DEVELOPMENT AND STANDARDIZATION OF A SCALE TO MEASURE THE SOCIO-ECONOMIC STATUS OF THE FARMERS

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ABSTRACT

The present study was undertaken to develop a scale to measure the socio-economic status of the farmers of South Gujarat. The scale consists of twelve main items such as caste, occupation, education, annual income, family type, family size, land holding, socio-political participation, material possessions, herd size, house holding and personal achievement. Relevant sub items against main items were also identified. The reliability and validity of the scale was established through appropriate methods.

INTRODUCTION

As such, worldwide there is a strong feeling that the solution of problems of conventional farming now lies in organic farming. The organic farming has been ecological balance and microenvironment suitable for sound health and growth of soil micro flora, plants, animals and human beings who consume farm products. Today, India has significant strengths in selected tropical organic produce in world market and its contribution reaches up to 20 million US $.

Notwithstanding the growing opportunities in this field, there has been little effort in research front regarding socio-economic status of organic farming followers. There is an urgent need to create a data base on various aspects of organic farming followers in order to reorient the research agenda and train extension and development workers in organic farming. Therefore, the present study was undertaken to develop and standardize a scale to measure the socio-economic status (SES) of the farmers of South Gujarat.

METHODOLOGY

This study was confined to an *Ex-post facto* research design. A two stage stratified proportionate random sampling technique was followed to standardize the SES scale. First of all, the list of urban and rural villages of the South Gujarat with categorization of farming community was obtained from the Directorate of Economics and Statistics Bureau, Government of Gujarat, Gandhinagar. The farmers doing agriculture and or holding a land was considered as the criteria for selection of the farmers, hence in the present study the land is understood to be the chief influencing item in determining the SES of farming community. For the basic requirement for identifying the items from the universe and item analysis, 7 villages from urban and 7 villages from rural areas with total 6,457 categorized farming communities were selected. Out of these, three per cent of the total farming communities from each category was randomly selected. In all, 200

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respondent size was obtained under this study.

FINDINGS

1 Development and standardization of SES scale for the farm families of South Gujarat

For the present study the procedure followed is given below:

1.1 Collection of the scale items

The items related to scale were collected by reviewing the literature *viz.,* books, magazines, research journals, souvenirs *etc.* Moreover, a rigorous discussion with experts of this field was also made to create clarity of concept about items to be incorporated for construction of SES scale. At last, a list of 249 items were scrutinised /prepared.

1.2 Preliminary selection of the items

It is a process which involves scrutinizing the items on the base of its essentiality from the list. For preliminary selection of the items, following criteria were used.

(i) Items must be good indicators of SES,

(ii) Items should be suitable for the study area,

(iii) Items must be objectively observable, and

(iv) Items should be scorable.

The points considered for eliminating the items were;

(i) Duplication of items, and

(ii) Non-specific or indistinguishable items.

Thus, a abridge list prepared which consisted of one hundred & twenty five items. An interview schedule for identification of items was prepared. According to the procedure, it was pre-tested on 50 farmers in non-sample area. The interview schedule was used for collecting information from the sample. Information thus collected was tabulated under main and sub items.

1.3 Allocation of weightage to items

A schedule was prepared for the purpose to allot the weightage to each main and sub items. The schedule was translated in to local language and pre-tested on fifty farmers of non-sample area to eliminate the ambiguity of the schedule.

After necessary corrections, it was administered to a group of forty experts who have been working in the field of agricultural extension. The experts were identified and requested to rate each main and sub items mentioned in the schedule on a five point continuum. The continuum was ranging from most important, important, some what important, less important and least important to indicate its relative contribution for determination of SES of farm families of South Gujarat. The item wise obtained information was tabulated by giving the weightage; five score for 'most important', four for 'important', three for 'some what important', two for 'less important' and one for 'least important'. In case of family type, two score for 'most important' and one score for 'least important' were assigned. Lastly, the mean scores for main items and sub items were calculated.

A Wilcokson Sign test was used to determine the differences between the mean scores of the two items. The probability value for each pair was found. The test showed that the differences among the various items or weightages were not significant. So, it was

decided that the main items may be given equal weightage in the scale. Weightages for sub items were also decided based on the mean scores in the same way as was done for main items. The obtained mean scores after calculation of main items are presented in table 5. The final weights were assigned to all main and sub items. These weights were used to calculate the scores secured by the 200 farm families for the information given through item identification schedule.

1.4 Item analysis

The particular situation or object that evokes the response, together with a specified set of response categories is called an item. It is a manifest variable. It was done by a method of external criterion to assess the discriminating power of the items.

1.5 Final selection of items

Item wise analyzed data were used for the selection of items. These were utilized only as tool for selection. The low discriminate value did not necessarily disqualify any item. Some items were excluded because of the problem encountered in defining them or in obtaining reliable responses on them. A final list of items was prepared for inclusion in the scale.

1.6 The first draft

With the selected items, a draft of the scale to measure SES of farm family was prepared. Mean scores in the item weightage schedule were utilized in assigning scores to different items and sub items. Zero was assigned for the absence/Nil information of an item and one for its presence/availability/possession (Lundberg, 1949). Multiples of one was assigned for successive levels in case of items in list.

1.7 Administration of SES scale

An interview schedule for getting information for scoring on SES scale was prepared. Instructions for administration of SES scale followed by brief explanation about the items and sub-items were also prepared for convenience and precision in administering the scale.

1.8 Working of the scale

The scale took five to ten minutes to collect information. No difficulty was expressed, if the rapport between investigator and respondent has been developed.

1.9 The final scale

The final format of SES scale was prepared. Except family type, the items were equally weighed. Each of them had a maximum score of five while in case of family type, a maximum score was two. The sub items were differently weighed.

1.10 Obtaining the reliability and validity of SES scale

1.10.1 Reliability of the scale

The concept of internal consistency does not apply to the present scale. Along with stability of scales the inter judge reliability is equally important. Coefficient of inter judge reliability would refer to the correlation between measurement, mode of the sample by the independent interviewers.

1.10.1.1 Test-retest method

This method was used to find out the coefficient of stability or what Wood (1961) calls “temporal reliability”. The correlation of the scale score’s taken at two times at one and half month interval from two farm families of 14 villages selected randomly in Stage-I. The

0.817 value of coefficient of stability indicates that the scale is highly reliable; it infers that the scale is able to give uniform measurement under similar conditions in terms of its stability.

1.10.1.2 Inter judge reliability

For testing the stability of the scale, it was applied to 28 randomly selected families by the two independent persons of Stage-I. The "sign test" and "rank order correlation test" were applied to know whether the difference in scores given by two persons were significant. The sign test was not significant. It indicates that the difference between the scores given by two persons were not significant. The rank order correlation between the scores obtained by two independent judges (0. 829) was very high.

1.10.2 Validity of the scale

The validity is the property of the scale which ensures that the obtained SES score correctly measure the variable they are supposed to measure. The joint committee of three organizations (APA, 1954) recommended that the instrument ought to take into account four aspects of validity i.e. content validity, predictive validity, concurrent validity and construct validity. In the present case the validity of the scale was established by using following methods.

1.10.2.1 Content validity

Garret and Woodworth, (1967) stated that the content validity is also called face validity. The content validity of this scale is borne out by the method of collecting items. The content validity is the validity when it appears to measure whatever the author had thought to measure. Judgement of content validity is very helpful in helping the author to decide whether the items are relevant to some specific situation. Therefore, the choice of the item in content validity depends upon the judgement of competent person about its suitability for the purpose of the test. In present study, the universe of the concept was covered widely. Each item of the scale was selected and judged by the experts and farmers, thus it can be said that the scale possesses content validity.

1.10.2.2 Concurrent validity

To test the concurrent validity of the scale, known group method was used. This method indicates that how well the scores relate to some outside criterion. A random sample of twenty eight farm families from Stage-I was taken as the judging group. They were requested to name persons of very high and very low SES. Thus the total number of farmers named was four for high SES and thirty six for low SES.

1.10.2.3 Construct validity

Construct validity is evaluated by demonstrating that certain exploratory constructs account to some degree for performance on the test (APA, 1954). It was verified by the test of normal probability.

1.11 Norms of distribution of scores

While constructing and standardizing a scale, it is necessary to work out the norms of distribution of scores. Norms are helpful in providing a basis for understanding and interpreting the raw scores. Also, they help in determining the relative position of an individual on a scale. Raw scores earned by individuals or particular group do not indicate the relative position of this individual or

group in the total distribution of population. Singly considered such scores do not provide a comprehensive view of the community studied and are not usable for the purpose of comparative study. Hence, the determination of norms is a part of the process of standardization of a measuring instrument.

1.11.1 Score distribution

The procedure recommended by Garrett (1967) was used to tabulate the frequency distribution and also to work out other graphical representations. The scores obtained were grouped into ten convenient classes with an interval of five points.

1.11.2 Tests of normality of distribution

A rough and ready test lay in the comparison of simple statistics such as the mean, median and mode. Theoretically, in normal distribution, these values coincide. The difference between mean (27.311) and median (29.000) is 1.689. However, mode (29.000) is higher than the mean and is equal to median.

1.11.3 Variability measures

The mean value was 27.311, while median and mode are equal (29.000). A low value of standard deviation (σx=7.538) indicated narrowness of deviations from the mean. The value of Absolute Mean Deviation (AMD) was 6.210. This has been utilized for expressing an individual score in terms of norms. The variance (σx^2) for the present study measured was 56.817.

1.11.4 Use of norms

The norms, in whatever way these be expressed, are meaningful with reference to the particular normative population from which these are derived. These are calculated from the scores obtained by the subjects constituting the standardized sample, so these have to be used specifically in the population for which these are reported.

1.11.5 Socio-Economic Status categories

The categorization of SES is based on the assumption that an individual stands on continuum of SES scale, which may be classified into a social system of status categories ranging from very low to very high. Science and scientific investigation require standardized tools and concepts which should be understood by all in the same way and in the same context. The lack of standard SES categories put the researcher in an embarrassing position. So, an attempt has been made to identify the standard SES categories for the present study based on scores of developed SES scale for farm families of South Gujarat.

1.11.5.1 Method Used

There are some methods for status categorization; (i) interval scales, usually taking the mean and standard deviation on basis of scaling. Here, the mean of the value of distribution is taken as the basis and multiples of standard deviation is used for getting desired number of categories on both sides of the mean, and (ii) Percentile scaling, usually in quartiles or percentiles. Here different quartiles are calculated and scores are divided into categories.

The categorization based on the mean and standard deviation does not appear to provide the realistic picture which obtained in the field of investigation. It has provided wider differences in numbers in the upper and lower status classes and larger concentration at the middle. Satisfactory categories could not be provided by percentile method also.

Therefore, an attempt has been made to categorize the farm family on the basis of median and AMD. This provided a symmetrical distribution of categories. Selltis *et al.* (1959) and Rogers (1962) suggested that the set of categories should be exclusive, exhaustive and derived from a single classificatory principle. Accordingly, it was decided to have five categories viz., higher, higher middle, middle, lower middle and lower.

The median of the distribution of status scores was 29.00 and AMD was 6.21 (rounded to 6.00). The middle group was bound by median minus AMD to median plus AMD whereas, other categories were formed on the basis of median $\pm$ AMD, median $\pm$ 2 AMD, above median + 2 AMD and below median + 2 AMD. This has resulted in the five categories which are mutually exclusive, exhaustive and derived from a single classificatory principle.

Table 1: Classification of SES

Sr.	Categories	Class
1	Higher	Above 41
2	Higher middle	36 - 41
3	Middle	23 - 35
4	Lower middle	17 - 22
5	Lower	Below 17

			Score
1	**Caste**		
	a	General	5
	b	OBC (Baxi/SEBC)	4
	c	ST	3
	d	SC	2
	e	Migrating Cast	1
2	**Occupation**		
	a	Professional/Service in Govt.	5
	b	Farming/Business/ Farming with service/Farming with other enterprise	4
	c	Skilled occupation	3
	d	Service in Private	2
	e	Unskilled occupation	1
3	**Education**		
	a	College /Post graduation	5
	b	High school	4
	c	Middle school	3
	d	Primary school	2
	e	Functionally literate	1
	f	Illiterate	0
4	**Annual income**		
	a	above 2,00,000	5

	b	1,50,001 to 2,00,000	4
	c	1,00,001 to 1,50,000	3
	d	50,001 to 1,00,000	2
	e	up to 50,000	1
5	**Family type**		
	a	Joint	2
	b	Nuclear	1
6	**Family size**		
	a	1 to 2 members	5
	b	3 to 4 members	4
	c	5 to 6 members	3
	d	7 to 8 members	2
	e	Above 8 members	1
7	**Land holding (in Ha.)**		
	a	Big (above 10 ha)	5
	b	Medium (4.01 to 10 ha)	4
	c	Semi medium (2.01 to 4 ha)	3
	d	Small (1.01 to 2 ha)	2
	e	Marginal (0.01 to 1 ha)	1
	f	Landless	0
8	**Socio-political participation**		
	a	Involvement in community work	5
	b	Active office bearer	4
	c	Financial contribution or raising fund for community	3
	d	Official position in social and political committee	2
	e	Official position in one or more socio-political organisation	1
	f	No participation	0
9	**Material possessions**		
	a	Tractor/Mini tractor/Gobar gas plant/ Refrigerator /Cooler /Green house/ Internet /Car, Truck	5
	b	Pump set/ Mobile/ Telephone/ Drip irrigation set /Sprinkler irrigation Set/LPG gas connection /Television/ Improved farm implements	4
	c	Motorcycle/Electricity/News paper/Sofa/VCD / DVD	3
	d	Bullock cart /Fan/Radio/Camera	2
	e	Watch/Table/Clock/Chair/Bicycle	1
10	**Herd size**		
	a	Buffalo/Cow	5
	b	Bullock	4
	c	Poultry	3
	d	Bulls/Heifers/Goats/Sheep/Donkey/	2
	e	Pig	1
	f	No animal	0

11	**House holding**		
	a	Concrete double storied	5
	b	Concrete	4
	c	Tiled and brick wall	3
	d	Mud walled/Metal sheet roof	2
	e	Thatched shed	1
12	**Personal achievement**		
	a	Award in agriculture	5
	b	Award in society	4
	c	Award in education	3
	d	Award in sports	2
	e	Award in bravery	1
	f	No award	0

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A teacher to be effective should always be a learner. If he ceases to be a student. he ceases to be a good teacher. Today, we are growing more and there is an increase in lawlessness. The teachers should set on example to the pupils by their behaviour vichara (Inquiry), achara (Practice) and prachara (Teaching) should go together. We should develop the habits of self - scrutiny and self-discipline.

- Dr. S. Radhakrishnan