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A MICROECONOMIC ASSESSMENT OF MGNREGA ON INCOME AND EXPENDITURE PATTERNS IN MIZORAM: A CASE STUDY OF LAWNGTLAI DISTRICT

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Abstract

This study examines the impacts of MGNREGA on income and expenditure patterns of the beneficiary households of Lawngtlai district, Mizoram. The study is conducted using multi stage sampling method covering a sample size of 374 households from the four blocks of Lawngtlai district. Percentage changed method and paired t- test approach are used to evaluate the impacts of MGNREGA on income and expenditure patterns. From the study, it is found that annual income of the beneficiary households increase by 19.12 percent as compared to the income before participation of the program. The total consumption expenditure increased by 18.24 percent per month as a result of income enhancement effect of MGNREGA program. The expenditure on consumption on food items is increased by 21.57 percent per month and that of non food items is 16.18 percent per month. The marginal propensity to consume (MPC) of MGNREGA beneficiary households on the average is 0.95 indicating that an increase

of rupees 100 in income leads to an increase of rupees 95 in expenditure of the households. Thus, MGNREGA program has significantly contributed to income stabilization and better expenditure choices among rural households of Mizoram.

Keywords: Expenditure, Income, MCE, MGNREGA, MPC, Paired t-test.

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1. Introduction

Rural employment schemes play a vital role in addressing poverty, unemployment, and underdevelopment in India's diverse regions. Among these schemes, the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA), launched in 2005, stands out as one of the most striving and inclusive social security programs aimed at ensuring livelihood security for rural households. The primary objective of MGNREGA is to give at least 100 days of guaranteed wage employment per year to rural households whose adult members are willing to work, thereby not only alleviating poverty but also promoting sustainable rural development through asset creation and social inclusion.

Mizoram, a small, hilly state in northeastern India, possesses a unique socio-economic and geographical landscape that influences the livelihood strategies of its rural households. The state's economy largely depends on forestry, and small-scale industries, with limited avenues for regular employment. The state's prevalence of subsistence farming, coupled with geographic isolation and infrastructural challenges, makes rural employment schemes like MGNREGA vital for sustaining local economies and enhancing household incomes. The scheme's potential to provide additional income and stabilize household expenditure patterns is particularly significant in the context of Mizoram, where traditional livelihoods often fall prey to seasonal and environmental uncertainties.

The impact of MGNREGA extends beyond mere wage provision; it influences the economic well-being and consumption behavior of rural households. By providing an additional source of income, the scheme potentially alters household expenditure patterns—such as increased expenditure on health, education, or better nutrition—thus contributing to overall improvements in living standards. Moreover, the income generated through

MGNREGA can help households invest in productive activities, savings, or debt repayment, fostering economic resilience over time.

Despite the widespread implementation of MGNREGA across various states, there is limited focused research on its socio-economic impacts within Mizoram's specific context. Understanding how MGNREGA influences income levels and expenditure behavior in Mizoram is essential for evaluating the scheme's effectiveness and formulating modified policy interventions. It can also illuminate the extent to which wage income from MGNREGA replaces traditional income sources and how it affects household expenditure priorities.

This study aims to fill this gap by examining the impact of MGNREGA on income and expenditure patterns among rural households in Mizoram. Utilizing primary data collected from selected villages, the research will analyze changes in income levels before and after scheme participation and explore shifts in expenditure categories. The findings will provide empirical evidence on whether MGNREGA serves as a significant income-enhancing mechanism and how it influences the consumption behavior of rural households in the region.

Thus, understanding the role of MGNREGA in promoting better economic conditions in Mizoram is very important for designing effective rural development policies. By assessing its impact on income and expenditure, this research will contribute valuable insights into the scheme's effectiveness, sustainability, and potential for fostering inclusive rural growth in Mizoram. The subsequent sections will detail the methodology, empirical findings, and policy suggestions based on the observed impacts.

2. LITERATURE REVIEW

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA), enacted in 2005, has since been a focal point of rural development discourse in India. A significant body of research has explored its multifaceted impacts - on income, employment, asset creation, and social empowerment—as well as its limitations and challenges across different regions of India. However, specific studies focusing on northeastern states like Mizoram are comparatively limited, necessitating a comprehensive review of existing literature to contextualize the unique socio-economic landscape of Mizoram and the potential effects of MGNREGA within it. Numerous studies have demonstrated that MGNREGA serves as a crucial income support mechanism for rural households. Beyond income, research has increasingly focused on how MGNREGA influences household expenditure patterns.

A study by Katoch, et al. (2020) found that the MGNREGA was the lifeline of poor villagers and it significantly improve the employment level but labour supply in agriculture showed a negative trend. These findings underscore MGNREGA's role in providing not only employment but also enhancing immediate and medium-term income security. Kannan (2012) also highlighted increased consumption expenditure and asset accumulation as critical outcomes of MGNREGA participation.

Dreze and Khera (2018) were among the first to highlights the scheme's transformative potential, emphasizing its ability to reduce to reduce distress, migration and provide a safety net to rural households. Their finding shows that regular incomes from MGNREGA allowed families to spend more on food, health and Education.

Bora and Das (2013) observe that MGNREGA helped to stabilize rural income in Assam. Reddy et al. (2012) focused on the economic dimension of MGNREGA, noticing that beneficiaries tend to allocate earning towards basic consumption, contributing positively to local markets and service use. Singh and Verma (2016) further established that MGNREGA engagement helps in reducing household debt and improving financial planning.

The study of Singh (2013) shows that the labourers are getting economic benefits from the scheme and it encouraged greater female work participation and it was found to have contributed to the socioeconomic empowerment of the rural poor. The study of Katoch (2022), he noticed that the scheme was significantly impacted the income generation and consumption expenditure of the households.

The study of Reddy, P. D. et al. (2016) reveals that participation in the MGNREGA scheme increases the income as a result; the savings of the household were also increases. Further reveals that the average consumption expenditure was also increases for food items, clothing, education, agricultural equipments etc. Laltlanthanga (2020) in his study, he emphasized the importance of the MGNREGA scheme in a region dominated by subsistence agriculture like Mizoram by providing financial relief of the households.

The limited studies in Mizoram suggest that geographical isolation, infrastructural constraints, and tribal social structures may affect scheme outreach and efficacy. Consequently, the socio-economic impacts on income and expenditure observed in other northeastern states can have nuanced differences in Mizoram's context. The review indicates that the MGNREGA's framework has broad potential, local conditions significantly affect its outcomes.

Gaps in Literature and the Need for Focused Studies

While the existing literature underscores the scheme's positive contributions to income and expenditure, it also shows gaps, particularly regarding the North-eastern states and Mizoram specifically. Most studies are intense in states like Andhra Pradesh, Rajasthan, and Bihar, with only a few addressing the northeastern context. The distinctive tribal societies, land use patterns, and infrastructural challenges in Mizoram require region-specific analysis to understand the scheme's actual impact.

Moreover, there is a need to examine not only the immediate income effects but also how MGNREGA influences longer-term behavioral changes, asset accumulation, social inclusion, and regional development. A comprehensive understanding of expenditure patterns—such as investments in health, education, and productive assets is crucial for evaluating the scheme's broader socio-economic benefits.

The extensive research highlights that MGNREGA significantly enhances rural income, supports consumption needs, and can contribute to poverty reduction across various Indian states. Nonetheless, the impact is context-dependent, influenced by regional characteristics, implementation quality, and social factors. Within Mizoram, the unique socio-economic and geographic landscape warrants targeted investigation. As such, this study aims to contribute to the growing body of knowledge.

3. METHODOLOGY

(i). Study area: The research focuses on rural villages across the Lawngtlai district of Mizoram. Lawngtlai district is chosen for our study because of their demographic diversity and varying levels of MGNREGA implementation. Besides, the impact study of MGNREGA for this district is not yet conducted.

(ii) Study Design: The impact assessment of MGNREGA adopts a mixed approach combining different quantitative techniques to capture different perceptions. This study employs a quasi experimental design using before and after comparison and a treatment and control group framework where applicable.

(ii) Estimation Techniques: This study is to assess the impact of the implementation of MGNREGA on the beneficiary households. The following techniques were used for assessing the impact of the implementation of MGNREGA on income and consumption

expenditure of the beneficiaries of the Lawngtlai district of Mizoram. The following quantitative techniques were employed in our study:

- a. Percentage Changed Method
- b. Paired t- test and
- c. Marginal Propensity to consume(MPC)

Percentage Changed Method:

The Impact of MGNREGA on income and consumption expenditure after implementation of the scheme is estimated using the Percentage change concept. The percentage change determines the difference in value and change from the original value to the new value over time. The percentage change of original value to new value over time is given by

$$\text{Percentage Change} = \frac{X_1 - X_0}{X_0} * 100$$

Where X_0 : Value of the parameter before implementation and

X_1 : Value of the parameter after implementation of the scheme

Paired T- Test:

Paired t- test was used for examining the significance of the Percentage Change in income and consumption expenditure of the households after the implementation of the MGNREGA scheme. (Katoch, et al., 2020). The purpose of the t test was to determine whether there was statistical evidence that the mean difference between paired observations on a particular outcome was significantly different from zero. The statistical significance of paired t- test was determined by p- values. The p- value was the probability of observing the test results under the null hypothesis. The expression for the paired t- statistic is:

$$t = \frac{\sum \delta}{\sqrt{\frac{n(\sum \delta^2) - (\sum \delta)^2}{n-1}}}$$

Where δ = difference per paired value

n = Number of samples

This test statistic (t) follows t-distribution with (n-1) degree of freedom. The statistical significance of paired t-test is determined by p- values.

Marginal Propensity to consume (MPC):

The MPC is used to investigate the impact of income on consumption expenditure. The MPC is defined as the ratio of change in consumption to the change in the level of income.

$$MPC = \frac{\Delta C}{\Delta Y} = \frac{\text{Change in consumption expenditure}}{\text{Change in level of Income}}$$

Where MPC= Marginal propensity to consume

ΔC = Total incremental Consumption expenditure

ΔY = Total incremental Income

(iii) Sampling Technique: A multi stage stratified random sampling technique is used to select the sample area on the basis of villages. The sample size is determined based on power analysis. Then the primary data are collected using survey questionnaire.

4. RESULTS, ANALYSIS AND DISCUSSION

4.1: Impact on Incomes of MGNREGA beneficiary households

Averages of incomes generated in the selected household from the sample area after participation of MGNREGA from Agriculture, Wage labour, Business and Industry, Pensions, and other sources has assessed and given in table 1.

An examination of the table reveals that there is an overall 19.12 percent increase in income after participation of the scheme that indicated that there is a positive and significant impact of the scheme in generating household income of the beneficiaries. The same result was also shown by Katoch (2022) and Tabrez (2019). In their study they found a paradigm shift in the employment and income generation.

Table -1

Annual Income of beneficiaries before and after participation of MGNREGA

Income sources	Average Annual Income of households (Rs)		Increase in Income (Rs)	% Change	% Share to total increase
	Before MGNREGA	After MGNREGA			
1.Agriculture	25,330.2	26,189.2	859.0	3.40	2.30
2.Wage labour	1,26,779.7	1,26,159.3	-620.4	0.50	-1.70
3.Business, industry	26,406.4	31291.1	4884.7	18.50	13.30
4. Pensions	2,026.0	2084.0	58.0	2.90	0.20

5. MGNREGA	- -	21813.2	21813.2	- -	59.60
6. Others	10,923.6	20,542.8	9619.2	88.10	26.30
Total(Annual income)	1,91,465.9	2,28079.6	36613.7	19.12	100
Monthly Average Income	15,955.5	18,990.0	3051.1	Paired t test $t=2.57^{**}$, $p=0.03$	

*denotes significant at 1 percent level.

Source: Author's own calculation using Stata- 11.

It can be seen from the table-1 that after participation of the scheme, the annual income of the households has increased and which have contributed about 59.60% to total increase in annual income. This shows that the MGNREGA scheme helps for sustaining rural household's livelihood.

The income generated from agriculture also includes activities related to agricultural outputs, animal husbandry such as piggery, poultry, cattle rearing, etc. This agricultural income generated has increased after the participation of the scheme is about 3.4 percent. This increase in the agricultural income is because of the fact that the beneficiary households have created additional income from the scheme and they were able to afford to invest more in livestock and agricultural production and hence increased their incomes. This increased in agricultural income after the participation of the scheme is about 2.30% of the total increase in the household income.

Regarding income generated from wage labour of the study area is decreased by Rs 620.00 annually on the average per household. This income decreases at the rate of 0.5 percent with respect to the income before participation of the scheme.

In the same manner, increase in income generated from Business and Industry is increased by 18.50 percent with respect to the income generated prior to the participation of the scheme, which also constitute about 13.30 percent to total increase in income.

Income generated from pension found to increase about 2.9 percent with respect to the prior income. There seems no significant change in the pension income indicates that there is no relationship between the scheme and the pension income.

The other income represents the income generated from other than agriculture, wage labour, Business & Industry and pensions etc. This income changes about 88.10 percent as a result of participation of the scheme. This indicates that as a result of increase in income due to the participation of the scheme leads to creation of additional capital for income generation.

The increased in income through business and Industry constitute about 26.30 percent of the total increased in income.

Pair t-test result shows that the annual increased in the income of the households is significant at 5% level and which is found to be increase at the rate of 19.12 percent on the average.

The augmentation in the income of the household after participation of the MGNREGA scheme in study area shows that MGNREGA schemes helps in the income generation of the beneficiary households. This shows that MGREGS provides job assurance for unemployment workforce of the area.

4.2: Impact of MGNREGA on Monthly Consumption Expenditure (MCE)

4.2.1: Impact on Consumption Expenditure on the Food items

Table 2 shows that the average monthly consumption expenditure of the household before and after the participation of MGNREGA scheme. There is a significant increase in the consumption expenditure on food items such as Rice, Mustard Oil, Vegetables, Pulses, Fruits, and Milk etc after participation of the scheme. On the whole, the monthly average consumption expenditure; increase by Rs 1306.5 which is about 21.57 percent of the monthly average consumption expenditure before the participation of the scheme. As an impact of the participation in the MGNREGA scheme, on the average, the beneficiary household increases their expenditure on rice, mustard oil, vegetables, sugar, fruits and milk has increased substantially due to the income effect of MGNREGA scheme. Similar to the finding of Tabrez, S (2019), Dkhar (2012), the implementation of MGNREGA has significant impact on the beneficiaries hence uplifting their socioeconomic conditions substantially.

Table - 2

MCE of beneficiaries on food items before and after participation of MGNREGA

Expenditures on Food Items	Average monthly expenditure of food items of the households		Increase in monthly expenditure	% Change	Paired t- test	
	Before MGNREGA	After MGNREGA			t- value	p-value
1. Rice	2753.4	3320.1	566.7	20.58	2.9786*	0.0031
2. Wheat	121.4	138.0	16.6	13.67	6.0699*	0.0000
3. Mustard oil	526.9	643.6	116.7	22.15	8.4701*	0.0000
4. Vegetables	865.9	1067.7	201.8	23.31	14.357*	0.0000

5. Pulses	503.2	580.0	76.8	15.26	3.7789*	0.0002
6. Sugar	409.6	500.2	90.6	22.12	19.289*	0.0000
7. Fruits	332.3	418.8	86.5	20.03	7.3238*	0.0000
8. Milk	545.4	696.2	150.8	27.65	10.618*	0.0000
Total(Food)	6,058.1	7,364.6	1306.5	21.57	--	--
Total(F+NF)	15,805.7	18,689.4	2883.7	18.24	--	--

*denotes significant at 1 percent.

#denotes insignificant.

Source: Author's own calculation using Stata- 11

4.2.2: Impact on Consumption expenditure on non-food items

The average monthly household consumption expenditure on non-food items of beneficiaries before and after the participation of MGNREGA is presented in table 3.

The expenditure on all the non-food items of the household increased at the rate of 16.18 percent due to the income enhancement effect of participation of the MGNREGA scheme. This indicates that there is a significant impact on the non-food items due to the impact of MGNREGA scheme. The increase in consumption expenditure on non-food items is highest for clothing (34.65%) followed by transport (28.70%) and Medical and Health expenditure (26.88%) due to income enhancement effect of MGNREGA but the expenditure on clothing is found to be statistically significant. Further, this increase in income leads to increase in Expenditure on Education (20.22%). The expenditure on agriculture that is, expenditure incurred on the activities for the production of farm outputs (wages for farm labours, agricultural inputs etc). From this table- 3, it is further confirmed that the change in the income as a result of implementation of MGNREGA for the item of Agriculture is negative indicating that expenditure on the production of agricultural product is diverted to other items of expenditure.

Table - 3

MCE of beneficiaries on non-food items before and after participation of MGNREGA

Expenditures on Non food Items	Average monthly expenditure of non-food items of the households (Rs)		Increase in monthly expenditure	% Change	Paired t- test	
	Before MGNREGA	After MGNREGA			t- value	p- value
1. Agriculture	1,261.9	1,243.4	-18.5	-01.47	-0.1384#	0.8900

2. Education	2,626.7	3,157.9	531.2	20.22	3.9378*	0.0000
3. Clothing	164.8	221.9	57.1	34.65	1.4023#	0.1616
4. Medical & Health	499.3	633.5	134.2	26.88	3.8916*	0.0001
5. Transport	1,482.7	1,908.2	425.5	28.70	4.0990*	0.0000
6. Electricity	463.8	519.6	55.8	12.03	10.000*	0.0000
7. Festival	633.1	749.9	116.8	18.45	4.7866*	0.0000
8. Maintenance of house	90.9	107.3	16.4	18.04	3.7759*	0.0002
9. Loan repayment	300.0	314.1	14.1	04.70	1.0182#	0.3092
10. Entertainment	412.5	477.7	65.2	15.80	3.8432*	0.0001
11. Fuel/Gas	1,811.9	1,991.3	179.4	09.90	2.5293**	0.0118
Total(Non-Food)	9,747.6	11,324.8	1577.2	16.18	--	--
Total(F+NF)	15,805.7	18,689.4	2883.7	18.24	--	--

*and **denotes significant at 1 percent and 5 percent level respectively.

#denotes insignificant.

Source: Author's own calculation using Stata- 11

Looking as a whole, the consumption expenditure on food and non food items on the average as a result of income enhancement effect of MGNREGA, a household increased their expenditure by Rs 2883.70 in a month which is increasing at the rate of 18.24 percent per month.

4.3: Marginal Propensity to Consume

The incremental incomes and consumptions on the average are calculated by differencing the net income and the consumption expenditure of the beneficiary before and after the participation of MGNREGA. Table 5 shows the incremental income and incremental consumption expenditure of the households.

Table - 5

MPC of the beneficiaries before and after MGNREGA scheme.

Consumption(C) (Rupees)		Income(Y) (Rupees)	
Before	After	Before	After
15805.7	18689.4	15955.5	19006.6
$\Delta C=2883.7$		$\Delta Y=3051.1$	
$MPC=\Delta C/\Delta Y=0.945$			

From the above table, we see that the incremental consumption expenditure (ΔC) is Rs 2883.70 and the incremental income (ΔY) is Rs 3051.10. From the table, we reveal that the MPC is approximately 0.945. This indicates that increase in one extra unit of disposable income a household is spending approximately 94.5% and save at the rate of 5% only.

5. CONCLUSION

MGNREGA program is one of the important flagship programs of the government of India. The main objective of this program is to improve rural livelihood in the country providing employment during the slack season of agricultural activities. MGNREGA was formulated to reinforce towards livelihood security in rural area by providing a legal guarantee of 100 days' work per year to every rural household. The study evaluates the impact of MGNREGA on income generation and consumption expenditure of the beneficiary households. The study was conducted using multi-stage sampling methods in Lawngtlai district of Mizoram covering 397 households from four R.D. Blocks of Lawngtlai district. From the study, it is noticed that annual income of the beneficiary households increases by 19.12 percent as compared to the income before participating the MGNREGA program. The total consumption expenditure increases by 18.24 percent per annum as a result of income enhancement effect. The expenditure increased on consumption of food items is 21.57 percent per month and 16.18 percent per month increased on non-food items. The marginal propensity to consume (MPC) of the MGNREGA beneficiary households on the average is 0.95. This indicates that one hundred rupees increase in income leads to ninety five rupees increase in consumption expenditure and a saving of five rupees.

MGNREGA has significantly contributed to income stabilization and better expenditure choices among rural houses of Mizoram. However, to fully harness its potential, improvement in planning, financial management and transparency are necessary and need of the hour.

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