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Empowering fisherwomen after tsunami in Kerala: Institutional lessons and insights

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Original Article

Abstract

Tsunami left behind huge and widespread destruction in the coastal villages of Kerala. Besides the loss of human lives, fishers also suffered loss of their 'livelihood capitals'. In order to provide relief and rehabilitation to the affected, Department of Fisheries, Kerala implemented multiple programs, which were christened under a common livelihood program named "Theeramythri" under the Society for Assistance to Fisherwomen (SAF). The Theeramythri programme facilitates and handholds fisherwomen to engage in gainful self-employment for their economic and social emancipation. Over the last decade SAF carried out commendable actions with around thousand enterprise groups with minimal initial outlays of less than 0.2 million rupees. SAF extends their financial and technical support right from the selection of enterprises, capacity building, branding and marketing, technology improvement, networking and monitoring. The present study gauges the empowerment levels of fisherwomen involved in these groups under the two time periods *viz*., prior to joining the society and the current status. The study identified that more than 300 million rupees has been provided as grant to these groups and these groups had been instrumental in empowering the fisherwomen in Kerala. The study also established the pivotal role SAF plays in achieving the goals of empowering fisherwomen and developing sustainable and commercially viable business models.

Keywords: *Women empowerment, SAF and activity groups, structural equation modelling, principal component analysis*

Introduction

Fishing continues as a mainstay for coastal and inland fishing communities as well as a source of healthy food for humanity in Kerala (Shyam *et al*., 2011; Shyam, 2013). However, innate problems like seasonality of landings and uncertainty of prices in this sector often creates vulnerability among the fishers affecting their livelihood. The ruthless struck of tsunami during 2005 made fishers' life even more miserable. Government of Kerala devised and implemented different programs namely Tsunami Rehabilitation Program (TRP), Tsunami Emergency Assistance Program (TEAP) and Prime Ministers National Relief Fund (PMNRF) to provide relief and rehabilitation to the affected. With a total outlay of ₹89 crores, around 2500 livelihood initiatives and micro enterprises of tsunami affected were facilitated. Since 2005, SAF (Society for Assistance to Fisher Women) an agency under Kerala government that works for the social and economic empowerment of fisherwomen in Kerala, through its multifarious and integrated developmental programmes was in operation for

implementing various relief programs for the tsunami affected coastal communities. Later, in 2010 various tsunami relief programs were merged under a new and holistic livelihood program named "Theeramythri" and SAF was entrusted the responsibility of executing this program. SAF under the Theeramythri program, provides continued handholding and mentoring to the micro enterprises and livelihood ventures that were established under the earlier tsunami rehabilitation programs. Besides sustaining and strengthening the existing enterprises, each year marginalized fisherwomen are identified, trained and assisted to start new micro enterprises both individuals and their Self Help Groups (SHGs) or Activity Groups–to address common challenges such as livelihoods, poverty eradication and social development. At present there are approximately 1000 units in operation across six different categories *viz.* garments and textiles, food, coir, fish, supermarket and others along the nine coastline districts of Kerala (Shyam *et al.,* 2017b).

The activity groups of SAF have now become significant for the rural development of the fisherwomen in Kerala. After the natural calamity –*Tsunami*, the vision of SAF through these activity groups have become one of the alternative livelihood for the fisherwomen. In this context the present study was conducted to analyse empowerment status of fisherwomen involved in the SAF Theeramythri groups during the exante-expost group involvement periods.

The overall objective of the study is to analyse the empowerment status of fisherwomen involved in the SAF Theeramythri groups. Though the following specific objectives was to analyse the role of SAF in empowering fisherwomen in income generation and livelihood option in Kerala and to estimate directly economic empowerment of fisherwomen and indirectly the socio-political empowerment attained through various microenterprises of SAF in Kerala during the exante-expost periods.

The present study has been undertaken with the following objectives:

- To portray the demographic and employment profile of the rural self-employed women.
- To measure the socio- economic empowerment of fisherwomen involved in activity groups during *exante – expost* periods.
- To assess the major driving forces which lead to the women empowerment

Material and methods

The present study is undertaken to assess the empowerment of fisherwomen after engaging in the SAF activity groups. The study is analytical and descriptive in nature. The universe of the study includes all the beneficiaries of the activity groups of SAF of all the coastal districts of Kerala. The primary data from 400 women entrepreneurs engaged in activity groups of SAF like garments & textiles, food, provisional store, supermarket, coir unit and others (hire service, DTP, ornament making) etc. are collected using non-random convenience sampling technique. Secondary data from related publications and websites were also used in the study. Statistical tools like percentage analysis, wilcoxon test, principal component analysis, factor analysis and sequential equation modelling were employed for analyzing the data. Fig. 1 indicates the area selected for the study.

Fig. 1. Sampling distribution

Results and discussion

Socio-Economic Profile

The demographic profile of the respondents revealed that 45.5% of respondents belonged to the age group of 35-45 and 32.75% of respondents belonged to the age group >45. Whereas respondents belonging to the age group <35years are about 21.75%. 44.25% of the respondents have their educational qualification up to secondary level. 42% of the respondents have primary education and about 13.75% have acquired graduation.

Table 1. Socioeconomic profile of the respondents

Age –wise classification of respondents	
Age	Respondents
<35	87(21.75)
35-45	182(45.5)
>45	131(32.75)
Total	400
Education-wise classification of respondents	
Primary	168(42)
Secondary	177(44.25)
Graduation	55(13.75)
Total	400

Figures in parenthesis indicate percentage to total

Table I shows the above described demographic profile of the women entrepreneurs selected for the study.

Business Profile of the respondents

The business profile of the respondents surveyed indicates that (Fig.2) out of 400 respondents, 50% of the respondents are involved in garments and textiles, followed by 25.75% in food sector and 12.50% are involved in other activities such as beauty parlour, hiring services etc. Only 7.35% of women entrepreneurs have business experience before embarking on

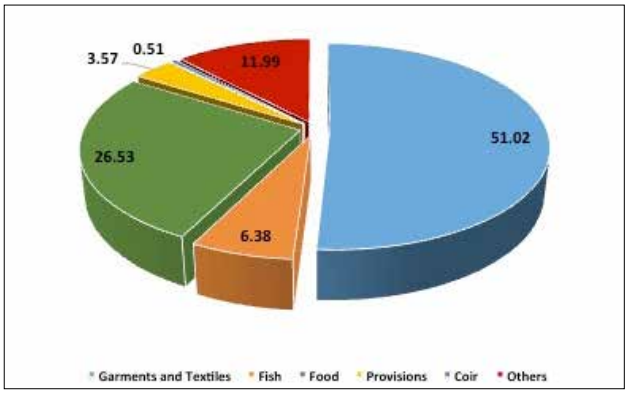

Fig. 2. Business profile of the respondents

the business and a vast majority (92.65%) of them are fresher's to these SHG's. Self-employment through these activity groups provides a new platform for the fisherwomen to improve their financial positions independently.

Assessing Empowerment (Ex-ante and Ex- post activity group involvement)

Women's empowerment is critical to the socio economic progress of the community and to bring women into the main stream of national development has therefore, been a major concern of the government (Shyam and Geetha, 2013). The role of women in economic development is most intimately related to the goal of comprehensive socio economic development and is a strategic question for the development of all societies (Badatya *et al.,* 2006). Any development strategy which neglects the need for enhancing the role of women cannot lead to comprehensive socio economic development (Reddy *et al.*, 2005). Thus empowerment is a process of awareness and capacity building, leading to greater participation, greater decision making power and control and transformative action (Ashaletha *et al.,* 2002).

SAF and Theeramythri have done one of the major tasks and it paved the way for assessing the empowerment level of these fisherwomen. As a part of the study, through survey the exante and expost data related to the empowerment of fisherwomen in activity groups were collected and analysed with five levels of indicators of empowerment :- Social, Legal, Economical, Political and Psychological empowerment. These five indicators are again subdivided with five components each and as a result almost all the minute factors related to the empowerment level are assessed through the study. The major driving forces of the empowerment, the age group that empowered most, the sector highly empowered the most, between sectors empowerment levels etc. are the important findings of the study.

The percentage analysis of the different sectors of the activity group members indicates that garment sector is the most empowered sector since the origin of these SHG groups. Throughout the years this sector shows significant increase in the number of activity groups and the members involved with less dropouts and also with the high level of empowerment. The trainings, skill up gradation programmes, motivation activities, efficient support, time management etc., are the real factors that cause for the significant increased empowerment. Garments and textiles are followed by the food sector. It occupies almost one third of all the activity groups. The effectiveness of the SAF in implementing training programmes and their effective planning and utilization of all the facilities both technical and man power are highly appreciated. Unity among the members as well as the officials also created a very good impact for the successful running of these SHG's and thereby empowerment.

The critical evaluation of the study used several statistical and econometric tools for attaining one of the best result. The Wilcoxon sign test indicates that there is huge increase in the empowerment level among the fisherwomen after joining these activity groups. Their efficiency of decision making, leadership quality and the skills are the three major qualities showing improvement after analysing the exante-expost data. This indicates that the economic status and social status of the women are equally improved after the hazards of tsunami. These activity groups have become an eye opener for their alternative livelihood. Table 2 shows the results of Wilcoxon test statistics which indicates the significant increase of the fisherwomen after involving in the activity groups.

Since the p value is less than 0.05, we reject our null hypothesis that there is no significant increase in the empowerment of

Table 2. Wilcoxon Test Statistics results- exante and expost survey

Indicators of empowerment	P value
Social	0.0312***
Economic	0.0311****
Political	0.0312**
Legal	0.0222
*Psychological	0.0300*

**Significant at 1% level*

fisher women after the involvement of Theeramythri activity groups. The empowerment status has steadily increased to a great extent in all the sectors with increase in all the five indicators of empowerment.

The Principal Component analysis (PCA) prior to factor analysis itself show a remarkable change in the empowerment level of the fisher women- before and after joining the activity groups. The biplots (Fig. 3 and Fig. 4) with the corresponding PCA analysis given clearly explains the fact that during the exante period almost all the level of indicators showed almost equal correlation with the level of empowerment. But these variations in the empowerment level have steadily increased in the expost period. They are much more empowered economically, followed by legally and politically. The factor analysis results (Fig. 5) also prove that the women empowerment levels – social, political, legal, economic, psychological have progressively increased in the expost period. Fig 5 shows that the economic empowerment was the highest among the 5 empowerment levels and it has increased from 44 (exante) to 79% (expost) followed by legal empowerment 42 (exante) to 68% (expost), political empowerment 40 (exante) to 63% (expost), social

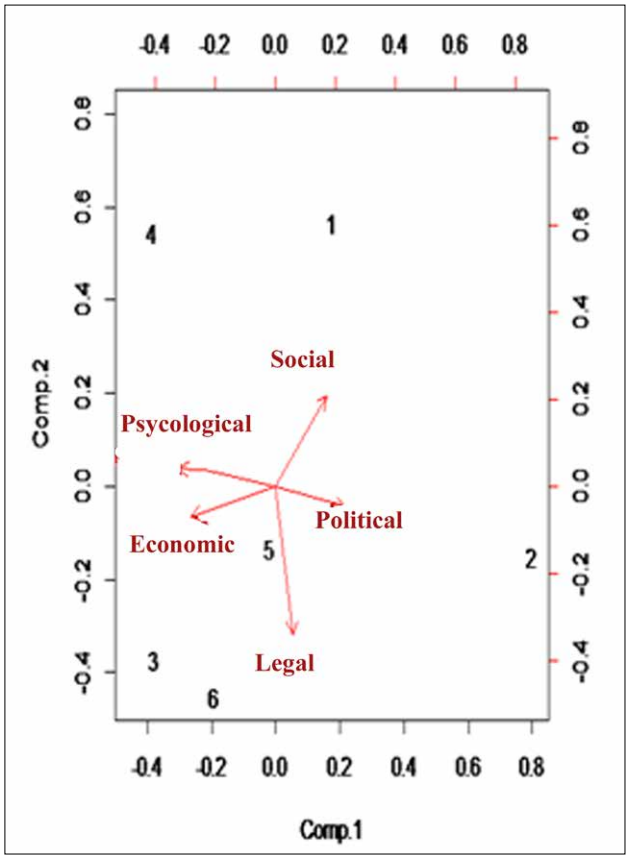

Fig. 3. Biplot -Exante period

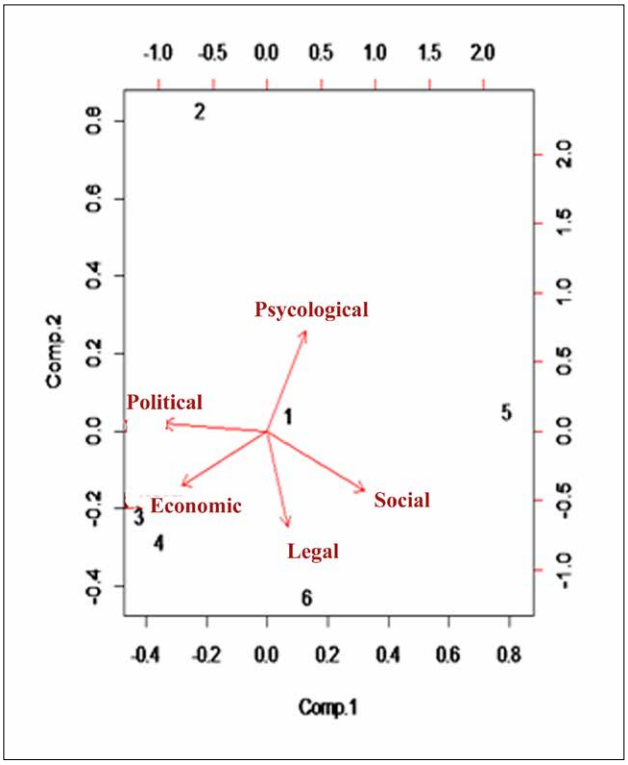

Fig. 4. Biplot -Expost period

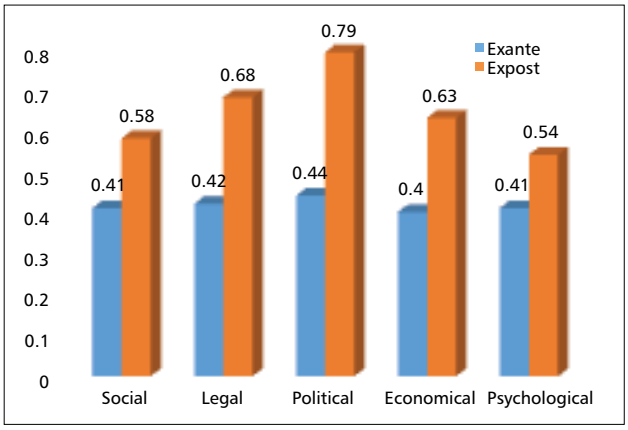

Fig. 5. Graphical representation of the Factor loadings

empowerment 41 (exante) to 58% (expost) and psychological empowerment 41 (exante) to 54% (expost).

Major driving forces of women empowerment

Since majority of the data included are of ordinal type we cannot measure the estimated value in order to find the major driven forces of empowerment. Structural equation modelling is used in order to find the relationship of the various parameters and

the empowerment level. Satorra-Bentler scaled Chi-Square and Root Mean Square Error Approximation (RMSEA) is used to estimate the accurate value of the present empowerment and the major driven parameters that lead such empowerment.

The latent factors of women's empowerment measured by the set of ordinal variables includes social, economic, legal, political and psychological are further computed by the scores given, wherein social factors are measured through: better social status, good interpersonal relationship, communication skill, public speaking and leadership skills, improved social networking, oneness /community feeling. Economic factor is measured through improved income and savings, economic independence, rational decision making, linkages with financial institutions, adept in financial transactions. The political factor is measured through: participation in public meetings/movement/action, better say in public domain, improved awareness on states/ country's political conditions, more acceptance as a leader in the society and invited to participate in the election, representation in elections. The legal and psychological factors are measured through: improved awareness on the legal provisions for a women, better access to legal information, ability to seek the help of concerned people to find concrete solutions to their daily justice problems, courage to respond against discrimination, skills in conflict management, improved self-worth/esteem, improve self-confidence, ability to analyses the problem and to develop solutions, improvement in the quality of life, knowing one's potential (strength and weakness).

Table 3. Estimated parameters of the measurement model for women empowerment and factors of women empowerment

Empowerment indices	Parameters	Score
Social	Better social status	4.17
	Good interpersonal relationship	3.36
	Improved Social Networking	6.20
	Improvement in standard of living	1.37
	Oneness /community feeling	0.17
Economic	Improved income and savings	13.58
	Economic independence	5.63
	Rational decision making	3.93
	Linkages with financial institutions	10.34
	Adept in financial transaction	2.31
Political	Participation in public meetings/movement	1.82
	Better say in the public domain	3.29
	Improved awareness on states' political conditions	4.27
	Acceptance as a leader	11.29
	Representation in elections	9.87
Legal	Improved awareness on the legal provisions	4.97
	Better access to legal information	9.39
	Ability to find concrete solutions with support	13.87
	Courage to respond against discrimination	3.68
	Skills in conflict Management	11.63
Psychological	Improved Self-worth / esteem	11.29
	Improved Self confidence	13.37
	Ability to analyses and solve the problem	3.78
	Improvement in the Quality of life	2.89
	Knowing ones potential	3.04

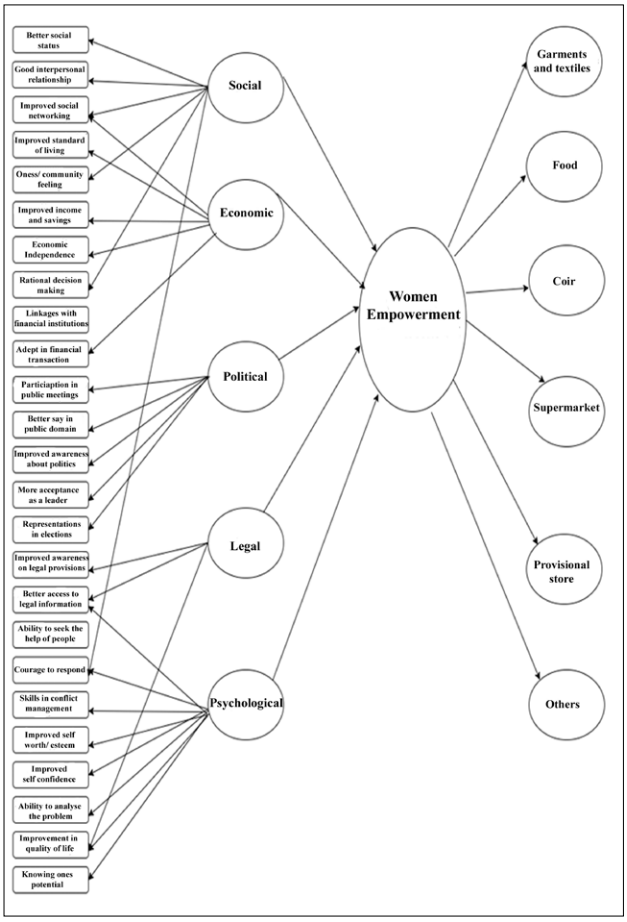

Fig .6. Path diagram for women empowerment

Measurement of empowerment levels using Structural Equation Modelling (SEM Analysis)

In order to assess the impact of diverse latent components on women empowerment, a structural equation model is estimated and results are indicated in Table 3. This model is presented by the path diagram in Fig. 6. The model consists of two parts: the measurement and structural parts. The measurement model, towards the right in Fig. 6 measures the latent women empowerment variables (in the ellipses) by its respective observed indicators (in rectangles). The various latent components of women empowerment are calculated

by the observed 25 indicators (in rectangles) on the left-hand area of Fig. 6. The relationship between the latent factors and their respective observed variables is indicated by the arrows. The dimension errors are symbolized by the arrows that point to all of the indicators. This model is indicated by the middle component of the path diagram. The straight single headed arrows stand for the causal relation between the latent factors and the latent women's empowerment variable (We).

The path diagram in Fig. 6 corresponds to the following synchronized equations structure (Joreskog and Sorbom, 1999).

$$x = \alpha^{x}\varphi + \varepsilon \qquad (1)$$

$$y = \alpha^{y}\beta + \delta \qquad (2)$$

$$\beta = \gamma\varphi + \mu \qquad (3)$$

Equation (1) symbolizes the dimension model for the latent components of women empowerment (), where x is the vector of determines for the latent component of women empowerment, is the vector of factor loadings and is the vector of dimension errors connected through the relevant signs. The dimension model matches to the left part of the path diagram (Fig. 6).

The latent women's empowerment is represented by and is computed by the indicator vector y as presented by means of equation (2), where is the vector of factor loadings and is the vector of quantity errors related through y. The dimension model matches to the right-hand part of Fig. 6.

Equation (3) is the SEM model, that specifies the latent women empowerment depends on the vector of latent component, where is the vector of latent regression coefficients and is the error word. The statistical significance of the latent regression coefficients thus points out which latent component has a noteworthy impact on empowerment of women.

Table 4. Estimated parameters of the women's empowerment structural model for the activity group members

Latent factors	t Coefficients
Economic	0.57
Legal	0.34
Political	0.29
Social	0.089
Psychological	0.069
Model Fit	
Satorra-Bentler scaled Chi-Square	$\chi 2 = 1132.67$
P value	0.05
RMSEA	0.07
NFI	0.90

Table 4 shows the parameter assess and some of the fit indices for the structural model of women empowerment for the SHG members. The coefficients are normalized and may perhaps thus be understood on both consequence and level. The fit of the structural equation model can be calculated by investigating the Normed Fit Index (NFI), the Root Mean Square Error of Approximation (RMSEA) and the Satorra-Bentler scaled chi-square goodness of fit index. NFI is an assessment that rescales chi-square to contrast a confined model with a full model using a subjective baseline null model. RMSEA believes the error of rough calculation in the inhabitants and discovers how fine the model with unidentified but best selected factor values, fitted in the population covariance matrix. The estimated Satorra-Bentler scaled chi-square in Table 4 indicates that the fit of the model is not exact. However, the RMSEA and NFI disclose that the model has a fine approximate fit, which entails that our approximations are reliable.

The results confirm that the economic factor has the most significant impact on empowering the fisher women of SAF activity groups. Linkage with financial institutions and adept in the financial transaction are the two main reasons for the increase in the empowerment level. Economic independences and their ability in decision making is steadily increasing through their efficient performance in working in the activity groups. The revolving fund and interest free loans provided by the SAF enable the members to create additional economic opportunities and generate income (Shyam *et al.*, 2016). Increase in the income and savings evidences their increased bargaining and decision-making power within the household and leads to women empowerment. Followed by economic empowerment the fisher women community have been much empowered legally. Of the total the second major factor of empowerment of fisherwomen is the upliftment of legal knowledge.

The ability to seek the help of concerned people to find concrete solutions to their daily justice problems shows the major increase in the legal empowerment. It enables them for perfect planning, management and to solve the conflicts among them. All these led them to their present positions in different arenas of life. The representations of these SHG members in the elections, their improved awareness on the legal provisions for a woman, their unanimous courage to respond against the discrimination and the better access to the legal information are the significant outcomes of the legal empowerment. More acceptance as a leader in society and invited to participate in elections is the major factor that leads to the political empowerment of fisher women to the third significant place in the total empowerment level. All these remarkable changes in the different factors of empowerment also show a considerable social and psychological empowerment among the fisherwomen (Shyam *et al.*, 2017a) Provision of managerial training and awareness creation activities by the activity groups leads to greater exposure and changes

in social attitudes. Better social status and good interpersonal relationship leads to their improved self-confidence and also improved self –worth/esteem. Of these five significant factors, empowerment by economic factor is the most effective. In fact, economic factors are twice as effective as in empowering women legally. The social attitudes are also crucial but are about two-thirds as effective as the economic factors in terms of their contribution to women empowerment (Sathiadhas *et al.,* 2003). Psychological empowerment also statistically shows some significance in women empowerment in the estimated model. All the facts reveal that SAF has done a major role in the upliftment of the fisherwomen community and thereby boosting the development of our nation.

The study clearly indicated that the main reason for fisherwomen in joining SHG is not merely to avail credit but also as a means to be empowered economically and socially through which the fisherwomen community could handhold themselves. All through the study reveals the fact that SAF and their SHG programmes are one of the core women empowerment strategy in Kerala which could set an example for the country. Women's empowerment has to be pursued as a serious objective. With no doubt we can state that the expansion of this model of activity groups of SAF to other states also will pave a new way for the whole empowerment of not only the fisher women but also all the unemployed women youth of the nation. Greater emphasis also needs to be placed on training, education, technical support, marketing skills and creating awareness about empowerment related issues with increased investment in social intermediation. Otherwise, SAF will result in positive outcomes but the process of women's empowerment will remain incomplete. The study concludes that a change has to be brought about not only in the status of women but in the attitude of the society towards them. Priority has therefore necessarily to be given to changing image of women, from a passive onlooker and recipient, to that of a positive doer and achiever.

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