



Effectiveness of NGO-Led Livelihood Initiatives on Income Generation among Rural Women of Bihar

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HIGHLIGHTS

- Across all NGO-Led livelihood initiatives, rural women experienced substantial savings growth.
- Tailoring emerged as the most popular and profitable livelihood activity, and their average income increasing from Rs 7,600 to Rs 16,000.
- Despite lower engagement compared to other activities, papad making demonstrated a remarkable income surge from Rs 5,777 to Rs 17,975.
- Mean earnings in agriculture rose from Rs 54,741.83 to Rs 76,733.54, with a highly significant t-statistic, underscoring their pivotal role in rural economic upliftment.

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ABSTRACT

The study explored the effectiveness of NGO-Led livelihood initiatives on income generation among rural women of Bihar. 450 rural women from 3 districts of Bihar were selected and data was collected during the year 2023-24. This study adopted a descriptive approach, using structured close-ended questionnaires through quantitative analysis involving interviews and surveys to collect information. Key activities such as tailoring, farming, handicrafts, homestead farming, and animal husbandry saw high engagement rates, with tailoring being the most popular at 97.33%. These initiatives significantly improved household financial stability, as evidenced by increased income, expenditure, and savings across all sectors. Tailoring, for instance, boosted average income from Rs 7,600 to Rs 16,000, while savings more than doubled. Similarly, papad-making, handicrafts, and animal husbandry demonstrated substantial profitability and improved resource management. Farming recorded the highest income increase, with a mean rise from Rs 54,742.83 to Rs 76,733.54, supported by a highly significant t-statistic of 13.91. Overall, the findings underscore the success of NGO-Led livelihood initiatives in promoting sustainable livelihoods and financial resilience among rural women in Bihar.

INTRODUCTION

Livelihood development plays a pivotal role in rural transformation, particularly for women in regions where traditional economic structures have often marginalized them. In rural Bihar, where agriculture remains the primary occupation, the lack of diversified income-generating opportunities has posed significant

socio-economic challenges for women. Income from animal husbandry, marginal works and labouring, were positively correlated with diversity; but land holding, income from agriculture, possession of household assets, average family education and maximum family education are negatively correlated with diversity (Pal et al., 2017). Over the years, non-governmental organizations (NGOs) have emerged as critical agents of change, introducing livelihood initiatives

aimed at fostering economic empowerment and social inclusion for rural women. These initiatives encompass a broad spectrum of activities, including vocational training, self-help group (SHG) formation, microfinance, handicrafts, and agri-based enterprises. Such interventions have not only provided women with alternative income sources but also enhanced their decision-making capabilities, social status, and overall quality of life. The significance of NGO-led livelihood initiatives lies in their ability to address the multi-dimensional barriers faced by rural women. Traditional gender roles, limited access to education, inadequate financial resources, and societal norms have historically restricted women's economic participation in Bihar. NGOs, through tailored programs, aim to bridge this gap by providing skill development, credit access, market linkages, and capacity-building opportunities. By fostering entrepreneurship and self-reliance, these livelihood initiatives help rural women transition from subsistence living to active contributors in their local economies. NGOs have been recognized globally for their role in fostering women's economic empowerment through livelihood initiatives. In his study, Kabeer (1999) demonstrated that economic empowerment involves not only income generation but also access to resources, decision-making power, and the ability to control one's life outcomes. NGOs have been instrumental in providing these opportunities by facilitating vocational training, microfinance, and self-employment ventures. Various studies highlight the success of NGO-led livelihood initiatives in rural India. A study by Kumar & Singh (2022) reported that NGO interventions in Bihar have significantly increased household income, particularly through skill enhancement and market linkages. The study revealed that women involved in tailoring and dairy farming experienced a 45 per cent increase in their average monthly income. In Bihar, NGOs have introduced programs focusing on tailoring, handicrafts, and agri-based businesses. Sinha & Sinha (2012) found in his study that such initiatives not only increase household income but also improve women's social standing within their communities. Singh et al., (2015) found that skill development programs in Bihar have equipped women with marketable skills, (weaving, tailoring, and food processing) leading to enhanced employability and entrepreneurship. Kumar & Sharma (2017) highlighted the need for continuous training and market linkages to sustain these income-generating activities. Without access to broader markets, many initiatives fail to achieve long-term financial stability for participants. Several region-specific studies have examined the impact of NGO interventions in Bihar. Sharma & Devi (2021) revealed that women participating in NGO-led initiatives experienced a 30 per cent increase in household income over five years. Additionally, Prakash et al., (2022) noted improvements in women's financial literacy and community engagement as a result of targeted training programs.

METHODOLOGY

The present study was conducted in Bihar, adopting a descriptive research approach to analyse the effectiveness of NGO-led livelihood initiatives such as tailoring, papad making, handicrafts and artisanal work, homestead farming of vegetables/kitchen gardening, animal husbandry and dairy farming, and farming on

income generation among rural women. The data collection was undertaken in three districts i.e., Muzaffarpur, Samastipur, and Patna, using a purposive stratified random sampling technique. Five NGOs were randomly selected from each district. From each NGO, 30 rural women were randomly chosen, resulting in a total sample size of 450 respondents. The selected NGOs from Muzaffarpur included Hanuman Prasad Gramin Vikas Seva Samiti, Akhil Gramin Yuva Vikas Samiti, Kanchan Seva Ashram, Akansha Seva Sadan, and Nirdesh. In Samastipur, the selected NGOs were Anmol Uphar Seva Foundation, Bhatra Lok Kalyan Seva Ashram, Mithilaanchal Vikas Samiti, Asha Seva Sansthan, and Gramin Samaaj Kalyan Sanstha. From Patna, the NGOs included Didi Jee Foundation, Ram Janki Pragati Seva Sansthan, Aga Khan Foundation, Prayas Bharti Trust, and Nari Gunjan. Data was collected through a self-structured, close-ended questionnaire. The structured survey focused on eliciting information related to the study's objectives. Statistical tools and techniques, including frequency and percentage analysis, were employed to interpret the results. To compare mean income levels before and after rural women joined the NGOs, the paired t-test was used at a 5% level of significance with (n-1) degrees of freedom. The findings were processed and presented in tabular form for clarity. The formula for the paired t-test is:

$$t = \frac{d}{\frac{S_d}{\sqrt{n}}}$$

Where; d: Mean of the differences in income, S_d : Standard deviation of the differences, n: Number of paired observations

RESULTS

Engagement of rural women in NGO-Led livelihood initiatives

The analysis of Table 1 reveals the engagement by rural women in various NGO-led livelihood initiatives aimed at income generation. Tailoring emerged as the most popular activity, with 97.33 per cent of rural women engaged in this sector, indicating its significant role in providing sustainable income opportunities. Similarly, farming-related initiatives also saw strong participation, with 94.44 per cent of rural women involved, highlighting the importance of agricultural activities in their livelihoods. Handicrafts and artisanal work demonstrated a substantial engagement rate of 93.33 per cent, reflecting the growing appeal of traditional skills in generating income. This was closely followed by homestead farming and kitchen gardening, with 89.55 per cent engagement, showcasing how small-scale agricultural practices are being adopted for both subsistence and income generation. Animal husbandry and dairy farming also garnered notable involvement, with 87.77 per cent of rural women engaged, emphasizing the value of livestock-based livelihoods in rural economies. Lastly, papad making, though slightly lower in engagement compared to other activities, still recorded a significant engagement rate of 83.33 per cent, illustrating its potential as a supplementary income source for rural households.

Overall, these figures indicate that NGO-led initiatives are highly effective in mobilizing rural women across diverse livelihood sectors, contributing to their economic empowerment and enhancing their household income stability.

Table 1. Engagement of rural women in NGO-Led livelihood income generation initiatives

NGO-Led livelihood initiatives	Engagement (%) (n = 450)
Tailoring	438 (97.33%)
Papad making	375 (83.33%)
Handicrafts and Artisanal Work	420 (93.33%)
Homestead farming of vegetables/ kitchen gardening	403 (89.55%)
Animal Husbandry and Dairy Farming	395 (87.77%)
Farming	425 (94.44%)

Effectiveness of NGO-Led Livelihood Initiatives on Income, Expenditure, and Savings of rural women

The findings of Table 2 highlights the effectiveness of NGO-Led Livelihood Initiatives on Income, Expenditure, and Savings of rural women by comparing their income, expenditure, and savings before and after engaging in various livelihood initiatives. Women engaged in tailoring experienced a significant rise in their average income from Rs 7,600 to Rs 16,000. This increase was driven by enhanced skills and better market access provided through NGO

Table 2. Income, Expenditure, and Savings of rural women in different initiatives

NGO-Led Livelihood initiatives	Economic development	Before joining	After joining
Tailoring	Income	7600	16000
	Expenditure	3000	5000
	Savings	4600	11000
Papad making	Income	5777	17975
	Expenditure	2300	5500
	Savings	3477	12475
Handicrafts & Artisanal Work	Income	10980	20000
	Expenditure	6600	8600
	Savings	4380	11400
Homestead farming of vegetables/kitchen gardening	Income	9500	11800
	Expenditure	3200	4100
	Savings	6300	7700
Animal Husbandry & Dairy Farming	Income	12800	15875
	Expenditure	5000	6200
	Savings	7800	9695
Farming	Income	13680	15500
	Expenditure	6200	7200
	Savings	7480	8300

training programs. Despite a rise in expenditure from Rs 3,000 to Rs 5,000, their savings more than doubled, growing from Rs 4,600 to Rs 11,000, indicating effective financial management training and profitability. Participants in papad-making saw their income increase dramatically from Rs 5,777 to Rs 17,975. This was facilitated by scaling operations and improved production efficiency. Although expenditures rose from Rs 2,300 to Rs 5,500 due to higher production costs, savings surged from Rs 3,477 to Rs 12,475, reflecting better resource utilization and profitability from expanded market linkages. In the handicrafts and artisanal work, income rose from Rs 10,980 to Rs 20,000, and savings increased from Rs 4,380 to Rs 11,400, despite expenditures rising from Rs 6,600 to Rs 8,600. The growth is attributed to enhanced craftsmanship skills, improved product quality, and access to wider markets supported by NGO efforts. For homestead farming of vegetables/kitchen gardening, income grew from Rs 9,500 to Rs 11,800, with savings increasing from Rs 6,300 to Rs 7,700, driven by the introduction of sustainable practices and efficient resource allocation. Similarly, participants involved in animal husbandry and dairy farming reported income growth from Rs 12,800 to Rs 15,875, with savings increasing from Rs 7,800 to Rs 9,695. This improvement resulted from cost management, access to better tools, and productivity gains facilitated by NGO training. In farming, income increased modestly from Rs 13,680 to Rs 15,500, and savings rose from Rs 7,480 to Rs 8,300. This growth was supported by the adoption of innovative farming methods and resource efficiency introduced by NGOs.

Across all initiatives, rural women achieved higher incomes and savings, with only a proportionate increase in expenditure. These initiatives have empowered rural women economically, helping them manage their expenses better and increase their savings, which can contribute to long-term financial stability and independence.

Effectiveness of NGO-Led livelihood initiatives on income generation among rural women

The findings in Table 3 highlights the effectiveness of NGO-Led livelihood initiatives on income generation among rural women. Farming shows the highest increase in income, with mean earnings rising from Rs 54,741.83 to Rs 76,733.54, supported by a t-statistic of 13.91, indicating a highly significant impact. Tailoring also reflects substantial income growth, with average incomes increasing from Rs 14,423 to Rs 25,530, and a t-statistic of 7.02, emphasizing their effectiveness. Handicrafts and artisanal work exhibit a remarkable improvement in earnings, increasing from Rs 10,600 to Rs 21,456, supported by a t-statistic of 6.87. Similarly, homestead farming, including vegetable and kitchen gardening, shows a notable rise from Rs 14,890.84 to Rs 22,765.95, with a t-statistic of 4.98.

Table 3. Effectiveness of NGO-Led livelihood initiatives on income generation among rural women

NGO-Led livelihood initiatives	Mean Income		t-statistics
	Before joining	After joining	
Tailoring	14423	25530	7.02**
Handicrafts and Artisanal Work	10600	21456	6.87**
Homestead farming of vegetables/kitchen gardening	14890.84	22765.95	4.98**
Animal Husbandry and Dairy Farming	28654	40984	7.79**
Farming	54741.83	76733.54	13.91**

**Significant at 5%

indicating a significant impact. Animal husbandry and dairy farming initiatives have also contributed significantly, with income increasing from Rs 28,654 to Rs 40,984, and a strong t-statistic of 7.79.

Overall, all initiatives show statistically significant improvements in income at the 5% level, highlighting the effectiveness of NGO-Led livelihood initiatives in enhancing the economic well-being of rural women across various livelihood initiatives.

DISCUSSION

The findings reveal a significant positive impact on the income, expenditure, and savings of rural women in Bihar, demonstrating the effectiveness of these livelihood initiatives in enhancing their economic well-being. The high engagement rates in various livelihood initiatives like tailoring, farming, handicrafts, and animal husbandry underscore the relevance of these initiatives in the rural economy. Non-Governmental agencies are playing proactive role in mobilizing, organizing and strengthening SHGs. Necessary managerial, technical mobilizing, organizing and strengthening SHGs. Necessary managerial, technical and marketing skills are being imparted to groups to enhance their livelihood opportunities. SHGs specifically women oriented had made a positive attempt towards women socioeconomic transformation and upliftment to make them torch bearer of the society (Slathia et al., 2006). Choudhary (2019) found from his study that NGOs played a crucial role in diversifying rural women's income sources in Bihar by introducing non-farm activities like tailoring, papad-making, and vegetable vending.

The study showed that women involved in multiple livelihood activities earned up to 60 per cent more than those relying solely on agriculture. This diversification also reduced their vulnerability to seasonal income fluctuations. Tailoring and agriculture emerged as the most popular, engaging over 90 per cent of rural women, which is consistent with earlier studies that highlight these sectors as primary sources of income for rural women in India (Sharma & Devi, 2021). Studies indicate that sectors such as tailoring and agriculture offer scalable and sustainable livelihood opportunities for rural women, as they rely on locally available resources and cater to both local and external markets (Reddy & Manak, 2005). Sharma (2021) highlights that skill development programs initiated by NGOs have empowered rural women economically and socially. In Bihar, tailoring and handicrafts emerged as primary sources of income. The training provided by NGOs not only enhanced technical skills but also improved financial literacy, leading to better income management and increased savings.

This finding suggests that when NGOs tailor interventions to fit local needs and market demands, participation rates increase significantly, as women recognize the potential for financial independence and community development. The significant increase in income, coupled with higher savings, aligns with the findings of Patel (2020), who highlighted the positive economic outcomes of NGO-led interventions through microcredit and skills training. For example, tailoring initiatives more than doubled the savings of participants, and similar trends were observed in other activities like papad-making and handicrafts. This supports the argument that income-generating activities facilitated by NGOs not only increase household income but also improve women's financial autonomy,

a core component of empowerment (Tripathi & Jain, 2018). Kabeer (1999) conducted a study and argues that increased income typically results in higher expenditures, especially when the enterprise expands, as women invest in materials, tools, and training to improve production quality and quantity. Singh et al., (2015) points out in his study that when women are given access to financial services and training, they tend to manage resources more effectively, leading to increased savings and better financial planning. This is a crucial outcome, as savings provide rural women with a buffer against economic shocks and increase their bargaining power within households and communities.

The findings show that agriculture-based initiatives, along with tailoring and animal husbandry, had the most significant impact on income generation. Jha et al., (2020) conducted a study and examined the role of NGOs in supporting agricultural practices such as homestead farming, vegetable gardening, and animal husbandry. Their research indicated a 35 per cent rise in household income among women engaged in these activities, with NGOs providing critical inputs like seeds, livestock, and technical training. The study concluded that these interventions significantly contributed to rural economic stability. The agricultural sector's growth, where average incomes rose by over Rs 20,000, is in line with Sinha & Sinha (2012), who argued that agriculture, when integrated with modern practices and supported by NGOs, can substantially improve rural women's economic outcomes. This is particularly true when NGOs provide technical support, access to markets, and financial products tailored to agricultural activities.

Furthermore, animal husbandry and dairy farming saw substantial growth, with incomes increasing by over Rs 12,000. Studies done by Yunus (2007) highlight the role of livestock-based livelihoods in rural economies, where women's involvement in animal husbandry leads to diversified income streams and increased household resilience. Moreover, Desai (2016) found that when NGOs provide skill-building initiatives in such areas, they enable women to tap into local and regional markets, often leading to long-term income stability. Handicrafts, in particular, align with Gupta & Mishra (2019), who identified traditional crafts as a source of sustainable income for rural women, especially when combined with modern market strategies and training. Slathia et al., (2014) reported impact in terms of enhancement towards their general awareness to basic amenities, better education, equality of opportunity, decision making capabilities, freedom of expression, personal security and their exposure to different educational institutions within and outside the state for acquiring latest know-how and technical expertise in various aspects of modern agriculture and subsidiary ventures due to NGO intervention.

Gupta & Yadav (2019) found that NGO-led livelihood programs in Bihar not only increased income but also improved savings patterns among rural women. Their research indicated that women engaged in small-scale enterprises such as papad-making and dairy farming experienced a 50% growth in savings over a two-year period. This financial independence has reduced dependency on male family members and enhanced women's decision-making roles within households. As per Prasad & Kumar (2018), NGO interventions have not only led to income generation but also enhanced women's financial independence and decision-making

power. Their study reported a 50% increase in women's control over household finances post-engagement in NGO-led livelihood initiatives, particularly in dairy and tailoring sectors.

CONCLUSION

The present study highlights the effectiveness of NGO-Led livelihood initiatives on income generation among rural women of Bihar. This study affirms the positive impact of NGO-led livelihood initiatives on rural women's income, expenditure, and savings in fostering economic empowerment. The significant increases in income and savings across various sectors indicate that tailored initiatives, such as vocational training, financial support, and market linkages, can substantially enhance the economic well-being of rural women. The findings reveal that engagement in diverse activities such as tailoring, agriculture, handicrafts, and animal husbandry not only increased income but also improved savings and expenditure management. Tailoring and agriculture emerged as the most impactful sectors, reflecting the potential of skill-based and farming-related interventions to drive sustainable economic growth. Ultimately, these NGO-Led livelihood initiatives play a vital role in fostering economic resilience, promoting self-reliance, and empowering rural women, contributing to broader rural development and poverty alleviation efforts in Bihar.

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