

## A Study on State-wise Implementation of MGNREGS in India : A Data Envelopment Analysis

SYED RIZWAN AHMED AND SANJAY KUMAR

Institute of Agribusiness Management, University of Agricultural Sciences, GKVK, Bengaluru - 560 065  
Department of Economics and Sociology, College of Basic Sciences and Humanities, PAU, Ludhiana - 141 004  
e-Mail : rizwan.pau@gmail.com

### AUTHORS CONTRIBUTION

SYED RIZWAN AHMED :  
Conceptualization, design  
investigation, data  
collection, editing, data  
analysis and manuscript  
preparation;

SANJAY KUMAR :  
Guidance and  
Conceptualization

**Corresponding Author :**  
SYED RIZWAN AHMED

Received : January 2024  
Accepted : February 2024

### ABSTRACT

Mahatma Gandhi National Rural Employment Guarantee Act envisages livelihood and social security by providing at least 100 days guaranteed wage employment to every rural households whose adult members volunteer to do unskilled manual work. In this study, implementing efficiency was compared in different states of India during 2006-07 to 2016-17. The efficiency of states in implementation of the scheme was measured using secondary data with different parameters like number of households provided employment, the number of households who demanded employment, households with total women-person days, the total number of person days of employment generated, total number of completed assets, total expenditure on wages, number of households availed 100 days of employment, total available funds, overall pure efficiencies scores and their ranking was obtained for respective states. The findings revealed the efficiency score of 1 was considered as efficient, which was observed in Kerala, Tamil Nadu and Tripura, therefore they were considered as best performing states, whereas Jammu and Kashmir and Arunachal Pradesh, were least performing states as their efficiency score was less than 1. As per census 2011, Kerala and Tamil Nadu states have showed lowest poverty index and high literacy rates which was positive indicator in efficient states. Therefore, implementation of scheme in richer states was efficient. In contrast, Bihar state has showed the highest poverty ratio and low literacy rates among male and female which is negative indicator resulted in poor demand for work, causes the inefficiency in poor implementation of the scheme. Thus, poverty and literacy rates were important factor which plays major role in better implementation of the scheme. Because poverty and literacy rates are vital developmental indicators as they are key variables of measure of development for quality of life, awareness level, skills of people in the society resulted in higher demand for work, as such more and more rural people are expected to exercise their right to work as enshrined in the Act.

**Keywords :** Employment, Income, Rural women, Implementation, Wages, MGNREGS, Data envelopment

**T**HE Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was notified on 7<sup>th</sup> September 2005. The mandate of the Act was to provide 100 days of guaranteed wage employment in a financial year to every rural households whose adult members volunteered to do unskilled manual work (Anonymous, 2011). Salient features of the Act were to Provide employment at the minimum wage rate

specified by the Central Government, creation of durable assets and strengthening the livelihood resource base of the rural poor. Wages are to be paid according to the Minimum Wages Act 1948 for agricultural laborers in the state and equal wages to be provided to both men and women. Work should ordinarily be provided within 5 km radius of the village. In case work is provided beyond 5 km, extra

TABLE 1  
State-wise number of job card holders under MGNREGS during 2011-12 to 2016-17

(in lakhs)

States	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Andhra Pradesh	71.66	144.31	150.32	91.55	83.77	84.29
Arunachal Pradesh	1.50	1.81	1.90	1.98	2.08	2.11
Assam	39.42	40.11	41.16	42.83	45.86	43.61
Bihar	126.31	130.83	130.12	126.83	132.36	137.90
Chhattisgarh	43.90	43.78	39.91	39.42	39.02	35.22
Gujarat	40.82	38.22	34.36	34.78	34.95	33.64
Haryana	6.77	7.48	7.79	7.73	7.67	8.26
Himachal Pradesh	11.06	11.47	11.6	11.61	11.73	11.75
Jammu and Kashmir	8.63	10.78	11.44	11.67	12.19	11.61
Jharkhand	40.29	40.05	37.38	36.03	36.8	38.83
Karnataka	55.85	54.64	55.58	55.2	55.78	51.97
Kerala	18.77	25.42	28.22	30.15	31.91	31.81
Madhya Pradesh	119.71	119.38	99.44	84.59	78.84	61.34
Maharashtra	67.97	70.91	72.52	76.24	78.25	79.05
Manipur	4.61	4.78	5.07	5.24	5.38	5.39
Meghalaya	4.57	4.67	4.76	4.8	4.87	4.96
Mizoram	1.90	2.01	1.96	1.8	1.86	1.89
Nagaland	3.84	3.98	4.13	4.24	4.25	4.25
Odisha	61.51	63.05	63.58	65.08	66.69	64.49
Punjab	8.75	9.22	10.69	10.94	11.76	12.42
Rajasthan	100.06	99.45	98.3	98.46	99.35	95.31
Tamil Nadu	83.71	92.28	84.97	82.25	84.28	77.94
Telangana	-	-	-	61.25	54.41	56.75
Tripura	6.03	6.42	6.32	6.3	6.12	6.04
Uttar Pradesh	149.23	151.13	149.11	152.66	160.97	151.49
Uttarakhand	10.31	10.55	10.71	11.09	11.35	10.43
West Bengal	112.23	114.61	117.43	119.97	123.09	124.18
India (In Crores)	12.01	13.01	12.78	12.13	12.31	12.48

Source : www.nrega.nic.in

wages of 10 per cent are payable to meet additional transportation and living expenses, At least one-third beneficiaries shall be women who have registered and requested work under the scheme. In case the number of children below the age of six years accompanying the women working at any site is five or more, provisions shall be made to depute one women worker to look after such children and she shall be

paid the statutory minimum wage. A proportion of the wages, not exceeding 5 per cent, may be deducted as a contribution to welfare schemes organized for the benefit of laborers employed under the program, such as health insurance, accident insurance, survivor benefits, maternity benefits and social security schemes. A 60:40 wage and material ratio has to be maintained. No contractors and machineries are

TABLE 2  
State-wise households demanded employment under MGNREGS, during 2011-12 to 2016-17

(in lakhs)

States	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Andhra Pradesh	49.98	58.54	60.40	36.93	39.63	39.32
Arunachal Pradesh	0.15	1.29	1.40	1.45	1.93	2.01
Assam	13.55	12.35	12.62	10.83	16.68	16.99
Bihar	18.05	20.88	20.59	14.74	19.23	28.79
Chhattisgarh	27.39	26.38	25.12	20.43	26.12	24.57
Goa	0.11	0.05	0.05	0.07	0.06	0.06
Gujarat	8.37	6.81	5.79	5.96	6.42	8.83
Haryana	2.78	2.94	3.25	2.63	2.00	3.26
Himachal Pradesh	5.29	5.15	5.39	4.99	4.67	5.59
Jammu and Kashmir	4.40	6.47	6.58	3.82	7.03	6.19
Jharkhand	15.82	14.19	11.39	12.32	12.71	20.19
Karnataka	16.63	13.32	14.50	15.14	16.63	21.09
Kerala	14.18	15.26	15.24	15.65	16.65	15.93
Madhya Pradesh	38.96	35.19	29.09	31.02	30.24	32.61
Maharashtra	15.20	16.25	11.44	12.82	14.21	15.60
Manipur	3.81	4.57	4.55	4.72	4.81	5.10
Meghalaya	3.36	3.32	3.64	3.57	3.75	4.16
Mizoram	1.76	1.75	1.78	1.94	1.90	1.89
Nagaland	3.73	3.87	4.08	4.07	4.18	4.20
Odisha	13.91	15.99	17.10	16.93	22.28	22.01
Punjab	2.46	2.40	4.12	3.41	5.29	6.04
Rajasthan	47.06	42.17	36.15	41.17	46.88	50.53
Sikkim	0.56	0.57	0.63	0.60	0.68	0.69
Tamil Nadu	63.76	70.61	62.68	56.82	60.95	62.10
Telangana	-	-	-	40.22	44.77	45.97
Tripura	5.67	5.97	5.91	5.93	5.80	5.86
Uttar Pradesh	73.64	49.47	49.95	45.36	63.11	57.45
Uttarakhand	4.71	4.40	3.97	4.92	5.88	5.89
West Bengal	55.32	58.17	61.33	57.19	65.00	61.58
India (In Crores)	5.11	4.98	4.79	4.65	5.34	5.56

Source : www.nrega.nic.in

allowed. Social Audit has to be done by the Gram Sabah Panchayat. All accounts and records relating to the scheme should be available and transparent for public scrutiny. (Anonymous, 2014). The MGNREGA was helped in poverty reduction and recognizes

employment as a legal right. This scheme helps in not only increasing the income of the poor, and also in asset creation thereby developed the rural infrastructure on a permanent basis. (Anonymous, 2015).

TABLE 3  
State-wise number of households provided employment under MGNREGS during 2011-12 to 2016-17  
(in lakhs)

States	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Andhra Pradesh	49.98	58.54	60.40	33.00	36.07	39.55
Arunachal Pradesh	0.04	1.29	1.40	1.37	1.81	2.03
Assam	13.49	12.35	12.62	9.67	15.02	15.73
Bihar	17.69	20.88	20.59	10.34	14.87	23.32
Chhattisgarh	27.25	26.38	25.12	17.48	21.74	21.32
Goa	0.11	0.05	0.05	0.07	0.06	0.07
Gujarat	8.22	6.81	5.79	5.13	5.57	7.16
Haryana	2.78	2.94	3.25	2.18	1.69	2.81
Himachal Pradesh	5.05	5.15	5.39	4.53	4.23	5.28
Jammu and Kashmir	4.31	6.47	6.58	3.32	6.53	6.28
Jharkhand	15.75	14.19	11.39	11.11	11.26	17.43
Karnataka	16.52	13.32	14.51	10.94	12.36	18.2
Kerala	14.16	15.26	15.24	13.8	15.06	14.57
Madhya Pradesh	38.8	35.17	29.09	27.94	27.02	28.03
Maharashtra	15.05	16.25	11.44	11.6	12.75	14.34
Manipur	3.56	4.57	4.55	4.69	4.74	5.16
Meghalaya	3.35	3.33	3.64	3.51	3.68	4.15
Mizoram	1.69	1.75	1.78	1.90	1.90	1.89
Nagaland	3.73	3.87	4.08	4.06	4.17	4.19
Odisha	13.79	15.99	17.1	14.69	19.97	20.37
Punjab	2.45	2.40	4.12	2.89	4.74	5.36
Rajasthan	45.22	42.17	36.15	36.87	42.21	46.35
Sikkim	0.55	0.57	0.63	0.57	0.65	0.68
Tamil Nadu	63.43	70.61	62.68	56.58	60.53	62.62
Telangana	-	-	-	40.43	44.63	45.17
Tripura	5.67	5.90	5.91	5.82	5.70	5.77
Uttar Pradesh	73.28	49.47	49.95	39.15	54.36	50.2
Uttarakhand	4.69	4.40	3.98	4.55	5.44	5.45
West Bengal	55.17	58.17	61.33	51.19	61.11	58.28
India (In Crores)	5.06	4.92	4.79	4.13	4.81	5.12

Source : www.nrega.nic.in

Presently MGNREGS was implemented in all the states and union territories of India. MGNREGS has showed varied impact across the states in terms of person-days of employment generated, works undertaken and wages paid (Ahmed *et al.*, 2023).

In states like Rajasthan and Himachal Pradesh, the act was very successful while other states like Bihar and Maharashtra; the impact was less remarkable (Dreze and Khera, 2009). The implementation success of MGNREGS was found that positive correlation

TABLE 4  
State-wise number of person days generated under MGNREGS in India, during 2011-12 to 2016-17  
(in lakhs)

States	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Andhra Pradesh	2939.34	3273.35	2994.70	1559.04	1992.10	2052.90
Arunachal Pradesh	0.73	43.50	36.56	19.38	50.46	85.98
Assam	352.63	314.04	298.47	210.95	486.33	467.52
Bihar	682.16	941.85	862.35	351.98	670.92	874.86
Chhattisgarh	1206.76	1194.34	1298.94	555.90	1013.96	885.95
Goa	3.11	0.69	1.15	1.72	1.07	1.26
Gujarat	313.00	281.90	230.30	181.46	225.45	271.07
Haryana	109.36	128.87	117.88	61.65	48.48	84.92
Himachal Pradesh	270.13	262.10	282.50	190.77	177.71	236.31
Jammu and Kashmir	209.10	365.56	338.12	121.09	316.32	320.35
Jharkhand	609.71	566.58	436.22	453.34	585.67	707.66
Karnataka	701.03	617.81	718.86	433.28	598.38	915.05
Kerala	633.10	837.74	866.03	588.72	741.74	684.62
Madhya Pradesh	1688.98	1399.47	1229.48	1175.40	1237.42	1130.63
Maharashtra	772.02	872.39	517.36	613.87	763.45	709.16
Manipur	224.07	285.11	113.23	101.17	75.33	119.03
Meghalaya	167.75	174.31	215.88	167.35	199.71	282.61
Mizoram	130.60	153.56	133.65	42.70	131.26	168.23
Nagaland	296.61	245.31	183.80	89.98	212.07	291.16
Odisha	453.75	546.01	711.82	535.40	894.46	776.04
Punjab	64.52	65.50	134.68	64.56	144.34	157.74
Rajasthan	2120.55	2203.38	1838.56	1686.19	2341.25	2596.82
Sikkim	32.88	36.31	44.03	24.12	43.84	46.12
Tamil Nadu	3015.75	4081.44	3677.23	2679.65	3686.75	3999.36
Telangana	-	-	-	875.69	971.15	988.01
Tripura	489.74	518.51	521.61	511.76	538.75	461.18
Uttar Pradesh	2673.36	1411.85	1753.60	1312.27	1822.39	1579.45
Uttarakhand	198.98	192.00	165.62	147.34	223.95	236.96
West Bengal	1495.94	2018.42	2296.34	1696.29	2864.97	2357.09
India (In Crores)	218.76	230.47	220.35	166.18	235.14	235.83

Source : www.nrega.nic.in

between MGNREGS performance of a state and its poverty ratios and literacy levels was due to facts that higher literacy levels lead to greater awareness levels and therefore more and more rural people of such states are expected to exercise their right to work as

enshrined in the act (Farooquee, 2013). State-wise efficiency in implementation of MGNREGS using data envelopment analysis, which examined the nature and impact of benefits accruing to the participating households was found that there was

TABLE 5

State-wise number of women person days generated under MGNREGS in India, during 2011-12 to 2016-17  
(in lakhs)

States	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Andhra Pradesh	990.75	1113.23	1056.13	818.38	908.18	219.16
Arunachal Pradesh	0.21	7.54	10.57	2.66	13.35	0.15
Assam	88.06	80.54	73.89	50.2	118.31	11.4
Bihar	179.52	251.8	297.11	127.96	207.07	26.52
Chhattisgarh	548.83	555.15	629.42	276.43	335.75	47.5
Goa	2.35	0.45	0.87	1.15	0.67	0.02
Gujarat	140.75	119.87	101.25	74.08	68.05	12.29
Haryana	39.68	50.54	49.06	23.62	18.3	1.11
Himachal Pradesh	155.36	145.14	176.36	105.73	97.58	4.96
Jammu and Kashmir	28.74	49.37	76.38	18.74	37.46	0.50
Jharkhand	188.04	179.79	139.11	132.65	150.6	36.55
Karnataka	321.34	287.62	334.71	188.81	184.56	30.31
Kerala	586.76	777.84	808.52	459.33	552.19	5.79
Madhya Pradesh	671.45	472.22	521.64	497.01	451.29	35.45
Maharashtra	299.45	362.77	224.52	236.67	239.24	46.74
Manipur	68.63	57.46	39.81	34.82	18.89	2.22
Meghalaya	67.23	56.37	85.67	51.94	50.23	0
Mizoram	29.01	29.97	37.34	14.55	32.52	7.29
Nagaland	68.93	33.19	49.83	20.57	53.15	5.30
Odisha	175.35	196.05	238.75	157.7	234.49	29.45
Punjab	27.83	29.68	70.96	33.24	62.78	4.84
Rajasthan	1457.99	1504.45	1245.55	1079.48	1294.86	163.31
Sikkim	14.66	14.80	19.44	9.52	14.65	1.25
Tamil Nadu	2231.01	3025.62	3072.03	2045.62	2406.68	218.6
Tripura	189.44	212.68	247.67	222.07	253.60	5.24
Uttar Pradesh	454.58	270.7	385.19	270.98	373.58	27.28
Uttarakhand	84.86	73.84	71.91	56.24	74.10	6.32
West Bengal	465.09	644.32	812.76	605.18	948.64	10.63
India (In Crores)	122.74	106.12	108.86	81.97	98.54	10.98

Source : www.nrega.nic.in

significant differences in the average man-days generated per household across the blocks which showed tribal majority regions had achieved higher efficient scores as a result higher participation was observed resulted in better implementation in respective tribal villages (Bhowmik and Bose, 2015).

During 2008-09 to 2013-14, measuring efficiency in MGNREGS implementation in different states of India revealed that during this period, less than ten states has achieved technical efficiency score of one which was considered as efficient state. All India level efficiency scores was less than one in all the years.

The efficiency score for Sikkim, Tripura and Goa was one consistently for each year under consideration implying efficient implementation of the scheme in these states. The poor states and low literacy-rate states are inefficient to implement the programme properly. The inefficient states also deploy higher number of workers per asset. In states with lower efficiency scores, the states where poverty ratio was high and literacy was low, there is a scope for better improvement by achieving higher output levels through better management of the scheme (Saha and Debnath, 2015). Chikkara *et al.*, 2014, studied inter-district efficiency measurement in Harayana found that implementation status of the scheme is not uniform across the districts. Hence, in this background the current study was conducted with the broad problem statement to assess the status of implementation of performance pattern of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in rural labour market of India. The specific objective of this study was to analyze the status of implementation of MGNREGS in selected states of India using data envelopment analysis.

#### METHODOLOGY

The study compares the efficiency level of scheme in different states of India during 2006-07 to 2016-17. Data Envelopment Analysis (DEA) was used to calculate the overall relative technical efficiency scores of each state. The secondary data was drawn from the official Decision Making Units (DMU) reports published by the Ministry of Rural Development, Government of India. The data was collected from various published sources like DMU reports that are available at official website of MGNREGA ([www.nrega.nic.in](http://www.nrega.nic.in)).

DEA is a nonparametric linear programming method for assessing the efficiency and productivity of DMUs. DEA application areas have grown since it was first introduced as a managerial and performance measurement tool in the late 1970s. Since then, new applications with more variables and complicated models have been and are being introduced DEA is a method for measuring efficiency of DMUs using linear programming techniques to envelop observed

input-output vectors as tightly as possible. DEA allows multiple inputs-outputs to be considered at the same time without any assumption on data distribution. In each case, efficiency was measured in terms of a proportional change in inputs or outputs.

A DEA model can be subdivided into an input-oriented model, which minimizes inputs while satisfying at least the given output levels and an output-oriented model, which maximizes outputs without requiring more of any observed input values. It is a tool in the hands of the researchers to evaluate the comparative efficiency of the organizations (DMU as the sampled districts in the present study) and the efficiency score was constrained to the interval of 0-100 per cent. DMUs having score 'one' (100%) on the frontier are considered as efficient, while a decision-making unit with a score less than one was deemed inefficient relative to other units in the sample. The efficiency score for any inefficient DMU can be calculated by measuring its relative distance from the efficient frontier. Accordingly, a DMU is to be rated as fully (100%) 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, relative importance of the different inputs or outputs. Each DMU (the districts) was assumed to maximize its outputs 1) Number of households provided employment, 2) Number of women person-days, 3) Number of completed assets, 4) Number of households attained 100 days of employment by using its inputs 5) Number of households demanded employment, 6) Total person days generated, 7) Wage expenditure, 8) Total expenditure etc. Districts taken as decision making units as implementing agencies. Here the study applied output-oriented DEA models with constant return to scale to estimate how well the states and districts utilize their resources and generate outputs to assess the impact of scale on performance overall averages obtained and ranking was performed in order to achieve the stipulated objectives of the study.

## RESULTS AND DISCUSSION

### State Wise Physical and Financial Performance of MGNREGS in India, During 2011-12 to 2016-17

The pattern of present study of MGNREGS showed varied impact across states in terms of job cards, households demanded employment, households provided employment, person-days of employment generated, rural women person-days of employment generated, households availed 100 days of employment and wages paid in rural India. Social security and livelihood security potential of MGNREGS implied effectiveness of MGNREGS implementation status resulted in provided employment to more than 50 million households across states and union territories of rural India. State-wise number of job card holders under Mahatma Gandhi National Rural Employment Guarantee Scheme is provided in Table 1, clearly underscore the facts that there was a wide variation in the proportion of job cards issued to the registered households. The scenario shows that the highest number of job card holders was in Uttar Pradesh, Bihar and West Bengal. Whereas, at all India level, job card holders had registered during FY 2011-12 was about 12.01 crore for seeking employment under MGNREGS and later it was increased to about 12.48 crore during FY 2016-17.

State-wise households demanded employment under Mahatma Gandhi National Rural Employment Guarantee Scheme is provided in Table 2. The data reveals that the households who demanded employment under MGNREGS was showed increasing trend over the years in many states. During FY 2011-12, the highest number of households who demanded employment was observed in Uttar Pradesh (73.64 lakhs), while lowest number of households who demanded employment was in Goa (0.11 lakhs). Likewise, during FY 2016-17, the highest number of households who demanded employment was observed in Tamil Nadu (62.10 lakhs) and lowest was in Goa (0.06 lakhs). However, at all India level during 2011-12, it was about 5.11 crore households demanded employment which increased to 5.56 crore during 2016-17.

State-wise households provided employment under Mahatma Gandhi National Rural Employment Guarantee Scheme is provided in Table 3. The data reveals that the households which were provided employment under MGNREGS was showing increasing trend over the years in many states. The highest number of households provided employment during FY 2011-12 were in Uttar Pradesh (73.28 lakhs), Tamil Nadu (63.43 lakhs) and the lowest number of households was in Goa (0.11 lakhs) and Arunachal Pradesh (0.04 lakhs), but during FY 2016-17, higher number of households were present in Tamil Nadu (62.62 lakhs) whereas Goa, Sikkim and Arunachal Pradesh were the lowest states who provided employment at around 0.07, 0.68, 2.03 lakhs, respectively. However, at all India level during FY 2011-12 households who provided employment were about 5.06 crore which was increased to 5.12 crore during 2016-17.

State-wise number of person days generated under Mahatma Gandhi National Rural Employment Guarantee Scheme is presented in Table 4 and the data showed that during FY 2011-12, the number of person days generated under MGNREGS was highest in Tamil Nadu (3015.75 lakhs) and the lowest was in Arunachal Pradesh (0.73 lakhs).

During FY 2016-17, the number of person days generated under MGNREGS was higher in states like Andhra Pradesh (2052.90 lakhs), Tamil Nadu (3999.36 lakhs), Rajasthan (2596.82 lakhs), Madhya Pradesh (1130.63 lakhs), West Bengal (2357.09 lakhs) and the lowest total person days generated in states like Goa (1.26 lakhs), Haryana (84.92 lakhs), Sikkim (46.12 lakhs) etc. However, at all India level during FY 2011-12, 218.76 crore of total person days of employment was generated which tremendously increased to about 235.83 crore during FY 2016-17 (Table 4).

State-wise number of women person days generated under MGNREGS is revealed in Table 5, showed that during FY 2011-12, Tamil Nadu (2231.01 lakhs) was the highest and the lowest in Arunachal Pradesh (0.21 lakhs) but during FY 2016-17, higher number of women person days was observed in Andhra



TABLE 6  
State-wise average person days per household of employment under MGNREGS, during 2011-12 to 2016-17  
(in days)

States	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Andhra Pradesh	61.06	58.83	53.14	43.61	46.68	17.92
Arunachal Pradesh	16.05	25.38	25.25	10.37	26.32	5.11
Assam	26.23	25.44	23.68	20.99	28.84	15.21
Bihar	37.75	43.32	41.78	32.87	41.86	19.02
Chhattisgarh	44.47	45.04	51.64	31.76	36.77	16.57
Goa	27.85	13	22.9	22.21	15.58	16.57
Gujarat	37.93	41.31	39.79	34.44	35.14	18.67
Haryana	39.28	43.57	36.26	27.15	27.89	12.91
Himachal Pradesh	52.4	48.67	52.34	39.92	40.17	13.8
Jammu and Kashmir	44.85	48.93	50.94	33.08	35.97	16.81
Jharkhand	38.63	39.5	38.3	38.96	45.44	18.13
Karnataka	42.34	46.48	49.56	38.8	42.41	22.39
Kerala	44.61	54.83	56.83	37.54	41.96	8.25
Madhya Pradesh	42.24	36.1	42.19	41.56	42.02	19.07
Maharashtra	47.17	52.66	45.18	50.22	52.44	19.38
Manipur	61.06	37.13	24.82	19.58	10.33	7.7
Meghalaya	48.84	44.77	56.76	40.19	39.31	5.81
Mizoram	72.49	73.24	70.55	19.29	46.21	14
Nagaland	69.4	35.1	42.92	16.29	40.77	7.93
Odisha	32.91	34.11	41.61	33.82	37.48	17.53
Punjab	26.25	27.08	32.67	21.49	26.31	11.11
Rajasthan	46.6	51.9	50.85	43.95	48.57	16.92
Sikkim	60.13	60.79	68.91	39.62	50.06	16.94
Tamil Nadu	47.51	57.82	58.59	43.42	49.55	9.44
Telangana	0	0	0	40.02	45.46	16.9
Tripura	86.47	86.78	87.69	77.08	88.32	8.15
Uttar Pradesh	36.35	28.2	34.96	31.3	31.04	13.97
Uttarakhand	41.53	39.96	41.28	29.11	33.02	14.96
West Bengal	26.47	33.66	37.44	30.63	38.32	12.99
Total	42.11	44.63	45.92	37.74	41.95	15.27

Source : www.nrega.nic

Pradesh (219.16 lakhs), Rajasthan (163.31 lakhs), Tamil Nadu (218.6 lakhs) and lowest was observed in Meghalaya (0), Jammu and Kashmir (0.5 lakhs) and Sikkim (1.25 lakhs). However, at all India level during FY 2011- 12, higher number of women person

days generated was about 122.74 crore but later decreased to 10.98 crore during FY 2016-17.

State-wise number of average person days per household illustrated in Table 6, revealed that number

TABLE 7  
State-wise number of households completed 100 days of employment under MGNREGS  
in India, during 2011-12 to 2016-17

(in per cent)

States	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Andhra Pradesh	22.78	19.60	16.15	15.20	12.15	14.55
Assam	0.38	0.19	0.33	0.42	0.87	0.29
Bihar	4.09	3.49	2.65	1.29	1.20	0.37
Chhattisgarh	4.98	4.72	7.43	1.93	5.01	4.33
Gujarat	1.00	1.01	0.63	0.66	0.39	0.21
Haryana	0.33	0.39	0.30	0.22	0.08	0.06
Himachal Pradesh	1.15	0.78	1.19	0.87	0.41	0.28
Jammu and Kashmir	0.89	1.34	1.43	0.31	0.72	0.90
Jharkhand	1.39	1.67	1.48	3.31	3.59	0.93
Karnataka	1.08	2.02	2.53	1.68	2.74	4.93
Kerala	3.00	6.58	8.73	3.96	3.42	2.84
Madhya Pradesh	7.31	3.79	3.77	6.35	4.66	3.53
Maharashtra	4.73	4.47	2.63	6.65	4.50	4.21
Meghalaya	0.84	1.03	1.20	1.31	1.01	2.17
Mizoram	1.74	0.66	0.00	0.00	0.00	1.42
Nagaland	1.96	1.04	0.02	0.00	0.04	0.00
Odisha	1.14	1.45	3.36	3.29	4.06	0.90
Punjab	0.09	0.07	0.27	0.08	0.14	0.09
Rajasthan	8.06	8.15	9.57	11.29	9.67	10.71
Sikkim	0.21	0.23	0.30	0.13	0.21	0.21
Tamil Nadu	14.46	26.07	19.76	13.35	17.45	33.10
Tripura	4.79	4.37	6.13	10.10	6.29	2.92
Uttar Pradesh	7.42	1.36	3.45	4.43	3.84	1.04
Uttarakhand	0.54	0.44	0.60	0.32	0.41	0.64
West Bengal	2.87	4.89	6.02	6.36	8.48	5.00
India	100.00	100.00	100.00	100.00	100.00	100.00

Source : www.nrega.nic.in

of average person days per household under MGNREGS during FY 2011-12, was highest in Tripura (86.47 days) and lowest in Arunachal Pradesh (16 days). During FY 2016-17, number of average person days per household was highest in Karnataka (22 days) and lowest in Arunachal Pradesh (5 days). At all India level, number of average person days per household under MGNREGS was decreased from 42 days during 2011-12 to 15 days in 2016-17.

State-wise number of households completed 100 days of employment is provided in Table 7, showed that during 2011-12, Andhra Pradesh showed the highest number of households completed 100 days of employment at about 22.78 per cent and lowest in Punjab was about 0.09 per cent. Later during FY 2016 -17, Tamil Nadu recorded 33.10 per cent which was highest number of households availed 100 days of employment and lowest was in North eastern

TABLE 8  
State-wise proportion of average wages paid under MGNREGS in India, during 2011-12 to 2016-17  
(in Rupees)

States/UT	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	Minimum Agricultural wages	Difference as per 2016-17
Andhra Pradesh	100.12	105.58	112.75	121.25	131.67	194	218	-24.00
Arunachal Pradesh	115.21	123.75	134.75	151.50	167.08	172	170	2.00
Assam	125.48	135.92	151.67	167.00	178.92	182	120.3	61.70
Bihar	120.48	144.00	154.25	170.75	176.92	167	177	-10.00
Chhattisgarh	110.71	130.25	143.75	153.92	153.67	167	149	18.00
Goa	134.26	144.42	178.00	195.25	204.50	229	225	4.00
Gujarat	110.79	119.25	132.83	150.75	157.83	188	120	68.00
Haryana	181.93	191.83	215.17	238.50	253.00	259	284.61	-25.61
Himachal Pradesh	119.26	129.17	137.67	153.33	160.67	213	212.5	0.50
Jammu and Kashmir	120.34	130.67	144.33	155.67	163.50	173	150	23.00
Jharkhand	112.47	122.00	138.00	158.00	162.00	167	178.67	-11.67
Karnataka	123.65	153.75	172.50	190.33	203.25	224	269.04	-45.04
Kerala	145.15	163.75	180.00	213.83	231.75	240	200	40.00
Madhya Pradesh	118.09	128.00	139.75	150.17	150.50	167	158	9.00
Maharashtra	152.39	161.33	161.08	166.67	178.50	192	100	92.00
Manipur	133.49	143.92	140.25	174.33	189.17	197	122.1	74.90
Meghalaya	117.46	127.67	145.25	152.75	162.75	169	160	9.00
Mizoram	100.09	113.33	148.00	99.17	183.00	188	220	-32.00
Nagaland	112.00	124.00	135.00	154.58	167.00	172	80	92.00
Odisha	115.42	125.00	141.75	161.92	182.83	174	150	24.00
Punjab	145.98	163.83	182.00	198.08	205.75	218	266.03	-48.03
Rajasthan	100.00	101.50	109.67	115.08	119.50	181	189	-8.00

TABLE 8 Continued....

States/UT	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	Minimum Agricultural wages	Difference as per 2016-17
Sikkim	115.17	125.08	136.25	155.58	168.42	172	200	-28.00
Tamil Nadu	95.78	96.67	104.42	125.33	133.67	203	100	103.00
Tripura	114.39	124.00	132.75	150.17	158.58	172	150	22.00
Uttar Pradesh	114.78	124.42	141.42	155.17	160.92	174	142	32.00
Uttarakhand	114.69	124.83	141.83	155.67	161.00	174	204	-30.00
West Bengal	126.58	136.50	146.58	164.08	170.00	176	193	-17.00
All India level	112.26	122.58	133.17	148.33	153.66	191.00	174.26	16.74

Source: www.nrega.nic.in

states like Mizoram (1.42%) and Nagaland (0%) over the years. However, at all India level during FY 2011-12, about 41.6 lakhs households availed 100 days of employment and during FY 2016-17 at around 39.9 lakhs households availed 100 days of employment, which was decreasing at required rate compare to previous years.

State-wise average wage rates are provided in Table 8, showed that during 2011-12, average wages paid was highest in Maharashtra at about Rs.152.39 and lowest in Arunachal Pradesh at about Rs.115.21 whereas during 2016-17 highest wage rates was in Haryana at about Rs.259 and lowest in north eastern states at about Rs.172. At national level average wage paid during 2011 was Rs.112 and during 2016-17 average wage paid was Rs.191 under MGNREGS. The past six years results showed wage rates were increased in half of the states with highest share in Goa, Haryana, Punjab, Kerala and Karnataka. The minimum agricultural wages were about Rs.174.26 at all India level with a lower difference of Rs.17, than MGNREGS.

### Sum of Overall Efficiency Scores

The study found that a significant difference in ranking on sum of overall pure average efficiencies score obtained under MGNREGS in different states of India (2006-07 to 2016-17) is presented in the Table 9. It was found that overall efficiency score based on averages obtained showed that Kerala and Tamil Nadu performed well in consistent manner over the years as most efficient states where its efficiency score was one which was calculated using different parameter by DEA technique which considered as better performing states. Whereas, Jammu and Kashmir, Arunachal Pradesh and Goa are least performing or laggard states.

Therefore, efficiency of the scheme depends both on internal and external factors like each state have different person days of employment and their target and achievement, fund availability, wage rates, which are varied in every financial year and other factors are also responsible for efficiency of the scheme in implementation. External factors like economic

**TABLE 9**  
**Ranking on sum of overall efficiencies scores obtained under MGNREGS in different states of India during (2006-07 to 2016-17)**

States/UT	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	Total	Ranks
Andhra Pradesh	0.62	0.55	0.57	0.64	0.71	0.61	0.64	0.49	0.44	0.56	0.44	6.28	5
Arunachal Pradesh	0.53	0.49	0.44	0.30	0.35	0.14	0.33	0.33	0.28	0.34	0.22	3.77	27
Assam	0.46	0.45	0.37	0.40	0.36	0.37	0.44	0.37	0.37	0.38	0.25	4.22	25
Bihar	0.36	0.37	0.42	0.44	0.42	0.35	0.48	0.52	0.46	0.44	0.26	4.52	19
Chhattisgarh	0.43	0.47	0.50	0.48	0.50	0.48	0.58	0.56	0.43	0.59	0.31	5.34	10
Goa	0.00	0.00	0.09	0.68	0.20	0.57	0.42	0.47	0.48	0.50	0.28	3.70	28
Gujarat	0.48	0.57	0.67	0.55	0.49	0.57	0.66	0.58	0.56	0.44	0.28	5.85	7
Haryana	0.39	0.42	0.39	0.39	0.42	0.49	0.46	0.44	0.39	0.42	0.22	4.43	22
Himachal Pradesh	0.56	0.42	0.51	0.46	0.51	0.61	0.67	0.66	0.59	0.59	0.29	5.87	6
Jammu and Kashmir	0.30	0.28	0.40	0.36	0.49	0.32	0.40	0.40	0.30	0.42	0.47	4.13	26
Jharkhand	0.43	0.38	0.44	0.41	0.44	0.44	0.64	0.52	0.47	0.53	0.30	5.00	13
Karnataka	0.52	0.52	0.56	0.46	0.44	0.50	0.54	0.61	0.51	0.66	0.30	5.64	9
Kerala	0.67	0.73	0.77	0.59	0.70	0.79	0.90	0.78	0.52	0.62	0.27	7.34	1
Madhya Pradesh	0.52	0.52	0.56	0.48	0.55	0.49	0.60	0.67	0.63	0.54	0.26	5.82	8
Maharashtra	0.37	0.38	0.44	0.40	0.46	0.42	0.48	0.62	0.59	0.55	0.35	5.07	11
Manipur	0.42	0.34	0.59	0.39	0.51	0.39	0.31	0.35	0.36	0.33	0.25	4.24	23
Meghalaya	0.38	0.40	0.52	0.43	0.43	0.44	0.53	0.50	0.38	0.50	0.29	4.81	18
Mizoram	0.36	0.34	0.62	0.37	0.61	0.40	0.43	0.45	0.48	0.36	0.55	4.94	15
Nagaland	0.35	0.33	0.44	0.50	0.56	0.38	0.38	0.34	0.34	0.35	0.25	4.23	24
Odisha	0.40	0.39	0.41	0.42	0.48	0.57	0.57	0.55	0.42	0.49	0.30	5.01	12
Punjab	0.42	0.34	0.37	0.36	0.42	0.50	0.52	0.46	0.41	0.42	0.26	4.46	21
Rajasthan	0.72	0.71	0.64	0.59	0.49	0.49	0.62	0.69	0.56	0.59	0.36	6.46	4
Sikkim	0.41	0.41	0.41	0.50	0.57	0.45	0.51	0.49	0.40	0.47	0.29	4.91	16
Tamil Nadu	0.55	0.54	0.63	0.74	0.70	0.54	0.74	0.69	0.59	0.63	0.40	6.75	2
Tripura	0.57	0.62	0.63	0.57	0.59	0.61	0.68	0.62	0.58	0.67	0.51	6.66	3
Uttar Pradesh	0.42	0.41	0.45	0.41	0.47	0.57	0.56	0.47	0.40	0.45	0.24	4.84	17
Uttarakhand	0.48	0.47	0.51	0.43	0.52	0.47	0.49	0.48	0.42	0.43	0.27	4.97	14
West Bengal	0.35	0.34	0.42	0.38	0.45	0.49	0.52	0.44	0.39	0.47	0.22	4.48	20
Mean	0.429	0.421	0.475	0.453	0.478	0.464	0.521	0.511	0.462	0.495	0.317	5.023	-

Source : Data envelopment analysis (DEA)

TABLE 10  
State-wise estimates of ranks between MGNREGS efficiency scores with poverty rates and literacy rates in different states of India

States	MGNREGS efficiency score (2006-07 to 2016-17)	Rank	Poverty rates in % (2011)	Rank	Literacy rates in % (2011)	Rank
Andhra Pradesh	6.28	5	10.96	23	67.0	24
Arunachal Pradesh	3.77	27	38.93	3	65.4	26
Assam	4.22	25	33.89	9	72.2	19
Bihar	4.52	19	34.06	8	61.8	27
Chhattisgarh	5.34	10	44.61	1	70.3	20
Goa	3.70	28	6.81	28	88.7	3
Gujarat	5.85	7	21.54	14	78.0	11
Haryana	4.43	22	11.64	20	75.6	15
Himachal Pradesh	5.87	6	8.48	26	82.8	5
Jammu and Kashmir	4.13	26	11.54	22	67.2	23
Jharkhand	5.00	13	40.84	2	66.4	24
Karnataka	5.64	9	24.53	11	75.4	16
Kerala	7.34	1	9.14	25	94.0	1
Madhya Pradesh	5.82	8	35.74	5	69.3	21
Maharashtra	5.07	11	24.22	12	82.3	6
Manipur	4.24	23	38.8	4	76.9	12
Meghalaya	4.81	18	12.53	19	74.9	17
Mizoram	4.94	15	35.43	7	91.3	2
Nagaland	4.23	24	19.93	15	79.6	9
Odisha	5.01	12	35.69	6	72.9	18
Punjab	4.46	21	7.66	27	75.8	13
Rajasthan	6.46	4	16.05	17	66.1	25
Sikkim	4.91	16	9.85	24	81.4	7
Tamil Nadu	6.75	2	15.83	18	80.1	8
Tripura	6.66	3	16.53	16	87.2	4
Uttar Pradesh	4.84	17	30.4	10	67.7	22
Uttarakhand	4.97	14	11.62	21	78.8	10
West Bengal	4.48	20	22.52	13	76.3	14

Source : Author calculations and www.indiastat.com

conditions of states, political factors, geographical factors, psychological and behavioral factors, demographics and socio-religious factors, community and caste factors were responsible for the better implementation of the scheme.

#### Relationship Between the MGNREGS Efficiency Scores with Poverty and Literacy Rates

Table 10 explains the relationship between the average efficiency score and poverty rates which was obtained as moderate negative relationship. This

implores that states with highest poverty rate seen in Jharkhand and Chhattisgarh were at 13<sup>th</sup> and 10<sup>th</sup> position, respectively, that is implementation of scheme in poorer states was inefficient and there have medium efficiency score at 5.0 and 5.34 scores respectively, as compared to Kerala and Tamil Nadu which has lowest poverty rate and their efficiency in performance of scheme implementation was highest at about 7.34 and 6.75 scores, respectively.

Similarly, relationship between efficiency scores of MGNREGS implementation and literacy rates which was obtained moderate positive relationship. Education and awareness about scheme play an important role for better implementation of the scheme. Kerala has the highest literacy rate and highest efficiency score was one which indicates that it was an efficient state.

Whereas, lowest literacy states have lower efficiency score which indicates that they were inefficient states. Thus, we can say that states with higher poverty rates have lowest MGNREGS efficiency score which indicates implementation of scheme in poorer states were inefficient. Similarly, highest MGNREGS efficiency score and highest literacy rates have highest MGNREGS efficiency score, which indicates implementation of scheme in richer and better states were efficient like Kerala and Tamil Nadu. Thus, poverty and literacy rates was proved to be an important factor which plays major role in better implementation of the scheme.

DEA efficiency scores obtained for MGNREGS in different states of India (2006-07 to 2016-17) showed that Kerala and Tamil Nadu performed well in consistent manner for all the years as most efficient states. Whereas, Jammu and Kashmir and Arunachal Pradesh, were the least performed states. The study implores that states with highest poverty rates have lower efficiency score which indicates inefficiency in implementation of the scheme.

States with lowest poverty rates have higher efficiency score which indicates efficiency in implementation of the scheme MGNREGS implementation efficiency and poverty indicates

negative relationship. Similarly, the literacy level and MGNREGS implementation efficiency indicates that there was positive relationship. Therefore, education and awareness about scheme plays an important role for better implementation of the scheme.

## REFERENCES

- AHMED, S. R., KUMAR, S., KHAN, M., 2023, Impact assessment of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) on rural women labour consumption expenditure pattern of food items in Punjab and Karnataka. *Mysore J. Agric. Sci.*, **57** (3) : 368 - 380.
- ANONYMOUS, 2011, MGNREGS Sameeksha report to the people. Ministry of Rural Development, Government of India: (Report No. 1), New Delhi, pp. : 76.
- ANONYMOUS, 2014, MGNREGS implementation report to the people. Ministry of Rural Development, Government of India: (Report No. 2), New Delhi, pp. : 94.
- ANONYMOUS, 2015, MGNREGS Sameeksha II anthropology of research studies. Ministry of Rural Development, Government of India: (Report No. 3), New Delhi, pp. : 115.
- BHOWMIK, I. AND BOSE, P., 2015, Efficiency and impact of MGNREGS in Tripura. *Social Cha. Dev.*, **22** (1) : 1 - 19.
- CHIKKARA, K. S., NEETU, S. AND POONAM, 2014, An inter-district efficiency measurement of MGNREGA in Haryana. *International J. Com. Sci. Mgt. Stu.*, **14** (2) : 22 - 28.
- DREZE, J. AND KHERA, R., 2009, The battle for employment guarantee, Oxford University Press Inc, New Delhi. **10** (3) : 4 - 17.
- FAROOQUEE, A. A., 2013, Policy implementation and impact review: A Case of MGNREGA in India. *Mediterranean. J. Soc. Sci.*, **4** (13) : 13 - 19.
- SAHA, P. AND DEBNATH, S., 2015, Implementation efficiency of MGNREGA: A study of Indian states using data envelopment analysis. *Indian J. Eco. Dev.*, **11** (3) : 631 - 336.