Rural Households' Participation in MGNREGA Programme of Puducherry

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

Aims: The study aimed to identify the factors determining the participation of rural households in the MGNREGA programme of the Puducherry.
Study Design: The study has utilised both purposive and random sampling methods to identify sample districts, sample blocks, sample revenue villages, and sample respondents for interview.
Place and Duration of Study: The study was carried out in Puducherry and Karaikal districts of Puducherry in the month of July 2022, the data collected pertains to agricultural year 2021-2022.
Methodology: Primary data was used in the study. The main methodology used in identifying the factors determining the participation in MGNREGA programme was Logit Regression. A well-structured interview schedule was used to collect data from the sample respondents. A sample of 120 beneficiaries and 120 non- beneficiaries of the MGNREGA programme were chosen at random and relevant data were collected.
Results: The estimates of the logit regression shows that education, family size, primary occupation, women headed family and possession of livestock are found to be the major determinants of participation. The family size and women headed family positively influence the probability of participation of rural households in MGNREGA programme and are significant at 1%

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and 5%, respectively. The variables such as education and possession of livestock were found to be significant at 5% level and negatively influencing the probability of participation of rural households in MGNREGA programme. Likewise, the variable primary occupation was found significant at 1% level and negatively influencing the probability of participation of rural households in MGNREGA programme.

Conclusion: The participation of rural households in MGNREGA programme is determined by the factors such as education, family size, primary occupation, women headed families and possession of livestock. Thus, the rural households with low education level, large family size, non- farm worker, women headed family and less possession of livestock are the major characteristics of the rural households which makes them to demand for MGNREGA job.

Keywords: MGNREGA; participation; rural households; puducherry; logit regression.

ABBREVIATIONS

MGNREGA : *Mahatma Gandhi National Rural Employment Guarantee Act*
GRS   : *Gramm Rozgar Sevak*
GP   : *Gram Panchayat*

1. INTRODUCTION

The Indian economy has long been plagued by unemployment. India, like any other emerging country, suffers from the negative effects of unemployment, which include poverty, a drain on national human resources, and a social shame. According to the Bhagwati Committee [1], "Unemployment and underemployment are the biggest challenges of the day and we are sitting on a volcano. The supreme task of planning is, therefore, to drain this labour reservoir by creating work opportunities and by shifting the unemployed and underemployed into productive work". In comparison to wealthy countries, unemployment is around 10-20% of the population, which is a big percentage. The unemployment rate of India is alarmingly increasing at 7.57 per cent [2].

The then-government believed that unemployment would change with quick economic growth and that five-year plans would produce appropriate employment opportunities for the unemployed workforce. All of the programmes implemented during every five-year plan ran in the same area, producing an unnecessary multiplicity of programmes, and none of them were pan-Indian to cover different targeted groups. So, a single integrated programme was created in India called NREGA was launched to improve the social and economic situation of rural population.

1.1 Mahatma Gandhi National Rural Employment Guarantee Act, 2005

The National Rural Employment Guarantee Act (NREGA) is the flagship programme of the Indian government that encourages inclusive growth and directly affects the lives of those who are considered to be economically disadvantaged. On August 23, 2005, the National Rural Employment Guarantee Act was officially enacted into law by the Indian Parliament. The programme officially began operations on February 2, 2006. MGNREGA as a programme was rolled out in three phases. The programme was piloted in its initial stage in 200 underdeveloped regions spread across 27 different states. The Act was extended to encompass an additional 130 districts during 2007–2008, and then with effect from first of April in 2008. Effectively, this is the 16th year of its operation, and currently the programme operates in 691 districts in the country.

The goal of National Rural Employment Guarantee Act (NREGA), 2005, is to provide employment for the enhancement of livelihood security of the households in rural areas of the country by providing at least 100 days of guaranteed wage employment in every financial year to every household whose adult members volunteer to do unskilled manual work (Government of India, 2005)*.

MGNREGA is a paradigm shift from past wage employment programmes since it is the world's largest employment programme, with no other paid employment programme comparable in size, structure, or ambition. The government of India bears 100% of the cost of unskilled labour and 75% of the cost of materials. The state is responsible for the expense of unemployment benefits if the beneficiary is not given job on time.

Gram panchayats must decide on the cost of at least half of the projects. MGNREGA currently includes social audit as a standard component. Wage earners, Gram Rozgar Sevaks (GRS), and Gram Panchayats (GP) bear a significant portion of the blame for MGNREGA's success.

Right from its inception, many economists and commentators turned into fanatic critics of MGNREGA. World Development Report (2009), indicated MGNREGA a "barrier to development". But still the Government implements the scheme to provide livelihood security to the poor households and to eradicate poverty in India.

Studies by Bebarta [3] and Erramani and Begari [4] examined the MGNREGA scheme's implementation and its contribution for the lives of rural households. Whereas studies by Kareemulla et al. [5], Tiwari and Upadhyay [6], Archana [7] and Balasubramaniam et al. [8] looked at the level of migration, difficulties, and obstacles associated with the MGNREGA scheme's implementation. Many researchers have also studied the factors influencing the participation in different regions but, there are no major studies on MGNREGA in Puducherry. Being a small Union Territory with third dense population in the country, need of the programme is essential for better implementation at the ground level as Puducherry is the first along with Kerala to resume the programme during Covid-19 in order to protect the livelihood of its rural population. Hence, the present study was conducted in Puducherry to determine the factors influencing the participation of rural households in MGNREGA programme.

2. MATERIALS AND METHODS

2.1 Data Sources

Primary data was collected in Puducherry where the MGNREGA programme is functioning in two districts namely, Puducherry and Karaikal districts. All blocks of the two districts were studied i.e. Ariyankuppam and Villianur blocks of Puducherry district as well as Thirunallar block of Karaikal district in Puducherry. A sample size of 240 respondents was chosen from the Based upon the expenditure on the MGNREGA programme, two revenue villages were selected from each block. Hence, a total sample size of 240 respondents was interviewed for the study among which 120 were beneficiaries and the remaining 120 were non- beneficiaries.

2.2 Method of Analysis

Logit regression function was used to identify the determinants of participation of rural households in MGNREGA programme in Puducherry.

2.2.1 Logit regression

To assess the likelihood of rural households participating in the MGNREGA programme in the region, a logistic, binary choice model was utilised by Suvedi et al. [9] and Akthar and Azeez [10]. It's worth noting that using logistic distributions in the analysis of dichotomous outcome variables has a benefit over using other models; binary logistic models don't rely on the assumption of linearity between dependent and independent variables, nor do they presuppose homoscedasticity.

As a result, a binary logit regression model was employed in this study to assess the likelihood of a households participating in MGNREGA programme. The household participating in the MGNREGA programme is the dependent variable (PART) having dichotomous random variable, which can take the values 1 or 0, with 1 denoting a household that participates in the MGNREGA programme and 0 denoting a household that does not participate in the programme.

Logistic model is specified as below:

$$PART = \beta_0 + \beta_1 AGE + \beta_2 EDU + \beta_3 SOC + \beta_4 FS + \beta_5 ND + \beta_6 PO + \beta_7 WHF + \beta_8 LS + \beta_9 PLS + v_i$$

Nine important explanatory variables have been selected from the data for the logit model analysis and are defined as follows:

PART = Dummy dependent variable (1 if participation in the programme and 0 otherwise)
β_0 = Intercept of the model
β_1......., β_9 = Coefficients
AGE = Age of the respondent (years)
EDU = Education (Years of schooling)
SOC = Social background (Dummy variable, 1 if socially backward (SC/ ST) and 0 otherwise)
FS = Family Size (numbers)
ND = Number of Dependents in Household
PO = Primary Occupation (Dummy variable, 1 if farm workers and 0 otherwise)
WHF = Women Headed Family (Dummy variable, 1 if yes and 0 otherwise)
LS = Land size (hectare)
PLS = Possession of Livestock (numbers)
v_i = Error term

The computed coefficients β_i for the parameters are really odds ratios, which are measures of changes in the ratio of probabilities. The sign of the coefficient reflects whether the likelihood of participating in the MGNREGA programme has increased or decreased. A positive coefficient indicates the likelihood of participation in the programme is high, whereas a negative number indicates the likelihood of participation in the programme is said to be less. The STATA computer programme was used to analyse the determinants of participation in MGNREGA programme.

3. RESULTS AND DISCUSSION

3.1 Socio-economic Characteristics of the Sample Respondents

The socio- economic characteristics of the sample respondents (Table 1) revealed that, the average age of the respondent were 40.24 and 42.19 for the beneficiaries and non-beneficiaries, respectively and 44.17 per cent of beneficiaries are illiterates whereas 30.83 per cent of the non- beneficiaries have completed their secondary education. Average family size and the number of earners per beneficiary household were 4.86 and 1.81, respectively while

on the contrary, it was 4.38 and 1.62 for the non-beneficiary households.

The beneficiaries are mostly non- farm workers (68.34 per cent) whereas the non- beneficiaries are farmers and agricultural labourers together constitute to 62.50 per cent. The socially backward households such as SC/ ST households (65.83 per cent) in comparison with the non- beneficiary households (50.83 per cent). The number of women headed families participated were found more in beneficiaries (22.5 per cent) than non- beneficiaries (7.5 per cent). It is evident that, the sample respondents were meagre land holders and its average is 0.61 acres of holdings by the beneficiaries and 0.76 acres of holdings by the non- beneficiaries. On the other hand, average possession of livestock by the beneficiaries and non-beneficiaries are 0.82 and 1.26, respectively.

3.2 Determinants of Participation in the MGNREGA Programme

To determine the factors that influence the participation of rural households in MGNREGA programme, logit regression was performed. The value of log likelihood ratio (-137.45) in the model (Table 2) states that the data used are good fit in model as the log likelihood can range from negative to positive infinity.

Table 1. Socio-economic characteristics of the sample respondents

Sl. No.	Category	Beneficiaries (N= 120)	Non- beneficiaries (N= 120)
I	Mean Age	40.24	42.19
II	**Educational Status**		
1	Illiterate	53 (44.17)	34 (28.33)
2	Primary Education	28 (23.33)	35 (29.17)
3	Secondary Education	29 (24.17)	37 (30.83)
4	Higher Secondary Education	8 (6.67)	9 (7.5)
5	Graduate	2 (1.66)	5 (4.17)
III	Mean Family Size	4.86	4.38
IV	Average No. of Earners	1.81	1.62
V	**Primary Occupation**		
	Farm Workers	38 (31.66)	75 (62.50)
	Non- farm workers	82 (68.34)	45 (37.50)
VI	No. of SC/ST Households	79 (65.83)	61 (50.83)
VII	No. of Women Headed Families	21 (17.5)	9 (7.5)
VIII	No. of land owners	27 (22.5)	30 (25)
IX	Average Farm Size (acres)	0.61	0.76
X	Possession of Livestock	0.82	1.26

(Figures in parentheses denotes the percentage to total)
Source: Primary data, 2021-2022

Table 2. Results of determinants of participation in MGNREGA programme-logit model

Variables	Coefficients	Std. Error	P value	Exp (β)
Constant	-1.76	2.42	0.467	0.172
AGE	-0.02	0.04	0.615	0.980
EDU	-0.12**	0.05	0.018	0.882
SOC	0.02	0.48	0.962	1.023
FS	0.50***	0.17	0.004	1.645
ND	0.88	0.48	0.067	2.416
PO	-1.25***	0.30	0.000	0.292
WHF	1.10**	0.49	0.025	3.017
LH	-0.26	0.31	0.400	0.772
PLS	-0.16**	0.08	0.042	0.848
Log Likelihood ratio	-137.45			
Pseudo R^2	0.17			
Number of observations	240			

, *- significant at 5% and 1% levels respectively
Source: Primary data, 2020-2021

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The pseudo- R^2 which also helps to find the goodness of fit and the value obtained (0.17) nears the good fit value which should range from 0.2 to 0.4.

The estimates of the logit regression shows that education, family size, number of dependents, primary occupation, women headed family and possession of livestock are statistically significant. The variables such as family size, number of dependents and women headed family were positive and significantly influencing the probability of participation of rural households in MGNREGA programme. According to Akthar and Azeez [10] and Varman and Kumar [11], MGNREGA have benefitted the households with more family size and the results obtained in the present study are found similar. If the family size increases by 1 unit, the probability of participation increases by 1.645 times. The participation of women headed family was positive and significant at 5 per cent level and their participation in MGNREGA programme will increase by 3.017 times.

The variables such as education, primary occupation and possession of livestock negatively influence the probability of participation of rural households in MGNREGA programme. In accordance with Pandi [12] and Ranjithkumar [13], the variables such as education and possession of livestock are influencing the probability of participation negatively and the results obtained in the study are found similar. If the education of the respondent (5% significance) increases by 1 year, the probability of participation will decrease by 0.882 times as the literates seek for skilled jobs. Similarly, the primary occupation is

highly significant at 1 per cent level and influences negatively i.e., if the respondent is a farm worker, the participation probability will decrease by 0.292 times. The possession of livestock decreases the probability of participation by 0.772 times for one unit increase in possession of livestock and found significant at 5 per cent level [14-16].

4. CONCLUSION

From this study, it is evident that education, family size, primary occupation, women headed family and possession of livestock are found to be the major determinants of participation in MGNREGA programme. The variables such as family size, number of dependents and women headed family were positive and significant at 1% and 5%, respectively influencing the probability of participation of rural households in MGNREGA programme. Similarly, the variables such as education and possession of livestock were found to be significant at 5% level and negatively influencing the probability of participation of rural households in MGNREGA programme. Likewise, the variable primary occupation was found significant at 1% level and negatively influencing the probability of participation of rural households in MGNREGA programme. Thus the rural households with low education level, large family size, non- farm worker, women headed family and less possession of livestock are the major characteristics of the rural households which makes them to demand for MGNREGA job.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/91286