

## A SCALE TO MEASURE MARKETING BEHAVIOR OF FARMERS

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### ABSTRACT

*The marketing behaviour of the farmers is the important aspect, on which it depends that how farmer performed different operations, marketing functions and receive ultimate benefits in the form of remunerative prices for their produce as a result of all the efforts made in this direction. Marketing behaviour is a behavioural construct that cannot be measured by a single variable, hence the need for developing a standardized instrument for its measurement. The present study has been conducted to develop a reliable and valid instrument for exploration of farmers' marketing behaviour. A step-by-step procedure of developing standardized marketing behaviour scale was followed, it includes identification of indicators, statement collection, relevancy test, item analysis, reliability test and validity test. Finally, the instrument developed to measure marketing behaviour of farmers consists of 39 statements under 10 key indicators. The standardized marketing behaviour scale will be usefull to measure the marketing behaviour of farming community. It will also serve as a valuable tool for further marketing behaviour studies by researchers and extension functionaries.*

**Keywords:** marketing behavior, farm produce, indicator, reliability, standardized scale.

### INTRODUCTION

Agricultural Markets are the primary drivers for agricultural development and as important as the actual farming itself. In the present context of globalization and liberalization, agricultural marketing plays an important role. The low bargaining capacity of farmers and unregulated markets restricts the farmers to get the remunerative price of their produce. The Agricultural Produce Marketing Committees (APMCs) established with a view to protect the interests of the farmers in general and small and marginal farmers in particular. The aim of regulated markets are to prevent exploitation of farmers by removing the hurdles in the marketing, to improve the marketing system for getting better prices of their produce and the goods are made available to consumers at reasonable prices.

In the study the marketing behaviour has been operationalised as, all the mental activities like collection of information, acquiring knowledge about the market situation, making decisions about the crops to be grown, management of resources, crop production technologies to be used, selection of market for sale of farm produce, as well as, physical activities like cultivation of crops and cleaning, grading, sorting, processing, packing, transporting, weighing of farm produce, performed by the farmers.

Agricultural marketing in India suffers from inefficiency, fragmented marketing channels, poor infrastructure, excesses of middlemen, policy distortions and disconnect between the prices received by producers and the prices paid by consumers (Ramesh, 2012). At present, it is the middlemen of the trade who manages to keep the lion's share of prices for food commodities paid by the urban consumers and those who do not do farming (Ali, 2011). Thus, marketing behaviour of the farmers is the main factor, on which it depends that how farmer performed different operations, marketing functions and can receive ultimate benefit in the form of remunerative prices for their produce as a result of all the efforts made in this direction. It was observed that very scanty attempts were made to measure the marketing behaviour of the farmers in a systematic and Scientific way, that could able to answer what is the situation of the farmers in relation to marketing behavior for getting the remunerative prices for their produce and dealing with the markets. Hence, in the present research study attempt has been made with the following objective.

### OBJECTIVE

To develop and standardize a scale for measuring the marketing behavior of the farmers.

## METHODOLOGY

The study was conducted in South Gujarat region of Gujarat State. Marketing behaviour is a broad economic term that refers to the behaviour of farm producer towards marketing. It is often analyzed and used to generate various marketing options aimed to get maximum returns of the produce. In general, it depends upon stock with the producer, type of market, prevailing market demand, future market demand, resources, planning and management of farm and resources. Considering the importance, the investigator has developed a scale on marketing behaviour. The details of the procedure in the construction and standardization of scale to measure marketing behavior of farmers was as followed. A standard procedure followed as suggested by Sharma (2023), Singh *et al.*, (2023) and Machapathri Praneeth *et al.* (2024).

### (1) Identification of Indicators for Marketing Behavior

All possible items (key indicators) which may probably contribute or affect or reflect the marketing behaviour were collected by reviewing the available literatures and opinions of experts of extension, agricultural economics and market professionals. A list containing 20 key indicators which may probably contribute, reflect the marketing behaviour were identified and circulated among the 55 faculties of extension, agricultural economist and market professionals to seek its extent of appropriateness for the scale.

The experts were asked to judge by putting tick mark in between 10 to 1 point continuum. The score was ranging from most important to least important. They were also requested to keep the three points in mind while judging against the key indicators; (i) indicator should contribute to economic condition of the farming community, (ii) indicator should measurable quantitatively through statement falling under particular key indicator and (iii) indicator should influence or otherwise indicate in varying degree of marketing behaviour.

Out of total 55, 50 experts replied with their due suggestions. These were compiled. The scores received on each indicator were summed up and on the proportion of each summed score to the maximum possible score was worked out to obtain weighted mean. Those indicators obtained mean score above the average mean value were chosen from the total. These way 10 key indicators were finalized for further procedure.

### (2) Collection of statements and analysis

For all identified key indicators, 10 statements each were developed by reviewing the literatures. Moreover, the opinions of faculties were also resorted. These way 100 statements were prepared. On the desk of investigator, the criteria suggested by Thurston and Chave (1929), Wong (1932), Likert (1932) and Edward and Kilpatrick (1948) were used for screening the statements. As a result of this process lastly 81 statements were obtained under 10 key indicators. The procedure is also followed by Patel *et al.* (2023); Saifuddin *et al.* (2024); Kumbhani *et al.* (2024); Prashanth *et al.* (2024).

A schedule containing 81 statements with five continuums was prepared and to convert them in to the item for measuring the marketing behaviour, it was mailed to 125 experts working under different universities located in Gujarat, Maharashtra, Tamil Nadu and West Bengal. The experts were requested to rate each statement on five-point continuum which ranging from most relevant, relevant, somewhat relevant, least relevant and not relevant and were scored with 5, 4, 3, 2 and 1 respectively. The relevancy score of each statement was ascertained by adding the score on rating scale for all the responses received from 76 out of 125 judges.

### (3) Relevancy test

In next stage, for relevancy test the relevancy score were calculated. For this purpose, the Relevancy Percentage (RP), Relevancy Weightage (RW) and Mean Relevancy Scores (MRS) were worked out for all the 81 statements. In relevancy test the judge's response obtained on each continuum were taken in to consideration where, Most Relevant Responses denoted as MRR, Relevant Responses as RR, Moderately Relevant Responses as MdRR, Less Relevant Responses as LRR and Not Relevant Responses as NRR.

**(a) Relevancy Percentage (RP):** Relevancy percentage was worked out by summing up the scores of highly relevant, relevant and neutral categories, which were converted into percentage.

**(b) Relevancy weightage (RW):** Relevancy Weightage was obtained by the formula.

$$RW = \frac{MRR + RR + MdRR + LRR + NRR}{MPS}$$

**(c) Mean relevancy score (MRS):** Mean relevancy score was obtained by the formula.

$$MRS = \frac{MRR + RR + MdRR + LRR + NRR}{N}$$

- MRR = Most Relevant Responses
- RR = Relevant Responses
- MdRR = Moderately Relevant Responses
- LRR = Less Relevant Responses
- NRR = Not Relevant Responses
- MPS = Maximum Possible Score (i. e. 76 X 5=380)
- N = Number of judges (i. e. 76)

Using these three criteria the statements were screened for their relevancy. Accordingly, the statements having > 70 RP, > 0.70 RW and > 3.5 MRS were considered as final statements (item) for present study. By this process, 64 statements were obtained in the first stage. Meaningful corrections for statements as suggested by the judges were also incorporated and finalized the same as item.

**(4) Item analysis (calculation of ‘t’ values)**

The paired ‘t’ test was used as determinant for statements to obtain the items for the present study. These statements were subjected to item analysis to delineate the items based on the extent to which they can differentiate the farmers’ holds excellent marketing behaviour than poor marketing behaviour. For this, 40 farmers were selected from non sample area of present study. The farmers were asked to indicate their degree of agreement or disagreement with each statement on the five-point continuum. The 5 score was given to strongly agree response, 4 to agree response, 3 to undecided, 2 to disagree and 1 to strongly disagree response for positive statement and for negative statement the scoring pattern was reversed. Based on the total scores, the farmers were arranged in descending order. The top 25 per cent of the farmers with their total scores were considered as the high group and the bottom 25 per cent as the low group, so as these two groups considered as criterion groups in terms of evaluating the individual statements as suggested by Edward

(1969). Thus, out of 40 farmers to whom the items were administered for the item analysis, 10 farmers with highest and 10 with lowest scores were used as criterion groups to evaluate individual items. The critical ratio, that is the ‘t’ value which is a measure of the extent to which a given statement differentiates between the high and low groups of the farmers and for each statement was calculated by using the formula suggested by Edward (1969).

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

Where:

- $X_H$  = The mean score on given statement of the high group
- $X_L$  = The mean score on given statement of the low group
- $\sum X_H^2$  = Sum of squares of the individual score on a given statement for high group
- $\sum X_L^2$  = Sum of squares of the individual score on a given statement for low group
- $\sum X_H$  = Summation of scores on given statement for high group
- $\sum X_L$  = Summation of scores on given statement for low group
- n = Number of respondents in each group
- t = Extent to which a given statement differentiates between the high and low group.

After computing ‘t’ value for all the statements, 39 items with highest ‘t’ value equal to or greater than 2.025 were finally selected and included as a tool (scale) to measure the marketing behaviour of the respondents (Table 1).

**Table 1: Statements selected for inclusion in the final scale**

Sr. No.	Statement	A	UD	DA
<b>I</b>	<b>Marketing information</b>			
1	Market news about commodity price is very useful to the farmers.			
2	Farmer should seek the market information before selling his produce.			
3	Knowing the trend of local market is advisable while selling the produce.			
4	One should use various sources for collecting market information.			
5	One should be aware about marketing channel for his produce.			
6	The seller should be aware about the market charges.			
<b>II</b>	<b>Market Intelligence</b>			

Sr. No.	Statement	A	UD	DA
7	An ability to assess market demand is important for planning the cultivation of crop.			
8	Knowledge about products preferences is important matter for seller.			
9	The seller should aware about different market grades and standards.			
10	Commodity wise forecasting of price helps the farmers.			
<b>III</b>	<b>Farm planning</b>			
11	For increasing the farm yield, development of farm production plan is important.			
12	An assessment about available resources is to be needed before cultivation of crop.			
13	Planning for timely procurement of inputs is required.			
14	Off season cultivation assist in good economic return.			
15	Long term planning is advisable for the success of enterprise.			
<b>IV</b>	<b>Production planning</b>			
16	One should estimate the probable cost of cultivation before growing crop.			
17	It is necessary to consider market demand about particular variety of produce before cultivation.			
18	Modern technology should be adopted to get maximum profit from the produce.			
19	Farmers should recognize the need based change in the crop cultivation practices for more profit.			
<b>V</b>	<b>Marketing planning</b>			
20	Before marketing the produce one should review the demand.			
21	Understanding about consumers' needs is required before plan to cultivate crop.			
22	Farmer should aware about buying and selling methods of APMC market.			
23	Awareness about alternative marketing methods for selling of produce helps in better return.			
<b>VI</b>	<b>Finance management</b>			
24	Farming should be aimed at maximum net return.			
25	Believing in economic aspects are important in selection of crop & variety for farmer.			
26	Keeping farm records is very important especially for financial aspects.			
<b>VII</b>	<b>Marketing skill</b>			
27	An art of marketing skill helps to get better return.			
28	Skill to interpret recorded data about market trends helps to get expected price of produce.			
29	An ability to learn new skills of market is very important.			
30	Group approach is more beneficial for getting better price for the produce from the market.			
31	I believe that training can improve the marketing skill of producers.			
<b>VIII</b>	<b>Entrepreneurship</b>			
32	One should consider farming as an enterprise.			
33	Quality produce is more important to get advantage of globalization			
<b>IX</b>	<b>Marketing channels</b>			
34	One should decide the appropriate marketing channel for getting maximum profit.			
<b>X</b>	<b>Post harvest management</b>			
35	One can get better price by grading his produce			
36	Storage facilities can ensure better return of produce.			
37	Godown and cold storage can help in getting higher prices of produce by selling the produce at right time			
38	Selling produce after value addition is more profitable			
39	Knowledge of packing & packaging is helpful in getting better price for the produce			

A=Agree, UD=Undecided, DA=Disagree

### (5) Standardization of the scale

The validity and reliability were ascertained to standardize the scale.

#### Reliability of the scale (Test –retest reliability)

The final set of the 39 items, which represent the marketing behaviour of farmers was administered on five-point continuum to a fresh group of 30 farmers which were not included in sample area as well as not included in the actual sample. After a period of 15 days the scale was again administered to the same farmers and thus two sets of scores were obtained. The correlation coefficient for the both the sets were worked out. The 'r' value (0.796) was highly significant at 0.01 level of probability indicating the marketing behaviour scale was highly suitable for administration to the farmers as the scale was stable and dependable in its measurement. Coefficient of reliability between these two sets of score was calculated by Rulon's formula (Guilford 1959).

$$r_{tt} = 1 - \frac{\sigma^2_d}{\sigma^2_t}$$

Where,

$r_{tt}$	= Coefficient of reliability
$\sigma^2_d$	= Variance of those differences
$\sigma^2_t$	= Variance of the total scores

#### Validity of the scale

The content validity of the scale was also tested. The content validity is the representative or sampling adequacy of the content, the substance, the matter and the topics of a measuring instrument. This method was used in the present scale to determine the content validity of the scale. As the content of the marketing behaviour was thoroughly covered the entire farming and marketing through literature and expert opinion, it was assumed that present scale satisfies the content validity. As the scale value difference for almost all the statements included had a very high discriminating value, it seemed reasonable to accept the scale as a valid measure of the marketing behaviour. Thus, the process applied to validate the scale ensuring a fair degree of content validity.

### RESULTS AND DISCUSSION

The final scale consisted of 39 statements representing ten indicators (Table 1). The responses had to be recorded on a three-point continuum representing agree, undecided and disagree with scores of 3, 2, and 1, respectively for positive statements and vice-versa for negative statements.

The marketing behaviour score of each respondent can be calculated by adding up the scores obtained by him/her on all the statements. The marketing behaviour score on this scale ranges from a minimum of 39 to a maximum of 117. The higher scores indicate that the respondent had better marketing behaviour and vice-versa.

The reliability and validity of scale indicated the precision and consistency of the results. The marketing behaviour scale developed is a contribution to the body of knowledge in the field of social sciences and behavioural science. The standardized marketing behaviour scale will fill the gap in the literature related to measure the marketing behaviour of farming communities. It will also serve as a valuable tool for further marketing behaviour studies by researchers and extension functionaries.

### CONCLUSION

The final scale with 39 statements representing ten indicators to measure the marketing behavior of the farmers was developed. The reliability and validity of scale indicated the precision and consistency of the marketing behaviour scale. It will serve as a valuable tool for further marketing behaviour studies by researchers and extension functionaries.

### ACKNOWLEDGEMENT

We acknowledge the support from authorities of Navsari Agricultural University, Navsari, Gujarat for providing the research platform for this study. We also appreciate the experts and the farmers for their valuable comments and support during the scale construction.

### CONFLICT OF INTEREST

This is to declare that there is "No conflict of interest" among researchers.

### REFERENCES

- Ali, N. (2011). Pricing of farm produces: A traditionalistic and humane approach. *Indian Farming* 61(7):28-31.
- Edward A. L. and Kilpatrick, F P. (1948). A technique for the construction of attitude scales. *J. Appl. Psychol.* 32:374-384.
- Edward, A. L. (1969). Techniques of attitude scale construction. Vakils, Feffer and Simons Inc., New York.
- Guilford, J. P. (1959). Psychometric method. McGraw-Hill Book Company Inc., New York.

- Kumbhani, S. R., Timbadia, C. K. and Bhuva, R. M. (2024) Scale to measure the perception of farmers and researchers about crop crisis and its management in crops. *Gujarat Journal of Extension Education*, 37(2):38-42. <https://doi.org/10.56572/gjoe.2024.37.2.0007>.
- Likert, R. A. (1932). A technique for the measurement of attitude scales. *Arch. Psychol.* New York, No. 140.
- Machapathri Praneeth, Kumar, Arun S. and Sharma, M. L. (2024). A scale to measure perception of farmers about agritech startup- farmer producer organization integration for improved extension advisory services. *Guj. J. Ext. Edu.* 37(1):46-51.
- Patel, M. R., Vinaya Kumar, H. M. and J. B. Patel (2023). A scale to measure attitude of youth towards agristartup programs. *Gujarat Journal of Extension Education*, 36 (2): 1-4. <https://doi.org/10.56572/gjoe.2023.36.2.0001>
- Prashanth, P., Reddy, M. Jaganmohan and Guntukogula, Patabhi Sandeep (2024) Multidimensional scale to measure stakeholders' attitudes on community participation in tank management. *Gujarat Journal of Extension Education*, 37(2):81-93. <https://doi.org/10.56572/gjoe.2024.37.2.0014>.
- Ramesh, C. (2012). *Economic & Political WEEKLY* December 29, 2012. XLVII (52): 168-173.
- Saifuddin, M. D., Devy, M. Rama and Suseela, K. (2024) Scale construction and assessing farmers' attitude towards the functioning of Rythu Bharosa Kendras. *Gujarat Journal of Extension Education*, 37(2):1-6. <https://doi.org/10.56572/gjoe.2024.37.2.0001>.
- Sharma, N. R. (2023). Construction of scale for perception of farmers towards farmer producer organization, *Guj. J. Ext. Edu.* 35(1): 34-37.
- Singh, Pankaj, Patel, M. R. and Patel, J. B. (2023). Development of scale to measure attitude of farmers towards family farming. *Guj. J. Ext. Edu.* 35(2):127-129.
- Thurston, L. L. and Chave, E. J. (1929). The measurement of Attitude. Chicago Univ. Chicago Press.
- Wong, K. A. (1932). Suggested criteria for writing attitude statement. *J. Soc. Psychol.* 3: 367-373.

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*Received : September 2024 : Accepted : November 2024*