

## Research Article

## Open Access

# Strengthening of Market led Extension activities in Agri and allied sectors: Harnessing stakeholder Managerial Skills for conducting Market led extension activities in Telangana state



T. V Kumar<sup>1</sup>, M. Sreenivasulu<sup>2</sup>, V. Sudha Rani<sup>3</sup>, G. E. Ch Vidyasagar<sup>4</sup>, And D. Srinivasa Chary<sup>5</sup>

<sup>1</sup>Department of Agricultural. Extension Professor Jayashankar Telangana State Agricultural University, Rajendranagr Hyderabad-30, Telangana, India.

<sup>2</sup>Department of Electronic Wing Professor Jayashankar Telangana State Agricultural University, Rajendranagr Hyderabad-30, Telangana, India.

<sup>3</sup>Director of Extension Professor Jayashankar Telangana State Agricultural University, Rajendranagr Hyderabad-30, Telangana, India.

<sup>4</sup>Department of Agronomy Professor Jayashankar Telangana State Agricultural University, Rajendranagr Hyderabad-30, Telangana, India.

<sup>5</sup>Department of Mathematics and Statistics Professor Jayashankar Telangana State Agricultural University, Rajendranagr Hyderabad-30, Telangana, India.

## ABSTRACT

Presently Agricultural marketing system in India suffers from a number of constraints which are either infrastructure related or Government regulation related or technology -related or related to poor information on domestic and overseas markets and opportunities or related to unstable and uncertain produce prices or related to delayed and late payment to producers and finally related to low producer's realization. Under these circumstances, a Second Green Revolution is expected to clear the mess and keep the nation on the right path. In order to improve the marketing system encouraging cooperative marketing, establishing of regulated markets, and grading, storage, and warehousing are essential. In this connection, the role of Market Led Extension is pivotal in promoting the agricultural marketing activities. Market-led Extension is a market-oriented extension system that informs, stimulates, and guides the farmer's right from the selection of an enterprise to the marketing of the produce with the purpose of getting an optimum return out of the enterprise. The present study focused on the Managerial ability of stakeholders for Market-led Extension, it was conducted with 245 respondents in seven different districts of Telangana state. For the selection of respondents, a multi-stage random sampling method was used. From each district 20 farmers, 5 APMC office bearers, 5 Agricultural officers, and 5 Traders. A total of 140 farmers, 35 APMC office bearers, 35 Agricultural officers, and 35 Traders were selected as respondents for the current study. From the study, it was concluded that the majority of the farmers had medium (32.86%) to low (27.14%) managerial ability for market-led extension, majority of the APMC office bearers had low (37.14%) to very low (31.43%) managerial ability for market-led extension, majority of the AOs had medium (42.86%) to low (28.57%) managerial ability for market-led extension and a majority (34.29%) of the Traders had low Managerial ability for a market-led extension. It could be improved by giving training to the respondents. Government should promote the formation of farm cooperatives including FPOs through the Department of Agriculture and KVKs, and motivate the farmers to link the FPOs to the big traders for easy marketing of crop produce. The challenges identified in this study include low awareness and adoption of market-led extension activities among farmers and stakeholders, significant skill gaps in conducting market activities, influence of social and cultural factors, financial constraints impacting decision-making in agriculture and allied sectors, and professional factors affecting stakeholders' abilities. Addressing these challenges through this study can provide valuable insights for policymakers in Telangana to formulate effective policies aimed at strengthening market-led extension activities in the state.

**Keywords:** Market Extension, Agricultural marketing system, Managerial ability, stakeholder for Market Extension, Market-led Extension activities, Agricultural Produce Market Committees, Farmer producer Organizations and Multi-stage random sampling.

## Introduction

India has made many strides on the production front but lacking in the field of agricultural marketing. These inadequacies are becoming more acute with the significant changes taking place

\*Corresponding Author: **T. V Kumar**

DOI: <https://doi.org/10.21276/AATCCReview.2024.12.03.57>

© 2024 by the authors. The license of AATCC Review. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

in Agri-food systems in domestic and overseas markets; the attainment of competitiveness is becoming increasingly dependent on the capacity of the country to develop effective and efficient agricultural marketing. Presently Agricultural marketing system in India suffers from a number of constraints which are either infrastructure or Government regulation related or technology-related or related to poor information on domestic and overseas markets and opportunities or related to unstable and uncertain produce prices or related delayed and late payment to producers and finally related to low producer's realization. (Planning Commission Government of India, 2011).

Accessibility of price information is of crucial relevance to inform farmer cash price expectation. Pooled information could be reliable, trusted, and understandable, and the cost of information should be within the capacity of farmers. Information should improve their marketing decisions, negotiation, and price realization. As physical barriers, such as road conditions and vehicle arrangements for transporting the produce might deter their access to the right place, they need to be market-oriented and skilled in calculating returns for risks they take. In this regard state Agricultural Department in association with the Agricultural Produce Market Committee's (APMC) officials, commodity exchanges, and technology service providers could take the initiative of real-time price dissemination through in-call or SMS-based services to the farmers. (Tadesse and Bahigwa, 2015).

With about 80.00 percent of the Indian farmers being small and marginal, the post-harvest losses have first-order effects on them. Beyond post-harvest losses, poor storage facilities compel smallholder farmers in India to sell their produce at low prices soon after the harvest. On the other hand, quality and quantity losses due to poor storage particularly for the high-value crops, have possibly been the major contributor to low farmers' income and seasonal food deficits at the household level. The possible stranglehold of the middlemen and traders can be weakened by empowering the farmers in terms of their choice of markets. (Ruchira and Mamatha 2020).

Agricultural marketing in India is undoubtedly growing and changing but neither in all places nor for all farmers. Under these circumstances, a Second Green Revolution is expected to clear the mess and keep the nation on the right path. To improve the marketing system by encouraging cooperative marketing, the establishment of regulated markets, and grading, storage, and warehousing are essential. In this connection, the role of Market Led Extension is pivotal in promoting agricultural marketing activities. (Vilas, 2016)

Market Extension is the market ward orientation of Agriculture through extension including agriculture & economics is the perfect blend for reaching the doorsteps of the farming community with the help of appropriate technology. (Kaleel et al, 2007). Market-led Extension is a market market-oriented extension system that informs, stimulates, and guides the farmer's right from the selection of an enterprise to the marketing of the produce with the purpose of getting optimum return out of the enterprise.

Market-led extension is a comparatively new approach that includes new methods /techniques of farming, and the importance of proper post-harvest handling, and marketing. This is to be disseminated among the communities of farmers through Agricultural Officers (AO), Horticultural officers (HO), Veterinary officers, and APMC officer bearers. This is done to maximize the profits of the producer whilst, focusing on lowering the costs of production and exposing them directly to markets.

### Objective

To study the managerial ability of stakeholders for Market extension

### Materials and Methods

The present study is confined to *Ex-post-facto and Exploratory* research designs. Northern Telangana Zone was selected purposively for the current study, 12 districts come under the Northern Telangana Zone, from this, 7 districts were selected

randomly. Out of 7 districts from each district 2 APMCs were selected randomly, and a total of 14 APMCs were selected for the current study. Two villages from each district were selected randomly based on the location of APMC in the district. The respondents were selected randomly based on the location of APMCs in the particular district. For the selection of respondents, a multi-stage random sampling method was used. From each district 20 farmers, 5 APMC office bearers, 5 Agricultural officers, and 5 Traders. A total of 140 farmers, 35 APMC office bearers, 35 Agricultural officers, and 35 Traders were selected as respondents for the current study.

The managerial ability of stakeholders for market-led extension, has been operationalized as the ability of stakeholders (farmers, Agricultural officers, APMC office bearers, and traders) who apply the basic functions of management in farming and marketing for effectively managing the activities of Market led extension. Managerial ability has been operationalized as all the mental and physical activities of farmers about farming and marketing like cultivating high-yielding varieties that are in high demand in the market, collection of marketing information, gaining knowledge about market intelligence, making decisions about the crops to be grown, managing the available resources, new crop production techniques to be used, selection of a market channel for sale of farm produce, performing grading, processing, and standardization for their crop produce. In the case of AOs, APMC office bearers and traders give advice to the farmers on selecting the crops, and crop production technologies to be used, giving updated market information, and giving information about grading/sorting, processing, arranging minimum market facilities to the farmers to sell their crop produce, conduct buying and selling activity in a transparent manner and checking the FAQ standards of farm produce at the market.

### Development of a standardized index to measure the Managerial ability of a stakeholder for the market-led extension.

In order to measure the managerial ability of stakeholders for market-led Extension a standardized index has been developed. The procedure followed for the development of the index is as follows.

### Item pool

Components and Items under different managerial ability Indicators were prepared considering all the functions of management as suggested in the review of the literature and by consulting experts in the field of agriculture extension, Agricultural Marketing, and Agribusiness management. The following were indicators in the Managerial ability index used to measure the managerial ability of stakeholders for market-led extension, Planning, Organizing, directing, Supervision, Controlling, Reporting, and Budgeting.

### Judges' rating of the indicators

After defining seven indicators of measurement of Managerial ability for market-led extension, they were given to 30 judges comprising the experts from the field of Agriculture Extension, Agricultural Marketing, Agricultural Economics, and Agri-Business Management from Professor Jayashankar Telangana Agricultural University (PJTSAU), BHU, ANGRAU, National Academy of Agricultural Research Management (NAARM), National Institute of Extension Management (MANAGE) and were asked to rate the relevancy of each indicator on five point

continuum viz., most relevant, relevant, somewhat relevant, less relevant, irrelevant with the weight age 5,4,3,2 and 1 respectively. Grand weighted mean is calculated separately for each stakeholder by considering all the items under different components of the indicators which were found to be 4.24, 4.17, 4.25, and 4.17 for farmers, APMC office bearers, AOs, and Traders respectively. Indicators whose weighted mean scores are more than the grand weighted mean were selected for inclusion in the final Managerial Ability Index (MAI). Under each indicator, only those items that have their mean above the weighted mean were considered for the study.

### Reliability

In the present study, a test-retest is adopted to measure the reliability of the Managerial ability index. The index was administered to a group of 100 respondents from non-sampled areas (Mahabubnagar, Sangareddy, and Medak districts of Telangana) with a time interval of 15 days. The two sets of scores were correlated to get the reliability coefficient and correlation was worked out. The correlation coefficient value of MAI is calculated separately for each respondent wise, values were 0.84 ( $r=0.84$ ), 0.82 ( $r=0.82$ ), 0.87 ( $r=0.87$ ), and 0.79 ( $r=0.79$ ) for farmers, APMC office bearers, AOs, and Traders respectively and was highly significant indicating the high degree of reliability of the instrument for measuring the Managerial ability of

### Planning ability

#### 4.1.1 Distribution of farmers according to their Planning ability for Market extension

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	7 - 13	61	43.58
2.	Medium	13 - 19	69	49.28
3.	High	19 - 25	10	7.14
Total			140	100

### Response analysis of the planning ability of farmers for Market extension

The results furnished in Table 4.1.2 revealed that the item 'Follow crop planning before the cultivation of crops' was ranked first, followed by 'To get a remunerative price for the produce is the main objective in planning for management of farm and marketing' (II Rank). The probable reasons for the above results (Table 4.1.1&4.1.2) were that the majority of the farmers had medium to low levels of planning abilities because of their low formal education and low training received in market-led extension aspects. The majority of the farmers were planning to get higher prices for their produce but they were not cultivating the varieties/crops which has high demand in the market and also they were not concentrating on reducing the market costs. During the data collection, it was observed that some of the farmers were selling their produce in the village itself, which led to distressed sales because the farmers were lacking with market information and wanted to reduce their transport costs and they were not planning about selling activity of crop produce.

### Organizing ability

#### 4.1.3 Distribution of farmers according to their Organizing ability for market-led extension

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	8 - 14	39	27.86
2.	Medium	14 - 20	71	50.71
3.	High	20 - 26	30	21.43
Total			140	100

The results presented in Table 4.1.4 revealed that the Items 'I execute the crop calendar activities as per the recommendations given by SAUs/Scientists' was ranked first, followed by 'I arrange all the resources (Irrigation, electricity, labors) before sowing the crop' (II Rank). The above results indicate that the majority of the farmers had medium to low organizing ability for market-led extension it might be the farmers were doing crop production-related activities regularly from time to time but they were neglecting market activities. They were not doing grading, standardization, processing, and value-addition activities. Farmers did not seem to be enthusiastic about getting their lots assayed before sale, those farmers who agreed that better quality produce fetched better prices did not think that the benefits of grading were worth the costs involved. Some of the farmers were not doing price reviews before selling their crop produce and not arranging the storage facilities. These were all affecting the farmers' organizing ability negatively.

stakeholders for Market-led Extension. Content validity and Jury validity were followed in the study.

### Overall Managerial ability of stakeholders for Market-led Extension

Respondents were given a managerial ability index which was developed for the study. All the individual indicator scores of each respondent were summed up to get a total of overall managerial ability of stakeholders for Market-led Extension. The possible maximum and minimum scores are 149 and 0 respectively for farmers, 122 and 0, 116 and 0, and 86 and 0 for APMC office bearers, AOs, and Traders respectively. The obtained maximum and minimum scores were 88 and 48 for farmers, 78 and 53, 87 and 52, and 63 and 38 subject to APMC office bearers, AOs, and Traders respectively.

### Categorization

The scores of seven indicators of each respondent were summed up to get the total score of managerial ability. based on obtained scores, respondents were grouped into five categories i.e., Very low, Low, Medium, High and very high using the exclusive class interval technique.

## Results and Discussions

### 4.1 Managerial ability of farmers for Market extension

**Directing ability****4.1.5 Distribution of farmers according to their Directing ability for Market extension**

(N=140)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	6 - 11	35	25.00
2.	Medium	11 - 16	81	57.86
3.	High	16 - 21	24	17.14
Total			140	100

The results furnished in Table 4.1.6 revealed that the Item 'I maintain good relation with my neighborhood farmers and other farmers in my village' was ranked first, followed by 'Market intelligence information helps me to make the right decision at the right time in farming and marketing' (II Rank). The probable reasons for the above results (Table 4.15.&4.1.6) were that the majority of the farmers had medium to low level directing abilities for Market extension, it is because the majority of the farmers in the study area had a low level of leadership, low level of motivation and low communication skills for a market-led extension. The mean scores of the items lie towards the rarely to never side which indicates farmers were not performing those activities regularly because they were not maintaining a good relationship with their neighborhood farmers, lacked the right motivational source to motivate, and were unaware of the market price information sources it resulted in poor directing ability for a market-led extension.

**Supervision ability****4.1.7 Distribution of Farmers according to their Supervision ability**

(N=140)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	1 - 3	18	12.86
2.	Medium	3 - 5	69	49.28
3.	High	5 - 7	53	37.86
Total			140	100

The results presented in Table 4.1.8 revealed that the Item 'Do you supervise the activities at your crop field regularly' was ranked first, followed by 'Do you supervise the transport facilities to market your produce' (II Rank). The above results indicate that (Table 4.1.7& Table 4.1.8) the majority of the farmers had medium to high supervision ability for a market-led extension. It might be due to the fact that the farmers were aware of their crop field activities and how to handle them but they were failing to supervise the post-harvest and marketing activities it is because farmers lacking post-harvest handling skills, marketing skills, and lack of knowledge regarding the marketing activities. For some of the items which got the lowest ranks, their mean scores indicate that the farmers were not performing those activities it might be due to a lack of awareness and knowledge regarding that particular activity.

**Control ability****4.1.9 Distribution of farmers according to their Control ability**

(N=140)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	3 - 8	40	28.57
2.	Medium	8 - 13	86	61.43
3.	High	13 - 18	14	10.00
Total			140	100

The results furnished in Table 4.1.10 revealed that the Item 'Do you take safety maintenance measures after using farm implements' was ranked first, followed by 'consult AO/Scientist If my activities in the field not going according to my plan' (II Rank). It can be observed from the Table. 4.1.9, that the majority of the farmers had medium to low control ability for market-led extension it might be due to the farmers not concentrating on market activities. They were not taking risks to perform market-related activities. The majority of the farmers in the study area were not utilizing the available market channels it is because they were not aware of the market channels and they were selling their crop produce at the nearest market without thinking about the price this shows that the lowest interest and low risk taking ability of the farmers towards market activities. These were all affecting the control ability of farmers negatively.

**Reporting ability****4.1.11 Distribution of farmers according to their Reporting ability**

(N=140)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	2 - 4	58	41.43
2.	Medium	4 - 6	75	53.57
3.	High	6 - 8	7	5.00
Total			140	100

The results furnished in Table 4.1.12 revealed that the Items 'If crop failure occurs/failure of seed germination, will you report AOs/scientists' was ranked first, followed by 'Will you give feedback to the AO/scientists and Market officers if you succeed in the plan of farming and marketing' (II Rank). It can be observed from the above tables 4.1.11 and 4.1.12 that the majority of the farmers had medium to low reporting ability it might be due to the fact that they were not aware of the feedback system and they interact with AOs/AEOs/APMC officers very rarely might it be a reason for the above result. The item's mean scores indicate that the farmers were reporting negative results of farming activities but they were not reporting positive results of the activities.

**Budgeting ability****4.1.13 Distribution of Farmers according to their Budgeting ability**

(N=140)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	1 - 4	29	20.72
2.	Medium	4 - 7	101	72.14
3.	High	7 - 10	10	7.14
Total			140	100

The results furnished in Table 4.1.14 revealed that the Item 'Consult Private money lenders for credit facilities' was ranked first, followed by 'Consult Banks for credit facilities' (II Rank). From the above results, it could be inferred that the majority of the farmers had medium to low budgeting ability for a market-led extension. It is because of low awareness about financial institutions that can provide credit facilities, lack of awareness about government schemes related to farming, and unable to avail the loans from banks. Due to low formal education, they are not able to prepare budget plans and do not calculate the cost of cultivation of crops. These were all affecting the budgeting ability of farmers negatively.

**Overall Managerial ability of Farmers****4.1.15 Distribution of farmers according to their Managerial ability for market-led extension**

(N=140)

S.No	Category	Class Interval	Frequency	Percentage
1.	Very low	48 - 56	11	7.86
2.	Low	56 - 64	38	27.14
3.	Medium	64 - 72	46	32.86
4.	High	72 - 80	28	20.00
5.	Very High	80 - 88	17	12.14
Total			140	100

The above results indicate that (Table 4.1.15) the majority of the farmers had medium to low managerial ability for the market-led extension because the majority of the farmers had medium to low planning ability, medium to low organizing ability, medium to low directing ability, medium to high supervision ability, medium to low control ability, medium to low reporting ability and medium to high budgeting ability for market-led extension. This with the results of Jadav (2004), Prajapati (2011), Warawdekar *et al.* (2015), and Kumar (2017).

**4.2 Managerial ability of APMC office bearers****Planning ability****4.2.1 Distribution of APMC office bearers according to their Planning ability**

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	9 - 13	17	48.57
2.	Medium	13 - 17	14	40.00
3.	High	17 - 21	4	11.43
Total			35	100

The results furnished in Table 4.2.2 revealed that the Item 'I plan to conduct buying and selling activities in a transparent manner in the market' was ranked first, followed by 'To get a remunerative price for the produce to the farmer is the main objective in planning for management of marketing' (II Rank). The probable reasons for the above results (Table 4.2.1 & 4.2.2) might be due to the fact that the APMC office bearers had low formal education in the study area of Agriculture and medium to low-level training received in market-related aspects, which resulted in medium to low-level knowledge on market related activities. The majority of APMC office bearers were involved in the preparation of market plans for their APMC only, very less APMC office bearers were giving advice to the farmers in the preparation of market plans. The items that got the lowest ranks and their mean scores indicate that the APMC office bearers were not performing activities like motivating the farmers to cultivate a variety/crop that has more demand in the market, value addition, and market forecasting-related activities.

**Organizing ability****4.2.3 Distribution of APMC office bearers according to their Organizing ability**

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	7 - 12	12	34.29
2.	Medium	12 - 17	19	54.28
3.	High	17 - 22	4	11.43
Total			35	100

The results presented in Table 4.2.4 revealed that the Items 'I delegate the responsibility to the market functionaries to perform a job' and 'I allotted work to the market functionaries based on the knowledge and skills possessed by them' were ranked first, followed by 'I execute the market activities as per the recommendations given by the District/State marketing board' (II Rank). Hence from the above results, it can be concluded that the majority of the APMC office bearers had medium to low organizing ability for market-led extension, it is because they had less interaction with farmers. So they can not able to provide some market services and also they don't have good interpersonal relationships with farmers.

The mean scores of some items (display the daily market news - 0.97, organize the training programmes on market-oriented production - 0.74, establish update technology in the market - 0.86, performing quality test of farm produce - 0.80, make arrangements for transport - 0.57, inform about the variety/crop which is more demand in the market - 0.31 and provide market linkages for export - 0.57) lies towards rarely to never side which means APMC office bearers were not performing these activities because lack of awareness and knowledge about activities.

### Directing ability

#### 4.2.5 Distribution of APMC office bearers according to their Directing ability

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	10 - 14	11	31.43
2.	Medium	14 - 18	15	42.86
3.	High	18 - 22	9	25.71
Total			35	100

The results furnished in Table 4.2.6 revealed that the Item 'I disseminate market-related information through Newspapers, TV, Mobiles, and Radio' was ranked first, followed by 'I give clear cut instructions to the labor/market functionaries regarding jobs performed/ any new technology is being implemented in the market yard' (II Rank). majority of the APMC office bearers had medium to low directing ability which might be due to medium to low-level role perception, medium leadership skills, medium motivation skills, and medium communication skills towards market-led extension. If we observe motivation items in the table, mean scores of the items indicate that the APMC office bearers were not motivating and guiding the farmers towards market-led extension activities, it is because of lack of knowledge about the activities, lack of interpersonal relationship with farmers and no field visits in the villages.

### Supervision ability

#### 4.2.7 Distribution of APMC office bearers according to their Supervision ability

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	1 - 3	3	8.57
2.	Medium	3 - 5	22	62.86
3.	High	5 - 7	10	28.57
Total			35	100

The results presented in Table 4.2.8 revealed that the Items 'Do you supervise the arrangements for providing storage facilities at the market yard' and 'Do you monitor your labors to get the work done at the market yard' were ranked first, followed by 'Do you monitor the workplaces of workers in the market to avoid malpractices' (II Rank). It can be evident from the Tables. 4.2.7&4.2.8 that the majority of the APMC office bearers were medium to high-level supervision abilities for a market-led extension. It might be due to the increasing work experience of APMC officers resulted in increasing their awareness, perception, and knowledge about the activities. The items ("monitor the price fluctuations of different crops" and "monitor whether the farmers are getting timely updated information or not") of mean scores indicate that some of the APMC office bearers were not performing the above activities because they were lacking skills in monitoring price fluctuations and not having a good interpersonal relationship with the farmers.

### Control ability

#### 4.2.9 Distribution of APMC office bearers according to their Control ability

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	6 - 9	17	48.57
2.	Medium	9 - 12	14	40.00
3.	High	12 - 15	4	11.43
Total			35	100

The results furnished in Table 4.2.10 revealed that the Item 'I record the data on crop arrivals in every season in the market yard' was ranked first, followed by 'I maintain various records the marketing yard' (II Rank). The probable reasons for the above results (Table 4.2.9& 4.2.10) might be due to some of the APMC office bearers were not providing efficient services at the market yard like providing electronic auction system, free storage facilities, drying platforms, and also they were not controlling the distress sales at villages, so these were might be reasons for the above result.

### Reporting ability

#### 4.2.11 Distribution of APMC office bearers according to their Reporting ability

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	1 - 2	5	14.28
2.	Medium	2 - 3	17	48.57
3.	High	3 - 4	13	37.14
Total			35	100

The results presented in Table 4.2.12 revealed that the Items 'I submit the crop arrival records and buying and selling records to the market committee chairman were ranked first and 'I report my higher authorities if something goes wrong in the market yard' (II Rank). It can be observed from tables 4.2.11& 4.2.12 that the majority of the APMC office bearers had medium to high reporting

ability for market-led extension, it is because increasing work experience of APMC office bearers resulted in improving their awareness and knowledge about the job activities. The statements mean scores lie towards the 'regularly' side which means APMC office bearers performing these activities regularly because these were important activities in the market yard for the smooth functioning of APMC.

### **Budgeting ability**

#### **4.2.13 Distribution of APMC office bearers according to their Budgeting ability**

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	2 - 4	10	28.57
2.	High	4 - 6	25	71.43
Total			35	100

The results furnished in Table 4.2.14 revealed that the Item 'Do you maintain the budget records of your market yard' was ranked first, followed by 'Do you use market committee funds to provide new infrastructure facilities in the market yard' (II Rank), and 'Do you allot the budget for providing new infrastructure facilities in the market yard' (III Rank). It can be evident from the Tables. 4.2.13 and 4.2.14 that the majority of APMC office bearers had high to low budgeting abilities because the majority of APMC office bearers maintained budget records of APMCs and buying and selling records of crop produce and allotting budget for providing new infrastructure facilities at market yard.

#### **4.2.15 Distribution of APMC office bearers according to their Managerial ability**

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Very low	53 - 58	11	31.43
2.	Low	58 - 63	13	37.14
3.	Medium	63 - 68	6	17.14
4.	High	68 - 73	3	8.57
5.	Very high	73 - 78	2	5.72
Total			35	100

The above results indicate that (Table 4.2.15) the majority of the APMC office bearers had low to very low managerial ability for market-led extension because the majority of the APMC office bearers had low to medium planning ability, medium to low organizing ability, medium to low directing ability, medium to high supervision ability, low to medium control ability, medium to high reporting ability and high to low budgeting ability for market-led extension. This is in conformity with the results of Chintaman (2010), Pradip *et al.* (2012) and Kavadi (2015).

### **4.3 Managerial ability of AOs**

#### **Planning ability**

##### **4.3.1 Distribution of AOs according to their Planning ability**

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	10 - 14	4	11.43
2.	Medium	14 - 18	15	42.86
3.	High	18 - 22	16	45.71
Total			35	100

The results furnished in Table 4.3.2 revealed that the Item 'Do you help the farmers in preparing crop plan and market plan' was ranked first, followed by 'To get a remunerative price for the produce to the farmer is the main objective in planning for the management of farming and marketing' and 'Forecasting about the weather' (II Rank). It can be observed from tables 4.3.1 and 4.3.2 that the majority of the AOs had medium to high planning ability for market-led extension it might be due to they had good formal education in Agricultural study area and they had received medium level training in market-oriented farming resulted in increasing their awareness and knowledge about their job activities. The AOs maintained a good interpersonal relationship with farmers helped the AOs and AEOs to understand farmers' situation and problems according to that they were planning the training programs and field visits in the villages. The majority of the AOs were disseminating weather, pest, and disease forecast information to the farmers from time to time. These all imply that the AOs had good planning abilities for a market-led extension.

#### **Organizing ability**

##### **4.3.3 Distribution of AOs according to their Organizing ability**

(N=140)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	6 - 11	13	37.14
2.	Medium	11 - 16	16	45.72
3.	High	16 - 21	6	17.14
Total			140	100

The results presented in Table 4.3.4 revealed that the Item 'I implement state government development programs and schemes related to Agriculture in the village' was ranked first, followed by 'I execute the activities as per the recommendations and suggestions were given by ADA/DAO' (II Rank). It can be evident from the Tables. 4.3.3 and 4.3.4 that the majority of the AOs had

medium to low organizing ability which might be due to they had low awareness and knowledge about market-related activities like FAQ standards of the crop produce, organizing FPOs in the villages and informing MSP prices of different crops to the farmers from time to time, the below items means scores were indicate the same. Apart from this, the AOs were performing their job roles very actively like executing the recommendations of ADA/DAO, implementing state Government development programs, providing soil health cards and soil testing facilities to the farmers, and conducting crop demonstrations in the villages.

### Directing ability

#### 4.3.5 Distribution of AOs according to their Directing ability

(N=140)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	13 - 18	9	25.71
2.	Medium	18 - 23	21	60.00
3.	High	23 - 28	5	14.29
Total			140	100

The results furnished in Table 4.3.6 revealed that the Items 'I give solutions to the farmers on pest control and disease control and other crop cultivation problems' was ranked first, followed by 'I give clear cut instructions to the AEOs regarding the jobs performed by them in the village' (II Rank). It was noticed from Tables 4.3.5 and 4.3.6 that, the majority of the AOs had medium to low directing ability for market-led extension, it is because of medium leadership abilities, low motivation abilities and medium communication abilities towards market-led extension. If we observe the motivation items in table 4.83, the items' mean scores lie between the rarely to never side which indicates that the AOs were not motivating the farmers towards market-oriented activities. It is because of a lack of awareness and knowledge about the activities of the AOs.

### Supervision ability

#### 4.3.7 Distribution of AOs according to their Supervision ability

(N=140)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	3 - 4	6	17.14
2.	Medium	4 - 5	16	45.72
3.	High	5 - 6	13	37.14
Total			140	100

The results presented in Table 4.3.8 revealed that the Item 'Do you monitor the activities of AEO in the village' were ranked first, followed by 'Do you monitor the supply of quality inputs by input dealers in the villages' (II Rank). Therefore from the above results it could be concluded that the majority of the AOs had medium to high supervision abilities for market-led extension. The above trend might be due to the continuously increasing work experience of AOs resulting in increasing their awareness, perception, and knowledge about the job activities. The items (visit farmers' fields at harvesting time and observe the new variety/ new technology performance in the villages) mean scores indicated that some of the AOs had not performed the above activities might be due to high work burden and other deputation duties they cannot able to concentrate on their job activities.

### Control ability

#### 4.3.9 Distribution of AOs according to their Control ability

(N=140)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	5 - 8	15	42.86
2.	Medium	8 - 11	13	37.14
3.	High	11 - 14	7	20.00
Total			140	100

The results furnished in Table 4.3.10 revealed that the Item 'I maintain various records crop cultivation in the villages' was ranked first, followed by 'We record the data on area-wise production of different crops cultivated in the village' (II Rank), 'consult ADA, If there is any problem in the village regarding crop cultivation or subsidies' (III Rank). It can be evident from the Tables. 4.3.9 and 4.3.10 that the majority of the AOs had medium to low control abilities for market-led extension, which might be due to the continuously increasing work experience of AOs resulting in improving their perception and awareness about the new activities to perform. The item 'control the farmers not to sell their crop produce in the nearest market irrespective of the price' mean score indicated that the AOs had not this activity this led to increasing distress sales in the villages and the farmers were losing their profit margin on the crop produce.

### Reporting ability

#### 4.3.11 Distribution of AOs according to their Reporting ability

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	2 - 4	1	2.86
2.	Medium	4 - 6	21	60.00
3.	High	6 - 8	13	37.14
Total			35	100



The results presented in Table 4.3.12 revealed that the Item 'Do you submit the records of area-wise production of different crops to the ADA' was ranked first, followed by 'If crop failure occurs/failure of seed germination occurs, will you take action' (II Rank), 'Do your AEOs report to you from time to time regarding activities performed by them in the village' (III Rank). It can be observed from tables 4.3.11 and 4.3.12 that the majority of the AOs had medium to high reporting ability for market-led extension, it is because increasing work experience of AOs resulted in improving their awareness and knowledge about the job activities. The items' mean scores lie towards the 'regularly' side which means AOs had performed these activities regularly but they had not taken the feedback from the farmers because lack of awareness about the importance of farmer feedback or forgetting to take the feedback due to busy in other job activities.

### Budgeting ability

#### 4.3.13 Distribution of AOs according to their Budgeting ability

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	0 - 2	18	51.43
2.	High	2 - 4	17	48.57
Total			35	100

The results presented in Table 4.3.14 revealed that the Items 'Will you record the cost of cultivation of different crops cultivated in your villages' was ranked first and 'Do you tell the farmers to work out cost-benefit analysis in your villages' (II Rank). It can be evident from the Tables. 4.3.13 and 4.3.14 that majority of the AOs had low to medium budgeting ability for a market-led extension because they were recording the cost of cultivation of different crops in the villages but they were not motivating the farmers to do cost-benefit analysis for their crops and some of the AOs were not motivating the farmers to cultivate commercial crops to get higher profits.

#### 4.3.15 Distribution of AOs according to their Managerial ability

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Very low	52 - 59	3	8.57
2.	Low	59 - 66	10	28.57
3.	Medium	66 - 73	15	42.86
4.	High	73 - 80	5	14.28
5.	Very high	80 - 87	2	5.72
Total			35	100

The above results indicated that (Table 4.3.15) the majority of the AOs had medium to low managerial ability for market-led extension because the majority of the AOs had high to medium planning ability, medium to low organizing ability, medium to low directing ability, medium to high supervision ability, medium to low control ability, medium to high reporting ability and low to high budgeting ability for market-led extension. This conforms with the results of Chauhan and Chauhan (2012), Warawdekar *et al.* (2015), and Kumar (2017).

### 4.4 Managerial ability of Traders for Marketled- extension

#### Planning ability

##### 4.4.1 Distribution of Traders according to their Planning ability

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	6 - 8	9	25.71
2.	Medium	8 - 10	15	42.86
3.	High	10 - 12	11	31.43
Total			35	100

The results furnished in Table 4.4.2 revealed that the Item 'Do you prepare any plan regarding the Marketing' was ranked first, followed by 'To do value addition of crop produce' (II Rank). It can be observed from tables 4.4.1 and 4.4.2 that majority of the Traders had medium to high planning abilities for market-led extension it might be due to possessing minimum education and continuously increasing work experience of Traders resulted in increasing their awareness, knowledge, and skills about the market activities. During the harvesting time, they go on field visits and planned their buying and selling activities with the farmers. During the interaction with Traders it was observed that some of the Traders were helping the farmers in many situations like providing credit facilities, input facilities, and transport facilities to the market, there is a strong trust bond between them.

#### Organizing ability

##### 4.4.3 Distribution of Traders according to their Organizing ability

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	5 - 9	16	45.72
2.	Medium	9 - 13	13	37.14
3.	High	13 - 17	6	17.14
Total			35	100

The results presented in Table 4.4.4 revealed that the Item 'I do fix a reasonable price for the farmer's crop produce in consolation with the commission agents' was ranked first, followed by 'Before buying the produce I do the quality test of farm produce like grain size and moisture content, etc' (II Rank). It can be observed from Tables 4.4.3 and 4.4.4 that the majority of the Traders had low to medium organizing ability for market-led extension, it might be due to medium to low-level training received by the traders, medium to low awareness and knowledge about the market activities and they were working with a profit motive, so these were might be reasons were above result.

#### **Directing ability**

##### **4.4.5 Distribution of Traders according to their Directing ability**

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	8 - 13	18	51.43
2.	Medium	13 - 18	14	40.00
2.	High	18 - 23	3	8.57
Total			35	100

The results furnished in Table 4.4.6 revealed that the Items 'I motivate the farmers to do grading and standardization for their crop produce' were ranked first, followed by 'I listen to the suggestions of commission agents and APMC office bearers' and 'I Maintain good relation with the farmers so that they can trust me' (II Rank). Therefore from the above results it could be concluded that the majority of the Traders had low to medium directing ability for market-led extension, it is because they had medium leadership abilities, low motivation skills, and low to medium communication skills for market-led extension. The items which got the lowest ranks, their mean scores indicated that the Traders were not performing that particular activity it is because the majority of the Traders were trading as a business activity so they were working on a profit motive. If they perform those activities it is very helpful to the farmers because farmers and Traders have a strong trust bond between them.

#### **Supervision ability**

##### **4.4.7 Distribution of Traders according to their Supervision ability**

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	1 - 2	9	25.72
2.	Medium	2 - 3	23	65.71
3.	High	3 - 4	3	8.57
Total			35	100

The results presented in Table 4.4.8 revealed that the Item 'Do you supervise the quality test activity of crop produce at APMC' was ranked first, followed by 'Do you regularly monitor and assess of prices of different crops' (II Rank). It was noticed from Tables 4.4.7 and 4.4.8 that, the majority of the traders had medium to low supervision abilities for market-led extension, it might be due to a lack of awareness and knowledge about the activities. The majority of the traders were supervise quality test activity because the traders were directly involved in the buying activity, they checked the quality of crop produce then they fixed the price. The items which got less ranks, their mean scores were indicate that Traders were not performing those activities because of low perception and low awareness about the activities or else they might be felt that those were not important activities for them to perform.

#### **Control ability**

##### **4.4.9 Distribution of Traders according to their Control ability**

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	4 - 7	19	54.29
2.	Medium	7 - 10	12	34.28
3.	High	10 - 13	4	11.43
Total			35	100

The results furnished in the Table 4.4.10 revealed that the Items 'consult APMC office bearers, If there is any problem in the market yard' was ranked first, followed by 'We use an electronic auction system in our market yard to ensure transparency in price fixation' (II Rank). It can be evident from the Tables. 4.4.9 and 4.4.10 that the majority of the Traders had low to medium control abilities for market led extension, it might be due to low awareness and knowledge about the market-led extension activities. The items ('control the farmers not to sell their crop produce in the nearest market irrespective of the price' and 'with the help of alternate marketing methods we can reduce marketing costs') mean scores was indicate that the Traders were not performing this activity because they feel that these activities might be affect their Trading business negatively.

#### **Reporting ability:**

##### **4.4.11 Distribution of Traders according to their Reporting ability**

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	0 - 2	13	37.14
2.	High	2 - 4	22	62.86
Total			140	100

The results presented in Table 4.4.12 revealed that the Items 'I report my higher authorities if something goes wrong in the market yard' were ranked first and 'I submit the arrival records and buying records to the market committee chairman' (II Rank). It can be observed from tables 4.4.11 and 4.4.12 that the majority of the Traders had high reporting ability for market-led extension, it is because the continuously increasing work experience of Traders resulted in improving their awareness and knowledge about the job activities. The items mean scores were lies towards the 'regularly' side which means Traders had performed the activities regularly but some of the Traders had not submitted their buying records at APMC in time it is because they might be felt that it is not necessary to submit, the APMC officers were already maintaining everyday buying and selling records.

### Budgeting ability

#### 4.4.13 Distribution of Traders according to their Budgeting ability

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	0 - 2	7	20.00
2.	High	2 - 4	28	80.00
Total			35	100

The results presented in Table 4.4.41 revealed that the Items 'I take the license as a trader and I conduct trading activity at the market yard' was ranked first and 'I sell the farmer crop produce to the retailers, private companies, and consumers for the higher price' (II Rank). It can be evident from the Tables. 4.4.13 and 4.4.14 that majority of the Traders had high budgeting ability for market-led extension because they were always following profit-oriented business and the majority of the Traders were not concerned about farmers' profit and at the same time they were not cheating the farmers in buying and selling activity. The items mean scores indicated that the majority of the traders took the license and conducted buying and selling activity at APMC. The majority of the Traders were selling crop produce to the big Traders at higher prices which they have bought from the farmers at minimum prices.

#### 4.4.15 Distribution of Traders according to their Managerial ability

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Very low	38 - 43	9	25.71
2.	Low	43 - 48	12	34.29
3.	Medium	48 - 53	8	22.86
4.	High	53 - 58	4	11.43
5.	Very high	58 - 63	2	5.71
Total			35	100

The table 4.4.15 indicate that the majority (34.29%) of the Traders had low Managerial ability for market-led extension followed by very low (25.71%), medium (22.86%), high (11.43%) and very high (5.71%) Managerial ability for market-led extension respectively. This is in conformity with the results of Baria *et al.* (2012), Kavadi (2015) and Kumar (2017).

**Concision: Market-led Extension** is comparatively new approach that includes new methods /techniques of farming, the importance of proper post-harvest handling, and marketing. This is to be disseminated among the communities of farmers through Agricultural Officers (AO), Horticultural officers (HO), Veterinary officers and APMCs officer bearers. This is done to maximize the profits of the producer whilst, focusing on lowering the costs of production and exposing them directly to markets. The majority of the farmers had medium Managerial ability for market-led extension, the Majority of the APMC office bearers had low Managerial ability for market-led extension, the Majority of the AOs had medium Managerial ability for market led extension and the Majority of the Traders had medium Managerial ability for the market led extension. It could be improved by giving training to the respondents. The government should promote the formation of farm cooperatives including FPOs through the department of Agriculture and KVKs, and motivate the farmers to link the FPOs to the big traders for easy of marketing of crop produce. Provide incentives to the farmers who successfully established and ran the FPOs. The Government should announce separate premium price for commercial crops like cotton, turmeric and sugarcane so that the farmers can motivated and cultivate commercial crops instead of traditional crops.

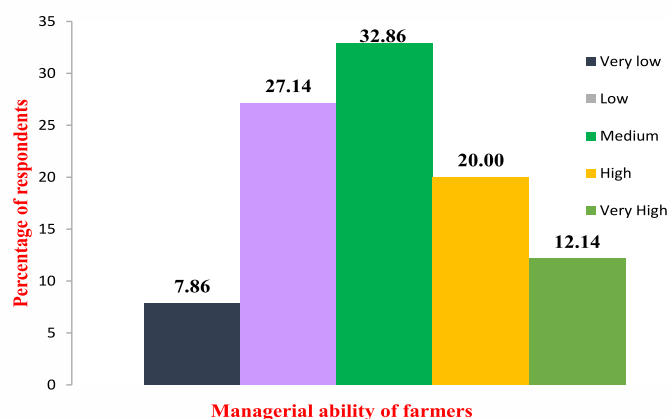


Fig 4.1. Distribution of farmers according to their Managerial ability

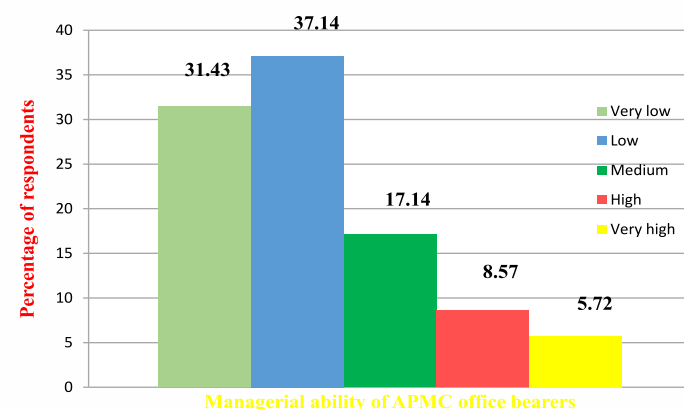


Fig 4.2. Distribution of APMC office bearers according to their Managerial ability

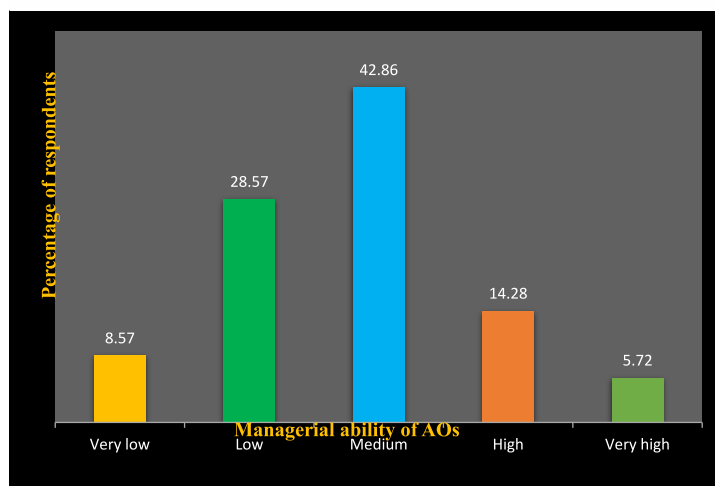


Fig 4.3. Distribution of AOs according to their Managerial ability



Fig 4.4. Distribution of Traders according to their Managerial ability

### Declarations

#### "Funding":

We did not receive support from any organization for the submitted work.

No funding was received to assist with the preparation of this manuscript.

#### "Conflicts of interest/Competing interests":

The authors have no conflicts of interest to declare that are relevant to the content of this article.

#### Ethics approval

This is an observational study. The Research Ethics Committee has confirmed that no ethical approval is required.

#### Informed consent:

"Consent to participate": Verbal informed consent was obtained prior to the interview.

"Consent to publish": Additional informed consent was obtained from all individual participants for whom identifying information is included in this article.

### References

- Baria, P. A., Soni, N. V. and Patel, D. D. (2012). Managerial ability of mango growers towards scientific cultivation in mango orchard. *Gujarat Journal of Extension. Education.* 23:78-80.
- Chauhan, N. M., Chauhan, N.B. (2012). Managerial Ability of the Programme Coordinators of Krishi Vigyan Kendras of India, *Indian Research Journal of Extension Education.* 12 (3), September.
- Jadav, N. B. 2004. Managerial ability of mango growers about scientific cultivation of Mango orchard. Ph. D. Thesis (*Unpublished*), Gujarat Agricultural University, Junagadh.
- Kaleel, F.M.H.; Krishnankutty, Jayasree and Satheesh Babu, K. 2007. *Market-Led Extension Dimensions and Tools*, Agrotech Publishing Academy, Udaipur – 313 002, 42-43.
- Kavad, S. D. (2015). Strategic Analysis of Market-Led-Extension Activities of Apmcs of South Gujarat, Ph.D (Agri) Thesis submitted to N. M. College Of Agriculture, Navsari Agricultural University Navsari – 396- 450 Gujarat State.
- Kumar, A, Vikash, P, and Singh, R. (2017) Managerial Ability of Lime Growers about Recommended Cultivation of Lime in Rajasthan, *International Journal of Agricultural Science and Research (IJASR).* 7 (2): ISSN(P): 2250-0057.
- Planning Commission Government of India, 2011. Report Of The Working Group on Agricultural Marketing Infrastructure, Secondary Agriculture and Policy Required For Internal And External Trade, For The Xii Five Year Plan 2012-17
- Prajapati, A. C. 2011. Managerial ability of potato growers of Banaskantha district. M.Sc.(Agri.) Thesis (unpublished), SDAU, Sardar Krushinagar.
- Ruchira Boss and Mamata Pradhan, 2020. Post-harvest Management and Farm Outcomes Storage Facilities Matter. *Economic and political weekly.* ISSN 0012-9976, Vol. 55, Issue No. 16, 18 Apr, 2020.
- Tadesse, G. and Bahiigwa, G. 2015. Mobile phones and farmers marketing decisions in Ethiopia. *World Development.* 68, 296-307.
- Vilas, M., Kadrolkar, 2016. Agricultural marketing In India Role Of Agricultural Produce marketing Committee (APMC), Department of Studies and Research in Economics, Tumkur University, B. H. Road, TUMKUR, Karnataka State, India.
- Warawdekar, S. C., Pandya, R. D. and Darandale, A. A. 2015. Resource management ability for eco-friendly sustainable cotton cultivation and their association with selected characteristics of cotton growers. *Souvenir-Abstracts, FSA:13.*