

IMPACT OF SELF HELP GROUPS (SHGS) ON INCOME AND EMPLOYMENT GENERATION OF RURAL MICROENTERPRISES; WITH SPECIAL REFERENCE TO NELLORE DISTRICT OF ANDHRA PRADESH.

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ABSTRACT: One of the hindrances of the MSME (Micro Small and Medium Enterprises) sector development is that the shortage of or insufficient formal financial services. Within the case of rural microenterprises, especially women entrepreneurs availing institutional credit is one of the toughest jobs because they're excluded socially and economically by the society. The govt has been considering women as a possible human resource and implementing many welfare schemes to uplift them. The Self Help Group (SHG) Bank Linkage Programme bridging the financial gaps of poor women and ladies entrepreneurs in rural segments. SHGs are acting as an empowerment tool for rural women entrepreneurs by proving rural credit. The target of the study to seem at the impact of the Self Help Group (SHG) on income and employment generation of rural microenterprises. The study depends on the first data, collected with the assistance of a questionnaire and in-depth interviews from Self Help Group (SHG) promoted women microenterprises in rural segments of the study area. There are around 2854 micro-enterprises within the Nellore district of Andhra Pradesh. The study is based on 200 Self Help Group (SHG) promoted women microenterprises from rural segments. Statistical tools used for the are correlational analysis, confirmatory correlational analysis, and structural equation modeling (SEM) to examine the impact of Self Help Groups on microenterprises development. The findings of the study indicate a significant statistical relationship.

KEYWORDS: MSME, SHGs, Inclusive Growth, Women Empowerment.

I. INTRODUCTION

The availability of capital impedes an outsized number of enterprises and accessing financial services from formal financial systems might be an enormous puzzle for microenterprises. This is often a special issue with the enterprises owned by women within the country majorly on account of the absence of collateral security. Amidst this example, the Self Help Group (SHG) acts as a developmental tool for the microenterprises, especially women-owned micro-enterprises in rural areas. one of the first objectives of SHGs is to bring socio-economic changes for the members through microfinance and microenterprises development. The role of women in microenterprises development has been identified long back, there's a robust correlation between poverty alleviation and women empowerment (S. Premchander, 2003). The economic, social, and cultural spheres of life are diversifying and recognizing equally due to the productive role of Self Help Groups (SHGs) in rural segments of the society.

The main agenda of the Government of India and Government of Andhra Pradesh is women empowerment, to realize this objective, they adopted a replacement strategy called Self Help Group Bank linkage program. (Desai, R. M., 2019) This is often one of the successful programs in rural credit and rural entrepreneurial development. The Concept of women entrepreneurship isn't a replacement phenomenon, women who are engaged within the process of production or rendering services referred to as women entrepreneurship. The SHGs promoted Microenterprises empowerment for the financially excluded sections, especially rural women within the society by providing employment and entrepreneurial opportunities with the assistance of microcredit. this is often one main objective of inclusive growth. (add lit). The financial services of Self Help Groups (SHGs) are creating a greater contribution to inclusive growth (Shetty, Niranjana & Pinto, 2017).

II. REVIEW OF LITERATURE

S. Premchander (2003); Biswas, M.P. & M. Rama Mohan Rao (2014) have focused on the Role of NGOs in poverty alleviation through microenterprises development and reveal that Non-Government Organisation's (NGO's) and Microfinance institutions had a superb impact on the alleviation of poverty through income and employment generation of small and microenterprises. Biswabandhu Mohanty, (2013); Sudhir K. Jain, and K. K. Tripathy,(2011) through their studies found that the SHGs-Bank Linkage program affects the socio-economic empowerment of the poorest of the poor, especially women. The NGOs, developmental institutions, farmer clubs have been helping within the event of Self Help Groups. Most of the SHGs can support the income and employment generation of women microenterprises with the help of microfinance. Susmita Chatterjee, Sangata Datta Gupta, Parjit Upadhyay, (2018); P Veeramani et.al.(2009); have addressed the issues in Self Help Group (SHGs) promoted Micro and tiny enterprises. Their studies have found that there is a positive relationship between women empowerment and microenterprises development.

Tanmoyee Banerjee (Chatterjee) and Chandralekha Ghosh, (2012); Suprabha K. R. (2014); found that training facilities of SHGs and NGOs are impacting more significantly on various dimensions of women empowerment and Self Help Group members who are trained further to become more empowered and employed. Judith Shaw (2004); Nisha Bharati(2014) through their studies have revealed that NGO promoted SHGs have more impact on women empowerment in rural areas and major problems of SHGs promoted microenterprises were lack of selling arrangements.

Veronica, W.Ngug & Ferongo (2014) through their study found that microfinance positively impacts the expansion of small and microenterprises. E.K.Agbaeze & Onwuka (2014) have examined empirically the impact of microfinance bank on rural development in Nigeria, The study has tested the impact of microfinance bank on deposit mobilization, intermediation and looked into how microfinance bank actions have an impact on loan penetration and long-run process. To conclude from most literature thereon microfinance bank features a positive impact on the agricultural economy of Nigeria.

Nandy (2014) has addressed the transformation of women entrepreneurship from the fifties to the twenty-first century and also discussed opportunities and challenges faced by women entrepreneurs. it's supported some policy measures like freedom of choice, mobility, and assurance of women entrepreneurs within the market and society, family support plays a significant role to beat obstacles faced by women in society. Dhekale (2016) focused on the performance of women entrepreneurship in India, review the literature on opportunities and challenges of women entrepreneurs in rural India. The study reveals that the formation of Self Help Groups (SHGs) more useful for the event of women entrepreneurship in India. The study found that women entrepreneurs were facing financial, marketing, technological, educational, competition and managerial problems.

Swain R B & Varghese A (2009) assessed that longer time membership in SHGs had a positive impact on asset creation. It was also found that longer membership leads to diversification in livestock income from agriculture to no agriculture. Gupta S & Rathore H. S. (2020) examined various aspects of women empowerment socio-economic and political. Found that SHGs have a positive impact on economic, social, and political empowerment in the study. Datta U (2015) through their study found that socio-economic variables had a low impact on the large scale self-help groups of the JEEVIKA project from Bihar state in India. Deininger K. & Liu Y (2013) focused on the impact of microcredit program on targeted poor and found that microcredit programs benefited in terms of nutritional intake, female empowerment, and income diversion.

III. OBJECTIVES OF THE STUDY

1. Examine how SHGs contribute to the Income and Employment Generation of rural Microenterprises within the Nellore district of Andhra Pradesh.

IV. METHODOLOGY

The main focus of this paper is to study the impact of Self Help Groups on income and employment generation among the Self Help Group promoted women microenterprises in rural segments of the study area. The study uses six variables to analyze the impact assessment namely;

1. Financial assistance of Self Help Groups to microenterprises
2. Technological assistance of SHGs
3. Administrative procedures of SHGs
4. Training facilities of SHGs(as independent variables)
5. Income generation of micro-entrepreneurs
6. Employment generation of microenterprises(as dependent variables)

Sample Selected for the Study

Primary data is collected with the assistance of a questionnaire as well as in-depth interviews from Self Help Group (SHG) women microenterprises representatives in the rural areas of the Nellore district of Andhra Pradesh. There are around 2854 micro-enterprises within the Nellore district of Andhra Pradesh. The study has surveyed 200 Self Help Group (SHG) promoted women microenterprises from rural segments of the study area.

Statistical Tools Uses

- Factor analysis
- Confirmatory factor analysis
- Structural equation modeling (SEM)

To measure the connection between the variables, the study has used two sorts of factor analysis, namely Explanatory factor analysis (EFA) and Confirmatory factor analysis (CFA).

(Add Literature review here) Explanatory correlational analysis is employed to categorize or group the observed variables into an equivalent factor component. Explanatory correlational analysis is employed for the dimension reduction of the observed variables. To find the connection between the variables (Observed and Latent variables) the study used the Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test Sphericity. Confirmatory factor analysis (CFA) is employed to find how well the variables are grouped and its multivariate statistical procedures. Confirmatory correlational analysis (CFA) will test whether the info is best fitted for the idea proposed model and validate the model by grouping of variables into factor components.

V. HYPOTHESES OF THE STUDY

Impact assessment of SHGs on Income generation in rural microenterprises:

H1: Financial assistance features a positive effect on Income generation of SHGs promoted microenterprises

H2: Technical assistance features a positive effect on Income generation of SHGs promoted microenterprises

H3: Administrative Procedures have a positive effect on Income generation of SHGs promoted microenterprises.

H4: Training Facilities features a positive effect on Income generation of SHGs promoted microenterprises

Impact assessment of SHGs on Employment generation in rural microenterprises:

H1: Financial assistance features a positive effect on Employment generation of SHGs promoted microenterprises

H2: Technical assistance features a positive effect on Employment generation of SHGs promoted microenterprises

H3: Administrative Procedures have a positive effect on Employment generation of SHGs promoted microenterprises.

H4: Training Facilities features a positive effect on Employment generation of SHGs promoted microenterprises.

VI. RESULTS AND DISCUSSION**Explanatory Factor Analysis**

EFA has been used to categorize or group the observed variables into the same factor component. Explanatory Factor Analysis also uses for the dimension reduction of the observed variables. Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test Sphericity are used to measure the relationship between the variables (i.e.) Observed and Latent variables. (KMO) index value varies from 0 to 1, if KMO value is 1 then all the variables determine the common factor or if KMO is 0 variables will not measure the common factor.

Bartlett's Test Sphericity is a statistical test for the significance level of correlation in the correlation matrix, the significant value of Bartlett's Test is required to be less than the critical value (0.05)(add literature review for this statement). Acceptance or rejection of the null hypothesis is based on the significance value, if the value is less than critical value then we reject the null hypothesis.

The table (Table no. 1) explains the KMO and Bartlett's test, the approximate Chi-square value is 3547.245 with 231 Degrees of freedom with 0.00 level of significance. The value of the KMO test is .889 which is higher than the critical value of KMO (.50). It means the KMO index is Meritorious and there is a significant relationship between variables so that we can proceed for the factor analysis. The significant value of Bartlett's Test is 0.000, this is lower than the critical value (0.05). Based on the obtained values of KMO and Bartlett's test the sample data is appropriate and Explanatory Factor analysis can be conduct.

The table (Table no. 2) explains the commonalities of the variables related to Self Help Group's contribution to income and employment generation in women microenterprises. It is found that all communality values of variables are having higher values than the critical value (0.50) and these values explain the level of relationship with a common factor. It explains that all the variables with higher values can better represent the common factor than variables with low communality values.

Total Variance Explained

After checking the communalities of the variable next step is factor extraction from the data by using the factor extraction method. Here principal component analysis is used to extract the factors which are influencing more in the total variance. (add literature here) In principle component analysis Eigenvalues are used, the maximum Eigenvalue explains the maximum variability extracted, the second-highest Eigenvalue explains the second higher variability, and so on. We retain the Eigenvalues greater than one ($\text{Eigenvalue} > 1$) to explain maximum variability.

From the table (table no. 3), it is observed that six factors are extracted from 22 components measuring the impact of Self Help Group on the income and employment generation in microenterprises. All six components are accounting for 79.11 percent of the total variability of the impact of Self Help Group on the income and employment generation of microenterprises in Rotation Sums of Squared. The first component with Eigenvalue of 9.16 accounted for 19.80 percent of variability, second variable with Eigenvalue of 2.35 account for 15.01 percent of variability, Eigenvalue of the third component is 2.13 account for 14.40 percent of the variance, the Eigenvalue of fourth and fifth variables having 1.56 and 1.17 which account for 12.20, 9.76 percent of the variability. Forth last component (Sixth) with Eigenvalue 1.00 accounts for 7.91 percent of the variability in the data.

Scree Plot

The line plot (Figure no. 1) explains the Eigenvalues of each factor component by the scree plot, OX-axis measures the component number, and Eigenvalues are measured on the OY-axis. Each point on the Scree plot curve explains the level of variability, first six columns of the scree plot show downward slopes after that the curve looks steeply down, and slowly it becomes a horizontal line. The horizontal line shows that each factor explains very smaller variability and the downward sloping curve explains that each factor component explains about very large variability. It can be concluded that the first six components are having higher Eigenvalues greater than unity that is the reason after the six columns of scree plot looks like a flat or horizontal line. Above all, six-factor components are extracted from 22 variables. And they explain 79.11 percent of the total variability of the impact of Self Help Group on the income and employment generation of micro-enterprises.

The table (table no. 4) explains the Rotated Component Matrix, which is used to measure the correlation between variables and factor components. (add literature review here) Orthogonal rotation also known as "Varimax" explains the weights of different variables of the factor components and their weights depend upon their loadings. The main objective of rotation is to minimize the number of factor components that are having more loadings and the main results of the principal component analysis will be showing with the help of orthogonal rotation (Varimax). The correlations of the variables and factor components values range between -1 to +1, The thumb rule for considering the factor loadings is more than or equal to 0.50 (Guadagnoli & Velicer, 1988), it means the study will consider the values which are more than the 0.50. The first-factor component having more loadings of variables subsequently second and other factor components are account for the smaller loading of the variables.

For the present study, six factors have been used to measure the impact assessment of SHGs on income and employment generation of the microenterprises. The table (table no.4) reveals that all twenty-two items are grouped into six main factors components based on their similar response of items. Above all items are fit into their respective factor components and collected data is best fitted to measure the factor components.

The table (table no. 4) reveals that first-factor component characterized by six items, namely "I have access on the increased income (0.864)", "I contribute for buying household assets like TV, Fridge, Fan, etc. (0.801)", "I have generally used my loan money on income-generating activities (0.796)", "I have access on the increased savings (0.769)", "There is an improvement in the monthly consumption level of the household. (0.703) and "My credit capacity has increased over some time (0.684). Improvement in the income and asset holding capacity has been highly correlated with the first-factor component called "**Income generation**".

The study has considered the remaining four items under the first-factor component because the values of correlation of all four items are greater than the thumb rule value (0.50). Similarly, the second-factor components constituted by four items (variables), they are; "the technical support provided by the SHG was helpful for the formation of the enterprise (0.863)", "It provides work shed facilities to its member for their business (0.860)", "SHG helps to procure raw materials for their members (0.837)" and "SHG helps to market and distribute the products of the members (0.832). The table (table no. 4) explains that Technical support and work shed facilities are accounted more correlation with the second-factor component followed by the other two

items, which are greater than the thumb rule value (0.50). The second-factor component labeled as a **“Technical Assistant”**. All the four items are having a similar correlation with the second-factor component and collected data for the second-factor component is best fitted.

Similarly, for the third-factor component is correlated with four items namely, “Interest rate of SHG's Loan lower than other financial services (0.890)”, “The Financial support received from SHG was helpful to run the business (0.863)”, “SHGs do provide timely financial support (0.800)” and “SHGs loans no need any collateral to avail (0.784). All these items (Variables) come under the third-factor component and having a similar correlation with the factor. The

The Third-factor component called **“Financial Assistance”**, a low rate of the interest rate of SHGs and Financial support by SHGs are accounts for a high correlation with the third factor followed by the other two variables. Similarly, if the study considers the fourth-factor component, it is represented by three items or variables, they are; “SHGs training to start new enterprise(0.883)”, “the operational assistance received from SHG was helpful to run the business (0.875)” and “The training provided by the SHG helps to improve the skill sets of the members(0.842)”.

The fourth-factor component described as a **“Training Facilities”** and all items under the fourth component highly correlated. Fifth Factor component is characterized by the three items, namely “Easy administrative procedures (rules) to avail SHGs loans (0.794)”, “Officials of SHGs are friendly in explaining about schemes (0.736)” and “Officials of SHGs not showing gender bias in extending loans (0.712)”.

The fifth-factor component defined as an **“Administrative Procedures”**. The last factor component is the sixth factor which is accounted for two variables, namely “Number of Employees have increased after joining SHGs (0.808)” and “Share of Women employment have improved (0.802)”.

The sixth-factor component defined as **“Employment Generation”** and two items or variables highly correlated with the factor component. Based on the above values of the varimax rotation the study will be preceded for further analysis.

Confirmatory Factor Analysis: Confirmatory Factor Analysis (CFA) is used to measure how well the variables are grouped and it is multivariate statistical procedures(add literature here). Confirmatory Factor Analysis (CFA) will test whether the data is best fit for the theory proposed model and it validates the model by grouping of variables into factor components. The validity of the measurement model depends upon the acceptable level of goodness-of-fit and constructs validity. Campbell & Fiske (1959) proposed two validities to measure validity procedures, they are; 1) Convergent Validity, 2) Discriminate validity.

Convergent validity and discriminate validity: Convergent validity and discriminate validity are the subsets of the construct validity (Cambell and Fiske, 1959). Convergent validity is explained about the correlation between measurement items and its proposed theoretical construct. The study will be using the Average Variance Extracted (AVE) and standard loadings extracted to measure the convergent validity.

Thumb rule for the convergent validity (Hair et.al, 2010)

- Average Variance Extracted (AVE) should greater than 0.5 ($AVE > 0.5$).
- Composite Reliability (CR) should more than the Average Variance Extracted (AVE).
- Composite Reliability (CR) should greater than 0.70 ($CR > 0.70$).

According to Hair et al. (2010), discriminant validity is “the degree to which two conceptually similar concepts are above distinct”. Based on the Average Variance Extracted (AVE) and Maximum Shared Variance (MSV) the study will calculate the validity of factors.

Thumb rule for the discriminate validity (Hair et al, 2010):

- Average Variance Extracted (AVE) greater than the Maximum Shared Variance (MSV); $(AVE) > (MSV)$.
- Average Variance Extracted (AVE) greater than the Average Shared Variance (ASV); $(AVE) > (ASV)$.
- Square root of Average Variance Extracted (AVE) should more than the inter construct correlation (Fornell-Lacker, 1994).

The table (tables no. 5) explains that the convergent and discriminate validity, rows in the table represent the constructs, namely; Income Generation (IG), Technological Assistance (TA), Financial Assistance (FA), Training Facilities (TF), Administrative Procedures (AP), Employment Generation(EG). Columns represent

Cronbach’s alpha of reliability, Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV), and Average Shared Variance (ASV).

Table No. 5 Convergent Validity And Reliability

Constructs	Cronbach’s alpha	C.R	AVE	MSV	ASV
Income Generation (IG)	.914	.920	.662	.501	.232
Technological Assistance (TA)	.912	.913	.726	.259	.198
Financial Assistance (FA)	.890	.893	.682	.252	.189
Training Facilities (TF)	.941	.945	.851	.291	.235
Administrative Procedures (AP)	.856	.702	.583	.501	.369
Employment Generation(EG)	.716	.733	.584	.259	.209

Source: Compiled from Primary Data

Note: Composite Reliability (CR), Average Variance Extracted (AVE), Maximum Shared Variance (MSV).

Reliability: C.R > 0.7; Convergent validity: AVE > 0.5; C.R>AVE;

Discriminate validity: MSV &ASV < AVE; Square root of AVE > Inter construct co-relation.

Table No. 6 Discriminant Validity

Constructs	Income Generation	Technological Assistance	Financial Assistance	Training Facilities	Administrative Procedures	Employment Generation	A V E
Income Generation (IG)	0.814						0.662
Technological Assistance (TA)	0.393	0.852					0.726
Financial Assistance (FA)	0.397	0.283	0.826				0.682
Training Facilities (TF)	0.515	0.365	0.362	0.922			0.851
Administrative Procedures(AP)	0.636	0.386	0.421	0.527	0.764		0.583
Employment Generation(EG)	0.38	0.419	0.304	0.328	0.327	0.764	0.584

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Compiled from Primary Data

Note: Square root of AVE (Bold values) > Inter construct co-relation (Non-Bold Vales).

Above both tables (tables no 5&6) reveal that the values of Composite Reliability (CR) and Average Variance Extracted (AVE) of Income Generation (IG) are 0.920 and 0.662, these values are above the rule of thumb values (i.e. CR>0.7 and AVE >0.5). The second construct that is Technological Assistance (TA), the value of the composite reliability is 0.913 similarly the value of the Average Variance Extracted (AVE) is 0,276 are more than the threshold value. The values of the composite reliabilities of Financial Assistance (FA), Training Facilities (TF), Administrative Procedures (AP), and Employment Generation (EG) are 0.893, 0.945, 0.702 and 0.733 respectively and all the values are above the thumb value (0.70). Similarly, the values of Average Variance Extracted (AVE) also satisfies the validity criteria, which means all the obtained values are above the threshold limit (0.5). The table (table no. 5) reveals that the values of composite reliability and average variance extracted satisfied the thumb rule for the convergent validity for all the six constructs.

Based on the Average Variance Extracted (AVE) and Maximum Shared Variance (MSV) the discriminant validity will be calculated. The obtained value of Average variance Extracted (AVE) for the all the six constructs satisfy the thumb rule of the discriminant validity. The table (table no. 5) reveals that all the values of

maximum shared variance and average shared variances are less than the average variance extracted. The second method to measure the discriminant validity is the square root of Average Variance Extracted (AVE) should be more than the inter construct correlation (Fornell-Lacker, 1994). The table (table no 6) shows the diagonal values are representing the square root of AVE, other values are representing the inter construct correlation. The table (table no. 6) reveals that the values of the square root of AVE are greater than the values of inter construct correlation. Finally based on the data of the two tables (tables no. 5&6), the study has determined the convergent validity and discriminant validity.

Comparative Fit Index (CFI)

Comparative Fit Index (CFI) is a revised version of the Normed Fit Index (NFI), directly related to non-centrally measure and not very sensitive size of the sample (Chen, 2007). Comparative Fit Index (CFI) compares the fitness of the independent model and target (hypothesis) model. A higher value of the Comparative Fit Index (CFI) indicates a good or better fit. According to Schermllen-Engel and Moorbrugger (2003) and Bentler (1998) “The value greater than the 0.95 indicates a good fit of the model.”

Tucker Lewis Index (TLI): Tucker Lewis Index (TLI) is proposed to overcome the disadvantage due to sample size in the Normed Fit Index (NFI) and it is also called “Non-Normed Fit Index (NNFI)”. The higher the values of TLI are the indicator for the good fit of the model, the acceptable level of Tucker Lewis Index (TLI) is greater than the value 0.95. The value of TLI ranges between zero (0) to one (1). (add literature here)

Root Mean Square Error of Approximate (RMSFA): According to Chen (2007) Root Mean Square Error of Approximate (RMSFA) index is the difference between Hypothesized covariance matrix and observed covariance matrix per degree of freedom. This index was proposed by “Steiger & Lind, (1980)”, gives the best measure for a larger sample size than the smaller sample size. The Root Mean Square Error of Approximate (RMSFA) index value ranges between zero and one, the model also best fit if the index value between 0.05 and 0.08, However, the value 0.05 is a good fit and the value 0.08 is acceptable fit of the model (Hair et al. 2010; Forza & Filippini (1998); Greenspoon & Saklofske (1998); Awang, (2012).

Table No. 7 Confirmatory Factor Analysis (Caf) Fit Indices

Model Fit Summary	Fit Indices	Rule Of Thumb
CMN/DF	1.427	< 3
CFI	0.976	> 0.95
TLI	0.972	> 0.95
RMSEA	0.046	≤ 0.08
P	0.000	0.000

Source: Compiled from Primary Data

The above table (table no. 7) explains the fit indices of confirmatory factor analysis and method of maximum likelihood estimation. This will be used to verify the Goodness of Fit (GOF) for the model. Indices namely, degrees of freedom (df), Comparative Fit Index (CFI), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), and Root Mean Square Error of Approximate (RMSFA). All the indices are within the accepted range, they are satisfying the rule of thumb values. df = 1.42, CFI = 0.976, TLF = 0.972, RMSEA = 0.046 and p = 0.000. Hence based on the theses values the model is the best fit.

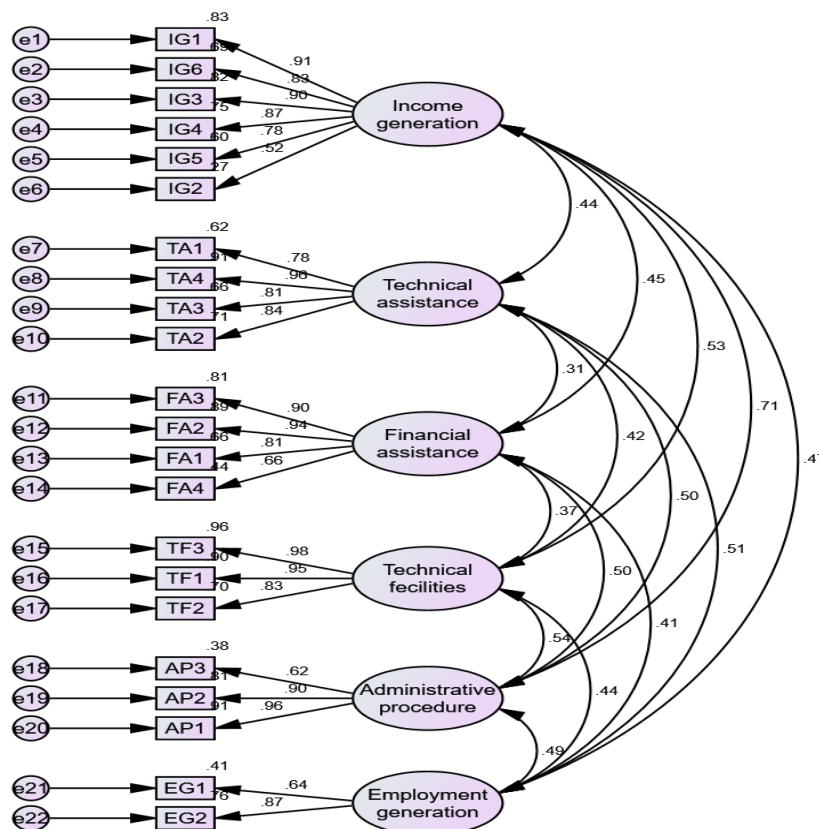


Figure No. 2, Measurement model

Source: Compiled from Primary Data

In the above figure (figure no. 2) circles represent latent variables (factors), observed variables (items) are represented by rectangles, and errors are represented by ellipses. There are six latent variables namely, Income Generation (IG), Technological Assistance (TA), Financial Assistance (FA), Training Facilities (TF), Administrative Procedures (AP), and Employment Generation (EG) in the Confirmatory Factor Analysis (CFA) diagram. Double-headed arrows of two interrelated constructs explain the inter-correlation. The regression paths are denoted by the single-headed arrows from circle to rectangles, which explains the link between observed variables and latent variables. The arrows from ellipses to rectangles represent the errors of the observed variables. The figure (figure no.2) reveals that the double-headed arrows between income generation to other five latent variables namely, Technological Assistance (TA), Financial Assistance (FA), Training Facilities (TF), Administrative Procedures (AP) and Employment Generation (EG) having 0.44, 0.45, 0.53, 0.71 and 0.47 levels of inter-correlation between IG and other five variables respectively. Similarly, the inter-correlation between Technological Assistance and the other four variables (Financial Assistance (FA), Training Facilities (TF), Administrative Procedures (AP), and Employment Generation (EG)) shows 0.31, 0.42, 0.50 and 0.51 levels of correlation among them. Inter Correlation between Financial Assistance (FA) and the other three variables (Training Facilities (TF), Administrative Procedures (AP), and Employment Generation (EG)) having 0.37, 0.50, and 0.41 levels of inter-correlation respectively.

The inter-correlation of Training Facilities(TF) to Administrative Procedures (AP) and Employment Generation (EG) are 0.54 and 0.44 levels and similarly, inter-correlation between Administrative Procedures (AP) and Employment Generation (EG) is 0.49 level. Based on the obtained data there is more inter-correlation between income generation and administrative procedures (0.71) in the study. Self Help Groups (SHGs) were more successful because of simple rules and regulations, no collateral, etc., results in most of the excluded sections are availing the institutional credit. The single head arrows from circles to rectangles are representing the items loading into the factor components. The figure reveals that all the items are the best fit into their respective factor components and collected data is best fitted to measure the factor components.

Structural Equation Modeling: The objective of the study is to find the impact of Self Help Groups (SHGs) on income and employment generation of microenterprises. The study has framed a total of 8 alternative

hypotheses in which four alternative hypotheses for income generation and the remaining four for employment generation.

Table No. 8 Results Of Hypothesis Testing For Income Generation

Independent Variable	Dependent variables	Hypothesis	Standard estimates (β)	Standard error	t-statistic	p-value	Results
Financial assistance	Income generation	H1	.129	.052	2.120	.034	Significant
Technological Assistance	Income generation	H2	.090	.053	1.479	.139	Not Significant
Administrative Procedures	Income generation	H3	.584	.106	7.072	***	Significant
Training Facilities	Income generation	H4	.223	.046	3.718	***	Significant

Source: Compiled from Primary Data

Note:significant at P value < 0.05 level (2-tailed).

***significant at P value < 0.01 level (2-tailed).

Table No. 9 Cumulative Squared Multiple Correlations Coefficient (R²)

Variable	R ²
Income Generation	0.416

Source: Compiled from Primary Data

The study assesses the impact by using five variables namely, financial assistance, technological assistance, administrative procedures, training facilities are Independent variables, and Income generation is a dependent variable. The above results reveal that the P-value for the H1 is significant at 0.034, so the null hypothesis will be rejected, which means financial assistance had a positive impact on the income generation of microenterprises with Path coefficient (β) value is 0.12. Similarly, the p-value for the H3 and H4 are significant at 0.01 which results in rejection of the null hypothesis. It suggested that the Administrative Procedures and training facilities have a positive effect on income generation of SHGs promoted microenterprises with the path coefficient (β) values are 0.584 and 0.223 respectively. It is surprising to know that the p-value for the H2 not significant at 0.139 levels, hence the study will accept the null hypothesis such that technical assistance has not been providing the income generation of SHGs promoted microenterprises in the study area.

The study has found that most of the microenterprises getting technological support from the Self Help Groups (SHGs) but their assistance is not providing a profitable income for the micro-entrepreneurs. The study has revealed that most women micro-entrepreneurs have felt that the technical support of the Self Help Group (SHG) was not modern or upgraded technology and unable to meet the current market scenario, results in a low level of income to women micro-entrepreneurs. The structural Equation Model (SEM) also measures the Cumulative squared multiple correlations coefficient (R²). The above table (table no. 9) reveals that the independent variables explain 42 percent of the variance in the dependent variable

Table No. 10 Results Of Hypothesis Testing For Employment Generation

Independent Variable	Dependent variables	Hypothesis	Standard estimates (β)	Standard error	t-statistic	p-value	Results
Financial assistance	Employment generation	H1	.190	.048	2.234	.025	Significant
Technological Assistance	Employment generation	H2	.338	.057	3.362	***	Significant
Administrative	Employment	H3	.210	.074	2.377	.017	Significant

Procedures	generation						
Training Facilities	Employment generation	H4	.185	.041	2.233	.026	Significant

Source: Compiled from Primary Data

Note: significant at P value < 0.05 level (2-tailed), ***significant at P value < 0.01 level (2-tailed).

Table No. 11 Cumulative Squared Multiple Correlations Coefficient (R²)

Variable	R ²
Employment Generation	0.229

Source: Compiled from Primary Data

The above table (table no. 10) explains the testing of the hypothesis in the Structural Equation Model (SEM) for the impact assessment of SHGs on employment generation. The study focused on the assessment of the impact by using five variables namely, financial assistance, technological assistance, administrative procedures, training facilities (Independent variables) and employment generation is a dependent variable. The above results reveal that the P-value for the H1 is significant at 0.025, so the null hypothesis will be rejected, which means financial assistance had a positive impact on the employment generation of microenterprises with Path coefficient (β) value is 0.190. Similarly, the p-value for the H2, H3, and H4 are significant at 0.01 which results in rejection of the null hypothesis. It suggested that the technical assistance, administrative Procedures, and training facilities have a positive effect on the employment generation of SHGs promoted microenterprises with the path coefficient (β) values are 0.338, 0.210, and 0.185 respectively.

The study has found that Self Help Groups are playing a significant role in the employment generation of microenterprises. It creates the gainful employment to economically and socially excluded sections of the society, especially for the women, poor in the rural segments. The structural Equation Model (SEM) also measures the Cumulative squared multiple correlations coefficient (R²). The above table (table no. 11) reveals that the independent variables explain 23 percent of the variance in the dependent variable. (add literature).

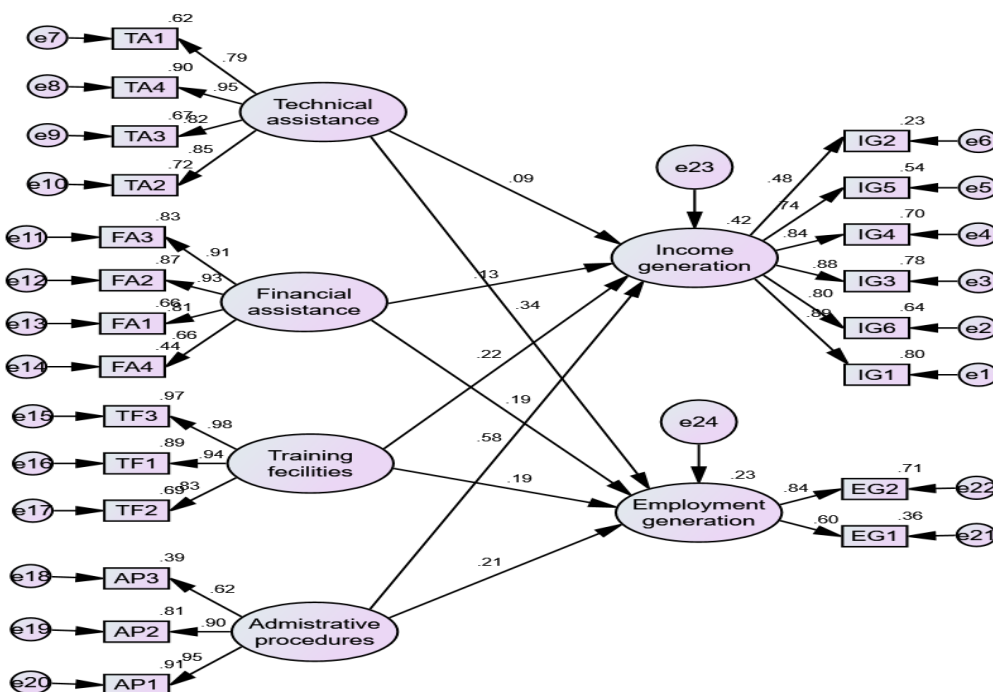


Figure No. 3, Structural Equation Model (SEM)

Source: Compiled from Primary Data

The above figure explains the Structural Equation Model (SEM), circles are represented latent variables (factors), observed variables (items) are represented in rectangles, and errors are represented by ellipses. There

are six latent variables namely, Income Generation (IG), Technological Assistance (TA), Financial Assistance (FA), Training Facilities (TF), Administrative Procedures (AP), and Employment Generation (EG) in the structural model diagram. The regression paths are denoted by the single-headed arrows from circle to rectangles, which explains the link between observed variables and latent variables. The same single-headed arrows from independent variables to dependent variables are representing the beta value. The arrows from ellipses to rectangles represent the errors of the observed variables.

SEM for Income Generation

In the above figure (figure no. 3) shows that single headed arrow from technical assistance to income generation shows the beta value 0.09. The beta value of technical assistance to income generation has positive signs but insignificant. Due to low beta value, the independent variable (Technological Assistance) does not influence the dependent variable much (Income Generation). The beta value for financial assistance (Independent Variable) to income generation (Dependent Variable) is 0.13 with a significant p-value that means financial assistance has a positive impact on the income generation of Self Help Groups (SHGs) promoted microenterprises. The beta value for the training facilities to income generation is 0.22 with significant p-value (Arrow from training facilities circle to income generation circle). Since there is a positive sign there is a positive relationship between an independent variable and dependent variable, which means training facilities has a positive impact on the income generation of micro-entrepreneurs. Similarly, there is a positive relationship between administrative procedures and income generation of microenterprises with the beta value 0.58 with significant p-value. The figure reveals that among all the four independent variables namely, Financial Assistance, Technological Assistance, Administrative Procedures, and Training Facilities, Administrative Procedures on income generation of SHGs promoted rural micro-entrepreneurs in the study area. The value above the income generation circle represents the R square (r^2) value which reveals that the independent variables explain 42 percent of the variance in the dependent variable.

SEM for Employment Generation

The single-headed arrows show the beta value from independent variables circles to the dependent variable circle. There are four independent variables namely; Technological Assistance (TA), Financial Assistance (FA), Training Facilities (TF), Administrative Procedures (AP), and dependent variables are Income Generation, Employment Generation (EG). The beta value for the technical assistance circle to employment generation is 0.34 with significant p-value. Since the beta value is positive, Technological assistance positively impact on the employment generation of SHGs microenterprises in rural areas. The beta value of financial assistance to employment generation is 0.19 with significant p-value. The positive beta value reveals that one unit change in financial assistance leads to a 0.19 level change in the employment generation of microenterprises. Similarly, the beta values for training facilities and administrative procedures to employment generation were 0.19 and 0.21 with significant p-value respectively. The data reveals that training facilities and administrative procedures have a positive impact on the employment generation of SHGs promoted microenterprises. The values above the employment generation circle represent the R square (r^2) value which reveals that the independent variables explain 23 percent of the variance in the dependent variable.

Table No. 12 SEM Fit Indices

Model Fit Summary	Fit Indices	Threshold Value
CMN/DF	2.257	<3
CFI	0.965	>0.95
TLI	0.961	>0.95
RMSEA	0.050	≤0.08
P	0.000	0.000

Source: Compiled from Primary Data

The above table (table no. 12) explains the fit indices of the Structural Equation Model (SeM) and the method of maximum likelihood estimation will be used to verify the Goodness of Fit (GOF) for the model. Indices namely, degrees of freedom (df), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), and Root Mean Square Error of Approximate (RMSFA). All the indices are in accepted range, they are satisfying the rule of thumb values. $df = 2.257$, $CFI = 0.965$, $TLF = 0.961$, $RMSEA = 0.050$ and $p = 0.000$. Hence based on the theses values the model is the best fit in the study.

VII. DISCUSSION AND CONCLUSION

It can be inferred from the study that financial assistance, administrative procedures and training facilities of SHGs had positive impact on the income generation of microenterprises in rural segments of the study area. It was surprising to confirm that technical assistance has not provided the income generation to SHGs promoted rural microenterprises in the study area. The study has revealed that most of the microenterprises getting technological support from the Self Help Groups (SHGs) but the assistance was not sufficient for a profitable income to the rural women micro-entrepreneurs in the study area. Most of the women micro-entrepreneurs in the study area have felt that the technical support of the Self Help Group (SHG) is not modern concerning the usage of r upgraded technology. It was found through personal interviews that the demands of the current market scenario are not fulfilled on account of the traditional methods of the SHG’s, results in low level of income to micro-entrepreneurs in rural segments of the study area.

The study has ascertained that the financial assistance had a positive impact on the employment generation of microenterprises in rural areas. Similarly, the technical assistance, administrative Procedures, and training facilities of SHGs have a positive effect on the employment generation of SHGs promoted microenterprises in rural areas. It creates the gainful employment to economically and socially excluded sections of the society, especially for the poor women in the rural segments of study areas.

APPENDIX

Table no. 1 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.889
Approx. Chi-Square		3547.245
Bartlett's Test of Sphericity	Df	231
	Sig.	.000

(Accepted KMO value: > 0.50, and Sig. value: <0.05)

Source: Compiled from Primary Data

Table 2 Communalities of the variables

Variables	Initial	Extraction
The operational assistance received from SHG was helpful to run the business (TF1)	1	0.919
The training provided by the SHG helps to improve the skill sets of the members(TF2)	1	0.852
SHGs training to start new enterprise(TF3)	1	0.942
Officials of SHGs not showing gender bias in extending loans (AP1)	1	0.864
Officials of SHGs are friendly in explaining about schemes (AP2)	1	0.832
Easy administrative procedures (rules) to avail SHGs loans (AP3)	1	0.741
The technical support provided by the SHG was helpful for the formation of an enterprise (TA1)	1	0.788
SHG helps to market and distribute the products of the members (TA2)	1	0.79
SHG helps to procure raw materials for their members (TA3)	1	0.771
It provides work shed facilities to its member for their business (TA4)	1	0.877
I have access to the increased income (IG1)	1	0.845
My credit capacity has increased over some time (IG2)	1	0.505
I have generally used my loan money on income-generating activities (IG3)	1	0.797

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I have access to the increased savings (IG4)	1	0.778
There is an improvement in the monthly consumption level of the household. (IG5)	1	0.678
I contribute to buying household assets like TV, Fridge, Fan, etc.(IG6)	1	0.763
Number of Employees have increased after joining SHGs (EG1)	1	0.73
Share of Women employment have improved (EG2)	1	0.781
SHGs do provide timely financial support (FA1)	1	0.755
The Financial assistance received from SHG was helpful to run the business(FA2)	1	0.866
Interest rate of SHG's Loan lower than other financial services (FA3)	1	0.857
SHGs loans no need any collateral to avail (FA4)	1	0.673

Source: Compiled from Primary Data

Table 3 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.169	41.676	41.676	9.169	41.676	41.676	4.357	19.804	19.804
2	2.354	10.698	52.373	2.354	10.698	52.373	3.303	15.014	34.818
3	2.130	9.681	62.055	2.130	9.681	62.055	3.169	14.404	49.222
4	1.565	7.116	69.170	1.565	7.116	69.170	2.686	12.208	61.431
5	1.179	5.359	74.529	1.179	5.359	74.529	2.149	9.767	71.197
6	1.008	4.581	79.110	1.008	4.581	79.110	1.741	7.913	79.110
7	.749	3.406	82.516						
8	.482	2.192	84.708						
9	.444	2.019	86.727						
10	.403	1.833	88.561						
11	.400	1.818	90.378						
12	.332	1.507	91.885						
13	.319	1.451	93.336						
14	.247	1.122	94.458						
15	.239	1.085	95.544						
16	.223	1.013	96.557						
17	.196	.890	97.446						
18	.159	.722	98.168						
19	.129	.586	98.754						
20	.110	.498	99.252						
21	.105	.477	99.728						
22	.060	.272	100.000						

Extraction Method: Principal Component Analysis.

Source: Compiled from Primary Data

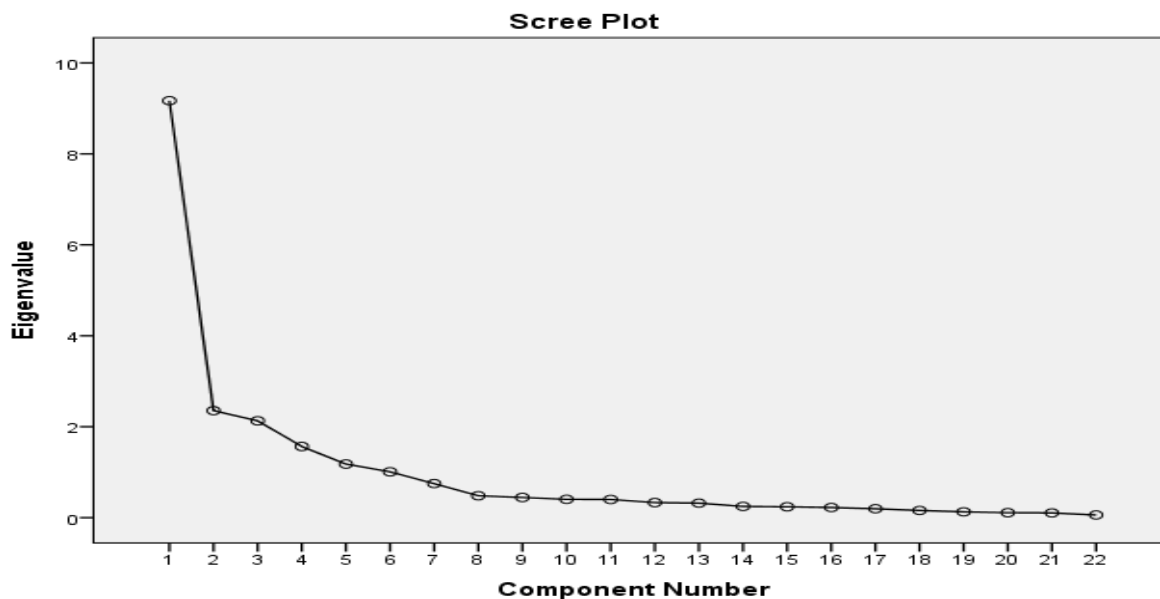


Figure 1: Scree Plot

Source: Compiled from Primary Data

Table No. 4 Rotated Component Matrix

	Component					
	Income Generation	Technological Assistance	Financial Assistance	Training Facilities	Administrative Procedures	Employment Generation
Improvement in income.	.864					
Increased Asset holdings.	.801					
Productive activities increased.	.796					
Increased savings.	.769					
Increased consumption.	.703					
Improvement in credit capacity.	.684					
Technical support.		.863				
Procure raw materials.		.860				
Workshed facilities.		.837				
Marketing and distribution.		.832				
Low Interest rate of SHGs.			.890			
Helpful to run the business.			.863			
Timely financial support.			.800			
No collateral to avail loan.			.784			

Training useful to startups.				.882		
Operational assistance.				.875		
Training programs Helpful.				.842		
Easy administrative rules.					.794	
Officials are friendly.					.736	
No gender bias.					.712	
Improvement in Employment.						.808
Women employment has improved.						.802

Source: Compiled from Primary Data

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

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