MGNREGS in North Eastern States of India: An Efficiency Analysis Using Data Envelopment Analysis

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Abstract

MGNREGS is the world's largest employment generation scheme functional in India since 2005-06. The North Eastern Region (NER) of India, comprised of eight states, characterised by economic backwardness has adopted the scheme in marginally greater extent than the national average. The present paper observes that the implementation efficiency, measured through the Data Envelopment Analysis (DEA) framework, varies across the states in a statistically significant manner for both 2012-13 & 2013-14 under Overall Technical Efficiency (OTE) as well as Pure Technical Efficiency (PTE) considering the districts as the Decision Making Units (DMUs). The average efficiency of implementation shows a marginal improvement in the later year but there are clear indications that the districts of the region operate with scale inefficiency. Tripura emerges as the most efficient state in terms of implementation followed by Mizoram, while Arunachal Pradesh is at the bottom. Further, efficiency is found to be positively attributed by literacy rates and higher share of marginalised population.

1. Introduction

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has been the largest employment generation programme in the world initiated by the Government of India in 2005 with the objective of enhancing livelihood security in rural areas by providing a guarantee of 100 days wage employment to all applicant rural households in a financial year irrespective of any conditionality save the willingness of the adult members to perform unskilled manual work. The enormity of the programme is evident in the fact that Rs 300000 crores (more than US $ 50 billion) has been spent by the Central government since its inception. A substantial empirical literature has looked at the different aspects of the scheme on a wide range of outcomes varying from poverty reduction to empowerment of women, children's education and

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health. The scheme is revolutionary in providing a right based framework for wage employment for the first time thereby making the government legally bound to those who demand it (Shah, 2012). The scheme has been lauded owing to its potential for acting as a 'big push' to the distressed regions and facilitate the full employment strategy for India (Bhatia and Dreze, 2006; Ambasta et. al. 2008, Hirway, 2008). The improved economic condition following the large scale employment generation has been a fact across the country (Dreze and Oldiges, 2007; Sharma, 2009; Ghosh, 2009), even amidst questions about the quality and quantity of work undertaken through the scheme (Shrivastava, 2006; CSE, 2008; World Bank, 2011); moreover, the scheme has also been criticised for being inflationary (Sethi, 2011) and breeding corruption (Mandavalli, 2010).The implementation of the scheme has actually varied across regions and states over the years with most of the states doing bad including those which are economically backward and poor (Jha & Gaiha, 2013; Sen, 2016); whereas, states with success in administering and delivering Public Distribution System (e.g.- Andhra Pradesh, Tamil Nadu, Rajasthan) were also very successful in implementing the scheme (Ravallion, 2016).

The 8 (eight) North Eastern (NE) states of India, accounts for 8% and 4% of the country's area and population respectively but contributes less than 2% of the country's GDP; which is in itself an indicator of its economic backwardness. Geographical isolation following the sole linkage to the mainland through the Siliguri corridor has characterised these predominantly agrarian states with negligible industrialisation, poor infrastructure and minimal gainful employment opportunities. The people, 34% belonging to the scheduled castes and scheduled tribes communities, have higher poverty levels than the national average (GoI, 2008).Added to it are the several extra-economic hurdles in the form of ethnic disturbances, insurgency and marginalization. As a result, the economic mainstay of these states has been the Central assistance and grants often decided in the parlance of the region's geo-strategic positioning. Thus, development initiative like MGNREGS becomes extremely important as a source of fund flow as well as building of asset for facilitating future economic endeavours. In other words, the opportunity of 100 days of guaranteed employment per household per year acts as a safety net for people living in the rural parts of this region. The rationale and goal of the scheme has been without doubt but the implementation has often been the issue and the source of concern and criticism for many.

Efficiency analysis of MGNREGS has itself been limited and use of DEA is even less. Datta and Singh (2012) used the DEA approach in commenting that socio-economic factors like- education, caste, religion, alternative income, health-related achievements and fund availability influences women's participation and share in employment. In West Bengal, relatively higher average efficiency scores indicated the efficacy of the local administration in obtaining quick fund from higher authorities through better administrative skills. Saha and Debnath (2015) observed that Indian states with low literacy rates and high poverty ratios have lower efficiency scores while Natesan and Marathe (2015) develops a mechanism to categorize the states in terms of their scores and also suggest areas which should be addressed for further efficiency of

implementation.

It is in this background that the present paper stems with the objective to undertake an efficiency analysis of implementation of MGNREGS using the Data Envelopment Analysis (DEA) approach for the states in North Eastern Region (NER), particularly because studies on MGNREGS considering all the NER states has also been scarce. The specific objectives of the present paper are-

1. To estimate the overall technical efficiency (OTE), pure technical efficiency (PTE) and scale efficiency (SE) scores of the districts of North Eastern states regarding the implementation of MGNREGS

2. To examine the differences in the levels of efficiency in implementation of MGNREGS among the NER states, if any; and

3. To identify the factors effecting the efficiency score

The present study is structured into five sections starting with the Introduction. The second section provides a methodological note on DEA and provides the analytical framework for the present study. Extent of MGNREGS in the North Eastern states is the crux of the third section, while the fourth section provides the analysis and discussion on efficiency of implementation. The last section provides the summary and concluding remarks.

2. Methodology and Analytical Framework

DEA (Data Envelopment Analysis) is a linear (mathematical) programming based method introduced by Charnes, Cooper & Rhodes (1978) as a generalisation of the Farrell's (1957) single-output/ single- input radial measure of technical efficiency to multiple- output/ multiple-input case by constructing a relative efficiency score as the ratio of a single virtual output to a single virtual input. This tool of operational research to measure technical efficiency under constant returns to scale (CCR model) was extended by Banker, Charnes and Cooper (1984) to include variable returns to scale (BCC model). The proponents of DEA considered it to be a mathematical programming model for observational data in order to obtain newer ways of analysing and estimating empirical relations of fundamentals of modern economics like- production functions and/or efficient production possibility surfaces. In other words, Data Envelopment Analysis is a decision making tool based on linear programming for measuring the relative efficiencies of a set of comparable units, termed as Decision making units (DMUs) in the DEA parlance.

Since DEA is directed to frontiers and not towards central tendencies, the attempt is to 'float' a piecewise linear surface to rest on top of the observations instead of trying to fit a regression plane through the centre of the data as in statistical regression. It should be noted that the extended Pareto- Koopmans definition states that full (100 percent) efficiency is attained by any DMU if and only if none of its inputs or outputs can be improved without worsening some of its other inputs or outputs. However, with theoretically possible levels of efficiency not being known always, particularly in

management and social sciences, the concept of Relative Efficiency is used which proposes that- a DMU is to be rated as fully (100 percent) efficient on the basis of available evidence if and only if the performances of the other DMUs does not show that some of its inputs or outputs can be improved without worsening some of its other inputs or outputs.

Mathematically, relative efficiency is written as-

$$\sum r \, u_r y_{ro} / \sum i \, v_i x_{io}$$

Where,

y_{ro} = rth output of a particular DMU, O
x_{io} = ith input of that particular DMU, O
u_r is the weight associated with each kind of output &
v_i is the weight associated with each kind of input

The problem is to find these weights such that $z = \sum r \, u_r y_{ro} / \sum i \, v_i x_{io}$, i.e. the ratio of the virtual output to the virtual input of each DMU is maximised. However, without additional constraints this ratio would be unbounded. Thus, to deal with this a set of normalising constraints are introduced:

$$\sum r \, u_r y_{rj} / \sum i \, v_i x_{ij} \; d+ \; 1 \text{for j} = 1, 2 \dots n \;\&$$
$$u_r \& \; v_i \; e+ \; 0 \text{ for all i } \&$$

Which reflects the condition that the virtual output to virtual input ratio of every DMU must be less than or equal to unity for non-negative weights.

The DEA method is applicable to identify a host of efficiency parameters. The technical efficiency score θ CRS is called the overall technical efficiency (OTE) and is calculated on the assumptions of constant returns to scale and is popularly known as CCR model. However, if the DMUs are not operating at an optimal scale, it can be decomposed into pure technical efficiency (PTE) and scale efficiency (SE). Pure technical efficiency is calculated on the assumptions of variable returns to scale where an additional convexity constraint: N1'λ = 1, is added to the existing model of overall technical efficiency. Symbolically, PTE = θ VRS. Further the mathematical programming ensures that pure technical efficiency scores are either greater or equal to the overall technical efficiency scores (Banker et al, 1984). Scale Efficiency for the ith DMU, on the other hand, is obtained as

$$SE_i = \theta_i{}^{CRS} / \theta_i{}^{VRS}$$

Where, SE = 1 indicates scale efficiency or constant returns to scale and SE < 1 indicates scale inefficiency.

It should be further noted that in DEA, technical efficiency can be viewed from two perspectives-
a) input oriented, where θ input = Minimum possible input/ Actual input &

b) output oriented, where θ output = Actual Output/ Maximum Possible Output.

Figure 1: Conceptual Framework of the Study
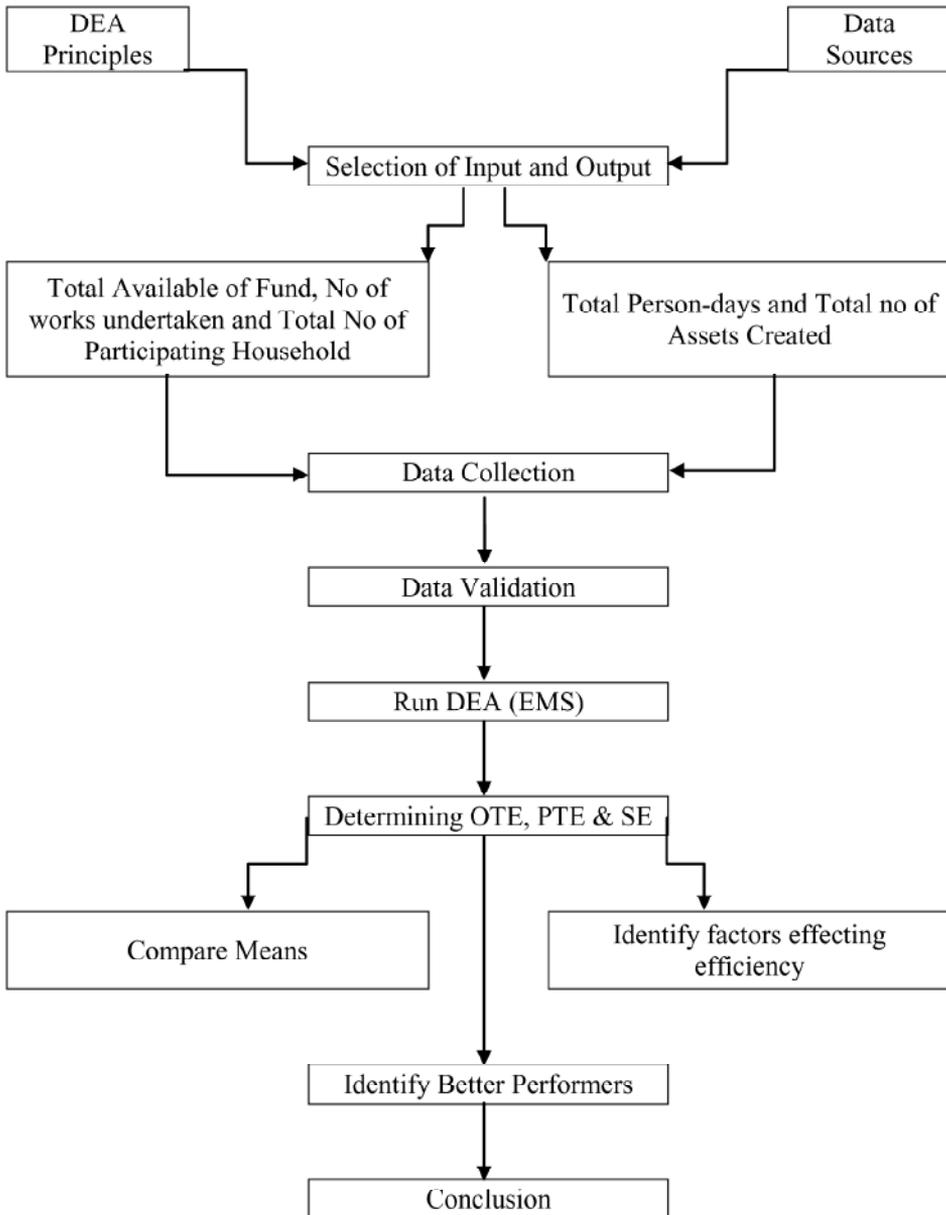
Source: Prepared by the Authors

The first objective of the study is addressed by estimating the efficiency scores. For the second objective, we undertake a one-way ANOVA to compare the average efficiency scores of each state. A post-hoc test (Tukey) is done to ascertain the level of difference among the individual states. In order to fulfil the third objective, an OLS regression considering the efficiency scores as the dependent variable is undertaken. The dependent variable for the regression is the average Pure Technical Efficiency (PTE) scores as it has been seen that most of the DMUs (districts) suffer from scale inefficiency. Social and economic indicators for the districts which are independent of the MGNREGS intervention have been considered as decision variables. The PTE scores have been considered for addressing the second and the third objectives as it provides opportunity for greater flexibility including decision making (Natesan and Marathe, 2015).

As stated earlier, the present paper considers the districts as the decision making unit and uses secondary data obtained from www.nrega.net for analysis. Total person-days and total number of assets created are considered as the output; whereas, total available of fund, the number of works undertaken and the total number of participating households are considered as inputs. In this context, it may be noted that availability of fund is synonymous with total allocation of funds (or total funds available) and is determined on the basis of the total demand for employment by the households possessing job cards. Important to note here that, total population of an area (in this case, districts) is not the major factor for determining the fund size as a large populated district may not necessarily have large funds rather can have lower number of job card holders and lesser demand for work. We have used an output oriented model since better efficiency means higher man-days generation per household, greater coverage of households with 100 days of work and a higher completion rate. The study refers to 2012-13 and 2013-14 because a number of administrative fragmentations in later period have been undertaken but the corresponding data for decision variables are not available. Moreover, 3 districts from Arunachal Pradesh has been left out from the present focus for inconsistent input variables, thus the present study is done considering 83 districts of NER. The efficiency analysis has been done using the EMS Software while the OLS regression has been undertaken in MS Excel Software. The data for decision variables are obtained from www.censusindia.gov.in and relate to Census 2011 undertaken by the government of India.

3. Extent of MGNREGS in North Eastern Region of India

The importance and relevance of MGNREGS in the NER is reflected in Table 1. The region catering to less than 4% of the country's population accounts for 5% of the job cards issued in the country. More than 66 lakh household had job-cards had been issued in 2013-14. The share of the region in terms of demand for employment under the scheme is even higher with more than 35 lakh households demanding work, which is in the vicinity of 7% of the national pie. The total number of person-days generated has marginally decreased in 2013-14 but is still above 7% of the country's share.

Table 1: MGNREGS in North East India (2012-13 & 2013-14)

Indicators	2012-13	2013-14
HHs with Job Cards	6477577(4.96)	6620181(5.17)
HHs demanding Employment	3410976(7.48)	3549288(6.85)
Total Person-days Generated (Lakhs)	1770.65(7.68)	1547.22(7.02)
Avg. Person days/ HH	44.30(44.99)	43.90(45.86)
HH with 100 days of work	8.86(7.80)	10.28(10.37)
Women Person days (% of total)	35.49(41.84)	39.32(50.11)
Work Completion Rate (%)	28.47(35.87)	31.60(14.69)
Utilisation of funds (%)	82.94(86.25)	88.29(86.25)

Source: Computed from www.nrega.in

However, the average person-days per household in the region have been marginally lower than the national average. Similarly, the share of women in job participation is also lower than the national average and the difference is substantial in 2013-14, indicating that more males from the households participate in the MGNREGS works in the NER. In terms of other indicators like HHs with 100 days of work, work completion rate (WCR) and utilisation of funds, the region has a mixed performance, with the national average being higher than the region's average in one of the two years of reference. However, the difference has not been much except for WCR.

In terms of the performance indicators, Table 2 shows that there are wide differences among the states. Tripura's performance has been credited since the initial years particularly for creating higher average person-days per household than the national average (Dreze &Oldiges, 2007; Usami &Rawal, 2012 and The Shillong Times, 2012). In terms of households with 100 days of job provision also Tripura is way ahead of others for both the years while for the work completion rate, the situation in 2013-14 appears to be much lower than some other states. Further, the equity aspect of the scheme appears to be addressed better in the context of participation of women and socially excluded groups in Tripura (Talukdar, 2008; Bhowmik, 2013). Mizoram has the best work completion rate in the region and the second best average person-days generation per household which is aptly reflected in the reduction of unemployment, increased agricultural wage rate, higher expenditures on food and improved standard of life (Lalthanmawaii, 2015). Sikkim and Meghalaya comes in the 3rd and 4th position in terms of average person-days per household in the NER. A strong social safety net for the vulnerable sections of the society in these two states have been created with greater integration of the BPL families as well as women workers which has led to 'Knowledge Empowerment' in the tribal societies as they have learnt to share information among themselves (Panda et. al, 2009).

Table 2: Output Indicators of North East Indian States (2012-13 & 2013-14)

States	Avg. Person days		HH with 100 days		WCR	
	2012-13	2013-14	2012-13	2013-14	2012-13	2013-14
Arunachal Pradesh	25.38	25.25	0.09	0.00	7.45	6.01
Assam	25.44	23.68	0.21	0.35	79.50	59.39
Manipur	37.13	24.82	0.01	0.01	63.89	34.37
Meghalaya	44.77	56.76	0.63	1.03	68.41	43.73
Mizoram	73.24	70.55	0.08	0.00	98.21	94.22
Nagaland	35.10	42.92	0.00	0.02	80.16	56.68
Sikkim	60.79	68.91	0.19	0.30	89.15	59.78
Tripura	86.78	87.69	37.93	47.23	96.09	49.82

Source: Computed from www.nrega.in

As is visible, the indicators are not very impressive for Manipur and Nagaland, where most of the participating households are from the backward communities. The average employment generation per household ranges between 35 to 45 days per annum and the proportion of household attaining 100 days of work is almost nil. The work completion rate is also not satisfactory (Stina et. al, 2015). Assam, the largest state of the region also does not depict satisfactory performance in terms of the indicators even though funds have increased over the years (Goswami & Dutta, 2014); however, the presence of women in Gram Sabha meetings have increased (Das, 2013) and participation in MGNREGS is determined by the levels of income, housing condition, levels of literacy and social status (Baruah & Radhkar, 2017). Nonetheless, the performance of the scheme in terms of all indicators appear to be low for Arunachal Pradesh as a whole and one of the major causes for it is the accumulation of unspent funds (Koyu, 2015).

It may be noted that performance of states like Tripura, Mizoram is better while performance of Arunachal Pradesh, Nagaland, and Manipur is very poor and as a result the aggregate average for the region stands lower than the national average for most of the performance indicators. It therefore proposes a scenario of wide variation within the region in terms of implementation of MGNREGS. However, as it is cumbersome to make an overall assessment in the presence of numerous indicators, we apply the DEA method to compute a comprehensive efficiency indicator taking account of the various objectives of the scheme.

4. Efficiency Analysis

Table 3: Frequency Distribution & Descriptive OTE, PTE and SE of Districts of North East India (2012-13 & 2013-14)

Efficiency Scores	2012-13			2013-14		
	OTE	**PTE**	**SE**	**OTE**	**PTE**	**SE**
E< 0.5	38 (45.78)	33 (39.76)	1 (1.20)	35 (42.17)	30 (36.14)	1 (1.20)
0.5 d" E < 0.6	11 (13.25)	7 (8.43)	1(1.20)	13 (15.66)	13 (15.66)	2(2.41)
0.6 d" E < 0.7	7 (8.43)	10 (12.05)	7 (8.43)	8(9.64)	8(9.64)	1 (1.20)
0.7 d" E < 0.8	8 (9.64)	9 (10.84)	4 (4.82)	4 (4.82)	7 (8.43)	4 (4.82)
0.8 d" E < 0.9	8 (9.64)	9 (10.84)	5 (6.02)	6 (7.23)	5 (6.02)	8(9.64)
0.9 d" E < 1.0	2(2.41)	4 (4.82)	55(66.27)	8(9.64)	7 (8.43)	58(69.88)
E= 1.0	9 (10.84)	11 (13.25)	10(12.05)	9 (10.84)	13(15.66)	9 (10.84)
Descriptive StatisticsDescriptive Statistics						
DMUs	83	83	83	83	83	83
Mean	0.5712	0.6173	0.9132	0.6092	0.6492	0.9299
Median	0.5579	0.604	0.9591	0.5648	0.5837	0.9694
Standard Deviation	0.2520	0.2470	0.1280	0.2407	0.2307	0.115
Minimum	0.088	0.1438	0.3342	0.0875	0.173	0.3178
Maximum	1	1	1	1	1	1

Source: Computed

Notes: **OTE**- *Overall Technical Efficiency,* **PTE**- *Pure Technical Efficiency &* **SE**- *Scale Efficiency*

Table 3 shows that more than 45 % of the DMUs (Districts) functioned with less than 50 % OTE levels in 2012-13, which marginally improved in 2013-14. The average OTE score for the districts also improved from 0.5712 to 0.6092 over the year. However, only 9 DMUs (10.84 %) are found to be efficient according to CCR specifications in both the years though the numbers of DMU with OTE above 0.9 has increased sizeably from 2 to 8 in 2013-14. The number of efficient DMUs under BCC specifications, has obviously been higher- 11 and 13 for the two successive years. The average PTE scores have also increased from 0.6173 to 0.6492 in the second year. However, in terms of scale efficiency, there is a decline in the number of DMUs scoring a perfect 100%, though the average has increased marginally from 0.9132 to 0.9299 in the second year.

Table 4 exhibits the average OTE and average PTE scores of the North Eastern States for the two years of reference. Tripura has been the overwhelming leader in terms of the efficiency scores in both the models for both the years with the average district achieving more than 90 % efficiency. Mizoram holds the second rank with more than 80% score, whereas Nagaland and Arunachal Pradesh are ranked at the bottom of the string for the two years respectively. Interestingly, the average efficiency in Arunachal Pradesh had declined in 2013-14 while Nagaland indicates marked improvement in the

efficiency of implementation in the later year. It is to be further noted that the average OTE and PTE had declined for the two best performing states, Tripura and Mizoram, in 2013-14 as compared to 2012-13. Manipur also experienced a decline in average efficiency scores. On the other hand, Meghalaya also had substantial improvement in efficiency scores in the second year alike Nagaland whereas Sikkim and Assam also indicate increased average efficiency.

Table 4: OTE & PTE of the States

States	Av.OTE (12-13)	Av. PTE (12-13)	Av. OTE (13-14)	Av. PTE (13-14)
Arunachal Pradesh (13)	0.4062	0.5229	0.3382	0.4887
Assam (27)	0.5612	0.5866	0.5615	0.5901
Manipur (9)	0.5279	0.6220	0.5049	0.5178
Meghalaya (7)	0.5890	0.6225	0.7573	0.7783
Mizoram (8)	0.8804	0.8895	0.8334	0.8458
Nagaland (11)	0.4030	0.4222	0.6944	0.7085
Sikkim (4)	0.6823	0.7482	0.7820	0.7906
Tripura (4)	0.9749	0.9749	0.9318	0.9418
'F' Stat	7.55***	5.68***	9.93***	5.45***

Source: Computed

*Notes: *** at significant at 1% levels*

From Table 4, it is seen that the average OTE scores and average PTE scores among the North eastern states are significantly different, as revealed by the F Stat values, for both the years. From Table 5, it is further seen that the extent of difference in the mean efficiency is not uniform across the states. The differences are more pronounced under the OTE framework as compared to the PTE format as is seen in the values of F Stat and also in terms of the incidence of significant differences. In all, there are 19 incidences of significant differences in mean efficiency under OTE, while for PRE, the number of such incidences is 13. In terms of OTE, Tripura had significantly higher efficiency scores than Arunachal Pradesh, Assam, Manipur, Meghalaya and Nagaland in 2012-13, while Mizoram also exhibited higher efficiency in implementation than Arunachal Pradesh, Assam and Manipur for both the years. On the other hand, the OTE scores of Arunachal Pradesh have been significantly lower than all the other states except Manipur in 2013-14. It is further observed that the lower range of difference in the average PTE values results in lesser number of significant differences of mean among the states. However, the differences which exist are mainly because of the higher scores of Tripura and Mizoram.

Table 5: Post Hoc Analysis of OTE and PTE between the NER States

|	AR	AS	MN	ML	MZ	NL	SK	TR
AR	xxx			PTE14**	PTE13***			PTE13***
					PTE14***			PTE14***
AS	OTE14**	xxx			PTE13**			PTE13**
					PTE14**			PTE14**
MN			xxx		PTE14**			PTE14**
ML	OTE14***			xxx				
MZ	OTE13***	OTE13***	OTE13**		xxx	PTE13***		
	OTE14***	OTE14***	OTE14***					
NL	OTE14***				OTE13***	xxx		PTE13***
SK	OTE14***						xxx	
TR	OTE13***	OTE13***	OTE13**	OTE13*		OTE13***		xxx
	*OTE14***	OTE14***	OTE14****					

Source: Computed

*Notes: *** at significant at 1% levels; **at significant at 5% levels; *at significant at 10% levels; AR: Arunachal Pradesh, AS: Assam, MN: Manipur, ML: Meghalaya, MZ: Mizoram, NL: Nagaland, SK: Sikkim & TR: Tripura*

The upper panel shows the significant differences in PTE and the lower panel shows significant differences in OTE among the states

Considering the average OTE and average PTE scores of the DMUs (districts) for the two years, it is seen that OTE scores for all the districts of Arunachal Pradesh are lesser than the average mean scores for the region. Surprisingly, one of her district, Upper Dibang valley, scores a perfect 100 % under PTE measure. The South Tripura district emerges as the best performing unit for having a perfect score under both the measure for the both the years, while two more district from Assam- Golaghat and Sonitpur and one from Meghalaya, East Garo Hills also strikes the perfect score under PTE measure for both the year. The high average efficiency of Tripura and Mizoram is an outcome of better performance of the component districts as we see none of the districts from these two states having any DMUs lying below the average efficiency of the region. Among the poor performers under this indicator are East Kameng, East Siang and Tawang districts of Arunachal Pradesh. Hailakandi of Assam and Longleng of Nagaland also feature among the poor performers on both accounts. In this context, the improved PTE scores for the three districts of Arunachal Pradesh may be attributed to existence of scale inefficiency.

Figure 2: Average OTE and Average PTE of Districts
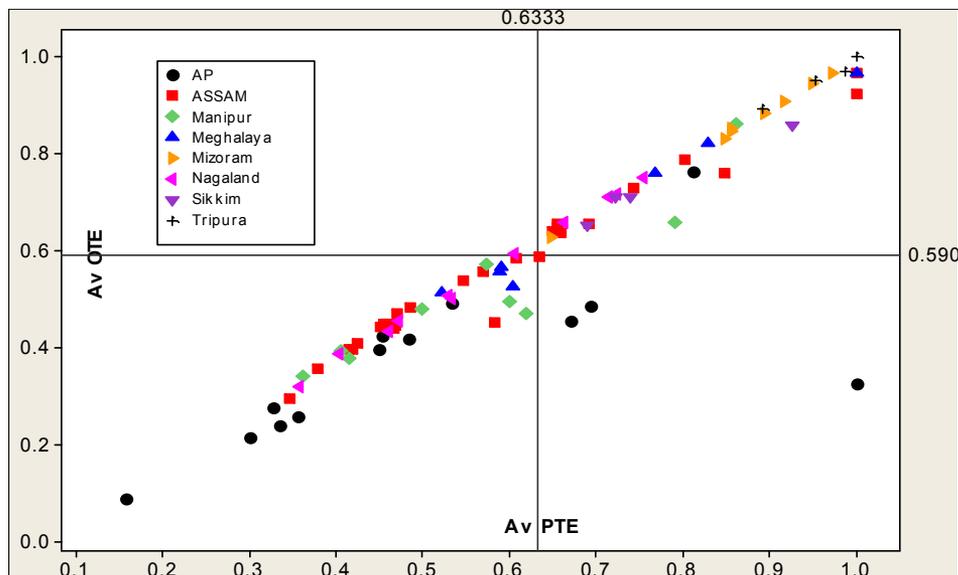
Source: Computed

Notes- Average OTE- 0.5902; Average PTE- 0.6333

In order to explore further into the determinants of implementation efficiency we undertake a regression analysis with average PTE scores of the districts for two years (of consideration, here) as the dependent variable. The explanatory factors are the levels of empowerment and the nature of population in the districts. Literacy rates can be considered as a proxy for the level of empowerment. Thus it can be reported that literacy rates will be having a positive coefficient. Even though the scheme is universal in terms of community specification/targeting, it is expected to facilitate greater integration of deprived sections of the society. Thus the scheme and its implementation are likely to benefit the backward sections of the society more as they are often excluded from the regular development interventions. In this background, the proportion of SC & ST population is considered as an explanatory variable and is expected to have a positive impact on the efficiency scores. Thus the proposed regression function is-

Efficiency Score = f (Literacy Rate, SC share in population & ST share in population). Further, the expected signs of the independent variables of the OLS regression are given in Table 6-

Table 6: Expected Signs of Independent Variables of OLS Regression

Variable	Expected Signs
Literacy Rate	+ ve
SC Proportion	+ ve
ST proportion	+ ve

Table 7: Results of OLS Regression

F. Stat	7.652***			
Multiple R	0.475			
R Square	0.225			
Adjusted R Square	0.196			
Standard Error	0.185			
Observations	83			
	Coefficients	*Standard Error*	*t -Stat*	*P-value*
Intercept	0.027	0.136	0.200	0.842
Literacy Rate	0.007	0.002	3.570	0.001*
SC Proportion	0.012	0.006	1.901	0.061***
ST proportion	0.001	0.001	1.922	0.058***

Source: Computed

*Note: *, **, *** significant at 1%, 5% & 10% respectively*

Table 7 shows that the efficiency of implementation of MGNREGS is significantly determined by the literacy rates. The model suggests that higher the literacy rates in the district, better is the efficiency of implementation. Higher literacy rates are considered as a proxy for better empowerment of the people as empowered people have expressive and effective skills for ensuring better functioning of the scheme.

It is also observed that the proportion of scheduled tribes (ST) and scheduled castes (SC), both, have a significantly positive impact on the efficiency of implementation as revealed in Table 7, where the coefficient of ST proportion and SC proportion in population is significant at 10% levels. Such a result is indicative of better implementation in districts habituated by the marginalized sections of the society. Interestingly, the coefficients of the independent variables indicate that the efficiency score increases by 0.012 for 1% increase in the share of SC population while the increase in efficiency is a bit lower if the share of ST population increases by similar ratio. The scheme, although, is universal in nature, yet one of the latent objectives is to improve the economic condition of the vulnerable sections of the society as component of inclusive development.

5. Summary and Concluding Remarks

Implementation of MGNREGS is certainly an issue of governance. Better governed states are often synonymous with political stability which ensures uninterrupted flow

of the development initiatives. The states of Tripura and Mizoram are dissimilar to other NER states particularly in the form of government. The Left Front had been in power in Tripura since 1993 while the Congress government in Mizoram has also been in power since 2008. These two states have been the national leaders in terms of average person-days generation which certainly contributed to better efficiency scores. Further, to be noted is the better literacy scenario in these states also. The higher literacy rates have contributed to empowered population which had an indirect impact on cajoling better implementation from the MGNREGS officials. The fact that districts with higher proportion of marginalised population indicating better implementation efficiency is certainly a welcome measure, but such a scenario is not uniform across the region as many ST dominated districts rank at the bottom tier of efficiency. The statistical significance of better efficiency in districts with higher proportions of tribal population also induces to ponder about the availability of alternative work in those areas. The lack of alternative in such districts may have been a contributing factor to increased awareness and implementation of MGNREGS. However, lack of employment and economic opportunities in the rural areas of the NER is a reality and centrally sponsored schemes are often a major source of livelihood in these states. The present study is however unable to determine whether the better efficiency in districts with more tribal population is an outcome of the demand side mechanism of empowered population or a supply side mechanism of better governance. Nonetheless, another important contributor to implementation efficiency has been the political will of the government. The Left Front, ideologically, has been a vociferous supporter of social security measures in general and MGNREGS in particular. Thus, it is nothing unlikely that the scheme will be utilised for achieving the political goal of the government. Moreover, the grassroots democratic institutions of Tripura (the three-tier Panchayati Raj Institutions) has also utilised the MGNREGS to penetrate further into the life and livelihood of the rural people. Thus, one can infer that MGNREGS has been a major contributor to Left Front's stay in power for long in Tripura. In Mizoram, the church plays a significant role in the development process and civil society organisations also work in tandem with the church and have been effective in ensuring better implementation. On the other hand, the law and order situation, poor governance, fragmentation in the rank and file of the villages have been a deterrent to implementation of MGNREGS in many parts. Also, to be noted is the fact that Arunachal Pradesh had experienced lot of political turmoil in the last few years, which is certainly a factor behind its poor performance but the most serious component for lower efficiency is certainly the poor work completion rate. Works started under MGNREGS have not been completed as a result the investment in manpower and labour turns out to be ineffective in the long run. However, the most encouraging take-away from the present study is the better efficiency of implementation in districts with comparatively higher proportion of scheduled population which is a satisfactory outcome from the perspective of welfare paradigm.

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