

A scale to measure the attitude of dairy farmers towards rearing of Murrah buffalo

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ABSTRACT

Attitude of an individual determines one's knowledge gain about any technology and its acceptance, adoption, continuance and rejection as well. It also has a bearing with other requirements associated with the technology ie the psychological object under consideration. This study was designed to develop a scale to measure the attitude of dairy farmers of Haryana towards rearing of Murrah buffalo. Likert's Summated Rating method was adopted to develop the scale. The final scale comprised of eight statements. This scale was standardized for administration.

Keywords: Attitude; dairy farmers; Murrah buffalo; scale

INTRODUCTION

Buffalo is the main stay of Indian dairy industry and rightly considered as the 'bearer cheque' of the rural folk. Among buffaloes Murrah has a higher rank in respect of its attractive appearance and high milk yield. However as nay farming activity Murrah buffalo rearing too has advantages and disadvantages in terms of which a farmer develops an attitude towards it. Despite many efforts of the concerned agencies for promoting the rearing of Murrah buffalo the results are not so encouraging on the part of the dairy farmers. The attitude of dairy farmers could have

been the main reason for this. The policy makers and the agencies for implementing dairy development programmes should consider the attitude or feelings of the farmers towards Murrah buffalo before a programme is implemented. Therefore an attempt was made to develop and standardize a scale to measure the attitude of dairy farmers towards rearing of Murrah buffalo.

Construction and standardization of the scale

Collection and editing of statements: The items constituting 'Attitude Scale' are

called statements. A statement may be defined as anything that is said about a psychological object or stimulus. Therefore the first step in the construction of the attitude scale was to obtain the items representing the universe of content in the area of rearing of Murrah buffalo. All the sources including relevant literature, concerned experts and dairy farmers were tapped for the purpose. Forty eight statements thus collected were further edited according to the informal criteria of Edward and Kilpatrick 1948 (Edward 1969). The statements which were overlapping in meaning or content, irrelevant to the local conditions, of poor interviewing quality etc were rejected. Finally a list of 36 statements was prepared. These statements were got evaluated by the concerned experts on their degree of favourable and unfavourableness for the subjects (the dairy farmers).

Responses to raw items (statements):

The raw universe of 36 items was administered to 80 subjects. The subjects included the dairy farmers who were well versed with the Murrah buffalo and its rearing. Their responses were obtained on a five point continuum viz Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree with a score of 4, 3, 2, 1 and 0 for positive and 0, 1, 2, 3, and 4 for negative statements respectively. The responses were collected from the farmers of Murrah tract of Haryana by interviewing them personally.

Selection of criterion groups: The two groups comprising of 25 per cent of the subjects with highest scores and an equal number with lowest scores were selected on the basis of total scores obtained by them with the assumption that these two groups will provide the criterion groups to evaluate the individual statement.

Calculation of 't' values: With the help of the criterion groups 't' values were calculated for all the 36 statements by using the formula given below (Edward 1969):

$$t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\frac{\sum (X_H - \bar{X}_H)^2 + \sum (X_L - \bar{X}_L)^2}{n(n-1)}}$$

Where

- t = extent to which a given statement differentiates between the high and low groups,
- $\bar{X}_H$ = mean score on a given statement for the high group,
- $\bar{X}_L$ = the mean score on a given statement for the low group,
- $(X_H - \bar{X}_H)^2$ = the variance of the distribution of responses of the high group to the statement
- $(X_L - \bar{X}_L)^2$ = the variance of the distribution of responses of the low group to the statement, and

A scale to measure attitude

n = number of subjects in low or high group

The 't' values obtained for all the statements are given in Table 1.

Final selection of the statements: On the basis of 't' values obtained for all the statements, eight statements (four positive and four negative) having the highest 't' values were selected finally for inclusion in the attitude scale.

Final format and scoring procedure of the scale: The finally selected attitude statements were randomly arranged in the

final format of the scale. The statements were presented along with a three-point continuum as suggested by Likert (1932). The three points of the continuum were Agree, Undecided and Disagree. For positive statements the weightage were 3, 2 and 1 respectively and for negative statements the weightage were 1, 2 and 3 in order. The range of scores for 8 items was from 8 to 24. The final format of the scale is given in Table 2.

Standardization of the scale: The scale was standardized by testing the reliability and validity of the scale.

Table 1. 't' values of attitude statements

S/N	Statement	't' value
1.	In dairy farming, rearing of Murrah is a status symbol for a dairy farmer	0.292
2.	Murrah buffalo is more susceptible to several diseases	0.848
3.	There is a high security risk in rearing of Murrah buffalo	3.488*
4.	Murrah bulls are better for breeding purpose than other buffalo breeds	1.852
5.	The demand of Murrah buffalo's milk is more in the market	1.482
6.	Milk of Murrah buffalo is difficult to digest by children and & aged people	-1.582
7.	Rearing of Murrah is beneficial because it produces strong male calves	1.909
8.	Murrah is not better than other breeds of buffalo	0.999
9.	Rearing of Murrah requires less care and management as compared to other breeds of buffalo	6.042*
10.	Rearing of Murrah has an edge over crop farming	1.464
11.	Rearing of Murrah is good as it suits well in different eco-socio-cultural systems	1.952
12.	Murrah looks beautiful among other breeds of buffalo	0.264
13.	The horns of Murrah buffalo are not better than other buffaloes	1.265

14.	Among buffaloes Murrah gives highest milk yield	4.856*
15.	The cost of milk production of Murrah is low owing to feeding rough fodder and less feeds	0.995
16.	In buffalo farming the choice of breed makes no difference	2.295*
17.	Better milk products are prepared from Murrah's milk than other buffalo breeds	2.089
18.	Vaccination against contagious diseases (RP & HS) in milch Murrah buffaloes is comparatively more regularly needed	-3.638
19.	Murrah buffalo is a fixed deposit (like gold) in the hands of a farmer	1.116
20.	There is no need to feed green fodder to Murrah buffalo	0.260
21.	Murrah buffalo compensates its cost probably in one lactation	4.630*
22.	Management of Murrah is more difficult than other breeds of buffalo	0.789
23.	Murrah fetches more price on its sale	2.024
24.	Artificial insemination in Murrah buffalo is not successful	3.161*
25.	Murrah rearing is boon to the welfare of the state	1.010
26.	Rearing of Murrah is costlier as compared to other breeds of buffalo	0.580
27.	Murrah requires costly housing system	1.248
28.	Rearing of Murrah is more practical because its milk is good for the health of field workers/peasantry	1.379
29.	Murrah males can not compete bullocks in farm operations	1.800
30.	Rearing of Murrah is not beneficial as majority of the land holdings are small and marginal	1.116
31.	Owing to higher milk yield and fat percentage maintaining Murrah is more remunerative	1.733
32.	People rear Murrah due to liking for high fat milk	5.416*
33.	Milk market does not favour Murrah rearing	0.345
34.	Due to high ranking liking Murrah is being smuggled out of its habitat	0.774
35.	Murrah has high feed and fodder intake as compared to other breeds of buffalo	2.152*
36.	A farmer having Murrah buffaloes is considered to be a progressive farmer	0.447

*Selected for final scale

Table 2. Final format of the Attitude Scale

S/N	Statement	Response		
		Agree	Undecided	Disagree
1.	Rearing of Murrah requires less care and management as compared to other breeds of buffalo	3	2	1
2.	People rear Murrah due to liking for high fat milk	3	2	1
3.	Murrah has high feed and fodder intake as compared to other breeds of buffalo	1	2	3
4.	Murrah buffalo compensates its cost probably in one lactation	3	2	1
5.	Artificial insemination in Murrah buffalo is not successful	1	2	3
6.	Among buffaloes Murrah gives highest milk yield	3	2	1
7.	There is a high security risk in rearing of Murrah buffalo	1	2	3
8.	In buffalo farming, the choice of breed makes no difference	1	2	3

i) Reliability of the scale

The split-half method was used for testing the reliability of the attitude scale. The scale was administered to 40 respondents (dairy farmers). The items of the scale were divided into two equal halves with 4 odd numbered statements in one half and 4 even numbered statements in the other half. The Pearson product-moment coefficient of correlation (Siegel and Castellan 1988) was computed and found to be 0.84 between the two sets of scores of the scale. This was a reliability estimate of only half scale as long as the original. Hence using Spearman Brown prophesy formula

(Tripathi 1999) the stepped-up reliability of the whole measure (0.91) was worked out which was significant at 0.01 level of probability. Thus the reliability and internal consistency of the attitude scale was confirmed.

ii) Validity of the scale

As the content of the attitude scale was derived with utmost care by screening relevant literature and consulting the concerned experts, professionals and dairy owners' opinion in addition to following all the scale construction steps it was assumed that the attitude scale measures what was intended to measure.

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Received: 20.03.14

Accepted: 27.05.14