

Employment Generation through MGNREGS: An Empirical Study on West Bengal

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Abstract: MGNREGS has confided in work for provincial family unit as a protected right. It likewise goes for making of unmistakable resources for create financial aspects of scale and in this manner includes salary trough a multiplier procedure, other than taking into account the social and environmental objectives. This part centers on the particular effect of the MGNREGS on the general business age in the territory of West Bengal, India. Observational discoveries allude that impact of MGNREGS on work age is sure and huge and financial components are likewise essential to create business.

Keywords: MGNERGS, India, Employment, West Bengal, Panel Data Econometrics.

I. INTRODUCTION

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) (2005) has trusted employment for rural household as a constitutional right. It also aims at creation of tangible assets to generate economics of scale and thus adds income trough a multiplier process, besides catering to the social and ecological goals. Collective action and better involvement of PRI's are two prime steps of successful MGNREGS implementation. The intersectional linkage is the key of rural transformation.

Promotion of livelihood trough employment generation was set as a major goal of MGNREGS. For that purpose a specified minimum wage is declared by the state governments for MGNREGS work. Variation in the minimum wage rate across the states has prevailed form the beginning of the scheme. The wage rate offered and its sharing by rural marginalised classes is significant in terms of livelihood promotion. Through MGNREGS has experienced dynamically in terms of wage rate modification, but it is admitted that the success of MGNREGS and its wage rate is dependent on its capacity of creating employment. It was conceptualised by the planners that wage income through MGNREGS is helpful to meet many contingency needs of the household and thus the livelihood will be standardised to same extent. It has been recommended that the long term investment in MGNREGS will build the capacity of the households towards their upward mobility.

Other point needed to mention that the engagement of rural labour in MGNREGS work is expected to raise their bargaining power with local employing authorities and thus the wage situation for other jobs is expected to be improved. "Rural wages can only increase if the demand for rural labour grows faster than its supply. In other words, rural wages can be affected by changing both the demand for and supply of rural labour. An increase in the demand for rural labour, given its supply, can occur if there is an increased labour demand in either agricultural or non agricultural activities" (Khandker, 1989). Increase in the number of work days through MGNREGS is expected to bring that desired situation. One of the important issues in the context of work condition is fixing of minimum wages, though controversial. "Advocates of non-regulation would argue that the labour market itself would set a 'floor' to wages, either because of supply and demand, or because of efficiency considerations. Moreover, they would argue that setting a wage would result in lowering employment and hence growth" (NCEUS report, 2007).

Since the execution of MGNREGS, a few investigations have been led for the most part on field encounters in various States. Das and Pradhan (2007) documented that different sorts of anomalies like circulation of employment cards after the work begin deferred and lower wage installment, hesitance of organization and little strengthening of the poor in Odisha for whom it has been planned. In one of the early field examines, it was seen that in Pati square of Madhya Pradesh the master dynamic job of laborers' association prompted the acknowledgment of privilege of assurance of work by spreading mindfulness about the Act (Khera, 2008). Jha et al. (2008) additionally discovered that STs and cooperation of landless is high in three towns of Andhra Pradesh. Khera et al (2009) noticed that the NREGA has a few arrangements that are gone for improving the investment of ladies. These have been met with changing degrees of accomplishment in various pieces of the nation. It is discovered that NREGA work, however little, brought about huge advantages. In any case, difficult issues stay in execution crosswise over States. It is guaranteed by the Planning Commission (2011) that 'There is proof that usage of NREG Program has diminished pain



relocation and improved the bartering intensity of horticulture work prompting higher wages'.

Banerjee and Saha (2010) discovered confirmations that in all the investigation towns (spread crosswise over 12 hinders in three States), the extra pay earned through NREGA-related works was for the most part spent on utilization of foodgrains. It has been presumed that had NREGA not been actualized in these territories, the majority of the families would not have had the ability to buy enough foodgrains. Pankaj and Tankha (2010) brought up that paid work under NREGS helped country ladies in acknowledging pay utilization impacts through better command over income. Further, NREGS expanded decisions for rustic ladies in two different ways. One, it opened a completely new road for paid business. Two, thus it expanded their decisions and capacity. Be that as it may, Patnaik (2010) scrutinizes the term 'right' utilized with regards to enactments (like ideal to nourishment or work) as truly deceptive. In like manner, "the NREGA comes nearest to giving a "right", in any case, as is notable, the arrangement of work on interest as guaranteed under the NREGA has not been the general practice (and joblessness stipend has not really been paid when business has not been given); true subsequently, the NREGA does not give a privilege to work. To put it plainly, while the administration talks of giving "rights", they are not "rights" in the genuine feeling of the term. Against this backdrop, the study empirically analyses the employment generation aspects of MGNREGS in West Bengal. Nest section briefs that employment generation under MGNREGS in West Bengal followed by documentation on MGNREGS and the Rural Marginal Classes. Data and methodological issues are carefully described followed by the descriptions of empirical results. Final section concludes the paper.

II. EMPLOYMENT UNDER MGNREGS IN WEST in Eng BENGAL

It is crucial to understand the spatial share of employment days beside temporal trend of MGNREGS implementation. Pachim Bardhhaman and Paschim Medinipur are the leading districts in terms of MGNREGS employment share to state. Data of employment share reveals that there is close association of physiography to employment generation. Besides urbanised districts 24 Parganas North and 24 Parganas South, Howrah etc., the overall trend of employment share is low for states having higher relative relief or rugged topography. These states include Cooch Behar, Jalpaiguri, Purulia etc.

Receive-Demand ratio can be assumed as a primary determinant of employment creation and the employment share by the marginalised classes. This ratio captures the percentage of job seekers who did not get employment under MGNREGS in spite of expressing their willingness to be considered for such job opportunities. It can be treated as a good measure of measuring the employment generating performances of MGNREGS across the administrative boundaries. The district wise Receive-Demand ratio in West Bengal shows that the ratio is zero for the most of districts. As per data given by MoRD there is atleast refusal of job across the states in year 2014-2017 which reveals an extraordinary performance of the scheme in West Bengal in the respective years. The spatial and temporal distribution of Receive-Demand ratio is significant across the districts of West Bengal.

Total Share under MONKEOS (2010-17)				
District	Number of	District		
	Employed	Contribution to		
	Persons	Total Share		
24 Parganas (North)	290590	3.95		
24 Parganas (South)	325895	4.8		
Bankura	417480	5.68		
Birbhum	606311	8.25		
Cooch Behar	328868	4.47		
Darjeeling Gorkha Hill	113743	1.05		
Council (DGHC)				
Dakshin Dinajpur	93590	1.02		
Uttar Dinajpur	107849	1.04		
Hoogly	513532	6.98		
Howrah	100157	1.03		
Jalpaiguri	394994	5.37		
Maldha	196968	2.06		
Murshidabad	434965	5.92		
Nadia	544897	7.41		
Paschim Bardhaman	1078560	14.67		
Paschim Medinipur	888101	12.08		
Purba Medinipur	557247	7.58		
Purulia	291702	3.97		
Siliguri Ma <mark>hak</mark> uma	40075	0.55		
Parisad				
Total S	7352524	100.00		

Table 1: District Wise Share of Employment to Total Share under MGNREGS (2016-17)

Source: www.nrega.nic.in

North Bengal districts- Cooch Behar, Darjeeling Gorkha Hill Council (DGHC), Siliguri Mahakuma Parisad are showing consistently good performance in Receive-Demand Ratio. On the other hand, Bankura and Birbhum are reportedly showing less Receive-Demand Ratio. The determinants of Receive-Demand Ratio are i) level of awareness of MGNREGS ii) awareness among villagers iii) allocation of fund for MGNREGS implementation. These determinant acts together to determine the Receive-Demand Ratio across the boundaries.

> Figure 1: Employed Persons in MGNREGA across Districts in West Bengal (2016-17)



Source: www.nrega.nic.in



The limitation of Receive-Demand Ratio is that it does not provide the complete picture of job receiving through MGNREGS. The household which is getting even a single day of wage employment is taken as the job receiving household. So the appropriate measure is the number of household receiving full 100 promised day of wage employment. One interesting fact is that full potentiality of MGNREGS providing 100 days of wage employment is very less across the districts in West Bengal. Though the percentage share has improved for most of the districts, ranging from 3.41 per cent to 12.47 per cent for Paschim Medinipur and 4.80 per cent to 10.87 per cent in South 24 Parganas 13.64 per cent from year 2014 to 2017. The overall figure of 100 days job receiving reflects the figure for household received 100 days of wage employment is always below 15 per cent which is curial for government concern.

Table 2: District Share to Received-Demand Ratio o	of
Employment under MGNREGS (2016-17)	

District	Receive-Demand Ratio (%)		
	2014-15	2015-16	2016-17
24 Parganas (North)	87.55	85.52	86.27
24 Parganas (South)	93.13	89.08	90.71
Bankura	90.07	80.53	94.26
Birbhum	94.52	87.33	82.69
Cooch Behar	98.19	95.76	92.05
Darjeeling Gorkha Hill	97.09	94.40	96.71
Council (DOHC)			
Dakshin Dinajpur	90.09	85.10	95.87
Uttar Dinajpur	90.12	86.50	87.57
Hoogly	94.35	85.93	89.53
Howrah	91.28	89.60	92.14
Jalpaiguri	94.15	93.30	92.26
Maldha	93.92	84.97	93.81
Murshidabad	89.12	60.21	91.64
Nadia	90.19	84.06	79.07
Paschim Bardhaman	91.52	88.14	83.02
Paschim Medinipur	94.22	89.68	90.07
Purba Medinipur	93.96	91.79	91.91 Ch ir
Purulia	90.75	80.54	92.42
Siliguri Mahakuma Parisad	95.92	91.30	82.42
Total	95.92	80.54	95.18

Source: www.nrega.nic.in

Figure 2: District Wise Receive-Demand Ratio of Employment under MGNREGA in West Bengal (2016-17)



Source: www.nrega.nic.in

From the below table it is evident that not all registered household are demanding MGNREGS job. Highest demand from the registered household as recorded in 2014-15, 2015-16 and 2016-17 are 78.64 per cent, 67.14 per cent and 71.60 per cent respectively. Birbhum, Jalpaiguri, Hoogly, Paschim Medinipur and Paschim Bardhaman are the districts which are showing consistently high demand. Other side, 24 Parganas, Uttar Dinajpur, malda and Murshidabad are in the bottom line regarding job demand. Districts showing regress in job demand over time are Bankura and Darjeeling. The demand for MGNREGS job are determined by seasonal availability of MGNREGS employment, nature of work offered, distance of the worksites, time span to get wage for previous MGNREGS employment and lastly opportunity wage to other works. These factors are conditional to the status of MGNREGA implementation and activeness of the village Panchayats.

Table 3: District Share to Total Number of Families Received 100 Days of Employment Out of Total Job Receiving Household under MGNREGS (2014-17)

Receiving Household under Montkelob (2014-17)				
	% Share of Number of families completed 100			
District	days of employment to Total Household			
	Provided Employment			
	2014-15 2015-16 2016-17			
24 Parganas (North)	4.31	2.93	5.46	
24 Parganas (South)	4.80	4.43	10.87	
Alipurduar		2.73	3.84	
Bankura	4.34	0.55	5.12	
Birbhum	9.49	2.89	11.57	
Cooch Behar	1.04	1.72	5.05	
Darjeeling Gorkha Hill Council (DGHC)	8.06	8.35	8.83	
	0.00	0.44	0.04	
Dakshin Dinajpur	0.80	0.44	0.94	
Uttar Dinajpur	0.62	1.26	5.02	
Hoogly	7.49	0.73	7.45	
Howrah	1.30	3.97	5.55	
Jalpaiguri	0.75	0.96	1.51	
Maldha	2044	1.42	3.83	
inee®Murshidabad	1.31	0.93	1073	
Nadia	13.63	9.49	13.78	
Paschim Bardhaman	2.72	1.46	4.17	
Paschim Medinipur	3.41	4.35	12.97	
Purba Medinipur	5.51	4.50	4.16	
Purulia	8.01	1.11	4.24	
Siliguri Mahakuma	1.79	0.20	0.62	
Parisad				
Total	4.58	2.77	6.72	
Average	4.09	2.58	5.83	

Source: www.nrega.nic.in





Source: www.nrega.nic.in



Table 4: District-Wise Share of Registered Household Demanding MGNREGS Employment (2014-17)

	Number	of Registered Ho	ousehold
District	Demanding Employment (%)		
	2014-15	2015-16	2016-17
24 Parganas (North)	37.88	34.49	38.65
24 Parganas (South)	31.92	29.55	42.49
Alipurduar		68.45	70.82
Bankura	62.05	46.90	58.68
Birbhum	76.13	64.39	71.60
Cooch Behar	49.70	43.71	62.62
Darjeeling Gorkha Hill	73.84	62.46	68.79
Council (DGHC)			
Dakshin Dinajpur	34.24	24.80	41.14
Uttar Dinajpur	22.62	21.49	27.93
Hoogly	73.04	61.16	70.05
Howrah	37.80	36.32	40.48
Jalpaiguri	66.60	49.94	59.92
Maldha	38.15	26.79	34.74
Murshidabad	46.47	45.17	29.93
Nadia	46.87	51.59	50.55
Paschim Bardhaman	78.64	67.14	68.75
Paschim Medinipur	66.40	63.35	60.09
Purba Medinipur	60.39	53.89	57.62
Purulia	5500	41.39	50.71
Siliguri Mahakuma	61.01	39.79	51.47
Parisad			
Total	54.37	47.20	52.01

Source: www.nrega.nic.in

Figure 4: District-Wise Share of Registered Household Demanding MGNREGS Employment (2014-17) in



Apart from the district wise share of employment registered households, demanding percentage of employment demand by registered individuals is another significant indicator. The figures are much lower than the household demand. Highest demand per hundred persons in year 2014-15, 2015-16 and 2016-17 are 56.69, 50.05 and 54.23 respectively. South Bengal two districts Paschim Bardhaman and Birbhum, where the percentage share is consistently higher than others districts. Most of the districts in this table are showing declining trend in terms of employment demand per hundred persons. This situation marks the following possibilities:

i. The employment demand per household is higher than employment demand per hundred persons in most of the districts because not all the registered numbers are placing a demand for MGNREGS employment.

ii. There's operating a factor of selection/preference among the household members regarding MGNREGS employment. iii. The factor of selection/ preference is most likely subjected to gender and age specific.

iv. Total number of families completed full days of promised employment (hundred for MGNREGA) is very less. The state average for this indicator is 4.09 per cent, 2.05 percent and 5.83 per cent for the years 2014-15, 2015-16 and 2016-17. This situation is discouraging rural mass to place a demand for MGNREGS job which is highly paid but highly irregular. People prefer to be registered as an option.

Figure 5: District-Wise Share of Employment Demand by Registered Persons (2014-17)



Source: www.nrega.nic.in

Table 5: District-Wise Share of Employme	nt Demand
by Registered Persons (2014-17)

	District	Number of Registered Persons Demanded			
2		Employment (%)			
		2014-15	2015-16	2016-17	
	24 Parganas (North)	24.40	20.93	24.26	
2	24 Parganas (South)	21.63	19.76	30.00	
	Alipurduar 2		35.25	40.97	
	Bankura 🧕	51.51	33.42	46.23	
	Birbhum g	56.42	43.36	39.05	
	Cooch Behar	29.56	25.82	40.22	
	Darjeeling Gorkha	44.03	36.20	40.22	
	HillCouncil(DGHC)				
	Dakshin Dinajpur	23.18	15.13	25.93	
	Uttar Dinajpur	15.68	12.12	17.92	
	Hoogly	54.05	42.86	50.81	
U	Howrah	26.18	25.22	29.03	
-	Jalpaiguri	35.79	25.96	32.95	
	Maldha	26.78	17.23	23.42	
	Murshidabad	30.15	31.06	20.53	
	Nadia	35.02	36.73	36.44	
	Paschim Bardhaman	56.69	50.05	51.02	
	Paschim Medinipur	46.70	43.82	42.78	
	Purba Medinipur	37.45	32.43	34.82	
	Purulia	38.15	26.47	34.16	
	Siliguri Mahakuma	33.61	21.67	28.24	
	Parisad				
	Total	37.74	31.59	36.09g	

Source: www.nrega.nic.in

III. MGNREGS AND RURAL MARGINAL CLASSES

Participation in public sphere programmes is largely dependent on the degree of social isolation or on the degree of social exclusion. Tilly in 2007 argued that "since exclusion itself promotes poverty, exists from poverty would therefore depend on eliminating or bypassing the usual effects of social exclusion". The incidence of social exclusion denies access to public welfare programmes and



therefore the intention of the scheme remains untouched in most of the time. De Haan(1999) uses NREGA as an example of how the targeted poverty programmes have focussing on addressing specific needs at the expense of the causes and patterns of social and economic exclusion. According to him NREGA has relieved poor workers from the insecurity, but has not emphasised on contributing to rural infrastructure and agricultural development, thus neglecting factors which would be elementary for sustained development and transformation of socio-economic relations.

Retzinger (1991) pointed out the importance of other people's value and attitudes as important sociological factors for individuals. These are the factors making people feel ashamed' Shehet. Al(2006) after their study on untouchability in rural India concluded, " these does not appear to be any qualitative studies on labour experiences of groups within caste-caste-gender nexus thus the intersections between the social construct of gender, economic class and caste still needs to be explored".

To get the full benefit of these developmental programmes, the programmes should be target the rural marginalised classes, as these classes constitute a large section on Indian population. Census 2011 reports that Sc and ST combined represents 25.2 per cent of total rural population. It is fact that the people of the bottom line are mostly the dwellers of the rural areas. So the development initiatives should target the rural marginalised section at first, for two reasons:

i. As rural marginalised classes consist of the majority of the marginalised people all over India and forms a big section of Indian society (25.2% of Sc & St, 41 % of OBC) deprived minimum livelihood.

ii. As this section is mostly or partially socially excluded due to caste class hierarchy, so far the sake of the social inclusion, they must come under the same umbrella of work and livelihood security like other non-marginalised classes.

There is a now a general view among developmental researchers that the reduction of poverty and deprivation is not possible without empowering the poor. It is important to highlight that the edition of Human Development Report for the year 2000 by UNDP clearly underscored the linkage between human rights and development. Now the right based development (RBA) approach is getting global significance over the need based approaches of development. Un Human Rights commission defines RBA 'as a conceptual framework for the process of Human development that is normatively based on international human rights standards and operationally directed towards promoting and protecting human rights'. So, the Right to Development has been recognised as the right to a process of development that ensures progressive realisation of the basic human rights reflected in a steady process of participatory and equitable economic growth and poverty

education. MGNREGS targets this right based direction of public investment with a vision to improve the conditions of the rural economy through sustainable resource generation, not only to improve the employment the employment situation merely. The objective of social inclusion was incorporated in the design of the scheme from the time of its inception; MGNREGS is playing a key role for the betterment of marginalised classes of rural India.

One of the constructive approaches of MGNREGA is to provide employment to the marginalised classes of rural India on a right based approach. It ensures the guarantee to work irrespective of class, caste and gender. Data portal of MGNREGA presents year wise data of various aspects of MGNREGS, on a regular basis. The following Table represents the employment share of SC, ST and others in MGNREGS employment in the 2015-2016 in West Bengal districts.

Table 6: Caste Wise Employment Share under MGNREGS (2015-16)

	Share of SC	Share of ST	Share of Other's		
District	Employment	Employment	Employment		
	(%)	(%)	(%)		
24 Parganas	5.21	3.19	4.95		
(North)					
24 Parganas	4.86	0.88	6.32		
(South)					
Alipurduar	2.04	7.45	2.78		
Bankura	4.60	5.03	1.75		
Birbhum	6.33	6.42	6.48		
Cooch Behar	10.74	0.71	4.85		
Darjeeling Gorkha	0.58	10.38	2.94		
Hill Council	JT.				
(DGHC)	Jel				
Dakshin Dinajpur	0.61	1.28	0.82		
Uttar Dinajpur	1.00	0.45	1.63		
Hoogly	8.50	5.55	4.66		
Howrah	1.27	0.06	2.08		
Jalpaiguri	4.60	11.59	3.93		
Maldha	1.45	1.67	2.95		
Murshidabad	2.14	1.06	7.01		
Nadia	10.08	3.53	10.13		
nee ^w Paschim	21.06	17.31	11.79		
Bardhaman					
Paschim Medinipur	8.81	22.47	12.69		
Purba Medinipur	3.80	0.40	12.13		
Purulia	1.45	6.27	2.64		
Siliguri Mahakuma	0.84	1.75	0.23		
Parisad					
Total	100.00	100.00	100.00		

Source: www.nrega.nic.in

Figure 6.a: Caste Wise Employment Share under MGNREGS (2015-16) – SC



Source: www.nrega.nic.in



This table suggests the highest number of employment share by SC population is found in Paschim Bardhaman followed by Cooch Behar and Nadia. Darjeeling Gorkha Hill Council (DGHC) and Siliguri Mahakuma Parisad are in bottam line. The data regarding SC employment share in MGNREGS suggests the considerable share of this category of population is concentrated in plain than that the plateau and mountainous areas of West Bengal. For STs, this regional contextualization is not applicable. The highest share of STs is found in Pashim Medinipur, followed by Paschim Bardhaman and Jalpaiguri district. Howrah represents the lowest share of ST employment under MGNREGS. Paschim and Purba Medinipur represents highest and second highest share of other category employment under MGNREGS.

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Source: www.nrega.nic.in

Participation of marginal classes to a state sponsored programme is determined by many geographical factors, such as a) share of marginal category population to total in districts b) literacy and awareness of marginal classes c) pro-activeness of district implantation agencies d) government initiatives to mainstream the unemployed marginal rural youth to the labour force and most importantly e) labour force participation trend of rural women belongs to SC and ST category of population. All these factors together play a great role in determining the MGNREGS participation which is evident from the district level variation in West Bengal.



Source: www.nrega.nic.in

IV. DATA AND METHODOLOGY

By forming a balanced panel of 17 selected districts (Bankura, Birbhum, Burdwan (Purba and Paschim together), Darjeeling, Jalpaiguri (Including Alipurduar), Hooghly, Howrah, Malda, Purba Midnapore, Paschim Midnapore, Murshidabad, Nadia, Uttar Dinajpur, Dakshin Dinajpur, North 24 Parganas, South 24 Parganas and Cooch Behar) in West Bengal over the period of 2010-2018, now we will conduct an empirical exercise to explore the overall impact of MGNREGS on employment generation. In this regard besides the data on the measures of employment generation and MGNREGA as focussed dependent and independent variables respectively, several socio-economic indicators of those districts are also collected from public sources.

employment (EMPL), outcomes of MGNREGA (NREG) and socio-economic indicators (SOCE) presented by a single index composed of the indices of level of education, family income, average lad holding, occupational status and health status. The dynamic panel models are categorized as follows, where all symbols follow their usual meanings:

 $EMPL_{it}=\alpha_{1it}+\beta_{11}EMPL_{it-1}+\beta_{12}NREG_{it}+\beta_{13}SOCE_{it}+\epsilon_{1it}$ (1) To explore the dynamic impacts of NREG and SOCE on EMPL, the study employs Arellano and Bond (1991) specified generalized method of moments (GMM) approach as suitable for dynamic panel framework to control the endogeneities in estimated regression equations. Panel models make more information available due to more efficiency and degrees of freedom. The models also allow to control the individual heterogeneity and to identify the effects which cannot be identified in time series and cross section data.

Before estimating the dynamic panel regression equation, the study also utilizes panel unit root tests developed by



Levin-Lin and Chu (LLC) (2002) and Im-Pesaran-Shin (IPS) (2003) to check the stochastic properties of variables. Panel unit root tests, although similar, are not identical to unit root tests carried out on a single series. In testing panel unit roots, the basic ADF specification is presented by equation (2):

$$\Delta y_{it} = \rho y_{i,t-1} + \sum_{j=1}^{p_i} \eta_{ij} \Delta y_{i,t-j} + X'_{it} \delta + \varepsilon_{it}$$
(2)

The LLC test allows the intercepts, the time trends, the variances of residual and the autocorrelation order to vary freely across the cross section units. But it will require the time series of independently generated with a common sample size and all individual AR(1) series have a common autocorrelation coefficient. The lag order p_i is permitted to vary across individual states. The appropriate lag order is chosen by allowing the maximum lag order and then by using the t-statistics for η_{ij} . The estimate of the autocorrelation coefficient, ρ , is not obtained directly from the estimation of equation (2). By using proxies for Δy_{it} and y_{it} that are standardised and free of deterministic components and autocorrelations.

The most commonly used estimator for dynamic panels with fixed effects in the literature is the GMM estimator by Arellano and Bond (1991). In this approach, the fixed effects are first eliminated using first differences instead of actual level of variables and then an instrumental variable estimation of the differenced equation is performed. As the instruments for the lagged differences of the endogenous variable or other variables which are correlated with the error term in differenced term – all lagged levels of the variables in question are used, starting with lag two and potentially going back to the beginning of the sample. The overall validity of instruments can be checked by a Sargan test of over-identifying restrictions.

The simple model of dynamic panel, with one period lag^f End can usually be expressed as the equation (3):

$$y_{it} = \alpha_i + \theta_t + \beta y_{i,t-1} + x'_{it} \eta + \varepsilon_{it}$$
(3)

 α_i represents fixed effect, θ_t is time dummy, x_{it} is a (k-1)×1 vector of exogenous repressors and $\varepsilon_{it} \sim N$ (0, σ^2) is a random disturbance. The fixed effect model is more suitable than a random effect model in panel frame because macro panel contains most of the sectors under consideration and it is less likely to be a random sample. The basic GMM panel estimators, $\delta = (z'x)^{-1} z'y$, are based on moments of the form of euation (4),

$$g(\delta) = \sum_{i=1}^{N} g_i(\delta) = \sum_{i=1}^{N} z'_i \varepsilon_i(\delta)$$
(4)

Where, z_i is a $T_i \times p$ matrix of instruments for crosssection, *i*, and,

$$\varepsilon_i(\delta) = (y_i - f(x_{ii}, \delta)) \tag{5}$$

GMM estimation minimizes the quadratic form:

$$S(\delta) = \left(\sum_{i=1}^{N} z_i' \varepsilon_i(\delta)\right)' H\left(\sum_{i=1}^{N} z_i' \varepsilon_i(\delta)\right) \quad (6)$$

with respect to $\boldsymbol{\delta}$ for a suitable chosen weighting matrix H.

Thus the basics of GMM estimation involve to specify the instruments Z and to choose the weighting matrix H, and to determine an estimator.

V. EMPIRICAL FINDINGS

We carry out LLC (2002) and IPS (2003) panel unit root tests and the results are displayed in table 1. Unit root test statistics are calculated for all underlying panel variables. The lag lengths are selected by following minimum Akaike (1969) information criterion (AIC) rule to estimate the test statistics. Both individual effects and linear trends as exogenous variables are incorporated in the estimated equations. We observe that all variables are having unit root problem at level. However, all panel variables become stationary at first differences.

Table 7: Estimated Statistics of Panel Unit Root Tests

	LLC (2002)		IPS (2003)	
Series	Laval	First	Laval	First
	Level	Difference	Level	Difference
EMPL	-1.82	-6.45*	-1.78	-6.23*
NREG	1.31	-5.91*	1.41	-5.58*
SOCE	- <mark>1</mark> .78	-6.02*	-1.66	-5.92*
*Significant at 5% level of significance				

Source: Author's own estimation using MGNREGS data

We use the first-differenced GMM technique as developed in Arellano and Bond (1991) to control the unobserved heterogeneities involved in the estimated relationships. We estimate three dynamic panel equations in order to find out the dynamic effect of NREG and SOCE on EMPL and the results are presented in table 8. The presence of lagged dependent variable in the estimated equation captures the basic dynamism.

Dependent Variable: $\Delta EMPL(1, it)$				
Method: Panel GM	IM			
Total Balanced Par	Total Balanced Panel Observations: 153			
Variable	Coefficient	t-Statistics	Probability	
$\Delta EMPL(1,it-1)$	0.18	11.23	0.0000	
Δ NREG (it)	0.07	9.89	0.0310	
$\Delta SOCE$ (it)	0.09	8.21	0.0019	
J-Statistics	11.71 (0.49)	Instr.Rank	11	

Table 8: GMM Estimation of the Impacts of NREG and SOCE on EMPL

Source: Author's own estimation using MGNREGS data

Capitalize only the first word in a paper title, except for proper nouns and element symbols. For papers published in translation journals, please give the English citation first, followed by the original foreign-language citation [8].

VI. CONCLUDING REMARKS

The paper focuses on the specific impact of the MGNREGS on the overall employment generation in the state of West



Bengal, India. In this regard, several aspects of MGNREGS and its connection with employment for the districts of West Bengal are carefully and methodologically presented followed by an empirical using panel data on those districts over a long period. Empirical findings refer that influence of MGNREGS on employment generation is positive and significant and socio-economic factors are also important to generate employment. These empirical outcomes also support the views generally observed from the presentation of data. Besides that it also corroborates the findings of several studies like Alam and Alam (2014) and Reddy et al. (2014) etc.

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