

DEVELOPING AND VALIDATING A SCALE TO MEASURE PERCEIVED EFFECTIVENESS OF INTERVENTIONS FOR SHG MEMBERS

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Abstract

Gender disparities in economic development is a problem established across the world. Women are often excluded from the process and benefits of development, negatively affecting their health, income and existence. NABARD has implemented many programmes to assist rural women to escape the clutches of poverty and exclusion. MEDP and LEDP are important interventions conducted to help rural women members of SHGs to enhance their skills, and ensure their sustainable livelihood through capacity building in their small-scale economic activities. These programmes are extensively carried out. The present study was intended to develop a scale to measure the perceived benefits or effectiveness of these programmes in imparting skills, knowledge, and expertise among rural women to come out of exclusion and poverty. The scale development and validation process included development of item pool from literature, and analysing its factor structure, and assessing its reliability and validity. A 12-item three-dimensional scale was finalised to measure the perceived effectiveness of the scale.

Key Words: Self Help Groups, Micro Enterprise Development Programme, Livelihood and Enterprise Development Programme, Perceived Benefits

Introduction

National Bank for Agricultural and Rural Development [NABARD] has the financial, developmental and supervisory role and is the apex regulatory body for overall regulation of Regional Rural Banks and apex co-operative banks in India. It is responsible for the development of small industries, cottage industries, and any other such rural or village projects. It is a statutory body established in 1982 under Parliamentary Act-National Bank for Agricultural and Rural Development Act, 1981. The financial functions of NABARD include refinance for supporting short- and long-term financing by banks, short-term loans to cooperative banks and RRBs to support farming activities, long-term loans to banks for covering non-farming activities, providing rural infrastructure development fund, micro-irrigation fund, and long-term irrigation fund, etc. In its supervisory role, major functions include ensuring financial inclusion, and supporting microfinance sector through its Self-Help Group-Bank Linkage programme (SHG-BLP). SHG based livelihood interventions of NABARD includes Micro Enterprise Development Programme (MEDP) and Livelihood and Enterprise Development Programme (LEDP). As on 31 March 2022, 5.47 lakh SHG members were trained through 19,203 MEDPs since 2006 with total sanctioned grant support of Rs.42 crore. As on 31 March 2022, more than 1.83 lakh SHG members have been supported through 1641 LEDPs with grant sanction of Rs.77 crore (NABARD, 2023).

Theoretical Background

Self-Help Groups: SHGs are community-based collectives predominantly composed of women in rural areas, formed with the objective of addressing shared socio-economic challenges. By pooling their financial resources, members enhance economic resilience and employ mechanisms of mutual accountability, such as peer pressure, to ensure effective management of credit and savings. SHGs have emerged as vital platforms for mitigating financial exclusion among rural women (Kabeer, 2005). Beyond financial functions, these groups serve as instruments of women's empowerment, fostering leadership skills and facilitating their participation in decision-making processes within the community (Aggarwal & Shamsi, 2022). Complementing these efforts, the National Bank for Agriculture and Rural Development (NABARD) implements capacity-building initiatives such as the Micro Enterprise Development Programme (MEDP) and the Livelihood and Enterprise Development Programme (LEDP), which provide SHG members with training and skill development opportunities aimed at enhancing income-generating and entrepreneurial activities.

Micro Enterprise Development Programme (MEDP): NABARD, since 2006, has been supporting need-based skill development programmes for mature SHGs which already have access to finance from banks. MEDPs are on-location skill development training programmes which attempts to bridge the skill deficits or facilitate optimization of production activities already pursued by the SHG members. It also aims at enhancing the knowledge participants related to enterprise management, business dynamics and rural markets. Grant is provided to the eligible training institutions to provide skill development training in farm, off-farm service sector activities leading to establishment of micro enterprises either on individual basis or on group basis. Thus, MEDP assists economically weaker sections of the society in starting small business. This program consists of components which provides skill and technical assistance to the people in the selected area. Very little impact evaluation studies have been conducted to analyze the feasibility of MEDP.

Livelihood and Enterprise Development Programme (LEDP): Since a skill development programme alone may have limited impact on livelihood creation among the SHG members, it was thought prudent to create sustainable livelihood among SHG members and to attain greater benefits out of skill upgradation and new scheme titled Livelihood and Enterprise Development Programme (LEDP) was launched by NABARD in December 2015. It was created to develop sustainable livelihood and to get maximum benefits to SHG members through skill upgradation. It envisages conduct of livelihood promotion programmes cluster. It also encompasses the complete value chain and offers end-to-end solution to SHG member. It is designed to be implemented on a project basis covering 15 to 30 SHGs in a cluster of contiguous villages where from SHG member would be selected. The skill upgradation training covers agricultural & allied activities as well as rural off-farm sector activities including intensive training for skill enhancement, backward-forward linkage, handholding for credit, refresher training and escort support connection. LEDP is intended to facilitate promotion of sustainable livelihood.

The MEDP and LEDP programmes of NABARD are intended to provide need-based skill development and sustainable livelihood to the women members of SHGs. The objective is to create a foundation for the establishment of micro-enterprises and to foster sustainable livelihood among the members of the SHGs both in the farming and non-farming sectors. The benefits of such training programmes are numerous and may result in better job opportunities and alternatives (Lee et al., 2014). Individual's work-related attitudes and their commitment can be affected by effective programmes (Meyer & Allen, 1997).

Measuring Training Effectiveness: The effectiveness of training programmes is typically evaluated through standardized measurement scales that capture outcomes at multiple levels, ranging from individual learning to organizational performance. One of the most widely used frameworks is Kirkpatrick's four-level model, which assesses effectiveness through reaction, learning, behaviour, and results (Kirkpatrick & Kirkpatrick, 2006). At the reaction level, scales often measure trainees' satisfaction with the content, delivery, and trainer effectiveness, usually through Likert-type items (Noe & Kodwani, 2018). The learning dimension is assessed using knowledge tests, skill demonstrations, or self-reported learning gains, whereas behavioural effectiveness scales examine the transfer of acquired competencies to the workplace (Baldwin & Ford, 1988). At the results level, measurement scales focus on organizational outcomes, such as productivity, quality, and cost reduction, which indicate the broader impact of training interventions (Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012). Additionally, some studies integrate the Learning Transfer System

Inventory (LTSI) to assess contextual factors such as motivation, peer support, and transfer climate that influence training effectiveness (Holton, Bates, & Ruona, 2000). Recent developments have also introduced multidimensional scales that capture psychological outcomes such as self-efficacy, empowerment, and job engagement as indirect indicators of training success (Grossman & Salas, 2011). Together, these scales provide a comprehensive means to evaluate not only immediate training outcomes but also their long-term impact on employee performance and organizational growth.

Employees' Perceived Benefits of Training: Mansour et al. (2022) suggested that training programmes need to develop organisational commitment in the beneficiaries. Individuals should have a readiness for change for the successful completion of trainings. They based their measures on the recommendations of Nordhaug (1989) who classified the perceived benefits into job-related, career-related and personal-related benefits. These benefits would be reflected in their attitudes to work and emotional attachment to it (Dhar, 2015).

Job-related benefits: are the positive outcomes individuals derive from learning interventions that improve their skills and ability that are directly applied to work related tasks, and strengthens self-efficacy, motivation and satisfaction (Noe, 2017; Saks & Burke, 2012).

Career-related benefits: Career-related benefits are long-term advantages to individuals helping to improve employability, career advancement, enhance reputation, and increase mobility. It fosters continuous learning, adaptability and skill diversification (Bartlett, 2001).

Personal-related benefits: these are individual-level outcomes that improve employee's personal growth, well-being, and self-developed, that are beyond the immediate requirements of their job. They may develop a sense of self-confidence and achievement, improving life quality (Colquitt, LePine, & Noe, 2000; Ely, 2004).

Based on the literature, the present study attempts to develop a multi-dimensional scale to measure the perceived effectiveness of training that SHG women members undergo through the MEDP and LEDP programmes of NABARD.

Methods

The attempt of the study is to examine if the three-dimensional scale composed of job-related, career-related and personal-related benefits as recommended by Nordhaug (1989) would capture the perceived effectiveness of MEDP and LEDP programmes. The items used in the initially developed pool was collected from literature (eg. Mansour et al., 2022; Noe and Wilk, 1993; Al-Emadi and Marquardt, 2007, etc.), and were related to the three dimensions of benefits. The initially developed pool of 17 items was submitted to a three-member panel of academicians to review the face and content validity. Minor modifications were made based on their feedback. The pool was administered on a purposively selected group of 36 SHG members in Ernakulam district in Kerala, who had undergone either of the training programme. Two blocks out of 14 in Ernakulam were randomly selected. In the selected two blocks, there were 12 grama panchayats. Six panchayats were selected randomly, which were composed of 87 villages. It was decided to cover at least 20 percent of the villages. Hence from the list of 87, 18 villages were selected randomly. Using the local self-government reports and the National Rural Livelihood Mission (NRLM) database, it was found that there were 221 women SHGs in the selected villages, with a membership of 2812 women. It was decided to cover at least 10 percent of the SHGs. Hence 23 SHGs were selected randomly from the list, with a membership of 297 women. This member list formed the sample frame for the study. The selected SHGs were approached personally, at the time of their weekly meetings, and discussions were held with the members. From these members, those who had undergone the MEDP or LEDP training within a previous period of two years were identified. The objectives of the study were explained to them, and their cooperation was solicited. Those who were willing to participate were included in the study. A total of 50 questionnaires were distributed, and 44 were returned as responded. These were initially screened, coded and entered into MS Excel spreadsheet. Row-wise and column-wise examination revealed some missing entries, where were removed completely. Outliers in data were examined by computing the Z-scores based on Polit and Beck (2010). The Z-scores outside ± 3.29 are outliers (Tabachnick & Fidell, 2013), and the corresponding rows were removed. A final dataset of 36 responses was used for the final analysis.

Analysis and Results

A descriptive analysis of the 17 items involving the computation of arithmetic mean score and standard deviation was done. Extreme mean scores (near to one or five) and extremely low standard deviations (less than 1) were examined for removal. Since no extreme values were detected, no data were excluded from further analysis. In the next stage, Exploratory Factor Analysis was performed. This involved the Principal Component Analysis with varimax rotation, based on Tavakol and Wetzel (2020). Since there were a number of items, it was necessary to examine the complex multidimensional aspect of the measured latent construct. Principal Component Analysis (PCA) with Varimax rotation based on Taherdoost, Sahibuddin, and Jalaliyoon (2014), Kaiser's (1960) rule of Eigen value greater than one, Cumulative percent of variance of 50 or 60 percent explained by the retained factors based on Pett, Lackey, and Sullivan (2003), and Factor loading of 0.50 or above based on Burton and Mazerolle (2011) were used to determine the factor structure.

Table 1 gives the results of EFA. Three factors were extracted. Factor 1 (); eigen value = 5.132; variance = 30.188%; factor two (eigen value = 3.304; variance = 19.435%); and factor three (eigen value = 2.108; variance = 12.400 %). The total cumulative variance explained by the three factors extracted was 62.024 %. Thus, it was concluded that a three-factor model structure could be used to examine the perceived benefits.

Table 1. Exploratory Factor Analysis						
Factor	Initial Eigen Values			Extraction sums of squared loadings		
	Total	% Of Variance	Cum %	Total	% Of Variance	Cum %
1	5.132	30.188	30.188	5.132	30.188	30.188
2	3.304	19.435	49.624	3.304	19.435	49.624
3	2.108	12.400	62.024	2.108	12.400	62.024
4	0.723	4.253	66.276			
5	0.668	3.929	70.206			
6	0.643	3.782	73.988			
7	0.617	3.629	77.618			
8	0.567	3.335	80.953			
9	0.537	3.159	84.112			
10	0.475	2.794	86.906			
11	0.437	2.571	89.476			
12	0.412	2.424	91.900			
13	0.375	2.206	94.106			
14	0.347	2.041	96.147			
15	0.304	1.788	97.935			
16	0.234	1.376	99.312			
17	0.117	0.688	100.00			
<i>Extraction Method: Principal Component Analysis</i>						
<i>Source: Analysis Results</i>						

The next attempt was to identify the component matrix to examine the factor loadings. Based on Burton and Mazerolle (2011), it was decided to suppress loadings below 0.50. Table 2 gives the rotated component matrix. Out of the total 17 items, six items loaded on to the factor one (item loadings range 0.917 to 0.512), five items loaded on to the factor two (item loadings range 0.827 to 0.524), and four items loaded on to factor three (items loadings range 0.814 to 0.734). Two items that loaded had very low loadings (below 0.50). Hence, they were excluded from further examination.

Table 2: Rotated Component Matrix			
Items	Component		
	1	2	3
Item 1	0.917		
Item 2	0.885		
Item 3	0.878		
Item 4	0.874		
Item 5	0.601		
Item 6	0.512		
Item 7		0.827	
Item 8		0.824	
Item 9		0.732	
Item 10		0.737	
Item 11		0.524	
Item 12			
Item 13			0.814
Item 14			0.778
Item 15			0.754
Item 16			0.734
Item 17			
<i>Extraction Method: Principal Component Analysis</i>			
<i>Rotation Method: Varimax Rotation with Kaiser Normalization</i>			
<i>Source: Analysis Results</i>			

Once the factor structure was initially established, the items were subjected to the examination of internal consistency reliability. Internal consistency reliability is the extent to which the items measuring a latent construct are associated with all other items measuring that construct. Cronbach's alpha (Cronbach, 1951) was computed to assess the reliability of the scale. Alpha Values above 0.70 are considered acceptable, based on Nunnally and Bernstein (1994). The computation was repeated by removing items, with the decision to stop repetition when highest value of alpha was achieved. For the factor

one, the alpha computed was 0.749 (with six items), which improved to the highest 0.857 (with four items). Hence it was decided to remove the two items (items 5, 6). For the factor two, the alpha computed was 0.787 (with five items), which improved to the highest 0.821 (with four items). Hence it was decided to remove the item (item 11). For factor three, all the four items provided the highest computed alpha of 0.773, with removal of items resulting in deterioration of alpha. Hence, all the four items were decided to be retained. Since the final alpha values were all above the recommended levels (> 0.70), the scale was reduced to 12 items. Refer to Table 3.

Table 3: Scale Reliability (Cronbach's Alpha)				
Components	Initial		Final after Item Deletion	
	Items	Alpha	Items	Alpha
Factor 1	6	0.749	4	0.857
Factor 2	5	0.787	4	0.821
Factor 3	4	0.773	4	0.773
TOTAL ITEMS	15	--	12	--
<i>Source: Analysis Results</i>				

The refined scale was subjected to the assessment of convergent validity. It was tested by repeating the Exploratory Factor Analysis using the refined data set corresponding to the 12-item scale. The extraction method was Principal Components Analysis (PCA). The extraction was based on Eigen-values above one, with the decision to retain items based on Kaiser (1970). The proportion of total variance explained was fixed at above 50 percent based on Streiner (1994), for retaining the items. Table 4 gives the results. For factor one, the Eigen value was 3.167, with 79.18 percent variance explained by the factor. For factor two, the Eigen value was 2.874, with 71.85 percent variance explained by the factor. For factor three, the Eigen value was 2.447, with 61.18 percent variance explained by the factor. Since in all the three cases, the Eigen values (> 1.00), and Variance explained (> 0.50) were within the recommended criteria established, it was concluded that the 12-item scale achieved convergent validity.

Table 4: Convergent Validity			
Components	Items	Eigen Value	Variance Explained
Factor 1	4	3.167	79.18
Factor 2	4	2.874	71.85
Factor 3	4	2.447	61.18
<i>Source: Analysis Results</i>			

With the confirmation of discriminant validity, the scale was then subjected to the assessment of discriminant validity. Discriminant validity was assessed by examining the inter-item cross-loadings. Based on Bhattacharjee (2012), when an item has factor loadings of 0.30 or less with the items of all other constructs (cross-loadings), discriminant validity is achieved. Table 5 gives the details. It is seen that except for the first four items, all other eight items had very low cross-loadings with factor one (-0.058 to 0.230). Except for Items five to eight, all other eight items had very low cross-loadings with factor two (-0.057 to 0.301). Except for Items nine to twelve, all other eight items had very low cross-loadings with factor three (-0.141 to 0.159). Hence convergent validity of the scale was established.

Table 5: Cross Loadings			
Items	Factors		
	1	2	3
1	0.908	-0.057	-0.042
2	0.885	0.017	0.067
3	0.877	0.196	0.053
4	0.854	0.301	0.093
5	0.194	0.874	-0.044
6	0.170	0.846	0.159
7	-0.058	0.814	-0.141
8	-0.031	0.764	0.151
9	0.197	0.01	0.822
10	0.004	0.227	0.801
11	0.230	-0.105	0.769
12	0.012	-0.003	0.754
<i>Source: Analysis Results</i>			

Conclusions

The foregoing analysis confirmed that the 12-item scale is reliable and valid to measure the perceived effectiveness of training programmes (eg. MEDP, LEDP) of NABARD among the rural women members of SHGs. The perceived effectiveness scale is confirmed to be a multi-dimensional scale with three components.

The items to measure the job-related benefits are:

- Improved skills and knowledge for the current role
- Improved confidence in performing job tasks
- Increased knowledge in tools and techniques applicable at work
- Positively impacted overall job performance

The items to measure the career-related benefits are:

- Helped identify and work towards career goals
- Opened up opportunities for career advancement
- Preparedness for future responsibilities and challenges

The items to measure the personal-related benefits are:

- Enhanced self-confidence and personal development
- Feels more engaged and valued by others
- Improved problem-solving and critical thinking
- Inspired the pursuit of personal growth and learning

The job-related benefits component measures the improvement in the skills and knowledge that are required for the current roles and job responsibilities. The improvement in confidence in performing the job-related tasks Increased knowledge after the training in tools and techniques that are applicable for executing job-related tasks and the perception of the beneficiaries on whether the training has impacted their overall job performance positively are captured by this component.

The career-related benefits component measures the help rendered by the training in identifying and working towards career goals of the individual, and the extent to which career opportunities were opened up after the training. The level of preparedness to take up future challenges and opportunities related to their career, and identification of the best practices for career are also measured by this component.

The personal related benefits component measures the self-confidence and personal development achieved by the training. The extent to which the individual members feel that they are more valued and engaged by others is also measured. Improvements in problem solving skills and critical thinking, as well as the inspiration felt to pursue personal growth are also captured by the component.

Acknowledgement: This study was carried out as part of a Major Research Project funded by The Indian Council of Social Science Research (ICSSR), Ministry of Education, Government of India.

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