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Role of MGNREGA for the Sustainable Nutritional Security among Rural Women in Tiruchirappalli District: A Field Level Study

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A B S T R A C T

Food security is a chronic condition for many poor people, particularly farmers in India, who often suffer from core afflictions. The backbone of India's agricultural workforce is its women, who work tirelessly to generate income for their households. To address this issue, several government programs have been implemented to involve poor farmers, especially women, in initiatives aimed at providing nutritional stability and food security through sustainable livelihoods and income generation for village households. The current study investigated the effects of social welfare initiatives on the food security of women in agriculture-based communities in Tiruchirappalli from 2022 to 2023. The researcher found that MGNREGA, a well-known government program, was highly preferred by farm women and had a strong correlation with the economic well-being of the targeted groups. A total of 120 samples were randomly selected, with 60 from MGNREGA households and 60 from non-MGNREGA households. The study found significant differences in mean income ($t=1.030^*$, $p<0.01\%$) and expenditure ($t=3.013^*$, $p<0.01$) between the groups. Nutritional status, including energy, protein, and folic acid intake, was also significantly better in MGNREGA households ($p<0.05\%$). The findings indicate that MGNREGA positively impacted the income and expenditure of participants, contributing to improved nutritional security among MGNREGA Labourers.

Keywords: Nutritional security, BMI, MGNREGA, Rural Women .

INTRODUCTION

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) plays a crucial role in providing wage employment for up to 100 days annually to rural households whose adult members are willing to engage in unskilled manual labor. This scheme functions as a fallback mechanism during lean seasons, offering an alternative source of income and acting as a social safety net for impoverished households (Das). The Government of India has implemented numerous reforms to enhance the effectiveness of the country's social safety net programs, aiming to meet nutrition and food security goals more efficiently. The vulnerable populations, particularly in rural areas, often experience low or subsistence-level incomes. This situation is primarily due to the significant reliance on the agriculture sector and a high dependency ratio, characterized by overcrowding and low productivity per worker. Even though agriculture grew at a rate of 1.6 percent between 1996–1999 and 2015–18, it is vulnerable to natural disasters like cyclones, droughts, and flash floods, which can cause large variations in annual outputs. As a result, people must move from farming to more productive non-farm sectors in order to significantly increase their income and purchasing power and improve household access to food (Devadarshini). This study examined the impact on the living conditions of landless labours, as well as the provision of additional income and improvements in food security status through income generation and food security programs.

RESEARCH METHODOLOGY

A cross-sectional study was carried out and the sample of 120 individuals of Tiruchirappalli district of Thuraiyur block from both gender aged between 18 to 70 years were considered through multi-stage random sampling technique. The list of job card holder families was prepared 30 MGNREGA women beneficiaries from all the two selected villages and 30 non-beneficiaries women from each of the selected villages were selected randomly. A total number of 120 respondents i.e. 60 beneficiaries' women & 60 non-beneficiaries' women were selected through multi-stage random sampling. Tiruchirappalli district was selected purposively, as the district is inhabited by a large proportion of the Schedule Caste and Schedule Tribe population. The two villages, namely Kombai and Vannadu, were selected from Thuraiyur block of tiruchirappalli on the basis of poverty in terms of livelihood and employment. MGNREGA was most popular among farmers and it was directly related to income of the target groups. Therefore, its impact on food security was assessed in this study.

OBJECTIVES:

The major objective of the study is the role of MGNREGA for the Sustainable Nutritional Security among Rural Women in Tiruchirappalli District

The following are the specific objectives

- To Examine the socio-economic profile of the sample respondents in the study area
- To compare the nutritional security of MGNREGA sample respondents with Non-MGNREGA sample respondents
- To analyze the implementation of MGNREGA, its functioning and to suggest appropriate policy measures to strengthen the programme more effectively.

DATA ANALYSIS

Table 1: MGNREGA Statistics of Tiruchirappalli Districts for 2023-24

Employment provided to households	40,707
Total person days	3,41,939
SCs	86,229
STs	5173
Other	2,94,750
Women	3,06,674
Total workers	3,86,152
No.of.Blocks	14
No.of.Panchayats and Villages	404 & 2210

Source: **www.nrega.nic.in**

Table 2: Socio-economic Profile of the Sample Respondents

Sl. No	**Variable**	**Categories**	**MGNREGA (60)**	**Non-MGNREGA (60)**	**N = (120)**
1.	Age	18-30 years	18 (15.0)	06 (5.0)	24 (20.0)
		31 – 50 years	36 (30.0)	42 (35.0)	78 (65.0)
		51 – 70 years	06 (5.0)	12 (10.0)	18 (15.0)
2.	Education	Illiterate	15 (12.5)	06 (5.0)	21 (17.5)
		Primary	22 (18.3)	12 (10.0)	34 (28.3)
		Secondary	30 (25.0)	20 (16.7)	50 (41.7)
		Higher Secondary	7 (5.8)	8 (6.7)	15 (12.5)
3.	Caste	OBC	19	11	30

			(15.8)	(9.2)	(25.0)
		SC	-	-	0
		ST	52	38	90
			(43.3)	(31.7)	(75.0)
4.	Size of Family	Small (upto 3 members)	10	18	28
			(35.7)	(64.3)	(15.0)
		Medium (4 – 6 members)	42	30	72
			(58.3)	(41.7)	(60.0)
		Large (>6 members)	08	12	20
			(40.0)	(60.0)	(25.0)
5.	Nature of Family	Nuclear	42	36	78
			(53.8)	(46.2)	(65.0)
		Joint	18	24	42
			(42.9)	(57.1)	(35.0)
6.	Annual Income	Up to Rs.50,000	4	8	12
			(33.3)	(66.7)	(10.0)
		Rs.50,000 – Rs.1,00,000	16	10	26
			(61.6)	(38.4)	(21.7)
		Above Rs.1,00,000	40	42	82
			(48.8)	(51.2)	(68.3)
7.	Annual Expenditure	Below Rs.50,000	07	22	29
			(11.7)	(36.7)	(24.8)
		Rs.50,000 – Rs.1,00,000	26	20	46
			(43.3)	(33.3)	(38.3)
		Above Rs.1,00,000	27	18	45
			(45.0)	(30.0)	(37.5)
8.	Land Holding	Landless	22	8	30
			(18.3)	(6.7)	(25.0)
		Marginal (up to 1 h.a)	40	25	65
			(33.3)	(20.8)	(54.2)
		Small (1 to 3 h.a)	4	11	15
			(3.3)	(9.2)	(12.5)
		Medium (3 to 8 h.a)	5	5	10
			(4.2)	(4.2)	(8.4)

Source: Primary data

The Socio-economic profiles of the respondents were presented in the table 1. The study revealed that 65% of the respondents belonged to the 31-50 years age group, indicative of middle age, while 24.0% fell into the 18-30 years category, representing younger adults. Notably, 41.7% of the beneficiaries had attained secondary education. Demographically, 75.0% of the sample identified as belonging to scheduled tribes, with 25.0%

categorized under other backward classes. A predominant majority (60.0%) of beneficiaries hailed from medium-sized families, and 65.0% resided in joint family settings. Approximately 54.2% of the beneficiaries held marginal land holdings, whereas 25.0% were classified as landless, relying solely on MGNREGA and other employment avenues. Moreover, nearly two-thirds (68.3%) of the beneficiaries reported an annual income exceeding Rs.1,00,000.

Table 3: Mean monthly income and Expenditure of the MGNREGA and Non-MGNREGA households (n=60 for MGNREGA workers, n=60 for Non-MGNREGA workers)

Groups	Variable	*Mean ±SD*	t Value
Mgnrega Households	Income (Rs.)	2.47 ± .724	1.030*
Non- Mgnrega Households		2.37 ± .610	
Mgnrega Households	Expenditure(Rs.)	2.33 ±.681	3.013*
Non- Mgnrega Households		1.93± .281	

=significant at p<0.01

Data presented on the table.4 showed that the mean income of the respondents suggested that the workers who were the MGNREGA beneficiaries (2.47 ± .724) had significantly more monthly income compared to the non-MGNREGA workers (2.37 ± .610). The results also revealed that MGNREGA & Non-MGNREGA Workers were positively correlated (r=0.374, p<0.001). There was a significant average difference between Income of MGNREGA & Non-MGNREGA Workers scores. (t_{59} = 1.030, p < 0.001). On average, MGNREGA mean income scores were 0.100 points higher than MGNREGA scores. Similarly, the mean expenditure was also significantly higher for MGNREGA workers compared to the non-MGNREGA workers. The statistical analysis showed significant difference between the groups of both income and expenditure. The results also revealed that Annual Expenditure of MGNREGA & Non-MGNREGA Workers were positively correlated (r=0.243, p<0.001). There was a significant average difference between Expenditure of MGNREGA & Non-MGNREGA Workers scores. (t_{59} = 3.013, p < 0.001). On average, MGNREGA mean expenditure scores were 0.400 points higher than Non-MGNREGA scores.

Table 4: Measurement on BMI and Weight of MGNREGA and Non-MGNREGA respondents (n=60 for MGNREGA workers, n=60 for Non-MGNREGA workers)

Groups	**Variable**	**Mean ±SD**	**t Value**
Mgnrega Households	Body Mass Index	28.36 ± 2.95	2.16*
Non- Mgnrega Households		26.87 ± 2.81	
Mgnrega Households	Weight	**67.74** ± 5.70	3.22*
Non- Mgnrega Households		70.79± 4.75	

=significant at p<0.01

The BMI for MGNREGA workers was (28.36 ± 2.95) Higher than the Non-MGNREGA workers (26.87 ± 2.81). The t value indicated (t=2.16, p<0.05) statistically significant difference between the two groups with regard to BMI of the respondents. The mean weight for MGNREGA workers was *67.74kg* where as for Non-MGNREGA workers it was*70.79kg*. The t value indicated (t=3.22, p<0.05) statistically significant difference between the two groups with regard to mean weight of the respondents.

Table 5: Mean nutrients intake among the MGNREGA and Non-MGNREGA respondents (n=60 for MGNREGA respondents, n=60 for Non-MGNREGA respondents)

Nutrients	**Non-MGNREGA**	**MGNREGA**	**t - Value**
	Mean ± S.D	**Mean ± S.D**	
Energy (kcal/d)	2010.11±258.1	2115.64±284.5	2.49*
Proteins (g/d)	27.56±2.02	32.48±3.65	1.2*
Fat(g/d)	30.19±16.04	34.27±21.05	3.67NS
Folic Acid (µg/d)	1238.26±337.21	1346.74±389.56	2.20*

Vitamin C (mg/d)	18.28±3.24	20.32±5.23	4.0^{NS}
Iron (mg/d)	13.26±2.64	14.25±3.15	2.25^{*}
Fiber (g/d)	17.28±1.10	21.36±1.66	0.90*
Calcium(mg/d)	225.24±21.29	248.29±25.64	4.57^{NS}

***=Significant at p<0.05, NS= Not significant**

Table 5 demonstrates that, in comparison to non-MGNREGA households, MGNREGA households have significantly higher mean energy intakes (2115.64±284.5 vs. 2010.11±258.1) and protein intakes (32.48±3.65 vs. 27.56±2.02); additionally, MGNREGA households consumed more fat (34.27g), calcium (248.29 g), folic acid (1346.74g), vitamin-C (20.32 g), iron (14.25g), and fiber (21.36 g). Among these nutrients the intake of energy, protein, folic acid, Iron and fiber was statistically significant in MGNREGA households compared to non-MGNREGA households (p<0.05%).

Results

- ∇ The study revealed that 65% of the respondents belonged to the 31-50 years age group, indicative of middle age, while 24.0% fell into the 18-30 years category, representing younger adults.
- ∇ Notably, 41.7% of the beneficiaries had attained secondary education.
- ∇ Demographically, 75.0% of the sample identified as belonging to scheduled tribes, with 25.0% categorized under other backward classes.
- ∇ A predominant majority (60.0%) of beneficiaries hailed from medium-sized families, and 65.0% resided in joint family settings.
- ∇ Approximately 54.2% of the beneficiaries held marginal land holdings, whereas 25.0% were classified as landless, relying solely on MGNREGA and other employment avenues.
- ∇ Nearly two-thirds (68.3%) of the beneficiaries reported an annual income exceeding Rs.1,00,000.
- ∇ The income of the respondents suggested that the workers who were the MGNREGA beneficiaries (2.47± .724) had significantly more monthly income compared to the non-MGNREGA workers (2.37 ± .610). The results also revealed that MGNREGA & Non-MGNREGA Workers were positively correlated (r=0.374, p<0.001).
- ∇ There was a significant average difference between Income of MGNREGA & Non-MGNREGA Workers scores. (t_{59} = 1.030, p < 0.001). On average, MGNREGA mean income scores were 0.100 points higher than MGNREGA scores.
- ∇ Data regarding the expenditure was significantly higher for MGNREGA workers compared to the non-MGNREGA workers. The statistical analysis showed significant difference between the groups of both income and expenditure. The results also revealed that Annual Expenditure of MGNREGA & Non-MGNREGA Workers were positively correlated (r=0.243, p<0.001).
- ∇ There was a significant average difference between Expenditure of MGNREGA & Non-MGNREGA Workers scores. (t_{59} = 3.013, p < 0.001).
- ∇ The BMI for MGNREGA workers (28.36 ± 2.95) was higher than that of Non-MGNREGA workers (26.87 ± 2.81). A t-test indicated a statistically significant difference between the two groups regarding mean BMI (t=2.16, p<0.05).
- ∇ The mean weight for MGNREGA workers was 70.79 kg, whereas for Non-MGNREGA workers it was 67.74 kg. A t-test indicated a statistically significant difference between the two groups regarding mean weight (t=3.22, p<0.05).
- ∇ The mean energy intake of MGNREGA households (2115.64 ± 284.5) was significantly higher than that of non-MGNREGA households (2010.11 ± 258.1). Similarly, the mean protein intake was significantly higher in MGNREGA households (32.48 ± 3.65) compared to non-MGNREGA households (27.56 ± 2.02). Among these nutrients, the intake of energy, protein, folic acid, iron, and fiber was statistically significant in MGNREGA households compared to non-MGNREGA households (p<0.05).

CONCLUSION:

The MGNREGA programme has contributed to poverty alleviation and rural development, demonstrates significant strides in providing employment and enhancing rural livelihoods. However, its success varies considerably across different regions due to factors such as local governance, infrastructure, and socio-economic conditions. While the initiative shows potential as a transformative rural employment programme, challenges such as delays in wage payments, lack of awareness, and administrative inefficiencies need to be addressed to optimize its impact. These findings can guide policies to expand MGNREGA for better nutritional outcomes. Additional studies should investigate the reasons behind these differences and the long-term health effects and to develop the nutritional programs for non-MGNREGA households to reduce the nutritional disparity. To achieve its intended sustainable livelihood outcomes, continuous monitoring, policy adjustments, and robust implementation strategies are essential. On the whole the Nutritional Benefits of the MGNREGA participants appears to be improved household nutritional intake.

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