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Maheshwari KD
Ph.D. Scholar, Department of
Agricultural Extension
Education, College of
Agriculture, University of
Agricultural Sciences, Dharwad,
Karnataka, India

Bheemappa A
Professor, Department of
Agricultural Extension
Education, College of
Agriculture, University of
Agricultural Sciences, Dharwad,
Karnataka, India

Corresponding Author:
Maheshwari KD
Ph.D. Scholar, Department of
Agricultural Extension
Education, College of
Agriculture, University of
Agricultural Sciences, Dharwad,
Karnataka, India

Scale to measure perception of implementers towards convergence mechanism under MGNREGA

Maheshwari KD and Bheemappa A

Abstract

Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) launched in February 2006 is perhaps the largest and most ambitious social security and public works programme in the world. MGNREGA with its inter-sectoral approach opens up opportunities for convergence with different programmes. The aim of convergence is to optimise public investments made under existing schemes through suggested ways of linking and steering them towards a common/ shared recipient end, both physical (area, infrastructure, natural resource) and human (person, group, agency). The convergence initiative is considered as a positive step towards sustainable rural development in many different ways. But, lack of convergence amongst relevant government departments and functionaries being heard among various states. Keeping this in view, an attempt has been made to develop a scale for measuring the perception of implementers towards convergence mechanism established under MGNREGA by using "Summated Rating Scaling Technique" developed by Rensis Likert (1932). For the identified 78 statements under seven components viz., Concept and special features (13), Objectives and specific advantages (21), Inclusion of ICT technologies (6), Stakeholders linkage and involvement (6), Resource pooling (8), Institutional arrangements (7), Stages of MGNREGA convergence mechanism (17) relevancy test was performed which resulted in 58 statements. Finally 38 statements were retained for measuring the perception towards convergence mechanism of MGNREGA.

Keywords: Convergence, Likert's summated rating scaling technique, MGNREGA, perception

Introduction

The Government of India implemented a series of wage employment programmes such as, Crash Scheme for Rural Employment (1971), Food for Work Programme (1977), Training of Rural Youth for Self-employment (1979), National Rural Employment Programme (1980), Jawahar Rojgar Yojana (1989) and National Food for Work Programme (2004). Based on the experience of these programmes, Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) (initially named as National Rural Employment Guarantee Act or NREGA) was enacted by Government of India in 2005 (Rekha and Mehta, 2019) [15]. MGNREGA is considered as a 'Silver Bullet' for eradicating rural poverty and unemployment, by way of generating demand for productive labour force in villages (Mohanty, 2012) [13]. The act marked a paradigm shift from the previous wage employment programmes with its right based approach that makes the government legally accountable for providing employment to those who demand.

Since, inception of MGNREGA, the country has achieved several milestones including massiveness of coverage, targeting benefits for the marginalized sections of the people (Jha *et al.*, 2008) [9], sensitizing people regarding employment as their rightful entitlement (Dreze, 2007), arresting distress migration and causing increase in lean season rural wages (Mehrotra, 2008) [12]. Ironically, the country has also witnessed conspicuous failures on some critical dimensions. Some major challenges are low employment creation (CAG, 2007; Biswas, 2007) [5, 4], underutilization of funds (www.nrega.nic.in), absence of transparency (Dreze, 2007), administrative delays and poor quality works (Ambasta *et al.*, 2008) [1]. Among all, the most visible challenge has been in respect of creating adequate employment and utilization of funds. Underutilization of funds tends to create a serious setback in achieving the targeted goals.

Based on the operational guideline issued in February 2013 the preparation of development plan with focus on creating employment opportunities and promote sustainable opened up opportunities for convergence of MGNREGA works with the resources of other programs and schemes available with various other line departments. The primary objective was maximizing returns on public investments for creating durable and productive assets, securing livelihood

for rural households and attaining sustainable development. With a view to strengthen the convergence process, the year 2014-15 was declared as the year of convergence by the Ministry of Rural Development (MoRD), Government of India (Anonymous, 2014) [3]. Consequently, the government requested all the states to develop a roadmap for convergence. But, lack of convergence amongst relevant government departments and functionaries being heard across the states. Hence, there is a need to assess the extent of involvement of implementers at various stages of programme, which necessitates the established measuring procedure. Keeping this in view, an effort was made to develop a scale to measure the “perception of implementers towards convergence mechanism established under MGNREGA”.

Material and Methods

In the present study perception was operationalised as meaningful sensations of development department’s extension personnel involved in implementation of MGNREGA convergence works. To measure perception of implementers towards convergence mechanism under MGNREGA a scale has been developed by following the procedure of the method of “Summated Rating Scaling Technique” suggested by Likert (1932) [11] and Edwards (1969) [7] has been discussed below.

Collection and editing of items

Based on the available literature, information gained during attending workshop and meetings related to MGNREGA convergence works, consultation with experts in MGNREGA work implementation, discussion with members of advisory committee and based on screening 78 statements under seven components viz., Concept and special features (13), Objectives and specific advantages (21), Inclusion of ICT technologies (6), Stakeholders linkage and involvement(6), Resource pooling (8), Institutional arrangements (7), Stages of MGNREGA convergence mechanism (17) were selected and which formed the universe of the content (Table 1). The identified items were carefully edited in the light of 14 criteria suggested by Edwards (1969)[7].

Relevancy test

The draft scale consisting of 78 statements were administered to a group of experts and experienced persons in the field of development programmes implementation to determine the relevancy and their subsequent screening in four point continuum viz., Most relevant (MR), Relevant (R), Less Relevant (LR), and Not Relevant (NR). For this purpose, the items were mailed, posted and directly interviewed to more than 96 experts in the field of Agricultural Extension and Rural development of different line departments working in district level and three tier Panchayat Raj Institution. The experts were requested to indicate their response on four point continuum for appropriateness of each statement for inclusion in the index to measure particular component of perception about MGNREGA convergence mechanism. The experts were also requested to make necessary modification and addition or deletion of items if they desired so. In all, 44 respondents could respond in time. The relevancy score for each item / statement was found out by adding the scores on the rating scale (MR-4, R-3, LR-2 and NR-1) for all the 44 respondents. From the data so gathered “Relevancy Percentage”, “Relevancy Weightage” and “Mean Relevancy Score” were worked out for all the 78 items / statements by using the formulae

$$\text{Relevancy Percentage (RP)} = \frac{\text{MR} \times 4 + \text{R} \times 3 + \text{LR} \times 2 + \text{NR} \times 1}{\text{Maximum possible score (78} \times 4 = 312)} \times 100$$

$$\text{Relevancy Weightage (RW)} = \frac{\text{MR} \times 4 + \text{R} \times 3 + \text{LR} \times 2 + \text{NR} \times 1}{\text{Maximum possible score (78} \times 4 = 312)}$$

$$\text{Mean Relevancy Score (MRS)} = \frac{\text{MR} \times 4 + \text{R} \times 3 + \text{LR} \times 2 + \text{NR} \times 1}{\text{Number of judges respondent}}$$

Involving this procedure individual statements were screened for their relevancies. Accordingly, statements having relevancy coefficient of 0.70 and mean relevancy score of 2.11 and above with were selected.

Item analysis

Item analysis was carried out by the method of Murphy and Likert (1937) [11] on the items selected to delineate the items based on the extent to which they can differentiate the perception items about MGNREGA convergence mechanism in higher group from lower group. A schedule was prepared and used for personally interviewing the perception of officials on a five point continuum viz., Strongly Agree (A), Agree (A), Undecided (UD), Disagree (DA) and Strongly Disagree (SDA) with weightages 5, 4, 3, 2 and 1, respectively. The schedule was administered to 40 experts in non-sample area. The ratings for each response by the respondents were utilized for the calculation of ‘t’ values under each item. The response to each statement was considered as a rating score and the scores were summed up for all statements.

From the total score, the frequency distribution of scores was considered, which was based on the responses to all statements. Then, 25 per cent of the subjects with the highest total score and 25 per cent of the subjects with the lowest total score were taken, which provided the criterion groups to evaluate the individual statement. The criterion ratio was calculated using the given below formula.

$$t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\left(\frac{\sum \bar{X}_H^2}{n} - \frac{(\sum \bar{X}_H)^2}{n}\right) \times \left(\frac{\sum \bar{X}_L^2}{n} - \frac{(\sum \bar{X}_L)^2}{n}\right)}}$$

Where,

- \bar{X}_H = The mean score on given statement of the high group
- \bar{X}_L = The mean score on given statement of the low group
- $\sum \bar{X}_H^2$ = Sum of squares of the individual score on a given statement for high group
- $\sum \bar{X}_L^2$ = Sum of squares of the individual score on a given statement for low group
- n = Number of respondents in each group
- t = The extent to which a given statement differentiate between the high and low group

The ratings for each statements were subjected to “t” test. The statements were finalised based on the “t” values. The statements having calculated “t” greater than table “t” were finalised.

Validity of the scale: Validity of a scale was ascertained by assessing content validity and construct validity.

Content validity: Kerlinger (1976) [10] defined content validity as the representativeness or sampling adequacy of the content, the substance, matter and the topics of a measuring instrument. The content validity is the validity when it appears to measure whatever the author had in mind, what he thought he is measuring. This includes both face validity and logical or sampling validity. The main criterion is how well the content of the scale sample the subject matter which is important for the variable under study. It was ensured in the collection and selection of statements for the construction of the scale by seeking the opinion of experts and also universe of content of perception of officials towards MGNREGA convergence mechanism.

Construct validity: The construct validity of an instrument is the extent to which one can be sure that it represents the construct whose name appears in its title (Henerson *et al.* 1978). In order for the operating measures to have construct validity, the operating measure must demonstrate that it measures that specific construct and not other constructs. The construct validity of the scale was established as follows.

Correlation of the component scores with total scores

A construct is valid in many occasions by the method of internal consistency (Anastasi, 1968) [2]. The essential characteristic of this method is that the criterion is none other than the total score of the test itself. The method involves finding the correlation of component scores with total scores of the test. The scale developed for the study was administered to 30 officials of three tier Panchayat Raj Institution, line departments, development departments works other than the respondents selected for the study. The correlation coefficients of total score of statements with components of perception scale viz., Concept and special features, Objectives and specific advantages, Inclusion of ICT technologies, Stakeholders linkage and involvement, Resource sharing/pooling, Institutional arrangements, Stages of MGNREGA convergence mechanism were calculated. The higher value of correlation coefficient justified the construct validity of the scale.

Reliability of the scale: The scale is said to be reliable when the results exhibit high degree of consistency or it consistently produces the same results when applied to measure the same phenomenon from time to time. The reliability of perception of stakeholders towards convergence mechanism of MGNREGA was established through 'split -half method'. The scale was administered to 30 officials of three tier

Panchayat Raj Institution and line departments' work under non-sample area. The statements were divided into two equal halves with even number items in one half and the odd numbers in the other half. The correlation coefficients between two sets of scores of the scale were calculated. The higher value of correlation coefficient justified the reliability of the scale.

Result and Discussion

Relevance analysis: Out of 78 statements 58 statements found have relevancy percentage more than 70.00 per cent and relevancy score of more than 2.11. Thus, 58 statements were qualified for subjecting to item analysis (Table 1 and 2). Further, statements were suitably modified and edited as per the comments of experts wherever applicable

Item analysis: The ratings for each 58 statements were subjected to 't' test. The calculated 't' was found to be greater than table 't' in 38 statements. Thus 38 statements were retained in the scale to measure the perception of officials towards convergence mechanism of MGNREGA (Table 1 and 2).

Validity of the scale: The correlation coefficients of total score of statements with components of perception of convergence mechanism of MGNREGA found to be 0.68, 0.72, 0.78, 0.69, 0.76, 0.74 and 0.66 for each components, respectively. The higher value of correlation coefficient justified the construct validity of the scale. Thus, it could be concluded that the components considered in the present study were appropriate in measuring the perception of officials towards convergence mechanism established under MGNREGA.

Reliability of the scale: The coefficient of correlation between two sets of scores of the scale was computed and found to be 0.82, which was highly significant at one per cent level indicating the high reliability of the scale. Thus, 'perception of officials towards convergence mechanism established under MGNREGA' scale was found to be reliable.

Administration and scoring of perception: The final scale consisted of 38 statements which are to be administered to the officials involved in MGNREGA convergence works implementation on five point continuum viz., strongly agree, agree, undecided, disagree and strongly disagree, with the scores of 5, 4, 3, 2 and 1 for positive statements and reverse order for negative statements respectively. The scores of all the items were summated to get the perception score of officials. The scores range from 38 to 190. A higher score revealed higher perception of the respondents.

Table 1: Details of items selected and retained to measure the perception of implementers towards MGNREGA convergence mechanism

Components	Total items identified	Items retained after relevancy test	Items retained after item analysis
A. Concept and special features	13	7	5
B. Objectives and specific advantages	21	16	8
C. Inclusion of ICT technologies	6	6	5
D. Stakeholders linkage and involvement	6	6	4
E. Resource sharing/pooling (technical, human, financial)	8	8	6
F. Institutional arrangements	7	6	4
G. Stages of MGNREGA convergence mechanism (Planning/ implementation/ monitoring and evaluation)	17	9	6
Total	78	58	38

Table 2: Scale to measure the perception of implementers towards MGNREG convergence mechanism

Sl. No.	Perception statements	Relevance analysis			Item analysis
		RW	RP	MRS	“t” values
A	Concept and special features				
1.	Convergence is an optimization of resources/ assets	0.8984	89.84	3.72	3.30**
2.	Convergence is harvest of interactive efforts	0.9102	91.02	3.82	2.89*
3.	Convergence approach involve certain social process encompassing co-operation, coordination, competition, accommodation, assimilation, integration and partnership	0.8242	82.42	3.11	2.76*
4.	Multiple assets to a household for augmentation of livelihood potential is a major thrust of MGNREGA convergence	0.9063	90.63	3.8	2.65*
5.	Convergence doesn't ensures in emerging MGNREGA as an accelerated strategy for connecting the rural poor/area with highways of opportunities (-)*	0.9063	90.63	3.8	2.32*
B	Objectives and specific advantages				
	<i>MGNREGA convergence</i>				
1.	Leads to curtailment of duplication and redundancy of efforts across agencies in creating almost identical assets	0.8750	87.50	3.29	2.36*
2.	Established synergy among different government programmes in planning & implementation	0.8998	89.84	3.69	2.82*
3.	Helped to get mutual benefits among the converged dept. both in complementary and supplementary manner	0.8398	83.98	3.18	3.25**
4.	Brought improvement in the five capitals of sustainable development of people (viz., physical, financial, natural, social and human capital)	0.8828	88.28	3.67	3.45**
5.	Helped in greater coverage of the households, area and works	0.8281	82.81	3.12	3.10*
6.	Helped to be instrumental in generating the durable and quality assets	0.8594	85.94	3.26	2.76*
7.	Minimised availability and accessibility of resources/support services to beneficiaries (-)*	0.9063	90.63	3.80	2.89*
8.	Ensured to overcome the challenge of empowering the poor and vulnerable sector people in a short period of time with appropriate strategies	0.9766	97.66	4.62	2.99*
C	Inclusion of ICT technologies				
1.	Convergence ensured to use basket of ICT technologies (Computer, Mobiles, Internet services, GIS, GPS, Remote Sensing) in development of the area	0.9258	92.58	3.92	2.46**
2.	e-FMS doesn't ensures transparent and timely availability of funds at all levels	0.8633	86.33	3.28	2.80*
3.	MIS of MGNREGA convergence projects maintain the transparency in all stages viz., planning, implementation, monitoring and evaluation	0.8555	85.55	3.21	2.76*
4.	Database of the works helps in identification of the gap in all sectors of works	0.8750	87.50	3.29	2.81*
5.	Enabled to pro-actively putting the information relating to MGNREGA convergence activities in public domain	0.8828	88.28	3.67	2.83*
D	Stakeholders linkage and involvement				
	<i>MGNREGA convergence</i>				
1.	Doesn't take the organisational relationships at higher levels (-)*	0.8984	89.84	3.69	2.08*
2.	Helped to reduce the vulnerability in the existing systems by involving the experts of line departments	0.8789	87.89	3.65	3.29**
3.	Facilitated in better quality planning	0.7852	78.52	2.19	2.05*
4.	Ensured to improve the delivery mechanism	0.7656	76.56	2.16	3.79**
E	Resource sharing/pooling (technical, human, financial)				
	<i>MGNREGA convergence</i>				
1.	Doesn't offers a good base for planned pooling of the resources (technical, human, financial) to meet the common objectives (-)*	0.8086	80.86	3.05	2.86*
2.	Facilitated in better utilization of available resources (technical, human, financial)	0.8555	85.55	3.21	2.51*
3.	Dovetailed the shortage of resources in implementing the works	0.7930	79.30	3.01	2.44*
4.	Ensured to maximise the outcomes and outputs of the programme	0.8086	80.86	3.05	2.98*
5.	Helped to access technical know-how available with converging dept. in designing and implementation of projects/works	0.7813	78.13	2.18	2.33*
6.	Convergence through NREGA has the advantage of guaranteed resource support	0.7773	77.73	2.17	2.57*
F	Institutional arrangements				
1.	The Panchayat Raj Institutions (PRIs) doesn't have a pivotal role in NREGA convergence mechanism (-)*	0.9297	92.97	3.98	2.60*
2.	Institutional arrangements at different levels (Village, Taluk, District, State, National) helps in advising, formulating, apprising and monitoring the implementation of convergence models at respective levels	0.8750	87.50	3.29	2.32*
3.	GPs act as the single window for facilitation in implementation of MGNREGS convergence works	0.8994	89.84	3.76	3.29**
4.	Helps to obtain the services from NGOs, SHGs, Cluster Facilitation Groups (CFTs) and Community Based Organisations (CBOs) in different stages of convergence mechanism	0.8086	80.86	3.05	3.55**
G	Stages of MGNREGA convergence mechanism (Planning/ implementation/ monitoring and evaluation)				
1.	The provision of decentralized planning enabled comprehensive need assessment at grassroots and greater ownership of projects	0.8594	85.94	3.24	3.46**
2.	Benchmark survey in planning ensured in assessing the gaps in varying sectors of works, development of the area and demand for works	0.8398	83.98	3.18	3.25**

3.	Planning based on demand doesn't requires the PRIs and inter & intra sectoral departments to display a lot of vision and skills (-)*	0.9453	94.53	4.52	3.35**
4.	Involvement of the technical personal from converged scheme/dept. ensured to obtain timely advice on practices to be followed	0.9119	91.19	3.86	3.42**
5.	Physical and financial audit ensured to verify the quality of works and to check that the expenditure is commensurate with the assets created	0.9263	92.63	3.96	3.1*
6.	Social audit ensured transparency, participation, consultation and accountability about MGNREGA convergence works	0.8342	83.42	3.14	2.58*

RW-Relevancy Weightage; RP-Relevancy Percentage; MRS-Mean Relevancy Score

(-)*negative statements

* Significant at 0.05% level

** Significant at 0.01% level

Conclusion

Out of various methods available for constructing of the perception scale, Likert's "Summated Rating Scaling Technique" was used for developing scale for measuring perception of implementers towards convergence mechanism established under MGNRGEA. The scale developed was standardised and found to be reliable and valid, hence, it may be used in future studies with due modifications. The scale would also enable the policy makers, development departments and three tire Panchayat Raj to analyse how well the MGNREGA convergence mechanism gaining success and what is the opinion of implementers towards MGNREGA convergence mechanism. This further helps the policy makers to improve the implementation of MGNREGAS convergence works in better mode.

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