

RESEARCH ARTICLE**Impact Assessment of MGNREGA on Income Generation and Consumption Expenditure in Himachal Pradesh****Sonali Katoch¹**

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ABSTRACT

MGNREGA was set in motion to enhance livelihood security in rural areas by providing at least 100 days of guaranteed wage employment in a financial year, to every rural household whose adult members volunteer to do unskilled manual work. The objective of the study is to assess the impact of MGNREGA on income generation and consumption expenditure of selected households. Multi-stage random sampling is used to draw the 100 households of Sangrah and Rajgarh blocks of Sirmaur district in Himachal Pradesh. Simple tabular analysis, paired t-test, multiple linear regression, and marginal propensity to consume are used for the analysis. Results reveal that the scheme has significantly impacted the income generation and consumption expenditure of the households. There is a significant hike in the agriculture and livestock income, whereas, from other sectors like labour and business, income has declined after the enactment of the scheme. It is observed that an increase in non-food consumption is more than the food consumption, meaning when the income of beneficiaries rises the proportion of income spent on food falls, even the absolute expenditure rises. Marginal propensity to consume is found 0.66 i.e. with an increase in a unit of disposable income, a household is spending approximately 66 per cent. For an overall income leap, assets creation should become one of the prime concerns rather than prioritizing the direct ways to increase the income of beneficiaries.

Key words: Engel's Law; Marginal propensity to consume.

India is one of the emerging superpowers of the world, yet is still one of the most disproportionate countries with regards to the distribution of wealth and income among its citizens. The GINI index of India was 35.2, ranking 95th out of 157 countries (CIA, *World Fact-book*, 2011). One of the major reasons for this imbalance is the existence of unemployment in the country, as majority of the country's rural population depend upon agriculture and allied activities for their livelihood (Census, 2011). The poor in rural areas depend principally on the wages they earn through unskilled, casual, and manual labour (Bhat and Mariyappan, 2015).

To minimize unemployment in rural areas, the government initiated numerous programs since independence but none gained the desired quantum and became inefficacious (Singh, 2013). However, in 2005 government launched the largest rights-

based public program in India's 200 most backward districts and named it Mahatma Gandhi National Rural Employment Guarantee Act. MGNREGA is different from previous employment schemes as it gives the right to work and if the relevant agencies fail to provide work within 15 days of application, it claims unemployment allowances to the beneficiaries (Gazette of India, 2007). Under this act, every adult member of a rural household is entitled to at least 100 days of guaranteed wage employment in a financial year (MGNREGA Sameeksha, 2012).

MGNREGA is a self-targeting and demand-driven program and hence India's endeavor to uplift the poor from poverty (Dhanya, 2006). The scheme has remarkably initiated transformations in the lives of the rural poor (Mathur, 2007). The program follows a systematic approach about the identification of works, issue of job cards to the eligible, execution of works,

provision for social audit, and transparency in payment (Kareemulla *et al.*, 2010). Thus, it was considered a unique scheme, which provides rural poor 'Right to Work' and a statutory obligation to the government to provide employment (Mohanty, 2012).

Himachal Pradesh being a hilly state has several geographical impediments coupled with low scope of industrialization, which engender problems of unemployment and poverty (Sharma, Tanwar and Rizvi, 2018). MGNREGA was enacted in Chamba and Sirmour in the first phase and in the second phase, Kangra and Mandi districts were added to the list. The whole state was brought under the cover on 1st April 2008. By keeping this perspective in view, the study is conducted in Sirmour district of state to assess the impact of the scheme on income generation and consumption expenditure of selected beneficiary households.

METHODOLOGY

Sirmour district of Himachal Pradesh is selected for study purpose because it was one among the 200 most backward districts, executed under MGNREGA in its first phase. Multi-stage random sampling is used to draw the primary data from selected households on a comparison basis as 'before' and 'after' the implementation of the program. The district is comprised of six developmental blocks, out of which two blocks *viz.* Rajgarh and Sangrah are selected randomly in sampling's first stage. A list of gram panchayats from each block is prepared and five panchayats are selected in sampling's second stage. Thereafter, a list of the households from selected panchayats is prepared and 10 households are selected in sampling's third stage. Thus, in all total 100 respondents are selected.

Based on the nature and extent of availability of data, simple tabular analysis, paired t-test, multiple linear regression, and marginal propensity to consume are employed for analysis. The impact of MGNREGA on income and consumption expenditure after implementation of the scheme is computed using the per cent change concept. The per cent change determines the difference in value and the change from the original value to the new value over time.

$$\% \text{change} = \frac{X_2 - X_1}{X_1} \times 100$$

Where,

X_1 = Value of the parameter before implementation, and
 X_2 = Value of the parameter after implementation of MGNREGA

Paired t-test : The significance of the per cent change in income generation and consumption expenditure after the implementation of scheme is examined using paired t-test (Tabrez *et al.*, 2019). The purpose of the test is to determine whether there is statistical evidence that the mean difference between paired observations on a particular outcome is significantly different from zero. The statistical significance of paired t-test is determined by p-value. The equation for paired t-test is:

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

Where,

d = Difference between the observations and

n = Number of paired observations.

Multiple linear regression function : A multiple linear regression function is fitted to identify the factors influencing the household income of the respondents (Harish *et al.*, 2011).

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + \mu$$

Where,

Y = Dependent variable (gross household income)

X_1 = Education status of household head

X_2 = Cultivated land

X_3 = Livestock units

X_4 = Employment in agriculture

X_5 = Employment in non-agriculture

X_6 = Number of man-days employed in MGNREGA

μ = Stochastic disturbance term

Marginal propensity to consume : Marginal Propensity to Consume is used to study the impact of income on consumption expenditure (Fisher *et al.*, 2020). MPC is defined as the ratio of change in consumption to the change in the level of income.

$$MPC = \frac{\Delta C}{\Delta Y}$$

Where,

ΔC = Total incremental consumption expenditure and

ΔY = Total incremental income

RESULTS AND DISCUSSION

Impact on Income level : Averages of income generated in selected rural households after employment in MGNREGA, from agriculture and non-agriculture activities such as wage labour (non-farm), agriculture labour, livestock, service, and business has been assessed and presented in Table 1. A Perusal of the table reveals that there is an overall increase of 8.05 per cent

Table 1. Average income level of respondents before and after MGNREGA

| Particulars | Before | After | % Change |
|--------------------|--------------------|--------------------|----------|
| Agriculture | 138954 (66.32) | 140219 (61.93) | 0.91 |
| Service | 50160 (23.94) | 50160 (22.16) | 0.00 |
| Wage labour | 2996 (1.43) | 2814 (1.24) | -6.07 |
| Agriculture labour | 6735 (3.21) | 5115 (2.26) | -24.05 |
| Livestock | 3580 (1.71) | 4774 (2.11) | 33.33 |
| Business | 7110 (3.39) | 7053 (3.12) | -0.80 |
| MGNREGA | - | 16266 (7.18) | - |
| Total | 209535 (100.00) | 226400 (100.00) | 8.05* |

Figures in parentheses indicate percentage to total income of households

*Significant at 5 percent level

in income after working under a scheme that indicated the positive and significant impact of the program in generating household income of beneficiaries. Similar results have been shown by *Dkhar et al., (20017)* in their study about a paradigm shift in employment and income generation.

Augmentation in income from the agriculture and livestock sector is noticed due to the creation of agriculture-oriented assets under scheme and investment by households in livestock units from the funds generated through working in the program. No change in the service sector is observed because of zero shift from permanent service to MGNREGA. Despite favorable results from MGNREGA, income from labour sector (wage and agriculture) and business sector decreased due to the shifting of the workforce to MGNREGA as there is an advantage of job assurance in the scheme.

Impact of various factors on household income : Multiple regression analysis is used to study the impact of different factors on household income and results (Table 2) reveal that cultivated land along with employment in agriculture and the number of man-days employed in MGNREGA are significant at a 5 per cent level. With an increase in one hectare of cultivated land, household income is increased by Rs.16072

Table 2. Impact of various factors on household income (N=100)

| Particulars | Coefficients | SE |
|--|--------------|----------|
| Intercept | -373617.42 | 98804.48 |
| Education status (X ₁) | 1993.74 | 1634.71 |
| Cultivated land (X ₂)* | 16072.39 | 3434.84 |
| Livestock units (X ₃) | 1099.44 | 3378.37 |
| Employment in agriculture (X ₄)* | 1366.86 | 155.55 |
| Employment in non-agri. (X ₅) | 55.90 | 96.40 |
| No. of man-days employed (X ₆)* | 2873.18 | 1068.79 |
| F | 31.81 | |
| R ² | 0.67 | |
| Adjusted R ² | 0.65 | |
| Number of Households | 100 | |

* Significant at 5 percent level

approximately. Similarly, with an increase in a man day under agriculture and MGNREGA, household income is increased by Rs.1367 and Rs.2873, which indicate that implementation of the scheme has significantly enhanced the livelihood security of rural poor in the study area. The value of R² indicates the moderate effect size, meaning 67 per cent of the variability in the outcome data cannot be explained by the model.

Impact on Consumption expenditure : The changes in consumption expenditure of households after employment in MGNREGA are studied by grouping expenditure into two main heads that are food and non-food items. A perusal of the Table 3 reveal that the maximum per cent increase under food items is in pulses consumption (83.46%) and the minimum is in vegetable consumption (3.28%), reason being the self-cultivation of vegetables and moreover, the increase in income did not change the preference of households towards more intake of vegetables. However in the case of pulses, with an increase in income, consumption expenditure increased due to a shift in preference of choice to high-value pulses from traditional staple diet. Consumption of non-food items increased more as compared to food items after an increment in income due to the scheme. Under non-food items, a maximum hike is observed in the category of entertainment other than the miscellaneous expenditure, which depicts the shift of households from a necessity to comfort lifestyle. Overall, the per cent increase in expenditure of food and non-food consumption is 65.75 per cent which implies the positive and significant impact of the scheme on sustaining the quality of life.

Table 3. Average impact on consumption expenditure before and after MGNREGA

| Particulars | Before | After | % Change |
|------------------------------|-------------------|-------------------|----------|
| <i>Food Consumption</i> | | | |
| Rice | 642 (3.80) | 883.2 (3.15) | 37.57 |
| Wheat | 175 (1.04) | 255.2 (0.91) | 45.80 |
| Mustard Oil | 423 (2.50) | 522 (1.86) | 23.55 |
| Vegetables | 1531 (9.06) | 1581.2 (5.65) | 3.28 |
| Pulses | 399 (2.36) | 732 (2.61) | 83.46 |
| Sugar | 248 (1.47) | 370.3 (1.32) | 49.44 |
| Fruit | 413 (2.45) | 503.6 (1.80) | 21.85 |
| Milk | 2640 (15.62) | 3760 (13.42) | 42.41 |
| <i>Non- Food Consumption</i> | | | |
| Clothing | 3160 (18.70) | 5078 (18.13) | 60.70 |
| Education | 2130 (12.60) | 3020 (10.78) | 41.78 |
| Newspaper | 37.1 (0.22) | 48.6 (0.17) | 31.00 |
| Medical Expenses | 328.5 (1.94) | 621 (2.22) | 89.04 |
| Electricity | 710 (4.20) | 814.5 (2.91) | 14.72 |
| Fuel/Gas | 615 (3.64) | 1121 (4.00) | 82.28 |
| Entertainment | 237.8 (1.41) | 478 (1.71) | 101.01 |
| Miscellaneous | 3210 (19.00) | 8222 (29.35) | 156.13 |
| Total | 16899 (100.00) | 28010 (100.00) | 65.75* |

Figures in parentheses indicate percentage to total consumption expenditure of households

* Significant at 5 per cent level

After increment in income from working under the scheme, the total expenditure spent on non-food consumption is more than the food consumption, which means when the income of beneficiaries rises, the proportion of income spent on food falls, even if absolute expenditure rises. This result convey the existence of Engel's Law in data analyzed. Similar results have been shown by Ghose (2011) in employment working paper.

Table 4. Marginal Propensity to Consume of study area before and After MGNREGA

| Consumption (C) | | Income (Y) | |
|--------------------|-------|--------------------|--------|
| Before | After | Before | After |
| 16899 | 28010 | 209535 | 226400 |
| $\Delta C = 11111$ | | $\Delta Y = 16865$ | |

Marginal propensity to consume = $\Delta C/\Delta Y = 0.66$

Marginal Propensity to consume : The incremental income and consumption are worked out by subtracting the net income and consumption of the beneficiary 'before MGNREGA from after MGNREGA. Total increment in consumption expenditure and income is found Rs. 11111 and Rs. 16865. Table4 reveals that Marginal Propensity to Consume is approximately 0.66, which means with one extra unit of disposable income, a household is spending approximately 66 per cent and saving 34 per cent.

CONCLUSION

National Rural Employment Guarantee Act (NREGA) is the largest rights-based public program enacted by legislation in 2005, to enhance livelihood security in rural areas. In the present study, it is found that after the enactment of the scheme, the income generation and consumption expenditure of households has elevated positively as well as significantly. The investiture of agriculture-oriented assets under MGNREGA and outlaying by the households in livestock units from the funds generated through working in the program showed a magnification in income from agriculture and livestock. There is also a significant shift of workforce from the labour and business sectors to MGNREGA because of the job assurance in the scheme making the income from these sectors decline. Factors like cultivated land, employment in agriculture, and the number of man-days employed in MGNREGA are found positive and significant at $p < 0.05$. With the rise of beneficiary's income after implementation of the scheme, even if absolute expenditure on food hikes, the proportion of income spent on food has declined showing an increment in non-food consumption than food consumption. In nutshell, the scheme has been successfully carried through so far. After working in MGNREGA the households can raise their income and improve their consumption expenditure, which has uplifted the standard of living of rural people.

MGNREGA directly or indirectly gives new strength to the rural economy by providing basic income and consumption stability, which improved the bargaining power of the rural workforce. Thus, the scheme came as extremely important for resource-poor households which imperiled the socio-economic development of the region. Albeit there is a significant increment in income, there still exists room for improvement. For an overall income leap, assets creation should become one of the prime concerns rather than prioritizing the direct ways to increase the income of beneficiaries. For MGNREGA workers, some price concessions should be offered in cost-effective shops so that adequate high-value food requirements of workers can be met through a public distribution system.

CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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