RESEARCH ARTICLE :

Scale to measure utility perception of mass media by the farm women

■ **A. S. Lad, P. R. Deshmukh and R. P. Kadam**

SUMMARY : Due to non-availability of proper scale to measure utility perception of mass media by the farm women, it was thought necessary to construct a scale for this purpose. Keeping this in view an attempt has been made to develop a scale for measuring utility perception of mass media by the farm women. Normalized rank approach recommended by Guilford (1978) was used in this study for scale construction.

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BACKGROUND AND OBJECTIVES

In the present study, utility perception refers to the degree to which an agricultural TV programme, agricultural radio programme and an agricultural article in the newspaper was perceived as useful to gain required technical knowledge which can be put into practice. Three mass media were selected *viz.,* TV, radio and newspaper for this study. Normalized rank approach recommended by Guilford (1978) was used in developing the present instrument. The advantage of this method was that it can be used with almost any number of variables and does not require a large number of judges for ranking the variables.

RESOURCES AND METHODS

The details of the steps actually followed for construction and standardization of utility perception of mass media scale were as follows.

Item collection:
Items related to utility perception of mass media were collected from review of literature and through interview with experts.

Selection of the items of utility perception of mass media:
Forty-nine items were included in the scale to measure the utility perception of mass media by the farm women. It was necessary to list sub-items under each main item to help in administering the scale and to have objective assessment of the scale items.

Selection of the judges:
In order to judge the relevancy of the

item and also to obtain the rank for the selected items, 80 judges were selected, who were expert in the field of Extension Education/Sociology and working in different agricultural universities all over India. The details are furnished in Table A.

Obtaining the judge's opinion:

Judges were requested to selected relevant items which, they felt, contributed to the utility perception of mass media. The judges were also requested to add the items which they feel appropriate for its inclusion in the scale.

Relevancy of scale items:

The responses received from the judges supported the relevancy of all the forty-nine items. Those items which received more than 75 per cent responses were considered as relevant for inclusion in the scale. It was observed that all the items were relevant as the responses for each item were given by more than 75 per cent judges. The details are furnished in Table B.

Obtaining the scale value for the items:

Normalized rank approach recommended by Guilford (1978) was used and scale value for each main item was worked out. The question of giving weightages to various main items was considered on the basis of mean value. In many scales, arbitrary weightages are given which is not scientific. Therefore, in obtaining the scale values for the main items following procedure was followed.

The judges were asked to rank the main items under each mass media. The reverse weightages were given *i.e.* first rank was given to the highest score and last rank was given to the lowest score. The scale values were worked out by using the following formula.

$$AM = \frac{\sum Wi \, x \, Xi}{\sum Wi}$$

where,
AM = Arithmetic mean
Wi = Weightage
Xi = Value of the variate.

Reliability of the scale:

In order to judge the reliability of the scale, test-retest reliability test was used.

Test-retest reliability:

According to Guilford (1978), if test is heterogeneous where different parts of the scale measure different traits, in that case only meaningful estimate of reliability is of the test-retest method. In the present study, Test-retest method of reliability was used.

Validity:

Validity of instrument is the property "that ensures that the obtained test scores correctly measure the variable they are supposed to measure" (English and English, 1958).

Content validity:

According to Kerlinger (1976) it is the representativeness or sampling adequacy of the content, the substance, the matter and the topics of measuring instruments. Further, he stated that content validation consists essentially of judgement, alone or with others, one judges the representativeness of the items. In the present study, the main items included in the scale were arrived at only after wide and judicious validation by the panel of judges who were expert in the field of Extension Education/Sociology.

Norms of distribution of scores:

While constructing and standardizing the scale, it is necessary to work out the norms of distribution of scores. In the present study, theoretical aspects of the norms of

Table A: Judges contacted and responses received			
Sr. No.	Details of judges	No. of judges contacted	No. of appropriate responses received
1.	Dean, HoD, Extension Education discipline	12	09 (75.00)
2.	Professor/equivalent	12	10 (83.33)
3.	Associate Professor/equivalent	28	21 (75.00)
4.	Assistant Professor/equivalent	28	23 (82.14)
	Total number of judges	80	63 (78.75)

* Figures in the parentheses indicate percentages to the total

Table B : Relevancy of the items as opined by judges

Sr. No.	Items	Relevant		Not relevant	
		Number	Per cent	Number	Per cent
	Utility perception of television (TV)				
1.	Understandability	60	95.24	03	04.76
2.	Credibility	58	92.06	05	07.94
3.	Accuracy of information	59	93.65	04	06.35
4.	Brevity	63	100.00	00	00.00
5.	Clarity	52	82.54	11	17.46
6.	Directness	54	85.71	09	14.29
7.	Timeliness	48	76.19	15	23.81
8.	Practicability	56	88.89	07	11.11
9.	Coverage of subject matter	62	98.41	01	01.59
10.	Time adequacy	63	100.00	00	00.00
11.	Information newness	61	96.83	02	03.17
12.	Terminology	50	79.37	13	20.63
13.	Motivation	48	76.19	15	23.81
14.	Pace (speed) of presentation	49	77.78	14	22.22
15.	Illustrativeness (Pictures)	50	79.37	13	20.63
16.	Imaginativeness	48	76.19	15	23.81
17.	Enjoyment in viewing	54	85.71	09	14.29
	Utility perception of radio				
1.	Understandability	63	100.00	00	00
2.	Credibility	60	95.24	03	04.76
3.	Accuracy of information	54	85.71	09	14.29
4.	Brevity	52	82.54	11	17.46
5.	Clarity	48	76.19	15	23.81
6.	Directness	50	79.37	13	20.63
7.	Timeliness	58	92.06	05	07.94
8.	Practicability	61	96.83	02	03.17
9.	Coverage of subject matter	63	100.00	00	00.00
10.	Time adequacy	49	77.78	14	22.22
11.	Information newness	57	90.48	06	09.52
12.	Terminology	54	85.71	09	14.29
13.	Motivation	59	93.65	04	06.35
14.	Pace (speed) of presentation	58	92.06	05	07.94
15.	Illustrativeness (Examples)	50	79.37	13	20.63
16.	Imaginativeness	51	80.95	12	19.05
17.	Enjoyment in listening	60	95.24	03	04.76
	Utility perception of newspaper				
1.	Understandability	62	98.41	01	01.59
2.	Credibility	63	100.00	00	00.00
3.	Accuracy of information	49	77.78	14	22.22
4.	Brevity	63	100.00	00	00.00
5.	Clarity	52	82.54	11	17.46
6.	Directness	51	80.95	12	19.05
7.	Timeliness	60	95.24	03	04.76
8.	Practicability	56	88.89	07	11.11
9.	Coverage of subject matter	49	77.78	14	22.22
10.	Information newness	51	80.95	12	19.05
11.	Terminology	63	100.00	00	00.00
12.	Motivation	60	95.24	03	04.76
13.	Illustrativeness (Pictures and examples)	57	90.48	06	09.52
14.	Imaginativeness	51	80.95	12	19.05
15.	Enjoyment in reading	58	92.06	05	07.94

distribution have been presented in the following way.

Frequency distribution:

The data were grouped in the interval length of five units and then presented in frequency distribution.

Graphical presentation:

Based upon frequency distribution, data were then presented in frequency histogram superimposed on the theoretical skew curve and the cumulative curve or 'ogive'.

Measures of central tendency:

As per the formula suggested by Guilford (1978) and Garrett (1967), three values of central tendency namely mean, median and mode were worked out.

Mean:

Mean (by direct method) $\bar{X} = \dfrac{\Sigma fm}{N}$

where,

f = Frequency of each class

m = Midpoint of various classes

N = The total frequency.

Median:

$$Median = Size \left\{ \frac{N}{2} \right\}^{th} item$$

$$Median = L + \frac{N/2 - c.f.}{f} x\, i$$

where,

L = Lower limit of median

N = The total frequency

f = Frequency of median class

c.f. = Cumulative frequency

i = Class interval of the median class.

Mode:

$$Z = L + \frac{f_1 - f_0}{2f_1 - f_0 - f_2} x\, i$$

where,

Z = Mode

L = Lower limit of the modal class

i = Class interval

f_1 = Frequency of the modal class

f_0 = Frequency of the class proceeding the modal class

f_2 = Frequency of the class succeeding the modal class.

OBSERVATIONS AND ANALYSIS

The findings of the present study as well as relevant discussion have been summerized under following heads:

Test-retest reliability:

Test-retest reliability of the scale was calculated on the basis of the responses of sample of 80 farm women who were not included in the final sample. The scale was administered twice to these respondents. The second administration was done approximately three weeks after the first one. Pearson's product moment co-efficient of correlation was used for the two sets of scores in order to obtain the test-retest reliability co-efficient. The reliability co-efficient obtained (0.902) was quite high, indicating that the developed scale was reliable. The co-efficient of correlation was also statistically highly significant at 1 per cent level.

Content validity:

The content validity of the scale was established in two ways, firstly the various main and sub items for inclusion in the scale were based on extensive literature review from Indian and foreign studies. Secondly, the opinion of the panel of 63 judges who were expert in field of extension education/ administration and development was obtained to find whether the items suggested were relevant for inclusion in the scale.

Norms of distribution of the scores by using the constructed scale:

In the present study, frequency distribution and measures of central tendency were worked out. For this purpose, the data obtained from one hundred fifty farm women were considered.

Frequency distribution:

The procedure recommended by Garrett (1967) was used to tabulate the frequency distribution and also to work out other graphical presentation. The data regarding utility perception of mass media scale was grouped into ten classes with class interval of 5 units. The frequency distribution has been given in Table 2.

Table 1 : Computed scale values of different items of the scale		
Sr. No.	Items	Scale value
	Utility perception of television (TV)	
1.	Understandability	6.47
2.	Credibility	7.97
3.	Accuracy of information	10.41
4.	Brevity	10.51
5.	Clarity	7.90
6.	Directness	8.00
7.	Timeliness	9.83
8.	Practicability	8.80
9.	Coverage of subject matter	9.00
10.	Time adequacy	6.57
11.	Information newness	8.43
12.	Terminology	9.44
13.	Motivation	10.38
14.	Pace (speed) of presentation	8.89
15.	Illustrativeness (Pictures)	8.92
16.	Imaginativeness	8.39
17.	Enjoyment in viewing	9.57
	Utility perception of radio	
1.	Understandability	8.19
2.	Credibility	9.13
3.	Accuracy of information	9.46
4.	Brevity	8.25
5.	Clarity	9.81
6.	Directness	10.32
7.	Timeliness	8.72
8.	Practicability	7.56
9.	Coverage of subject matter	8.94
10.	Time adequacy	6.73
11.	Information newness	9.67
12.	Terminology	8.46
13.	Motivation	9.19
14.	Pace (speed) of presentation	9.10
15.	Illustrativeness (Examples)	7.64
16.	Imaginativeness	8.24
17.	Enjoyment in listening	7.28
	Utility perception of newspaper	
1.	Understandability	10.00
2.	Credibility	6.62
3.	Accuracy of information	7.79
4.	Brevity	7.44
5.	Clarity	9.06

Table 1 : Contd........

Table 1 : Contd............		
6.	Directness	7.73
7.	Timeliness	7.83
8.	Practicability	7.95
9.	Coverage of subject matter	7.94
10.	Information newness	8.02
11.	Terminology	9.95
12.	Motivation	7.40
13.	Illustrativeness (Pictures and examples)	6.51
14.	Imaginativeness	5.84
15.	Enjoyment in reading	9.60

Graphical presentation of the frequency distribution:

The graphical presentation of the frequency distribution helps to translate numerical facts into more concrete and understandable form. The data in Table 2 have been presented in histogram (Fig.1) shows the histogram based on observed and smoothed frequency in column number 4 and 5 of Table 2. Further, theoretical normal curve superimposed on smoothed frequencies in the Fig.1, asymmetrically and closed resembled to normal probability curve. This indicating that the scores of one hundred fifty respondents were normally distributed.
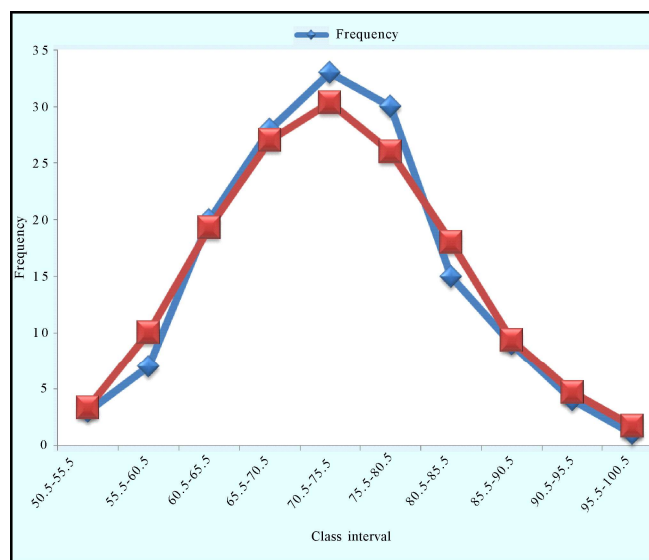
Fig. 1: Histogram of observed and smoothed frequencies with normal curve superimposed on smoothed frequencies

Cumulative percentage curve and 'ogive':

Cumulative percentage curve is another graphical method of representing frequency distribution. To

compute cumulative percentage, cumulative frequencies were required to be found out. Table 3 indicates necessary conversion of cumulative frequencies into percentage of the total number of respondents (N).

The cumulative percentage curve was later on drawn with interval limits laid on the x-axis and cumulative percentage on y-axis. Data are presented in Fig.2. The figure drawn was quite regular, thereby indicating that scores obtained by the instrument developed followed normal distribution.

Measures of central tendency:

The different values of central tendency were worked out for 150 respondents these were: Mean= 73.23; Median = 72.67 and Mode= 73.62. These values being very close, indicating that distribution followed normal curve.

Similar procedure was followed by Bawajir and Nandapurkar (1984) for the construction and
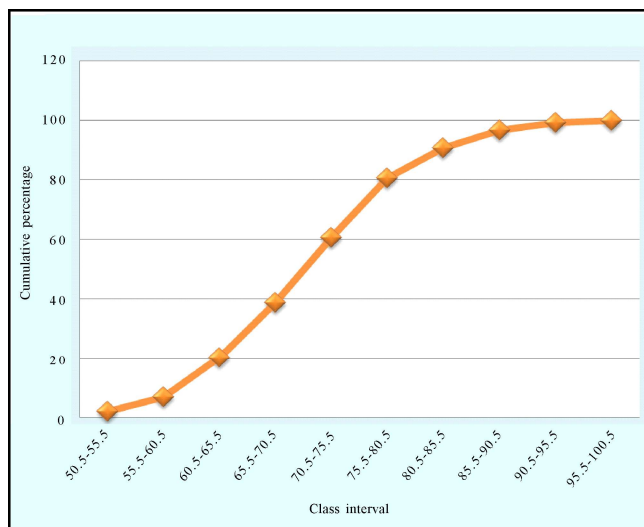

Fig. 2: Cumulative percentage curve (ogive) of utility perception index of 150 respondents

standardization of socio-economic status scale of rural families.

Table 2: Frequency distribution of UPI of 150 respondents

Sr. No.	Class interval	Mid-point	Frequency	Smoothed frequency
1.	50.5-55.5	53	3	3.33
2.	55.5-60.5	58	7	10.00
3.	60.5-65.5	63	20	19.33
4.	65.5-70.5	68	28	27.00
5.	70.5-75.5	73	33	30.33
6.	75.5-80.5	78	30	26.00
7.	80.5-85.5	83	15	18.00
8.	85.5-90.5	88	9	9.33
9.	90.5-95.5	93	4	4.66
10.	95.5-100.5	99	1	1.66

Table 3 : Percentage cumulative frequency of UPI of 150 respondents

Sr. No.	Class interval	Upper limit	Frequency	Cumulative frequency	Cumulative per cent
1.	50.5-55.5	55.5	3	3	2.00
2.	55.5-60.5	60.5	7	10	6.67
3.	60.5-65.5	65.5	20	30	20.00
4.	65.5-70.5	70.5	28	58	38.67
5.	70.5-75.5	75.5	33	91	60.67
6.	75.5-80.5	80.5	30	121	80.67
7.	80.5-85.5	85.5	15	136	90.67
8.	85.5-90.5	90.5	9	145	96.67
9.	90.5-95.5	95.5	4	149	99.33
10.	95.5-100.5	100.5	1	150	100.00

Rate 1/N= 1/150=0.0066

Table 4 : Final list of items for utility perception of mass media scale

Sr. No.	Item	Score (weightage to responses under main item)	Do you agree to scores		For main items only		
			Yes	No	Relevant	Non-relevant	Rank
	Utility perception of television (TV)						
	Understandability						
1.	Fully understand	3					
2	Partially understandable	2					
3.	Not understand	1					
	Credibility						
1.	Credible	3					
2.	Somewhat credible	2					
3.	Not credible	1					
	Accuracy of information						
1.	Fully accurate	3					
2.	Somewhat accurate	2					
3.	Inaccurate	1					
	Brevity						
1.	Concise	3					
2.	Partially concise	2					
3.	Lengthy	1					
	Clarity						
1.	Clear	3					
2.	Partially clear	2					
3.	Not clear	1					
	Directness						
1.	Direct	3					
2.	Direct to some extent	2					
3.	Not at all direct	1					
	Timeliness						
1.	Very timely	3					
2.	Reasonably timely	2					
3.	Not timely	1					
	Practicability						
1.	Quite practicable	3					
2.	Practicable	2					
3.	Not practicable	1					
	Coverage of subject matter						
1.	Fully covered	3					
2.	Partial covered	2					
3.	Mostly uncovered	1					
	Time adequacy						
1.	Quite adequate	3					
2.	Adequate	2					
3.	Inadequate	1					

Table 4: Contd...........

Table 4: Contd……

	Information newness	
1.	New	3
2.	Somewhat new	2
3.	Old	1
	Terminology	
1.	Simple	3
2.	Somewhat simple	2
3.	Difficult	1
	Motivation	
1.	Motivating	3
2.	Somewhat motivating	2
3.	Not motivating	1
	Pace (speed) of presentation	
1.	Normal	3
2.	Slow	2
3.	Fast	1
	Illustrativeness (Pictures)	
1.	Adequately illustrative	3
2.	Somewhat illustrative	2
3.	Not illustrative	1
	Imaginativeness	
1.	Highly imaginative	3
2.	Partially imaginative	2
3.	Not imaginative	1
	Enjoyment in viewing	
1.	Delightful	3
2.	Partially delightful	2
3.	Boring	1
	Utility perception of Radio	
	Understandability	
1.	Fully understand	3
2.	Partially understandable	2
3.	Not understand	1
	Credibility	
1.	Credible	3
2.	Somewhat credible	2
3.	Not credible	1
	Accuracy of information	
1.	Fully accurate	3
2.	Somewhat accurate	2
3.	Inaccurate	1
	Brevity	
1.	Concise	3
2.	Partially concise	2
3.	Lengthy	1

Table 4: Contd……..

Scale to measure utility perception of mass media by the farm women

Clarity

1.	Clear	3
2.	Partially clear	2
3.	Not clear	1

Directness

1.	Direct	3
2.	Direct to some extent	2
3.	Not at all direct	1

Timeliness

1.	Very timely	3
2.	Reasonably timely	2
3.	Not timely	1

Practicability

1.	Quite practicable	3
2.	Practicable	2
3.	Not practicable	1

Coverage of subject matter

1.	Fully covered	3
2.	Partial covered	2
3.	Mostly uncovered	1

Time adequacy

1.	Quite adequate	3
2.	Adequate	2
3.	Inadequate	1

Information newness

1.	New	3
2.	Somewhat new	2
3.	Old	1

Terminology

1.	Simple	3
2.	Somewhat simple	2
3.	Difficult	1

Motivation

1.	Motivating	3
2.	Somewhat motivating	2
3.	Not motivating	1

Pace (speed) of presentation

1.	Normal	3
2.	Slow	2
3.	Fast	1

Illustrativeness (Examples)

1.	Adequately illustrative	3
2.	Somewhat illustrative	2
3.	Not illustrative	1

Table 4 : Contd…….

	Imaginativeness	
1.	Highly imaginative	3
2.	Partially imaginative	2
3.	Not imaginative	1
	Enjoyment in listening	
1.	Delightful	3
2.	Partially delightful	2
3.	Boring	1
	Utility perception of newspaper	
	Understandability	
1.	Fully understand	3
2.	Partially understandable	2
3.	Not understand	1
	Credibility	
1.	Credible	3
2.	Somewhat credible	2
3.	Not credible	1
	Accuracy of information	
1.	Fully accurate	3
2.	Somewhat accurate	2
3.	Inaccurate	1
	Brevity	
1.	Concise	3
2.	Partially concise	2
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	Clarity	
1.	Clear	3
2.	Partially clear	2
3.	Not clear	1
	Directness	
1.	Direct	3
2.	Direct to some extent	2
3.	Not at all direct	1
	Timeliness	
1.	Very timely	3
2.	Reasonably timely	2
3.	Not timely	1
	Practicability	
1.	Quite practicable	3
2.	Practicable	2
3.	Not practicable	1
	Coverage of subject matter	
1.	Fully covered	3
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1.	Simple	3	
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3.	Difficult	1	
	Motivation		
1.	Motivating	3	
2.	Somewhat motivating	2	
3.	Not motivating	1	
	Illustrativeness		
	(Pictures and examples)		
1.	Adequately illustrative	3	
2.	Somewhat illustrative	2	
3.	Not illustrative	1	
	Imaginativeness		
1.	Highly imaginative	3	
2.	Partially imaginative	2	
3.	Not imaginative	1	
	Enjoyment in reading		
1.	Delightful	3	
2.	Partially delightful	2	
3.	Boring	1	

Conclusion:

It can be concluded that, the reliability co-efficient obtained (0.902) was quite high, indicating that the developed scale has high reliability and validity. Further, theoretical normal curve superimposed on smoothed frequencies is asymmetrically and closed resembled to normal probability curve. This indicating that the scores of one hundred fifty respondents were normally distributed. Also the values of measures of central tendency being very close, indicating that distribution followed normal curve.

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