RURAL DEVELOPMENT THROUGH WOMEN SELF HELP GROUPS (WSHGS): A STUDY OF NAMCHI DISTRICT, SIKKIM, INDIA

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Abstract

To improve the socio-economic conditions of WSHGs in rural areas through the North-East Rural Livelihood Project (NERLP) and National Rural Livelihood Mission (NRLM) has played a vital role in Sikkim. Now, in Sikkim, the Sikkim State Rural Livelihood Mission (SSRLM) under the Rural Development Department has been functioning in all the districts of Sikkim. Rural development is a continuous process of aiming to increase the welfare of societies and upgrade the quality of life of rural people. Rural Development is an effective process that comprises the socio-economic, environmental, political, and welfare of the rural poor people living in sparse areas.WSHG has also been helping in uplifting women's empowerment as well as the work participation of women in the rural economy of the country. So, that they can use their local resources and generate income for rural development for their people. This paper focused on how the WSHGs have contributed to the society and rural development in Sikkim. It examines the degree of income inequalities among the respondents and to analyze the factors that determine the socio-economic status of WSHGs.It also helps to examine the changes in the level of income, expenditure, and savings before and after joining the WSHGs. The present study is based on primary data and secondary data. The data was collected from 7 blocks viz., Namchi, Ravongla, Namthang, Sikkip, Sumbuk, Temi Tarku, and Yangyang of Namchi districts, South Sikkim. The sample size considered for the study is 100 WSHGs consisting of 1 respondent from each selected group. Descriptive and inferential statistics have been used for analyzing the data. The descriptive statistics tools such as simple percentage, mean, average, and standard deviation were used. To test the hypotheses, OLS, Logit model, and Z-test were used. The result shows that income inequalities exist between the members of WSHGs in the study area. The factors determining the Socioeconomic status of WSHG among the members of groups such as age, and income. education and house type have a positive impact on the socio-economic status of WSHGs. The WSHGs' potentialities like age, experience, and house type have a positive impact on the rate of income of WSHGs after joining the groups. Therefore, the average annual income and saving of respondents has increased after joining the WSHGs.

Keywords: Women Self Help Groups (WSHGs), Rural Development, Income Inequalities, Saving, Income, Z-test.

JEL Classification:D31, E21, R11, R12, R15

1. Introduction

Rural Development is an effective process that comprises of socio-economic, environmental, political, and welfare of the rural poor people living in sparse areas. Rural development is a continuous process of aiming to increase the welfare of societies and improve the quality of life of rural people(Sangtam & Yaden, 2017). Rural Development is one of the important pillars of which the future of our country stands which is the main contribution of WSHG in the village. So, that they can use their local resources and generate income for rural development for their people. WSHG has also been helping to uplift women's empowerment as well as the work participation of women in the rural economy of the country (Dutta, 2015). Development can be possible only when the rural areas are developed through WSHG. Without sustainability, development is not feasible since it plays a crucial part in the development of every program, initiative, and scheme in the nation. The expansion of the rural population has a significant impact on the development of a state. Since more than 70% of Indians reside in rural regions, the idea of rural development is extremely important. Poverty is a real issue that growing nations like India must deal with (Nagesha & Ajeya, 2018). NRLM & NERLP were established in the nation as an essential part of the project/scheme of plan of action as a result. To improve the socio-economic conditions of WSHGs in rural areas through the North-East Rural Livelihood Project (NERLP) and National Rural Livelihood Mission (NRLM) has played a vital role in Sikkim.

A WSHG is a small group of rural poor people with 10 to 20 members who voluntarily agreed to create a group to improve each member's socioeconomic situation. There is no restriction on what age a person can join the group. Each WSHG member saves between Rs. 50 and Rs. 300 per member each month on average for the group. Inter-group lending is a common practice among organizations that offers less expensive rates of interest, ranging from Rs.1 for WSHG members to Rs. 5 for nonmembers. However, there used to be a 2/100 monthly rate for WSHG members. The fundamental units of participation are WSHGs. It could be legitimate (registered) groups or unofficial ones. The fundamental ideas behind WSHG emphasize the concepts of "Thrift", "Credit", and "Self Help". Working in groups is preferable to working alone because it allows members to more readily integrate and make the greatest use of their talents, skills, capabilities, and resources. Each member agrees to use the common fund when necessary for the group in an emergency and is willing to consistently contribute to and save in it. The money is gathered from additional sources, such as grants provided by projects, future bank loans, and other sources as they may have done so collectively. By the provisions set forth by the organization's norms, the group may permit the issuance of microloans to needy members.

The assessment of Swarnajayanti Gram Swarozgar Yojana (SGSY) revealed that lack of infrastructure, scarce capacity building, and a poor delivery system, and therefore the SGSY has been reorganization as National Rural Livelihood Mission (NRLM). The Government of India started NRLM on 3rd June 2011. Through this program, the primary objective is to reduce poverty in the nation. The mission's primary goal is to support rural poor people in developing sustainable livelihoods by making it simple for them to access credit and loans, support for diversification, and public services. Then, the Government of Sikkim has also adopted the program due to the more scope and capability to meet the goals of the people of Sikkim. In November 2015, the

program's name was changed to Deendayal AntyodayaYojana – National Rural Livelihood Mission (DAY-NRLM).NRLM was implemented in the East and North District up to December 2019. West and South Districts were taken under the NRLM fold in November 2019 after the North East Rural Livelihoods Project (NERLP) withdrew from the state of Sikkim (Annual Report, 2019-20). NERLP is a World Bank-funded project which is to be implemented in four States viz. Mizoram, Nagaland, Sikkim, and Tripura across 8 districts i.e., 2 districts per state (NERLP, Ministry of DoNER, Govt. of India, 2011). It was launched in 2013. The goal of NERLP is to promote rural lives, with a particular emphasis on women, young people without jobs, and the most disadvantaged demographic in the North Eastern States. They also encourage the use of sustainable agriculture practices and the management of natural resources (ibid). The program is implemented in the South, West, and 15 Panchayats wards of the East district. In South and West Sikkim, NERLP was implemented till November 2019. The rural institutions i.e., WSHG, Federations, Producer Group, and Producer organization of these two districts have been taken over by the SSRLM under NRLM. From, January 2020, Sikkim State Rural Livelihood Mission (SSRLM) was implemented in all the districts of Sikkim(Annual Report, 2019-20). Now, in Sikkim, the Sikkim State Rural Livelihood Mission (SSRLM) under the Rural Development Department has been functioning in all the districts of Sikkim. Sikkim Rural Development Agency (SRDA) took the effort to promote the idea of WSHGs in Sikkim in 1999. This program's funding was distributed 75:25 between the State and the Centre as part of a centrally supported project. However, starting on September 15, 2008, the funding ratio has changed to 90:10 vide GOI Letter No.G.20011/02/2008-SGSY-I Dated 18th November 2008 (Annual Report, RDD, Government of Sikkim, 2008-2009). There are currently more than 5232 WSHG with 49,194 members in the State of Sikkim. At the ward, gram panchayat, and block levels, the WSHGs are combined into roughly 500 federations. Additionally, 211 producer groups and 7 producer organizations active throughout the state are assisted and promoted by SSRLM. They are engaged in both agricultural and non-agricultural enterprises (SRLM Report, 2023).

The study was conducted in the 7 blocks viz., Namchi, Ravongla, Namthang, Sikkip, Sumbuk, Temi Tarku and Yangyang of Namchi districts. Most of the WSHGs in these villages have found 10 members. The majority of WSHGs have engaged in activities including making potato chips, cardamom cultivation, candle making, growing ginger, poultry, piggery, milking cows, growing vegetables, producing pickles, creating clothes i.e., stitching school uniforms, knitting, making toys, making masks, and growing mushrooms, but they encountered issues with marketing their products. However, WSHG members borrow money from the WSHG fund mostly for their medical care, weddings, the education of their kids, and public celebrations in Sikkim (MART Report, 2011). The importance of bank connections to financial inclusion cannot be overstated. To jointly promote WSHG and financial inclusion, a connection with the bank is essential. Without bank connections, the members would not be able to meet their needs for nominal interest-rate consumption loans (DAY-NRLM, MoRD, Government of India, 2017). There are numerous financial institutions and bank branches that assist and encourage WSHGs financially. Selected WSHGs from different districts of Sikkim participated in annual fairs and exhibitions that SRDA

and RDA organized in the market to display their unique group's products (Mukhia, 2016). The members exchange opinions and ideas with one another, choosing the best one to apply in the group to lighten the workload on the teams. The success of group work and the group's superior negotiating power over its members is necessary for the country's rural development. As a result, WSHG is regarded as a self-sustaining microfinance system at the local level in the nation.

2. Review of Related Literature

Nikhitha & Neermarga (2022)have examined the working of SHG based on women's Economic Development and its influence on income patterns. It was found that joining the group boosted the likelihood of receiving assistance with housing, food, health care, and education. They all concur that their appreciation of the importance of children's education, health, finances, and social duties has grown. It demonstrates that they are more confident in living better lives as a result of their growing affiliation. To successfully engage SHG members in income-generating activities, it is necessary to increase their capacity, capability, and professional, and entrepreneurial abilities. SHG members learned how to deal with challenges with more self-assurance, entrepreneurial talent, knowledge, and a positive outlook. These women should be given loans at fair interest rates, and they should be educated on all the financial aspects of loans, which are currently lacking.

Kumar (2020) has analysed on Role of Self Help Groups (Shg's) on Socio-economic Changes of Women: A study. In contrast to economic empowerment, his study indicated that SHGs increase psychological and social empowerment. It improves self-assurance, bravery, skill acquisition, and women's emancipation. It demonstrates how SHG might affect social, and economic conditions, decision-making, and the participation of women in outdoor activities. Changes in social interaction patterns result in a significant shift in the population of the society, which implies new social roles and statuses. The study concludes that the pattern of change in the community or society is not the only thing that has changed; the organization and way of thinking of those who live there have also changed. They exhort that to be used in the thoughts, ideas, values, and attitudes as well as in the physical parts of life.

Nagesha and Jeya (2018)have mentioned in their titled 'Role of Self Help Groups in Rural Development – A study'.In this study, it was discovered that the economically and socially disadvantaged were marginalized in the study region, which is why financial support was given to SHGs to help them improve their socioeconomic standing. SHG has evolved into a tool for reducing rural poverty. Small businesses have significantly aided in the socioeconomic advancement of the rural underprivileged in society. The Indian government recognizes the importance of SHGs in the economic growth of rural India and that there were over 2.25 million SHGs there. SHGs have been dealing with a variety of issues, including unemployment, poverty, a lack of skills, illiteracy, and common trends in basic infrastructure and health services. It was proposed that since the program helped the family's children receive an education, the Anganwadi teachers, staff, and presidents should take care of each member and persuade them to work together in the rural region.

Sangtam and Yaden (2017) in their study examined the Role of Self Help Groups (SHGs) in Rural Development with Special Reference to Chare, Longkhim, and Sangsangyu Block under Tuensang Districts, Nagaland. The results show that the SHGs in the area work well in the marginalized self-serviced economic center and the living conditions of the rural area. The highest percentage of SHGs were found to be practicing handicraft & weaving and similarly following piggery farming which is the second highest in terms of income-generating activities, out of other different types of income-generating activities. The study revealed that there is a high change in income generation between the different economies' activities of SHGs.

Thakur (2016) discussed sustainable development as one of the important tools for society. They viewed that sustainable development can be achieved through growth of the entrepreneurial activities amongst the underprivileged socio-economic groups. The scheme of Microfinance has been found essential for lifting the poor above the level of poverty by providing them with increased self-employment opportunities, giving them creditworthy, and solving the problems of unemployment. The largest micro-credit scheme in the world is the SHGs Bank-linkage programme which become very popular. They observed that microfinance can contribute to poverty alleviation programs and improve the socioeconomic status of rural poor in India. Microfinance through the network of cooperatives, commercial banks, regional rural banks, NABARD, and NGOs has largely been a supply-driven recent approach. Hence, she suggested that with the help of commercial banks, cooperatives, and regional rural banks, the grassroots level of the program is to be administered.

Dutta (2015) examined the rural development through SHGs. Without the development of rural areas, the real development of India is not possible. SHGs are among those programs initiated by the government and non-government organizations (NGOs) in the year 1992. The result showed that government initiatives of SHGs provide financial assistance to its members, and increase their saving accounts, credits, Kisan credit cards, and many more. This further led to the overall development in socio-economic aspects. Though NABARD has taken some initiatives to promote the SHGs-BPL (2013-17) program to eradicate rural poverty, awareness about financial inclusion still has not been spread all over India. The study found that nearly 70 percent is covered by South India for the SHG bank linkage program and as such socio-economic development in these areas is in full swing. However, the remaining part is still not developed.

Pangannavar (2014) had researched on development of SHGs. He termed "Self Help" as "Mutual Help" which was developed by women. In 2000, the SHG program was started in the Belgaum District of Karnataka State by the Government in the study. The result showed that the development of Women Self Help Groups (WSHGs) is very slow in terms of their number, membership, accumulation of funds, and size of disbursement of funds among beneficiaries. The author suggests that there should be good efforts of Govt., NGOs, voluntary private associations, and individuals for the development process and sustainability of WSHGs in the district.

Sharma (2014) analysis on Microfinance with the help of SHGs and women empowerment in the selected SHGs of Sikkim. He focused on analyses of the socio-economic status of women and the

role and performance of micro-financial institutions in empowering women in the State. The study revealed that their income generation activities and income of the people have risen, courage, and self-confidence among the women members, socio-economic empowerment, physiological level, and the decision-making process in the family have increased in the district after joining the SHGs. The finding of the study suggested that the NGOs and Government should take the necessary initiative for marketing the goods available in the area, which is produced by SHGs.

4. Objectives of the Study

1. To examine the degree of income inequalitiesamong the respondents of WSHGs of South Sikkim.
2. To analyze the factors that determine the socio-economic status of WSHGs for rural development.
3. To find out the differences in income, expenditure, and savings of WSHG before and after joining WSHG.

5. Research Hypothesis

1. H_0: There is no significant difference in the degree of income inequalities among the respondents of WSHGs of South Sikkim.
2. There is no significant change in the mean income, expenditure, and mode of saving of respondents before and after joining WSHGs.

6. Methodology

The study was conducted in the 7 blocks viz., Namchi, Ravongla, Namthang, Sikkip, Sumbuk, Temi Tarku and Yangyang of Namchi districts. The sample size considered for the study is 100 WSHGs consisting of 1 respondent from each group. In this present study, 100 WSHGs were selected on a random basis taking 1 member from each group with a total of 100 members as respondents. A simple random sampling technique was used. The questionnaire was prepared for WSHG leaders for different blocks and interview schedules were prepared. In this paper, both open and closed-ended questionnaire has been used.

The study is exploratory and both primary and secondary data have been used in the present study. The primary data for this study is collected from 1st December 2022 to 31st January 2023. Therefore, the primary data has been accessed from the WSHG with the help of a questionnaire prepared. The secondary data regarding WSHG and microfinance has been accessed from books, the internet, journals, articles, periodicals, newspapers, and other sources etc. Descriptive and inferential statistics have been used for analyzing the data. The descriptive statistics tools such as simple percentage, mean, average, and standard deviation were used. To test the hypotheses, OLS, Logit model, and Z-test were used.

7. Result and Discussion

Gini Measures of Income Inequalities of WSHG

A statistical indicator of economic disparity in a population is the Gini coefficient. It gauges the sample population's income inequality or dispersion. Between 0 and 1, the coefficient can have any value. When the Gini coefficient is zero, all populations have complete equality and the same level of income, whereas when it is one, the populations' incomes are perfectly unequal. Typically,

we discover values between 0 and 1 in the majority of cases. There are many ways to measure income inequality, including the Lorenz curve, Decile ratio, Palmo ratio, etc., but in the current study, the Gini coefficient is used to gauge the degree of inequality of WSHGs in the Namchi district of Sikkim.

Table 1: Gini Measures of Income Inequalities among the members of Namchi districts in Sikkim.

Sl.no	Districts	South
1	Gini Co-efficient	0.208

Source: Computed by authors using primary data through field survey, 2022-23

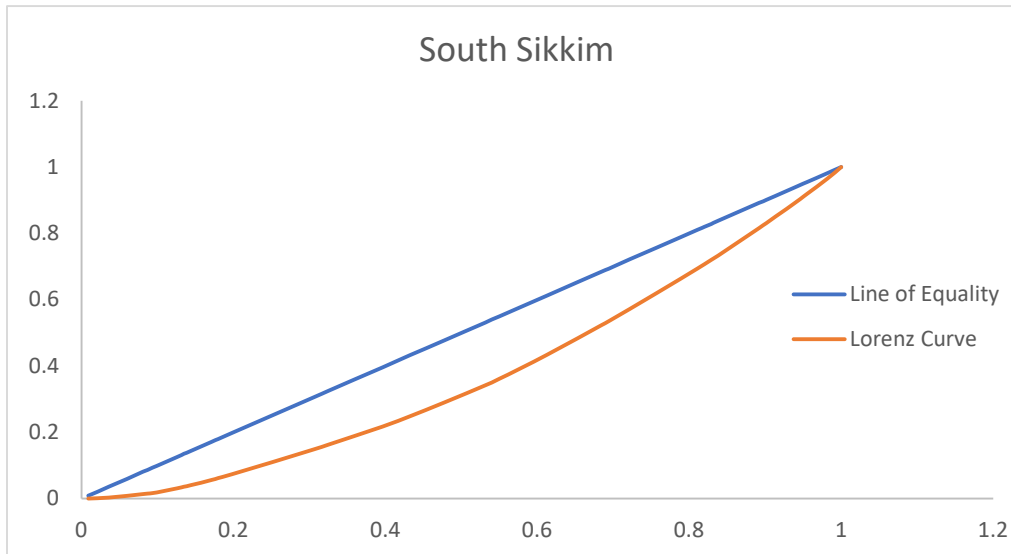**Figure 1: Lorenz Curve of Namchi District**

Table 1 and Figure 1 represent income inequalities calculated for WSHGs of Namchi districts of Sikkim in terms of Gini Co-efficient and Lorenz Curves. From the above analysis, we can infer that income inequalities are not very severe among the respondents of Namchidistrictsof Sikkim. Therefore, income inequalities exist between the members of WSHGs.

Factors determining the Socioeconomic status of WSHG among the members of groups of Namchi district of Sikkim.

The logit analysis has been done to analyze the socio-economic status of WSHG among the members of the Namchi districts of Sikkim. With the help of these models, we try to find out the whether there is socio-economic status of WSHG has been improved or not, as compared with the previous years. It is considered as qualitative dependent variables implied by 1 in case of improvement in socio-economic status and 0 in case of no improvement in socio-economic status of WSHG. It has been regressed on various explanatory variables such as age, income, education,

occupation, and house type of WSHG. The regression model is used for understanding the following:

$$L_i = \ln\left(\frac{Pi}{1-P}\right) = \beta_1 + \beta_2 AGE_i + \beta_3 INC_i + \beta_4 EDU_i + \beta_5 OCCUP_i + \beta_6 HT_i + \mu_i$$

Where $P_i = 1$, if there is an improvement in the socio-economic status of WSHGs, 0 otherwise. The explanatory variables such as AGE is the age of the respondent, INC is the income of the respondent, EDU is the education of the respondent, OCCUP is the occupation of the respondent, HT denotes the type of house, and μ_i is the error term. Hence the dependent variables are the dual result that may not provide a correct outcome by the Ordinary Least Square Method (OLS), so, non-linear evaluation methods i.e., maximum likelihood method are used. The following outcome of the logit evaluation is given below in the table.

Table: Logit Estimation of socio-economic status of WSHG

Independent/ Control Variables	Coefficient	Standard Error	Z Statistics	Probability (p-value)
AGE	.5666	.2958	1.92	0.055***
INC	.0002	.0001	2.04	0.042**
EDU	.4842	.2124	2.28	0.023**
OCCUP	.1692	.3410	0.50	0.620
HT	1.150	.4111	2.80	0.005*
Constant	-6.498	1.9305	-3.37	0.001*
No. of Obs = 100		LR χ^2 (5) = 24.70		Prob> χ^2 = 0.0002
Pseudo R2 = 0.1786			Log Likelihood = - 56.7840	

Source: Computed by authors using primary data through field survey, 2022-23

Note: *, **, *** denotes the significance at 1%, 5%, and 10% level of significance respectively.

The coefficient of AGE is statistically significant at a 10 % level of significance implying a positive relationship between the age of the respondents and the socio-economic status of WSHGs. Age is a crucial variable for socio-economic development. Thus, an increase in the age of the respondents has a positive impact on their socio-economic status. The coefficient of income is statistically significant at a 5% level of significance suggesting a good relationship between income and socio-economic status. Hence, income is considered an important variable for socio-economic status. So,

an increase in income means to increase in the socio-economic status of WSHG. The coefficient of education is statistically significant at a 5% level of significance which shows the positive relationship with socio-economic development as the educated people become self-reliant and self-sustain depending on the situation in which every educated person is engaged. The coefficient of occupation is statistically not significant at any level as there is no positive effect in the relationship between occupation and socio-economic status. Therefore, in this instance, an occupation is insignificant for socio-economic development. Similarly, the coefficient of type of house is highly significant at a 1% level of significance giving a very good relationship with the socio-economic status. Therefore, the better conditions of houses show the high standard of living of people and the self-esteem, motivation, and encouragement towards the rural people. An improvement in the living conditions of respondents implies a better socio-economic position in society. The value of Pseudo R^2 is 0.1786 which implies that 18 % of the cases findings of small extent of probabilities carry the actual results. The significant value of Pseudo R^2 indicates that the examined socio-economic variables satisfactorily impact the WSHGs.

Keeping in view the objectives of the study an attempt is made to analyze of results of collected data. To begin with the total income of WSHGs, the total expenditure of WSHGs, and the total savings of WSHGs.

(i) Total Income of WSHGs

The total amount of income is yielded by the respondents of WSHGs to increase the total amount of household income. This helps to determine the level of household income and saving pattern of WSHGs. Active participation and involvement in WSHGs may indeed increase the income level and savings of the groups. Therefore, for analyzing the total household income before and after joining the WSHGs, the figure is depicted in Table 3.

Table 3: The Total Income of WSHGs (Before joining and after joining WSHG) of South Sikkim.

Monthly Income (In Rs)	Before joining WSHGs (No. of Respondents)	After joining WSHGs (No. of Respondents)
Less than 10,000	48	39
10,000 – 30,000	36	33
30,000 – 50,000	12	20
50,000 – 100,000	4	7
1,00,000 and above	0	1

Total	100	100

Source: Computed by authors using primary data through field survey, 2022-23

We suppose the null hypothesis, that there is no significant difference in the average income and savings before and after joining the WSHGs in the sample area, against an alternative hypothesis, that the average income and savings before joining the WSHGs are lesser than the average income after joining the WSHGs. Thus, we can write mathematically,

H_0: $\mu_1 = \mu_2$

H_1: $\mu_1 < \mu_2$

Table 4: Mean and Standard Deviation of Total income before and after joining the WSHGs.

Particulars	Before joining WSHGs	After joining WSHGs
Mean Income	47121	54308
Standard Deviation	25403	23987
Sample Size	100	100

Source: Computed by authors using primary data through field survey, 2022-23

The results of total income,

$$Z = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} = -2.05$$

The mean income before and after joining the WSHGs is Rs. 47121 and Rs. 54308 respectively. The mean annual income difference is Rs. 7187. But, the calculated value of |Z| = 2.05 is more than the critical value of 1.64 at a 5 percent level of significance, therefore, the null hypothesis is rejected here. Thus, there is a significant difference in the annual income before and after joining the WSHGs. It shows that, from the above results the mean income has increased after joining WSHGs.

(ii) Total Expenditure of WSHGs

The Total expenditure is one of the factors to determine the equilibrium level of real gross domestic product (GDP). This expenditure helps to maintain the economic stability in the area and it is considered an indicator of development through WSHG. For analyzing the total household expenditure before and after joining WSHG, let us consider the given table 5.

Table 5: Total Expenditure before and after joining the WSHGs.

Monthly Expenditure (In Rs)	Before joining WSHGs (No. of Respondents)	After joining WSHGs (No. of Respondents)
Less than 10,000	63	68
10,000 – 30,000	33	30
30,000 – 50,000	2	1
50,000 – 100,000	2	1
1,00,000 and above	0	0
Total	100	100

Source: Computed by authors using primary data through field survey, 2022-23

We suppose the null hypothesis, that there is no significant difference in the average annual expenditure of the respondents before and after joining the WSHGs in the sample area, against an alternative hypothesis, that the average monthly expenditure before joining the WSHGs is greater than the average annual expenditure after joining the WSHGs. So that, we can write mathematically,

H_0: $\mu_1 = \mu_2$
H_1: $\mu_1 > \mu_2$

Table 6: Mean and Standard Deviation of Total Expenditure before and after joining the WSHGs.

Particulars	Before joining WSHGs	After joining WSHGs
Mean Expenditure	35870	30380
Standard Deviation	18770	16796
Sample Size	100	100

Source: Computed by authors using primary data through field survey, 2022-23

The results of total expenditure,

$$Z = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} = 2.17$$

The mean annual expenditure before and after joining the WSHGs is Rs. 35870 and Rs. 30380 respectively. The mean monthly income difference is Rs. 5490. But, the calculated value of Z =

2.17 is more than the critical value of 1.64 at a 5 percent level of significance, therefore, the null hypothesis is rejected here. Thus, there is a significant difference in the annual household expenditure before and after joining the WSHGs. Hence, it is shown that the mean expenditure of households has decreased after joining WSHGs.

(iii) Total Saving of WSHGs

The mode of bank saving is one of the important socio-economic factors which determine economic stability and saving rates. This plays an important role in the economic, and social individual responsibilities of WSHG. This also determines the wealth accumulation, per capita, and other financial reforms. Here, for analyzing the total household savings before and after joining the WSHG, the figure is depicted in Table 7.

Table 7: Total Saving before and after joining the WSHGs.

Monthly Saving (in Rs)	Before joining WSHGs (No. of Respondents)	After joining WSHGs (No. of Respondents)
Less than 10,000	93	80
10,000 – 30,000	5	14
30,000 – 50,000	2	4
50,000 – 100,000	0	1
1,00,000 and above	0	1
Total	100	100

Source: Computed by authors using primary data through field survey, 2022-23

We consider the null hypothesis, that there is no significant difference in the average monthly saving of the respondents before and after joining the WSHGs in the sample area, against an alternative hypothesis, that the average monthly saving before joining the WSHGs is lesser than the average monthly saving after joining the WSHGs. Thus, we can write numerically,

H_0: $\mu_1 = \mu_2$,
H_1: $\mu_1 < \mu_2$

Table 8: Mean and Standard Deviation of Total Savings before and after joining the WSHGs.

Particulars	Before joining WSHGs	After joining WSHGs

Mean Saving	14696	17984
Standard Deviation	7690	8533
Sample Size	100	100

Source: Computed by authors using primary data through field survey, 2022-23

The results of total saving, thus

$$Z = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} = -2.86$$

The mean monthly savings before and after joining the WSHGs are Rs. 14696 and Rs.17984 respectively. The mean annual saving difference is Rs. 3288. But, the calculated value of $|Z| = 2.86$ is more than the critical value of 1.64 at a 5 percent level of significance, therefore, the null hypothesis is rejected here. Thus, there is a significant difference in the annual savings before and after joining the WSHGs in the sample area. It shows that the mean annual saving has increased after joining WSHGs.

The ordinary least square (OLS) model has been used in the following form to analyze the link between WSHG's potentialities and income from WSHGs.

$logygnr_i = log\beta_0 + \beta_1 logage_i + \beta_2 logedu_i + \beta_3 logoccup_i + \beta_4 logexp_i + \beta_5 loght_i + e_i$

Where, ygnr = income generation rate,

$ygnr = \frac{y_t - y_{t-1}}{y_{t-1}} \times 100$

t = income after joining WSHG

t-1 = income before joining WSHG

age = age of the women

edu = education of women: 0 = illiterate, 1 = Primary level, 2 = secondary level, 3 = senior secondary level, 4 = graduation, 5 = post-graduation

occupation = occupation of the women

exp = experiences of women in the WSHG

ht = house type

e_i= error term

To investigate the relationship between WSHGs' potentialities and the rate of income from WSHG, a Regression Analysis has been used in this study.

From the given analysis, we would like to know the concepts about the differences in the economic condition of WSHG in Sikkim and to know how far the WSHG's potentialities in terms of age, education, occupation, experience, and house type influence the rate of income on WSHG (Chettri & Ruma, 2020). Therefore, we have used the Ordinary Least Square Method (OLS) regression

equation to find out the impact of WSHGs' potentialities on the rate of income from WSHG. The following are the OLS regression equation in the form are given below:

$$logygnr_i = log\beta_0 + \beta_1 logage_i + \beta_2 logedu_i + \beta_3 logoccup_i + \beta_4 logexp_i + \beta_5 loght_i + e_i$$

Table 5: Income generation rate on casual variables using Ordinary Least Square Method (OLS) of Regression Analysis

Independent/ Control Variables	Coefficient	Standard Error	t- Statistics	Probability (p-value)
log age	0.6823	0.2961	2.3039	0.0234**
log edu	0.0562	0.2752	0.2043	0.838
log occupy	0.1082	0.3476	0.3115	0.7561
log exp	1.9074	0.3770	5.0594	0.0000*
log ht	0.7851	0.2786	2.8181	0.0059*
Constant	3.2437	0.9114	3.5588	0.0006*
No. of Obs = 100				
R Squared = 0.3091				
Adjusted R-Squared = 0.2724				
F-Statistic = 8.4144				
Probability (F-Statistic) = 0.0000				
Note: *, **, *** denotes the significance at 1%, 5%, and 10% level of significance appropriately.				

Source: Computed by authors using primary data through field survey, 2022-23

The above table shows that the coefficient of AGE is statistically significant at a 5 % level of significance denotes a relationship between the age of the respondents and the socio-economic status of WSHGs. Age is an important factor for socio-economic improvement. Thus, an increase in the age of the respondents has an increasing impact on their socio-economic status. Similarly, an increase in experiences implies that the WSHG would have more income rate increases. Hence, the coefficient of experience is statistically significant at a 1% level. This would help in the support and motivation of the groups. The coefficient of house type is significant at a 1% level which implies that the type of house will also determine the level of income, living standard, and socio-

economic in the WSHG. The coefficient of education and occupation are statistically insignificant. There is no effect in the relationship between WSHG potentialities and rate of income. Thus, from the above analysis, it can be revealed that the age, experiences, and house type of the WSHG have a positive impact on the rate of income in the WSHG. The F-statistic is 8.4144 and significant at a 1 percent level indicating that all coefficient is statically significant. The value of R-squared is 0.3091 which indicates that the moderately well fitted. On the other hand, the 31 percent variation in the rate of income is explained by age, experience house type, etc.

The findings of the Study are as follows: -

1. It was found that the income inequalities are not very severe among the respondents of the Namchi districts of Sikkim. The result shows that income inequalities exist between the members of WSHGs in the study area.

2. The factors determining the Socioeconomic status of WSHG among the members of groups such as age, and income. education and house type have a positive impact on the socio-economic status of WSHGs.

3. The average annual income, mean annual income and mean annual saving of respondents have progressed after joining the WSHGs. Therefore, the WSHG members started their small businesses in their area which assists development in social, economic, and physiological domains.

4. The WSHGs' potentialities like age, experience, and house type have a positive impact on the rate of income of WSHGs after joining the groups.

5. The positive signal in the above factors, the WSHG has performed its constructive functions and responsibility in the rural area for the rural development and empowerment of women as well in the district.

Suggestions and policy implications

Taking into consideration, the rural development through WSHG in the sample area, the following suggestions are constructed:

1. The Government and NGOs should organize the orientation and workshop for the WSHGs in a rural area to achieve the knowledge and awareness of groups, and the importance of microfinance and educate them which leads to the development of leadership qualities.

2. It is advised that the Government should provide vocational training opportunities to all WSHG members compulsorily so that they become self-sufficient, and self-reliant and empower themselves for rural development.

3. They should take necessary steps for the marketing of the product manufactured by the WSHGs in the rural areas.

4. It is suggested that the Government should be focused on the problem faced by WSHG in the village, to achieve goals from their business in the locality which means to improve their livelihood in the area.

Conclusion

It has made a very remarkable achievement in the last five years in the context of WSHG as self-reliant. In Sikkim, WSHGs is one of the burning issues which helps to develop women in the rural area. Rural development is a continuous process of aiming to increase the welfare of societies and improve the quality of life of rural people. Development can be possible only when the rural areas are developed through WSHG. The socio-economic status has been improved or strengthened in the sample area. WSHGs become empowerment of women, engage in small business activities, increase their level of income, and mode of bank saving, decrease their expenditure level, and change in their lifestyle. After adopting the WSHG, there has been a vast change in their standard of living, ameliorating the quality of life of rural people and women empowerment. The study indicates that enables the stability in their income through WSHG. Through the WSHG activities, they increased the confidence level, decision-making, capacity of the women, and leadership qualities among the members. Rural Development is one of the important pillars of which the future of our country stands which is the main contribution of WSHG in the village.WSHG has become one of the important tools for social, economic, and unemployment problems in the rural area and this helps to control the unemployment issues through small economic activities. It helps to link and bridge the gap between the financial institution and the rural poor people. WSHG helps to reduce poverty and encourage women's empowerment and rural development. The Government alone is not possible for women's empowerment so the collective efforts of all the members of the groups must play respective roles for achieving their goals. The Government has taken good initiatives such as the NABARD e-Sakthi project for WSHGs launched in East Sikkim, an online marketing platform for their products, stitching school uniforms of all the districts and other areas. Therefore, the government should more concentrate on empowering women by providing more and more financial grants to WSHGs with subsidies through the SHG-Bank linkage program.

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