Original Research Article

"Knowledge Assessment of Stakeholders on Market-Led Extension in Telangana"

ABSTRACT

Market-led-extension works with various aspects on quality, consumer's preference, latest knowledge of market, market analysis, market intelligence, processing, value addition, Use of ICTs and Appropriate Extension Approaches and other marketing information on regular basis. These can helps the farmers to realize high returns for their produce, minimize the production costs, reduce the post-harvest loses and improve the product value and marketability. Hence, the extension should focus on end-to-end basis. Keeping this in view a study conducted on analyzing the knowledge level of stakeholder about Market led Extension. This study confined to an *Ex-post-facto and Exploratory* research designs. Northern Telangana Zone was selected purposively for current study, Out of the twelve districts that make up the Northern Telangana zone, seven districts were chosen at random. Two APMCs were randomly chosen from each of the seven districts; hence, a total of 14 APMCs were chosen for the current study. A random selection of two villages was made from each district, taking into account the district's APMC location. Based on where the APMCs were located in the specific district, the respondents were chosen at random. Stakeholder knowledge regarding Market Led Extension, the majority of farmers (54.28%) reported having low knowledge, the majority of APMC office bearers (48.57%) reported having medium knowledge, the majority of AOs (57.14%) reported having medium knowledge, and the majority of traders (40.00%) reported having medium knowledge. To bring their knowledge level into higher categories the department of Agriculture and Agricultural marketing should conduct the capacity building activities through training programmes, exposure visits taken up at regular intervals and can also conduct the collaborative development programmes with the Agricultural marketing department, KVKs, DAATTCs, SAUs in the villages. There is a need to motivate the Traders to perform market led extension activities at APMCs for this the Government of Telangana, Department of Agricultural Marketing and Department of Agriculture should conduct need based training's on market oriented agriculture and market led extension activities to the Traders.

Keywords:
Market led Extension activities, Agricultural Produce Marketing Committee (APMCs), Market oriented Agriculture, Post harvest losses and APMC office bearers

Introduction

Undoubtedly, agricultural marketing is expanding and changing in India, but not everywhere or for all farmers. A Second Green Revolution is anticipated in these conditions to clean up the mess and steer the country in the correct direction. Grading, storage, and warehousing are crucial for enhancing the marketing system and promoting cooperative marketing, as well as the creation of regulated marketplaces. In light of this, market-led extension plays a critical role in advancing agricultural marketing initiatives (Vilas, 2016).

Providing education to farmers about basic dimensions of agricultural marketing is the prime need in today's context. The marketing problems and solutions need to be incorporated within the scope of field-level agricultural extension workers who are in direct contact with the farmers. Under the present scenario, marketing extension cannot be ignored any longer as it provides strong pillars on which sound structure of agriculture marketing could be established. In the past, farmers planted the crops that their neighbors planted and sold to buyers that their neighbor sold. Now, the trend is changing as many farmers find themselves in a position to make individual decisions about what, when, where and how to produce and market.

The road connecting production-related technology from research institutes to farmer's fields was paved in large part by extension agencies. The farmers are well compensated for their productivity. Inadequate infrastructure and ineffective marketing channels are thought to be the root of both high and unstable consumer pricing as well as the low amount of consumer rupee that reaches farmers. The middlemen control the market but provide little value addition, and producers and consumers frequently receive bad deals. Consequently, extension agents must play a significant part in helping farmers develop the skills necessary to overcome new obstacles and increase the prices at which they may sell their produce. This Extension change is known as Market – led extension, and so far it is not a much-discussed issue in the extension scenario. Hence the extension focus should extend from mere production to market-led extension on an end-to-end basis. (Bagish*et al*, 2019).

Market-led extension regularly deals with a variety of topics, including quality, customer preferences, the most recent market knowledge, market analysis, market intelligence, processing, value addition, Use of ICTs and Appropriate Extension Approaches, and other marketing data. In addition to lowering production costs and post-harvest losses, these can assist farmers maximize the value and marketability of their produce. Thus, the extension ought to concentrate on an end-to-end approach. The extension system must now be trained with market-related information and abilities. To accomplish efficient marketing, infrastructure including information and extension services to farmers, transport and communication facilities, public utility supply, trade and advertisement, public storage, market and abattoir facilities are very much required (Duraisamy, 2007).

Objective:

To investigate stakeholder understanding about market-led extension

Materials and Methods:

The current investigation is limited to *exploratory and ex-post-facto* research designs. For the current study, the Northern Telangana Zone was purposefully chosen. Of the 12 districts that make up the Zone, 7 districts were chosen at random. Two APMCs were randomly chosen from each of the seven districts; hence, a total of 14 APMCs were chosen for the current study. A random selection of two villages was made from each district, taking into account the district's APMC location. Based on where the APMCs were located in the specific district, the respondents were chosen at random.The multistage random sampling approach was employed in the process of selecting the respondents. 20 farmers, 5 APMC office bearers, 5 agricultural officers, and 5 traders are selected from each district. Total 140 farmers, 35 APMC office

bearers, 35 Agricultural officers, 35 Traders were selected as respondents for the current study.

In this study, knowledge is defined as the respondents' level of information and comprehension on market-led extension. The following methodology was used to create a knowledge test that was used to gauge respondents' understanding of market-led extension.

3.1 Developing and harmonizing a knowledge assessment on Market led Extension.

Collection of items:

Initially, 246 items were collected focusing on various aspects of Market led extension *i.,e* Post harvest technology, FAQ (Fair Average Quality) standards, Market channels, market intelligence information, new marketing reforms, grading and processing of produce, contract farming and other market-related activities performed by stakeholders. The specialists in the field of Agriculture Extension, Agricultural Economics and Agribusiness management scientists working in MANAGE, NAARM and SAUs of different states were consulted in order to gather the 246 questions listed above. 206 questions were left after screening, fine-tuning, and editing in accordance with the advice of the relevant scientists. Item analysis was applied to these 206 questions in order to filter additional items according to respondents' opinions in the non-sample area.

Item analysis:

Three indices namely item difficulty index, item discrimination index, and point biserial correlation were used to conduct the item analysis. The item discrimination index tells us how well an item separates well-educated respondents from poorly informed respondents, or how well it discriminates in agreement. On the other hand, the item difficulty index shows how challenging a certain thing was. According to the rest of the test, the point biserial correlation gave information about how effectively the item measures or discriminates. The questions were pretested in accordance with Gonard's recommendations (1948). After revision, the questions were given to 240 respondents. (60 farmers, 60 AOs, 60 APMCs office bearers, 60 traders selected for the purpose of pretesting). Pretesting was done in the non-sampling area of the following districts Mahabubnagar, Sangareddy and Medak districts of Telangana.

Item difficulty index (P)

The 240 non sample respondents were given the 206 items, which included multiple choice, fill in the blank, Yes/No, True/False, and one word answers. The scores granted were one for accurate response and zero for erroneous response. Following the computation of each respondent's total score on 206 items, the 240 respondents were ranked from highest to lowest. The 240 responses were split into six equal groups as a result. Ten farmers responded to each of these groups (designated G1, G2, G3, G4, G5, and G6), and ten APMC office bearers, AOs and traders responded to each group in the case of AOs, APMCs, and traders. The intermediate two groups, G3 and G4, were removed for item analysis purpose, retaining only four

extreme groupings with high and low scores (Bloom *et al.*1956).The percentage of respondents who correctly answered a given item was used to calculate the index of difficulty. Items with 'p' values between 0.2 and 0.8 were taken into account when the knowledge test was finally selected.

Item discrimination index (E 1/3)

The item discrimination index is shown by "E 1/3" which is computed by the formula.

$$E\ 1/3 = \frac{(S1 + S2) - (S5 + S6)}{N/3}$$

where the frequencies of right responses in the categories G1, G2, and G5, G6 are, correspondingly, S1, S2, and S5, S6. "N" is the total number of responders from the sample chosen for the item analysis, which consists of 60 traders, 60 AOs, 60 APMCs, and 60 office bearers. The range of the discrimination index is 0 to 1. For the ultimate test, the items with a discriminating index between 0.20 and 0.80 were chosen.

Point biserial correlation (r_{pbis})

To determine the internal consistency of the items that is, the relationship between the total score and a dichotomized response to any particular item point biserial correlation was the primary goal of the calculation. In a sense, the correlation between each individual question on the preliminary knowledge test, determined using Garret's (1966) recommended formula, was used to measure the validity power of the item.

$$r_{pbis} = \frac{MP\text{-}MQ}{SD} \times \sqrt{pq}$$

r_{pbis}= Point biserial correlation.

MP = The average of all respondent's scores who provided a correct response to the question

$$MP = \frac{\text{Sum total of x y}}{\text{Total number of correct answers}}$$

MQ = The average of all respondent's scores who provided a incorrect response to the question

$$MQ = \frac{\text{Sum total of x - Sum total of x y}}{\text{Total number of wrong answers}}$$

SD = Standard deviation of the entire sample.

P = Proportion of the respondents giving correct answer to the item.

$$P = \frac{\text{Total number of correct answers}}{\text{Total number of respondents}}$$

q = Proportion of the respondents giving incorrect answer to the item (or)

q = 1-P

X = Total score of the respondent for all items.

Y = Response of the individual for the question i.e. (Correct = 1; not correct = 0)

XY = Total score of the respondent multiplied by the response of the individual to the question. i.e. (Correct = 1; not correct = 0)

Items having significant point biserial correlation either at 1 per cent (or) 5 per cent level was selected for the final test of the knowledge.

Test representativeness: Great care was made to ensure that the final test items selected encompassed all of the respondent's knowledge on market-led extension.

Total number of items chosen

1. Ultimately, 137 questions with difficulty level indices ranging from 30 to 80 were chosen from a total of 206 things.
2. Questions having 0.2 to 0.8 discriminating indices.
3. Questions at the 1% or 5% level that exhibit considerable point biserial correlation.

The range of the selected items is between 0.20 and 0.80 for proportionality. These proportions add out to (0.80 + 0.20)/2 = 0.50 on average.

Consequently, a total of 137 true/false, multiple choice, fill in the blank, yes/no, and one-word answers made up the final set of knowledge test topics that were chosen in order to assess the stakeholder understanding about market-led extension. To gauge reliability of instrument, after conducting test-retest reliability, the correlation coefficient (r=0.83) was found to be extremely significant, suggesting that the instrument used to gauge farmers' knowledge could be relied upon. Point biserial correlation (rpbis) was used to verify the test items' validity. The validity of the knowledge test items intended to gauge farmers' knowledge of market-led extension was demonstrated by the items with extremely significant correlation coefficients at the 1 percent (or 5 percent) level.

Because it demonstrated a higher degree of validity and reliability, the knowledge test developed for this study assesses stakeholder understanding about market-led extension.

Pattern of scoring:

The chosen knowledge test items were offered in various formats, including fill in the blank, multiple choice, true/false, one-word answers, and yes/no. Each test item had a score of "one" for the right answer and "zero" for the wrong answer. A respondent's knowledge score is calculated by adding up the scores of all the test

question items that they properly answered out of a total of test items. There was a possible knowledge score between 0 and 137.

Scoring and Categorization

Based on the knowledge scores obtained, respondents were grouped in to following 3 categories by using class interval technique. The class intervals were calculated based on maximum and minimum obtained scores. For each stakeholder items were prepared and finalized separately, for farmers 34, APMCs office bearer's 37, AOs 33 and Traders 33 items altogether total 137 items were finalized for knowledge test. Total score on knowledge test for a respondent was obtained by adding the scores obtained for all items present in knowledge test. The maximum possible and minimum possible scores for knowledge tests on market led extension for farmers, APMCs office bearers, AOs and traders were 0 to 34, 0 to 37, 0 to 33 and 0 to 33 respectively. For farmers the maximum and minimum obtained scores were 12 to 27. Subject to APMCs office bearers, AOs and traders the maximum and minimum obtained scores were 28 to 16, 12 to 27 and 13 to 25 respectively.

Results and Discussions:

4.1 Knowledge level of farmers about Market led extension

From the Table 1 and Figure 1, It is found that more than half (54.28%) of the farmers had low level of knowledge followed by (31.43%) of the farmers had medium level of knowledge and 14.29 per cent of the farmers belongs to high level knowledge about market led extension.

Table 1 Distribution of farmers according to their knowledge level aboutMarketledextension (N=140)

S. No	Category	Class Interval	Frequency	Percentage
1.	Low	12 - 17	76	54.28
2.	Medium	17 - 22	44	31.43
3.	High	22 - 27	20	14.29
Total			140	100

The results presented above indicate that majority of the farmers had low to medium level of knowledge about market led extension. The probable reason for this might be most of the farmers in the study area had low formal education, less training received on market oriented agriculture and they were not aware about market led extension activities. To bring their knowledge level into higher categories the department of Agriculture and Agricultural marketing should conduct the capacity building activities through training programmes, exposure visits taken up at regular intervals and can also conduct collaborative development programmes with the Agricultural Marketing department, KVKs, DAATTCs, SAUs in the villages. This is in conformity with the results of Suddep (2005), Gummagolmath (2012), Dhumale (2017), Rao (2019) and Kumari *et al* (2022).

4.2Knowledge level APMC office bearers about Market led extension

The data presented in Table 2 and Figure 2 reveals that majority (48.57%) of the APMC office bearers reported with medium level of knowledge followed by 28.57 and 22.86 per cent of APMC office bearers had low and high level of

knowledge about market led extension.

Table 2. Distribution of APMC office bearers according to their knowledge level (N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	16 - 20	10	28.57
2.	Medium	20 - 24	17	48.57
3.	High	24 - 28	8	22.86
Total			35	100

The results presented above indicate that majority of the APMC office bearers had medium to low level of knowledge about market led extension. The probable reason for this might be most of the APMC office bearers comes from non-agricultural background study area, so market-oriented agriculture, high-yielding market-oriented varieties and market-led extension activities were new to them. They were not aware about new marketing reforms in Agricultural marketing. Due to the low availability of staff at APMC they were unable to attend training programmes at national training institutes. Hence it is suggested that the Government need to recruit the new APMC office bearers from Agricultural background study area and training programmes should be conducted for APMC office bearers on market-oriented agriculture and new market reforms in Agriculture at regular intervals. This is in conformity with the results of Gummagolmath *et al.* (2012), Kavad (2015), Kumar (2017) and Rao *et al.* (2020).

4.3 **Knowledge level of AOs about Market led extension**

The data regarding the knowledge level of AOs were presented in Table.3. It could be observed from Table 3 and Figure 3 that the majority (57.14%) of the AOs reported with a medium level of knowledge. About one-fourth (25.71%) of the AOs reported with a low level of knowledge and only 17.17 percent of the AOs had a high level of knowledge.

Table 3. Distribution of AOs according to their knowledge level (N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	12 - 17	9	25.71
2.	Medium	17 - 22	20	57.14
3.	High	22 - 27	6	17.17
Total			35	100

From the above results, it can be concluded that the majority of the AOs had a medium to low level of knowledge about market led extension. The probable reason for this might be most of the AOs interested to give suggestions to the farmers from sowing to harvesting, they were not involved in market related extension activities and they were not aware about new marketing reforms, market oriented agricultural activities. So there is a need to motivate the AOs to concentrate on market-oriented

Agriculture, conduct need-based training's on market-led extension to the AOs and improve their knowledge in market led extension. Some of the AOs had high (17.17%) knowledge about market led extension because they had received training's on market led extension and they were actively involving market led extension activities. This is in conformity with the results of Gummagolmath *et al.* (2012), Kavad (2015), Kumar (2017) and Rao *et al.* (2020).

4.4 **Knowledge level Traders about Market led extension**

The classification of Traders in to different categories based on their knowledge level and the corresponding frequency distribution is presented in the Table 4 and Figure 4. The results indicate that majority (40.00%) of the traders had medium level of knowledge, more than one third (37.14%) of the Traders had low level of knowledge and only 22.86 per cent of the traders had high level of knowledge.

Table 4. Distribution of Traders according to their knowledge level

(N=35)

S.No	Category	Class Interval	Frequency	Percentage
1.	Low	13 - 17	13	37.14
2.	Medium	17 - 21	14	40.00
3.	High	21 - 25	8	22.86
Total			35	100

From the above table results, it can be concluded that the majority of the Traders had medium to low level of knowledge about market led extension. The probable reason for this might be most of the Traders were only involving in buying and selling activity, they were not performing other market led extension activities at APMC and they were not aware about new marketing reform in agricultural marketing. So there is a need to motivate the Traders to perform market led extension activities at APMCs for this the Government of Telangana, the Department of Agricultural Marketing and Department of Agriculture should conduct need based training's on market oriented agriculture and market led extension activities to the Traders. Some (22.86%) of the traders had high level of knowledge about market led extension because they were accessing the market related information from different sources, maintaining good contacts with the AOs, AEO and APMC office bearers and actively involving market led extension activities. This is in conformity with the results of Gummagolmath *et al.* (2012), Kavad (2015), Kumar (2017) and Mishra *et al* (2020)

Conclusion: In Telangana, Majority of the agricultural produce is being sold at the village itself by farmers immediately after harvesting due to urgent financial requirements and lack of transport facilities. Besides, a large number of small holders of Agricultural land hence, the quantity of produce is too small for bringing it to urban market place for the purpose of selling at better prices. Therefore, the key answer to the above questions will empower farmers in both production and market oriented knowledge which is the sole responsibility of Extension functionaries through Market Led Extension. In this present study it is revealed that majority of stakeholder having low to medium knowledge in Market led Extension aspects. To bring their knowledge

levelin Market led Extension into higher categories the department of Agriculture and Agricultural marketing should conduct the capacity building activities thorough training programmes, exposure visits taken up at regular intervals and can also conduct the collaborative development programmes with the Agricultural marketing department, KVKs, DAATTCs, SAUs in the villages.

Disclaimer (Artificial intelligence)

I hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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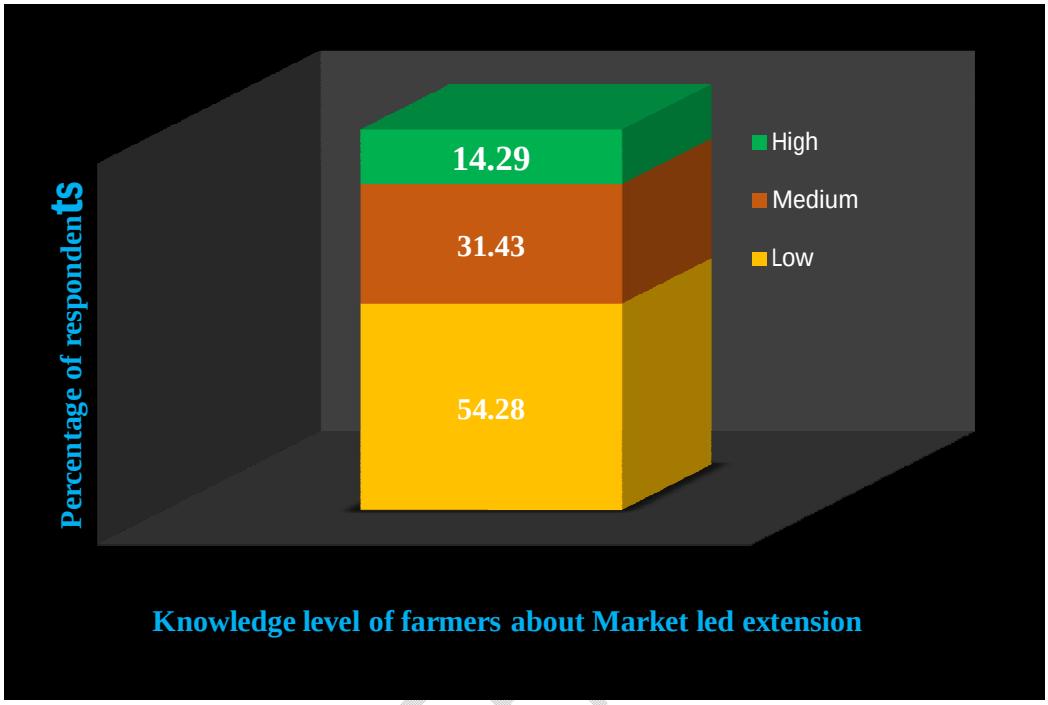

Fig .1. Distribution of farmers according to their knowledge level about Market led extension

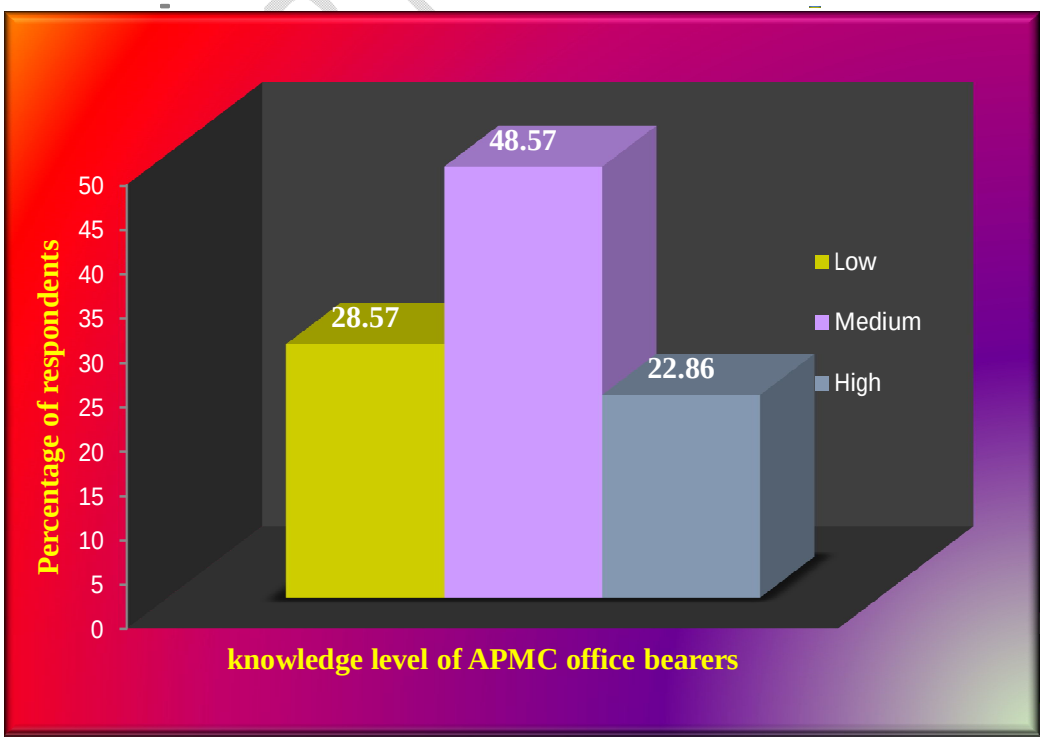

Fig2. Distribution of APMC office bearers according to their knowledge level

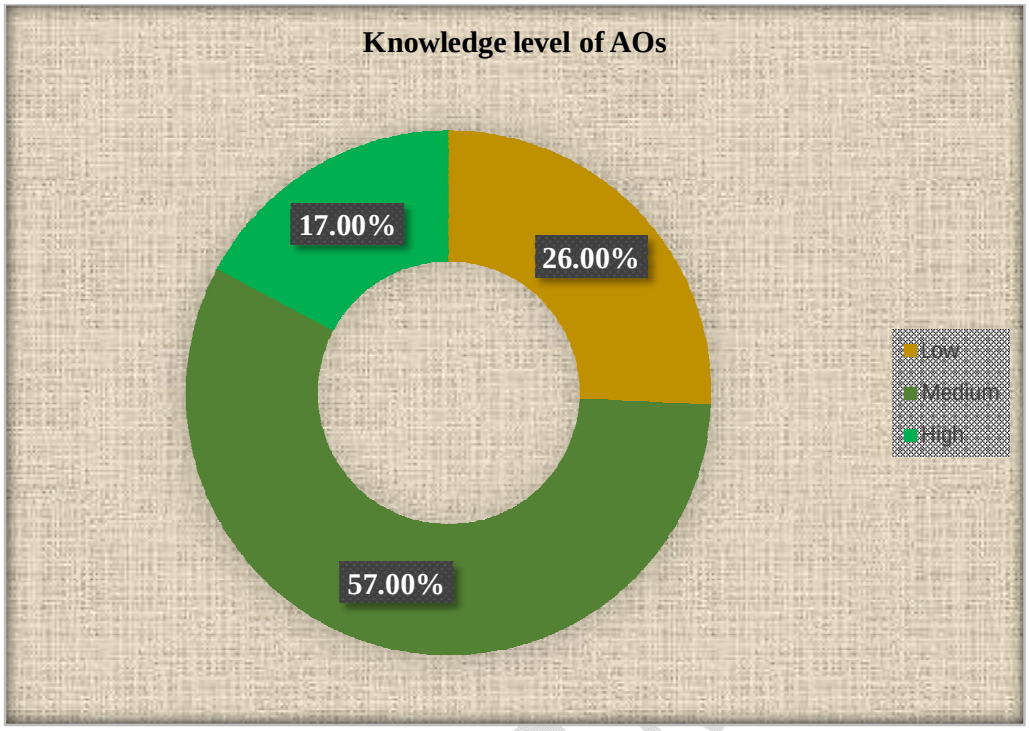

Fig3. Distribution of AOs according to their knowledge level

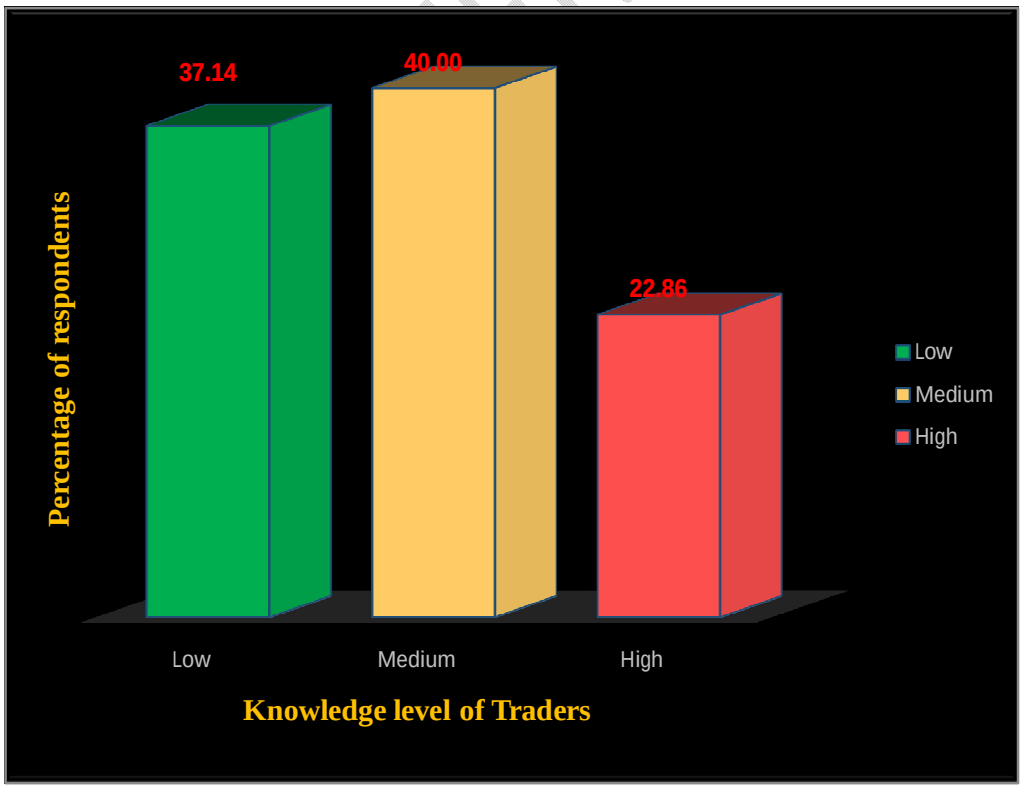

Fig4. Distribution of Traders according to their knowledge level