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Evaluating the economic impact of mini dairy scheme: Insights from per capita income analysis

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Abstract

The Mini Dairy Scheme aims to boost rural incomes by promoting small-scale dairy farming through financial support, training, and resources. This study compares the socio-economic characteristics and income-generating factors of beneficiaries and non-beneficiaries A total of 100 respondents were selected randomly of Y.S.R. Kadapa district. Out of which 50 were beneficiaries and 50 were non-beneficiaries of the scheme. Data were collected from veterinary dispensaries and structured interviews with beneficiaries to assess socio-economic conditions, costs, and returns. A regression analysis was conducted to evaluate the impact of variables like agriculture, livestock farming, education, family structure, and employment on per capita income. For beneficiaries, significant factors influencing income included farm labor, gender, secondary education, family size, landholding, and employment ($R^2 = 0.32$). Among non-beneficiaries, farm labor, age, gender, family size, landholding, and secondary education played a key role ($R^2 = 0.37$). These results highlight differences in how the scheme affects the livelihoods of participants compared to non-participants.

Keywords: Mini dairy scheme, per capita income, rural development, socio-economic factors

Introduction

The Mini Dairy Scheme is a critical initiative designed to enhance rural livelihoods by promoting small-scale dairy farming. Through the provision of financial support, training, and access to resources such as feed and equipment, the program aims to increase the income of farmers by enabling them to establish and maintain dairy units. This not only supports income diversification but also contributes to rural economic stability. Despite the scheme's apparent benefits, the extent to which it influences income generation may vary significantly between beneficiaries and non-beneficiaries.

This study aims to explore the socio-economic factors that influence income in rural households, comparing those who benefit from the Mini Dairy Scheme to those who do not. By examining variables such as agriculture, livestock farming, education, family structure, and employment, this study provides insight into the factors contributing to income variability in rural communities. A regression analysis was conducted to determine which variables have the most significant impact on income for both beneficiaries and non-beneficiaries of the scheme.

Methodology

The data from the respondents and Veterinary assistant surgeons collected through structured interview schedule

Results

The results of the regression analysis revealed several important factors that influence income for beneficiaries of the Mini Dairy Scheme. The regression coefficients and t-values indicated the strength of various socio-economic variables. Key findings include: For beneficiaries, the intercept was 20133.49 with a t-value of 2.788, indicating a significant baseline income for this group (Qian Sun Robert *et al* 2013) [1]. The impact of agriculture on income was positive but not statistically significant for beneficiaries ($\beta = 67.56$, $t = 0.67$). Similarly, livestock farming had a modest but non-significant effect on income ($\beta = 8.21$, $t = 0.86$). Farm labor had a statistically significant positive effect on income for beneficiaries ($\beta = 11.53$, $t = 1.88$), indicating that households involved in labor-intensive farming benefited from additional income. This variable did not significantly impact income ($\beta = 28.42$, $t = 0.25$) (Tanwar P S 2012) [4]. The age of the household head had a negligible impact on income ($\beta = 0.31$, $t = 0.054$). Gender had a significant impact ($\beta = 3.75$, $t = 1.85$), suggesting that female-headed households experienced differences in income generation. Literacy levels did not have a statistically significant influence on income ($\beta = 78.38$, $t = 0.80$). Primary education showed no significant effect on income ($\beta = 95.29$, $t = 0.84$) (Singh Rishikant 2013) [3]. However, secondary education had a statistically significant positive effect ($\beta = 100.90$, $t = 1.95$), highlighting the importance of education in improving income levels. Larger family size was associated with higher income ($\beta = 65.19$, $t = 1.52$), although this was only marginally significant. Landholding in acres had a significant positive impact on income ($\beta = 60.43$, $t = 1.81$), indicating the importance of land resources for dairy farmers. The value of assets did not significantly affect income ($\beta = 0.0035$, $t = 0.24$) (Sarap *et al* 2012) [2]. Employment was a significant factor ($\beta = 81.13$, $t = 2.50$),

suggesting that more working days were associated with higher income for beneficiaries. The R^2 value for beneficiaries was 0.32, indicating that 32% of the variation in income can be explained by the model.

Discussion

The results indicate that while several factors contribute to income generation for beneficiaries of the Mini Dairy Scheme, not all socio-economic variables exert the same influence. Farm labor, gender, secondary education, family size, landholding, and employment emerged as the most significant factors. The positive impact of secondary education suggests that households with more educated members are better equipped to take advantage of the resources provided by the Mini Dairy Scheme, such as financial support and training. Similarly, larger landholdings and greater employment (in terms of man-days) contributed to higher income, underscoring the importance of land resources and labor availability in rural income generation. The gender of the household head also played a significant role, indicating that female-headed households might experience different income dynamics, possibly due to variations in decision-making and resource allocation. The relatively modest influence of agriculture and livestock farming could be attributed to the fact that dairy farming represents a supplementary income source for many households.

Table 1: Factors influencing per capita income of Beneficiaries of Mini dairy scheme

Explanatory variables		Beneficiaries		
		Regression coefficients	Standard errors	't' value
S. No	Intercept	20133.49	19854.94	2.788
1	Agriculture	67.56	99.94	0.67
2	Livestock farming	8.21	9.52	0.86
3	Farm labour	11.53 *	9.65	1.88
4	Non- farm occupation	28.42	110.07	0.25
5	Age of the head of the family	0.31	5.84	0.054
6	Gender of the head of the family	3.75 *	1.90	1.85
7	Literacy	78.38	97.72	0.80
8	Primary education	95.29	112.25	0.84
9	Secondary education	100.90 *	98.95	1.95
10	Family size	65.19 *	42.87	1.52
11	Land holding in acres	60.43 *	58.62	1.81
12	Value of assets	0.0035	0.014	0.24
13	Employment (man days)	81.13 **	32.37	2.50
	R^2 = 0.32 *			

Table 2: Factors influencing per capita income of Non beneficiaries of Mini dairy scheme

Explanatory variables		Non beneficiaries		
		Regression coefficients	Standard errors	't' value
S. No	Intercept	5981.16	3904.91	2.831
1	Agriculture	124.19	326.74	0.38
2	Livestock farming	14.5	18.5	0.18
3	Farm labour	107.85 *	105.92	1.93
4	Non- farm occupation	59.00	301.07	0.19
5	Age of the head of the family	5.96 *	4.01	1.95
6	Gender of the head of the family	191.97 *	190.01	1.96
7	Literacy	64.40	287.16	0.22
8	Primary education	212.99	337.08	0.63
9	Secondary education	25.89	391.22	0.066
10	Family size	161.63 *	159.82	1.81
11	Land holding in acres	198.29 *	117.86	1.88
12	Value of assets	0.011	0.014	0.74
13	Employment (man days)	13.61	12.22	1.11
	R^2 = 0.37 **			

Conclusion

This study highlights the role of the Mini Dairy Scheme in improving rural incomes, with several socio-economic variables significantly influencing the income of beneficiaries. Farm labor, secondary education, gender, family size, landholding, and employment were the primary factors contributing to income among scheme beneficiaries. However, the moderate R^2 value suggests that other unmeasured factors may also play a role in income variability. To further enhance the effectiveness of the Mini Dairy Scheme, policymakers should consider targeting interventions that support education, particularly secondary education, and address gender disparities in income generation. Additionally, efforts to increase access to land and employment opportunities in rural areas could further boost the income potential of beneficiaries. While the scheme has shown positive outcomes, expanding its reach and tailoring it to address the diverse needs of rural households could ensure more sustainable income growth across rural communities.

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