	85.2	96.9	94.2	96.4
30	92.5	93.3	88.8	98.1	94.5	96.9	94.6	90.3	92.8	98.3	95.7	98.3	94.3	93.1	91.4	98.0	95.4	97.3
40	94.8	96.5	93.4	98.8	99.2	97.8	97.4	92.2	96.1	99.6	95.7	98.8	97.2	96.4	95.3	92.2	95.5	98.0
50	97.6	97.6	96.7	99.0	99.2	98.3	98.7	92.8	97.8	99.8	95.7	99.0	98.7	99.3	97.2	99.1	95.5	98.6
60	98.9	97.9	98.1	99.2	99.2	98.9	99.0	93.8	98.5	99.9	95.7	99.3	99.4	99.5	98.5	99.3	95.5	99.1
70	99.4	98.0	99.3	99.5	99.7	99.3	99.7	98.0	99.1	100.0	95.7	99.4	99.7	99.5	99.4	99.6	95.5	99.5
80	99.8	99.5	99.7	99.9	99.7	99.5	99.9	98.2	99.3	100.0	95.7	99.6	99.7	99.9	99.7	99.9	95.5	99.8
90	100.0	99.6	99.9	100.0	99.7	99.8	99.9	98.3	99.9	100.0	95.7	99.8	99.9	99.9	99.9	99.9	95.5	99.9
100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Unit level records of NSSO 61st, 66th and 68th Rounds

Nearly in all the categories of the disabled persons, nearly 1 per cent own more than 50 per cent of the total land owned by each category while the bottom 10 per cent of land is owned by more than 70 per cent of the persons. This proportion is 83 per cent for the persons with low disability and 74 per cent each for persons with moderate and severe disability in rural areas while in urban areas, the bottom 93 per cent, 89 per cent and 94 per cent of the persons with low, moderate and severe disability are owning merely 10 per cent of the total land owned by their respective groups. Thus, the poverty ratio on account of the dimension of land are very high and at the same time its distribution is also highly unequal. This points towards the need of finding the poverty gaps and the squared poverty gaps of all the deprivations discussed here. We know that the poverty gap measures the extent to which individuals fall below the poverty line (the poverty gaps) as a proportion of the poverty line. The sum of these poverty gaps gives the minimum cost of eliminating poverty, if transfers were perfectly targeted. The squared poverty gap index (also known as the poverty severity index, P^2) averages the squares of the poverty gaps relative to the poverty line. It is one of the Foster-Greer-Thorbecke (FGT) class of poverty measures that allow one to vary the amount of weight that one puts on the income (or expenditure) level of the poorest members in society (World Bank, n.d.[iv]).

We can examine the poverty gap and the squared poverty gap from Table 9. The table shows that the poverty gap index as well as the severity of poverty i.e. Squared poverty gap index are higher for the persons with severe disability in case of the dimensions of per capita consumption expenditure in both the rural as well as urban areas. On the other hand, in case of land ownership, the poverty gap index as well as the squared poverty gap index is the highest for the persons with low disability in rural areas while in urban areas, the same is true in case of poverty gap index but the severity of poverty on account of land ownership has been found to be the highest for the persons with moderate disability.

Table 9: Poverty Gap and Squared Poverty Gap on different Dimensions by Degree of Disability

	Rural									Urban								
	Degree of Disability									Degree of Disability								
	Low			Moderate			Severe			Low			Moderate			Severe		
Dimension	2011-12	2009-10	2004-05	2011-12	2009-10	2004-05	2011-12	2009-10	2004-05	2011-12	2009-10	2004-05	2011-12	2009-10	2004-05	2011-12	2009-10	2004-05
	Poverty Gap																	
PCE	4.52	4.80	8.01	2.64	11.57	10.23	6.19	8.55	10.61	3.31	6.99	8.29	5.01	8.88	5.07	3.81	6.49	9.13
Education	49.39	47.55	63.12	43.51	59.98	59.24	70.07	75.92	75.24	30.14	30.75	41.73	36.05	58.52	30.13	51.63	51.06	61.18
Land owned	79.53	82.02	76.28	72.88	68.95	69.74	67.14	68.18	65.75	96.14	96.52	95.60	95.20	95.17	89.77	93.73	95.06	92.79
	Squared Poverty Gap																	
PCE	1.48	1.32	2.54	0.69	5.87	4.42	2.24	3.35	3.78	0.97	2.31	2.91	1.72	1.91	1.67	1.27	2.24	3.13
Education	46.99	45.08	60.85	41.49	58.91	57.44	67.75	74.19	73.79	28.18	28.92	39.11	32.59	56.05	27.19	49.62	49.29	58.94
Land owned	74.46	77.08	71.15	68.27	63.28	61.81	61.37	62.34	59.26	94.38	95.37	94.63	94.63	94.61	85.78	92.04	93.65	90.71

Source: Calculated from the unit level records of NSSO 61st, 66th and 68th Rounds

PCE: Per capita consumption expenditure

VI. Multidimensional Poverty among the Persons with Disability

In this section, we can examine the poverty status of the persons with disability on different dimensions. We can also observe the relative contribution of each of the dimension in overall poverty rates of the sampled population. Table 10 shows the head count index (H0), adjusted head count index (M0), adjusted poverty gap index (M1), adjusted squared poverty gap (M2) as well as the weighted sum of average number of deprivations (A), average normalised gap (G) and average squared normalised gap (S).

Table 10: Profile of the Multidimensional Poverty by Degree of Disability (k=2)

Sector	Degree of Disability	H0	M0	M1	M2	A	G	S
		2011-12						
Rural	Low	0.629	0.461	0.350	0.322	0.733	0.759	0.698
	Moderate	0.478	0.338	0.256	0.239	0.707	0.757	0.707
	Severe	0.718	0.544	0.407	0.371	0.758	0.748	0.682
Urban	Low	0.458	0.339	0.259	0.242	0.740	0.764	0.714
	Moderate	0.568	0.426	0.326	0.302	0.750	0.765	0.709
	Severe	0.636	0.467	0.385	0.367	0.734	0.824	0.786
		2009-10						
Rural	Low	0.652	0.487	0.359	0.330	0.747	0.737	0.678
	Moderate	0.528	0.441	0.340	0.306	0.835	0.771	0.694
	Severe	0.756	0.587	0.446	0.408	0.776	0.760	0.695
Urban	Low	0.514	0.399	0.292	0.269	0.776	0.732	0.674
	Moderate	0.869	0.717	0.498	0.465	0.825	0.695	0.649
	Severe	0.643	0.497	0.396	0.373	0.773	0.797	0.751
		2004-05						
Rural	Low	0.745	0.586	0.428	0.390	0.787	0.730	0.666
	Moderate	0.675	0.530	0.393	0.349	0.785	0.742	0.658
	Severe	0.776	0.621	0.453	0.407	0.800	0.729	0.655
Urban	Low	0.634	0.499	0.373	0.345	0.787	0.747	0.691
	Moderate	0.515	0.379	0.271	0.244	0.736	0.715	0.644
	Severe	0.755	0.604	0.471	0.438	0.800	0.780	0.725

Source: Calculated from the unit level records of NSSO 61st, 66th and 68th Rounds

The table shows that although the head count index for people living below poverty on atleast two dimensions has come down between 2004-05 and 2011-12 but still 62.9 per cent, 47.8 per cent and 71.8 per cent of persons with low, moderate and severe disability, respectively in rural areas are facing deprivation of atleast two dimensions. The table further shows that the head count ratio, the adjusted head count ratio, the adjusted poverty

gap and squared poverty gap are the highest for the persons with severe disability in rural as well as urban areas. Since, each category is not homogeneous in itself as we have seen in the distribution tables that there are wide inequalities in each of the dimension within each category of persons with disability, hence, it is important to examine the normalised poverty indices. We can see that during 2011-12, the average number of deprivations were the highest for the persons with severe disability in rural areas but in urban areas, it is the highest for the persons with moderate disability. Similarly, in case of the normalised poverty gap and the squared poverty gap, we can find the highest value for the persons with severe disability in urban areas but in rural areas, the normalised poverty gap is the highest for the persons with lower degree of disability while the squared poverty gap is the highest for the persons with moderate disability. These results provide an insight in to the groups to be targeted and the amount to be transferred to pull them out of the poverty traps. For this purpose, an examination of the relative contribution of different dimensions in overall value of each of the poverty measure can also be helpful. This can be observed from Table 11. The table shows that as against the general impression, the relative contribution of per capita consumption expenditure to overall poverty rates is very low and it has also been declining over a period of time. During all the years under study, we can see that the contribution of the other two dimensions is much higher for all the categories of the persons with disability. Looking at the latest available information (i.e. 2011-12), we can observe that for all categories of the disabled persons, the contribution of the dimension of ownership of land is the highest for all indicators of poverty in rural as well as urban areas. Another noticeable point is that in case of persons with severe disability in rural areas, the relative contribution of education to overall poverty rates is higher than that of the land ownership and it has increased in 2011-12 as compared to 2004-05 and it is the highest for severely disabled persons in extreme poverty.

Table 11: Relative Contribution of different Dimensions to Poverty Ratios

Degree of Disability	Dimension	Rural			Urban		
		M_0	M_1	M_2	M_0	M_1	M_2
		2011-12					
Low	PCE	14.48	4.14	1.49	16.90	4.23	1.32
	Education	40.93	44.03	45.72	38.13	38.68	38.67

	Land owned	44.59	51.83	52.79	44.98	57.09	60.01
Moderate	PCE	13.80	2.71	0.69	13.73	5.13	1.90
	Education	39.27	39.31	39.53	41.75	36.91	35.95
	Land owned	46.94	57.99	59.78	44.52	57.95	62.15
Severe	PCE	15.84	5.02	2.00	12.19	3.26	1.14
	Education	42.05	47.94	50.75	42.55	43.57	43.99
	Land owned	42.11	47.04	47.25	45.26	53.17	54.87
	2009-10						
Low	PCE	17.55	4.16	1.23	24.17	7.96	2.86
	Education	38.61	42.18	43.62	32.99	34.79	35.60
	Land owned	43.84	53.65	55.15	42.84	57.24	61.54
Moderate	PCE	22.67	11.35	6.39	28.60	5.94	1.37
	Education	39.90	47.51	51.67	32.97	39.14	40.15
	Land owned	37.43	41.14	41.94	38.43	54.93	58.49
Severe	PCE	18.74	6.36	2.73	18.28	5.43	1.99
	Education	41.12	49.14	52.57	38.88	42.14	43.20
	Land owned	40.13	44.50	44.70	42.83	52.43	54.81
	2004-05						
Low	PCE	21.53	6.01	2.06	23.31	7.36	2.80
	Education	38.12	45.83	48.52	34.49	37.11	37.66
	Land owned	40.35	48.16	49.42	42.21	55.53	59.53
Moderate	PCE	20.92	8.65	4.22	18.18	6.05	2.26
	Education	38.99	47.59	51.94	36.52	36.97	37.18
	Land owned	40.08	43.76	43.85	45.30	56.98	60.57
Severe	PCE	22.73	7.72	3.07	20.60	6.46	2.38
	Education	38.73	49.20	53.67	37.99	42.37	43.81
	Land owned	38.54	43.07	43.26	41.42	51.17	53.81

Source: Calculated from the unit level records of NSSO 61st, 66th and 68th Rounds

PCE: Per capita consumption expenditure

Above results give important implications for poverty alleviation programmes targeting the disabled persons. Using the latest available information, we can use the targeting technique on the FGT measures of poverty. This technique gives us an idea of impact of spending a constant lump-sum amount on overall poverty reduction. For this purpose, the data has been taken from the latest round only. The results of such targeting scheme have been shown in Table 12.

Table 12: Targeting Poverty by Degree of Disability

Sector	Degree of	PCE	Education	Land Owned

	Disability	FGT Index	Impact on Population	FGT Index	Impact on Population	FGT Index	Impact on Population
Rural	Low	21.02	-0.0008	60.94	-0.1029	90.36	-0.0001
	Moderate	15.51	-0.0005	53.57	-0.1003	82.07	-0.0001
	Severe	26.56	-0.0009	81.35	-0.0783	80.43	-0.0002
Urban	Low	17.36	-0.0004	38.90	-0.1100	99.12	0.0000
	Moderate	17.53	-0.0005	53.32	-0.0666	95.79	0.0000
	Severe	17.31	-0.0005	61.11	-0.0909	96.85	-0.0003

Source: Calculated from the unit level records of NSSO 61st, 66th and 68th Rounds

The targeting by degree of disability shows that expenditure of one currency unit (rupee in the present case) reduces the poverty for all categories of disabled persons but its impact is the highest if it is spent upon the persons with severe disability in rural areas. The table shows that a rupee spent on this group reduces the consumption poverty rates of the overall population of rural areas by 0.0009 per cent while in urban areas, greater impact can be observed by targeting the persons with moderate and severe disability. On the other hand, the impact of expenditure on education is higher than the other dimensions and the highest impact can be observed in case of targeting the persons with low disability in rural as well as urban areas. Interestingly, the poverty rates on account of the dimension of land ownership are very high but the impact of a rupee spent on this dimension for poverty alleviation is the lowest and it is almost negligible in case of the persons with low and moderate disability in urban areas. Thus, we can say that targeting poverty through education can be more effective than other dimensions.

VII. Policy Suggestions: Above analysis has shown that the persons with disability bear multiple deprivations and as linked with the employment status, we have seen that the persons with severe disability face greater deprivations and for them education is the major contributor to their overall poverty rates and the relative contribution of education is the highest for severely disabled persons in extreme poverty. This gives an important policy implication for poverty alleviation programmes for this category of the disabled persons. This points towards the need of including the people/children with severe disability in the programmes of universalisation of education in rural as well as urban areas. The results have also shown that targeting poverty through education can be more effective than other dimensions. So, appropriate and adequate measures should be taken in this direction. Further, lack of ownership of land has been found to be an important

pathway to poverty of the persons with disabilities, so there is a need to address this issue as well. But the redistribution of land is easier to say than done. The land reforms in the country has not solved this issue even after 70 years of Independence. So, there is a need that alternative employment opportunities are created in the non-farm sector of the rural areas so that the deprivation of land does not result in poor status of the persons with disability. In urban areas also, there should be an emphasis on promotion of self-employment opportunities among these segments of population by providing them credit without any collateral in the form of land. We have also observed that a big majority of the persons with disability are actually working in casual jobs. This can be due to the problems in their mobility and also due to the attitude of the employer who may be considering them less efficient than the non-disabled persons or may be avoiding the responsibility of providing supportive infrastructure to them. In order to solve this problem, all the production units should be instructed to have a disabled friendly infrastructure in their premises and any violation of the rules in this direction should be strictly dealt with. There should be strict vigilance upon the fact if the organised sector is strictly following the quotas and reservations mandated for the physically handicapped persons or not. Any deviations from the set norms should not be tolerated as providing the required facilities for the persons with disability is not a mercy but a right. From a human rights and social justice perspective, the widespread exclusion of people with disabilities from society is unequivocally unacceptable. Such exclusion is also untenable from an economic perspective as it not only creates a significant economic burden for individuals and their families, but also carry substantial costs to societies at large in shape of loss of productive capacity.

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Notes

[i] As per NSSO, the employment status of a person under three categories used in this study is defined as follows:

Usual principal activity status*:* The usual activity status relates to the activity status of a person during the reference period of 365 days preceding the date of survey. The activity status on which a person spent relatively long time (i.e. major time criterion) during the 365 days preceding the date of survey is considered as the *usual principal activity status* of the person.

Current weekly activity status*:* The current weekly activity status of a person is the activity status obtaining for a person during a reference period of 7 days preceding the date of survey.

Current daily activity status: The activity pattern of the population, particularly in the informal sector, is such that during a week, and sometimes, even during a day, a person could pursue more than one activity. Moreover, many people could even undertake both economic and non-economic activities on the same day of a reference week. The current daily activity status for a person was determined on the basis of his/her activity status on each day of the reference week. Each day of the reference week was looked upon as comprising either two 'half days' or a 'full day' for assigning the activity status. For recording time disposition for activities pursued by a person in a day, an intensity of 1.0 was given against an activity that was done for 'full day' and an intensity of 0.5 against the activity which was done for 'half day'. A person was considered 'working' (employed) for the full day if he/she had worked for 4 hours or more during the day.

[ii] For the details of this methodology see Planning Commission (2014) www.planningcommission.nic.in/reports/genrep/pov_rep0707.pdf

[iii] Poverty lines (Expert Group Methodology)
2004-05: Rural = Rs. 447, Urban = Rs. 579
2009-10: Rural = Rs. 673, Urban = Rs. 860
2011-12: Rural = Rs. 816, Urban = Rs. 1000

[iv] http://siteresources.worldbank.org/.../**Poverty**_Inequality_Handbook_Ch04.pdf , as visited on July 10, 2018.