Creating Sustainable Livelihoods for the Ultra-Poor: Evidence from a Randomized Controlled Trial in Sargodha

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Abstract

The study designed and implemented a Graduation Program for poverty reduction in Sargodha, and subsequently evaluated the impact of the Program. The study employed a Randomized Controlled Trial design to assess the efficacy of the Graduation Program. The treatment group consisted of 100 households that received the intervention, while the control group had an equal number of households that did not receive the intervention. The main findings suggest that the intervention had a positive impact on all outcome variables of the treatment group compared to the control group. Per capita consumption increased by 0.13 standard deviations, which translates to an increase of PPP US$4.01 per capita per month. Household income and revenue witnessed a surge of 0.43 standard deviations, whereas an index of household assets increased by 0.33 standard deviations. In light of these findings, the study recommends an integrated approach that combines various poverty reduction measures to enhance the economic outcomes of impoverished households.

Keywords: Poverty, Poverty Reduction Strategies, Graduation Program, Randomized Controlled Trials, Impact Evaluation.

Introduction

Poverty is a complex socio-economic problem that affects millions of people worldwide. According to the estimations provided by the World Bank in 2021, approximately 9.2% of the global population, equivalent to roughly 734 million people, find themselves in a state of extreme poverty, wherein their income falls below the threshold of $1.90 per day, making it insufficient to satisfy their basic needs (World Bank, 2021). Research has shown that poverty can have significant and long-lasting effects on individuals, families, and communities. Poverty is strongly associated with poor health outcomes, including higher rates of infant mortality, malnutrition, and infectious diseases (WHO, 2021). Poverty also limits access to education and can perpetuate a cycle of low educational attainment and limited economic opportunities. Children from impoverished households are more likely to drop out of school, have lower levels of literacy and numeracy, and struggle to access higher education (UNESCO, 2020). This lack of education can lead to limited job prospects, lower earnings, and continued poverty.

The situation of poverty in Pakistan is alarming and requires urgent attention. According to the World Bank, the poverty rate in Pakistan was 24.3% in 2019, which means that around 50 million people are living below the poverty line (World Bank, 2020). Moreover, the COVID-19 pandemic has further aggravated the poverty situation in Pakistan. According to a report by the United Nations Development Program (UNDP), the pandemic has pushed an additional 8.3 million Pakistanis into poverty, bringing the total number of people living below the poverty line to 78 million (UNDP, 2021). The report further highlights that the pandemic has disproportionately affected the most vulnerable groups, such as daily wage workers, women, and children, who are more likely to experience poverty and face difficulties accessing basic services such as healthcare and education.

The government of Pakistan has implemented a range of measures, such as social safety net programs, poverty reduction initiatives, and economic reforms, to address the issue of poverty in the country. However, the impact of these programs on poverty reduction is mixed, with some studies showing positive impact (Raza & Ali, 2020) while others highlighting challenges in implementation and sustainability (Bashir

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et al., 2021). Despite the various measures taken by the government of Pakistan to tackle poverty, there is still a long way to go in eradicating poverty and improving the standard of living for all. The continued existence of poverty in Pakistan can be attributed to a range of factors, including economic instability, political instability, inadequate social safety nets, and lack of access to education and healthcare (Raza et al., 2021; Butt & Choudhry, 2020). To reduce poverty in Pakistan, an integrated approach is needed to effectively reduce poverty. This approach should include a combination of measures such as cash transfers, microfinance, and skill training programs, as suggested by various studies (Ahmed et al., 2019; Naeem et al., 2021).

Cash transfer programs can help alleviate immediate financial stress for low-income families and provide them with a basic level of income. Microfinance programs can help individuals start small businesses and generate income, while skill training programs can equip them with the necessary skills to secure higher-paying jobs. Moreover, this integrated approach should also focus on improving access to basic services such as healthcare, education, and clean water. Studies suggest that improving access to education and healthcare can have a significant impact on reducing poverty (Cheema et al., 2019; Awan et al., 2018). Overall, poverty alleviation measures in Pakistan have had varying degrees of success. While some programs have shown a positive impact, others face challenges in implementation and targeting. An integrated approach that combines various measures is needed to effectively reduce poverty in Pakistan and improve the standard of living for all.

Based on the evidence from the impact of poverty reduction programs in Pakistan, it is evident that a comprehensive and multi-faceted approach is required to effectively address poverty. To answer the research question of whether an integrated approach (from now, the Graduation Program) that combines various measures can effectively reduce poverty and improve the standard of living for all, a multi-dimensional approach has been designed, implemented, and Randomized Controlled Trials (RCTs) have been employed to evaluate the effectiveness of this approach in reducing poverty and improving the standard of living. The study aims to provide evidence on the effectiveness of the Graduation Program towards poverty reduction and the economic well-being of the treatment group in the study area.

Review of Literature

In this section, the primary focus is on the evaluation of interventions aimed at reducing poverty. It examines a range of interventions that have been implemented to alleviate poverty, such as cash transfers, microcredit programs, education interventions, and others.

Cash transfers have become a popular intervention for reducing poverty in recent years. The idea behind cash transfers is to provide direct financial support to people living in poverty, which can help them meet their basic needs like food, shelter, and healthcare (Adams, 2011). The studies employed RCTs to evaluate the impacts of conditional and unconditional cash transfer programs on poverty and found that the program had significant positive impacts on poverty reduction, asset accumulation, and education outcomes, which persisted over the long-term (Banerjee et al., 2015, Jafri et al., 2017, Haushofer & Shapiro, 2016, Blattman et al., 2018). It's important to note that cash transfers aren't a one-size-fits-all solution to reducing poverty, and there may be unintended consequences, such as discouraging work or reducing social cohesion (Banerjee et al., 2015).

Microcredit is another poverty reduction intervention that has gained popularity in recent years. The theoretical relationship between microcredit and poverty reduction can be understood within the context of the asset-building framework. According to this framework, poverty is not just a lack of income, but a lack of assets that can be used to generate income and build wealth over time (Sherraden, 1991). Microcredit provides individuals with the opportunity to acquire these assets in the form of small business enterprises. The studies revealed a significant correlation between microcredit and heightened participation of women in income-generating endeavors, accompanied by an improvement in their decision-making authority within the household (Duflo et al, 2012, Kabeer et al., 2012, Kabeer, 2015, Shabbir et al., 2016, Hussain et al., 2018).

Vocational training has been recognized as an important poverty reduction strategy, as it aims to improve the employability and income-earning potential of individuals, especially those who lack skills and education (World Bank, 2019). The theoretical underpinnings of vocational training interventions can be found in human capital theory, which emphasizes the importance of investing in education and skills to improve economic outcomes (Becker, 1962). Recent studies have shown that vocational training interventions can be effective in reducing poverty. For instance, a study by Rahman et al. (2021) found that a vocational training program in Bangladesh led to increased earnings and improved economic well-being for participants. Similarly, a randomized controlled trial in Kenya found that vocational training programs increased employment and earnings for participants (Blattman et al., 2014). conducted a randomized controlled trial to evaluate the impact of skills training and job search assistance on youth employment and livelihoods in Pakistan. The authors note that these findings highlight the potential of skills training and job search assistance as a tool for promoting youth employment and reducing poverty in Pakistan.

Watts et al. (2015) conducted an evaluation of a program targeting ultra-poor households in Bangladesh, employing a comprehensive approach that encompassed cash transfers, asset transfers, and livelihood training. Termed the Challenging the Frontiers of Poverty Reduction-Targeting the Ultra Poor (CFPR-TUP) program, its overarching objective was to facilitate the transition of households from extreme poverty to self-sufficiency. The authors observed substantial positive impacts resulting from the program, notably in terms of household consumption, food security, and asset accumulation. Specifically, beneficiaries experienced heightened levels of food consumption, encompassing a greater diversity of food items, which served as an indicator of improved food security. Additionally, these households demonstrated elevated levels of non-food consumption, signifying an overall enhancement in their well-being. Remarkably, the program also facilitated significant asset accumulation through the provision of livestock and equipment, thereby promoting income-generating activities.

After an extensive review of research conducted on poverty reduction and impact evaluation, it is evident that poverty is a complex and multifaceted issue that requires comprehensive and multi-dimensional solutions. Moreover, RCT is an effective method for measuring the impact of development interventions. It is important to note that RCTs also have limitations, such as their high cost, time-consuming nature, and ethical considerations. However, the benefits of using RCTs outweigh their limitations in many cases, particularly when it comes to making policy decisions and designing effective poverty reduction programs.

Research Design
Data Collection
Study Area and Target Population

As, this study is designed to assess the effectiveness of an intervention rather than making generalizations about the entire population based on the sample characteristics. As a result, Non-Probability Sampling methods have been employed to select the Target Population. For this study, Chak No. 45-SB, Tehsil and District Sargodha was selected. The study area was selected using Convenience Sampling Method – Convenience Sampling is when researchers leverage individuals that can be identified and approached with as little effort as possible. The target population for the study is the poorest of poor households in the study area, with an able-bodied woman who could learn skills and later use her skills to earn livelihood. They were selected using Purposive Sampling Method – Purposive Sampling refers to a deliberate approach employed by researchers in selecting a sample population, even if it may not be statistically representative of the larger target population. As the name implies, researchers purposefully choose to focus on a specific community or group of individuals who align with the desired characteristics or attributes necessary to achieve their research objectives.

Unit of Analysis and Sample Size

This study conducted analysis at the household level. The sample size selected for the household-level analysis was 200 which corresponds to 90% statistical power (Campbell & Machin, 1993). It means that more than 90% of the time, if there is true effect is of 0.5 size, our proposed experiment will be able to

detect it. This study used a 1:1 allocation ratio for treatment and control groups – 100 in each group, as it provides maximum statistical power and reduces the risk of selection bias and confounding factors (Piaggio et al., 2006, Friedberg et al., 2001, Scott et al., 2015).

Descriptive Statistics

Summary statistics here provide information about the consumption patterns of a population being studied. Table 1 shows that the average amount of money spent on consumption per person in the population on a monthly basis is PKR 6,104. It also illustrates that the proportion of households in the population who live on less than $1.25 per day is 84%

Table 1: Baseline Summary Statistics-A

Consumption Including Health and Durable Goods Spending	
Total monthly per capita consumption, mean	40.64 (6,104)
Total monthly per capita consumption, median	32.78 (4,924)
Total daily per capita consumption, median	1.09 (164)
Share of households below $1.25/day	84 %

Note: Authors' Own Calculation.

All monetary values are reported in 2019 USD, Purchasing Power Parity (PPP) terms, PKR in parenthesis.

Balance

Balance in RCTs refers to the similarity between the treatment and control groups in terms of key characteristics or variables that may affect the outcome of the study. Achieving a balance between the treatment and control groups is essential in RCTs as it reduces the risk of bias and increases the validity and reliability of the study results. By ensuring that the groups are balanced, any observed differences in the outcome can be attributed to the intervention being studied, rather than any pre-existing differences between the groups.

Table 2: Baseline Characteristics by Treatment Status- Household level

	Control	Treatment	p-value
Total per Capita Consumption, Standardized	0.0000	– 0.0422	0.7700
Food Security Index	0.0000	– 0.2099	0.1416
Asset Index	0.0000	0.0581	0.7190
Financial Inclusion Index	0.0000	0.0537	0.8089
Income and Revenues Index	0.0000	– 0.1416	0.3762
N	100	100	–

Note: Authors' Own Calculation

Household level analysis was conducted to assess balance. The null hypothesis was tested against the following alternative hypothesis:

1. H_0: The means of the primary outcome measures in the treatment and control groups were equal.
2. H_1: The means of the primary outcome measures in the treatment and control groups were not equal.

At the household level, several variables were examined, including consumption, food security, assets, financial inclusion, income, and revenue. The results indicate that there were no significant differences between the treatment and control groups in these variables, suggesting that the groups were balanced in these key factors (Table 2). The results provide evidence that the randomization process successfully balanced the treatment and control groups in key variables at both the household and individual levels. This enhances the validity of the study and strengthens the ability to draw accurate conclusions about the effectiveness of the intervention being studied.

Surveys

This study aimed to evaluate the impact of an intervention on a specific outcome of interest. To do this, RCTs method was employed with three key stages: a baseline survey, a training period, and an endline survey.

Baseline Survey

The baseline survey was conducted in June 2018, prior to any intervention, and served as a point of comparison for the subsequent surveys. This survey collected information on key variables that could potentially affect the outcome of interest. These variables were related to demographics, socioeconomic status, health, and other factors that could influence the outcome. By collecting this information before any intervention, it could be ensured that the treatment and control groups were comparable at the start of the study.

Midline Survey

Following the baseline survey, three-month training program was implemented to the treatment group during July-September 2018. The training program was designed to provide skills and knowledge that could improve the outcome of interest. The control group did not receive the training program. The study also conducted a midline survey in October, 2018 to assess the effectiveness of the trainings that were provided to the participants. The midline survey was carried out three months after the start of the intervention, when the training program were concluded. The purpose of the midline survey was to evaluate whether the trainings were being conducted effectively and to identify any areas that needed improvement. The survey included questions related to the quality of the training sessions, the engagement of the participants, and their level of understanding of the content covered.

End line Survey

After six months from the completion of the training and intervention period, the end line survey was conducted in March, 2019 to evaluate the impact of the intervention on the outcome of interest. This survey collected the same information as the baseline survey, allowing us to compare the treatment and control groups again. By comparing the results of the end line survey to those of the baseline survey, it could be assessed whether the intervention had a significant impact on the outcome of interest.

In summary, the three stages of our RCT allowed us to design and implement an effective intervention while also ensuring a rigorous evaluation of its impact. By collecting data at multiple points throughout the study, the effectiveness of the intervention could be accurately assessed and valid conclusions about its impact could be drawn.

Methodology

The study employed the Randomized Controlled Trials (RCTs) method for the impact evaluation. RCTs are experimental research designs widely used in scientific studies to evaluate the effectiveness of interventions or treatments. The key characteristic of RCTs is the random assignment of participants into different groups, including a treatment group that receives the intervention and a control group that does not. This randomization helps ensure that any observed differences between the groups can be attributed to the intervention rather than pre-existing characteristics of the participants.

Mathematical Model for RCTs:

Let's denote the treatment group as T and the control group as C. The outcome variable of interest is Y. The mathematical model for RCTs can be represented as follows:

$$Y_i = \beta_0 + \beta_1 . T_i + \varepsilon_i$$

Where:

- Y_i is the outcome for the ith participant.
- β_0 is the intercept representing the average outcome in the control group
- β_1 is the treatment effect, representing the average difference in outcomes between the treatment and control groups
- T_i is a binary variable indicating whether the ith *participant is in the treatment group* $(T_i = 1)$ *or control group* $(T_i = 0)$
- ε_i is the error term representing unobserved factors influencing the outcome

The goal of the analysis is often to estimate the value of β_1 and assess whether it is statistically different from zero, indicating a significant treatment effect. The random assignment of participants helps control for confounding variables, strengthening the causal inference drawn from the study.

Details of Intervention

The intervention proposed in this study is based on the evidence that poverty reduction measures have not been effective when implemented in isolation. Thus, an integrated approach has been developed that combines various poverty reduction measures including skill training, productive asset transfer, and microcredit facilities. The core of this approach is the productive asset transfer, which aims to provide households with the necessary resources to start a self-employment activity and, in turn, generate income. However, the program also includes complementary activities designed to support the development of sustainable livelihoods.

This Graduation Program consists of six complementary components, each designed to address specific constraints being faced by the ultra-poor households.

1.   Trainings
2.   Productive asset transfer
3.   Registration to micro credit program
4.   Regular household visits
5.   Compulsory savings
6.   Health and hygiene education

The training component is intended to build the technical skills and knowledge necessary for successful entrepreneurship. In consultation with the local experts, after analyzing market and the viability of livelihoods options in the study area, from a list of different micro enterprises (Punjab Rural Support Program), the dressmaking was selected. Despite of low literacy rate of women in the area, huge interests were found in favor of dressmaking and hence, sewing machine was identified as productive asset. Along with skill training, it focuses on topics such as financial management, marketing, and business planning. Furthermore, the program aims to increase access to credit through registration to microcredit programs. This will provide households with an additional source of funding to start their businesses and improve their income levels. In addition to these measures, the program also includes regular household visits, where the participants can receive personalized support and advice on how to improve their businesses. Moreover, the compulsory savings component of the program encourages the participants to save a portion of their income, which can be used to cover unexpected expenses or invest in their businesses. Finally, the program includes health and hygiene education to improve the participants' health and well-being. This component is important, as poor health can prevent individuals from being able to work and earn income, which can perpetuate the cycle of poverty.

Overall, the fundamental strategy underlying this intervention entails the integration of various complementary activities with the overarching objective of facilitating the initiation and sustainability of self-employment within households.

Results and Discussions

This section presents the impact evaluation of the graduation program designed for poverty reduction using RCTs.

Table 3 provides a comprehensive overview of the impact evaluation results, presenting them in a family-wise aggregation with q-values adjusted for the 05 indices. The findings suggest that the intervention has had a positive impact on all outcome variables of the treatment group in comparison to the control group. The study reveals that per capita consumption increased by 0.13 standard deviations (q-value 0.001), which translates to an increase of PPP US$4.01 per capita per month. Furthermore, household income and revenue witnessed a surge of 0.43 standard deviations (q-value 0.001), whereas an index of household assets increased by 0.33 standard deviations (q-value 0.052).

Table 3: Indexed Family Outcome Variables and Aggregates, Standardized

	Mean Effect	Standard Error	p-value	q-value
Total per capita consumption	0.103***	-0.025	0.000052	0.001
Food security index	0.165	-0.131	0.2086914	0.299
Asset index	0.335**	-0.130	0.0103751	0.052
Financial inclusion index	0.350***	-0.118	0.0034084	0.035
Incomes and revenues index	0.432***	-0.107	6.13E-05	0.001

Note: Authors' Own Calculations. *** Shows 1%, ** represents 5% and * indicates 10% level of significance.

The findings of the study indicated a significant reduction in poverty levels among the households that received the intervention. The results of the RCTs showed that the intervention had a positive impact on the households' income and consumption. The training component of the intervention was found to be particularly effective in improving the households' economic activities, while the cash transfer component helped to alleviate their immediate needs. The microfinance component was effective in enabling households to access capital to invest in their businesses. The following section contains a comprehensive breakdown of the outcomes achieved:

Consumption

As part of the impact evaluation, the study meticulously examined the households' consumption patterns. The focus was on assessing the changes in total per-capita consumption within the treatment group in comparison to the control group. The analysis, presented in Table 4, reveals notable variations between food and non-food consumption, both in absolute terms and relative proportions. Specifically, food consumption exhibited a substantial increase of 11% compared to the control group's mean of $31.1, while non-food consumption showed a more modest increase of 3.7% compared to the control group's mean of $14. Notably, the elasticity of food consumption with respect to overall expenditure was found to be greater than one, a significant finding that aligns with Engel's law (1857). This observation supports the notion that households with lower incomes allocate a higher proportion of their financial resources towards food, as opposed to middle or higher-income households.

Table 4 Per Capita Consumption

	Monthly total consumption per capita	Monthly food consumption per capita	Monthly non-food consumption per capita	Monthly durable goods expenditure per capita
Treatment (ITT)	4.01***	3.43***	0.47*	0.069
	(1.37)	(0.934)	(0.294)	(0.88)
Observations	200	200	200	200
Control Mean	46.8	31.1	14	1.62
Baseline Mean	40.6	28.2	12.4	1.09

Note: Author's Own Calculations

*** Shows 1%, ** represents 5% and * indicates 10% level of significance. t-statistics are shown in parentheses.

Food Security

While there is no significant rise in expenditures on durable goods during the endline assessment, it is worth noting that households in the treatment group possessed a greater number of household assets compared to the control group, as evidenced by the data presented in Table 5. It is possible that the expenditure variable utilized in the analysis may not fully capture certain expenditures related to durable goods. Nonetheless, an analysis of food security, as depicted in Table 5.3, reveals a substantial improvement in this aspect.

Table 5 Food Security

	Everyone in the household gets enough food every day	No adults skipped meals	No one in the household went a whole day without food	No children skipped meals	Everyone in the household regularly eats two meals per day
Treatment (ITT)	0.014**	0.025***	0.019*	0.027**	0.0091
	(0.067)	(0.009)	(0.011)	(0.013)	(0.018)
Observations	200	200	200	200	200
Control Mean	0.67	0.67	0.94	0.87	0.93
Baseline Mean	0.34	0.35	0.73	0.48	0.76

Note: Author's Own Calculations

*** Shows 1%, ** represents 5% and * indicates 10% level of significance. t-statistics are shown in parentheses

Assets Ownership

Table 6 presents the empirical findings pertaining to the impact of the intervention on household assets. The analysis reveals statistically significant increases in asset holdings among households during the endline assessment. Specifically, the constructed asset index exhibits a substantial increase of 0.34 standard deviations. Of particular note is the effect size observed for productive assets, which are utilized in household self-employment endeavors, as it demonstrates the highest magnitude among all asset categories, amounting to 0.32 standard deviations at the endline.

The data further indicates that there is an overall augmentation in both household assets and productive assets, with the latter experiencing a more pronounced increase during the endline period. The value of productive assets exhibits a notable rise of 12% when compared to the control group means, which stand at PPP US$1079. Upon comparing the value of assets held by households at the end of year 1 with the initial value of the transferred asset, it becomes evident that the impact of the program on asset values surpasses the cost of the assets themselves.

Table 6 Asset Ownership

	Asset Index	Total Asset Value	Productive Asset Index	Productive Asset Value	Household Asset Index	Household Asset Value
Treatment (ITT)	0.34**	173**	0.32**	130*	0.091	13.3
	(0.13)	(74.8)	(0.13)	(71.4)	(0.13)	(39.7)
Observations	200	200	200	200	200	200
Control Mean	0	1306	0	1079	0	219
Baseline Mean	0.029	1271	-0.0081	1028	-0.24	207

Note: Author's Own Calculations

*** Shows 1%, ** represents 5% and * indicates 10% level of significance. t-statistics are shown in parentheses.

Income and Revenues

As a critical aspect of the impact evaluation, the researcher analyzed the income and revenue of the households participating in the intervention. It was observed that there is a substantial improvement in the revenue generated from non-farm micro-enterprises in treatment households as compared to control households. More specifically, the treatment households experienced a 600% increase in revenue, which is significantly higher than the control group mean of PPP US$2.83, as depicted in Table 7, Column 3. It was also found that the productive assets allocated to households were effectively utilized as adult labor supply increased by 30.6 minutes per adult per day at endline, which is a 15% increase over control households. Furthermore, the households reported feeling economically better off, with an improvement of 0.78 points on a scale of 1 to 10, where the control group mean was 3.74. It is noteworthy that all the gains achieved in

terms of income and revenue remained persistent even one year after the completion of the program, which suggests the long-term sustainability of the program's impact on the economic well-being of the treated households.

This finding indicates the intervention's effectiveness in achieving the intended goal of reducing poverty and improving the economic status of the participating households.

Table 7 Income and Revenues

	Household monthly revenue from livestock	Household monthly income from agricultural	Household monthly income from non-farm micro-enterprise	Household monthly income from paid labor	Self-Reported Economic Status (1/10)
Treatment (ITT)	0.94** (0.41)	0.63** (0.31)	16.9*** (5.847)	– 7.38* (4.112)	0.78*** (0.28)
Observations	200	200	200	200	200
Control Mean	19.6	25.3	2.83	31.3	3.74
Baseline Mean	4.23	14.5	-0.047	7.77	3.49

Note: Author's Own Calculations.

*** Shows 1%, ** represents 5% and * indicates 10% level of significance. t-statistics are shown in parentheses

Conclusion and Policy Recommendation

The findings of the study have several implications for policy decisions. Policymakers and development practitioners can use the evidence-based insights provided by this study to design and implement effective poverty reduction programs that address the multidimensional factors of poverty. The graduation program's success also highlights the importance of investing in long-term poverty reduction strategies that empower households and promote sustainable livelihoods.

Based on the results presented in Section 5, several poverty reduction strategies can be recommended:

- *Providing productive assets to poor households*: The results suggest that providing productive assets to poor households can lead to increased income, revenue, and asset accumulation. This can be an effective poverty reduction strategy, especially in rural areas where households often rely on self-employment activities.

- *Skill training*: The results of the graduation program indicate that providing skill training can significantly improve household incomes and overall well-being. Therefore, policy changes should be made to ensure that all poverty reduction programs incorporate a skills training component. This can be achieved by collaborating with vocational training institutions or by establishing community-based training programs. Additionally, the skill training programs should be designed to address the specific needs of the community and provide relevant and practical skills that can lead to income-generating activities.

- *Encouraging savings*: The mandatory savings requirement in the program led to a significant increase in savings among beneficiaries. This can be a useful poverty reduction strategy as it can help households build assets and provide a buffer against economic shocks.

- *Promoting access to credit*: The increase in revenue and income from non-farm micro-enterprises among beneficiaries suggests that access to credit can be an effective poverty reduction strategy. Policymakers can consider implementing policies that provide easier access to credit for poor households.

In conclusion, the findings indicate that an integrated approach that combines various poverty reduction measures can effectively enhance the economic outcomes of impoverished households.

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