TRAINING NEED ANALYSIS OF AGRICULTURAL OFFICERS (AOs) OF DEPARTMENT OF AGRICULTURE DEVELOPMENT AND FARMERS' WELFARE KERALA

by

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THESIS

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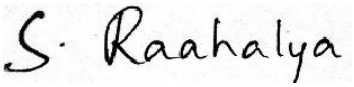
2020

DECLARATION

I, hereby declare that this thesis entitled **"Training need analysis of Agricultural Officers (AOs) of Department of Agriculture Development and Farmers' Welfare Kerala"** is a bonafide record of research work done by me during the course of research and the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any other University of Society.



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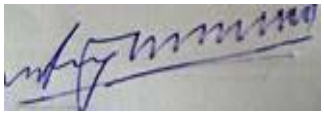
Certified that this thesis entitled "**Training need analysis of Agricultural Officers (AOs) of Department of Agriculture Development and Farmers' Welfare Kerala**"is a research work done independently by Ms. SandipamuRaahalya (2018-11-128) under my guidance and supervision and that it has not previously formed the basis for the award of any degree, diploma,associateship or fellowship to her.



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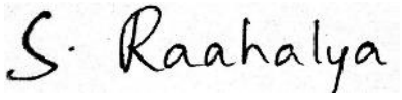

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LIST OF ABBREVIATIONS AND SYMBOLS USED

AO	Agricultural Officer
AAO	Agricultural Assistant Officers
AKC	Agriculture Knowledge Cenre
GDP	Agricultural Technology Management Agency
et al.,	Coworkers
KVK	KrishiVigyan Kendra
NGO	Non-Governmental Organisation
B.Sc.	Bachelor of Science
M. Sc.	Master of science
Ph.D.	Doctor of Philosophy
ADAs	Assistant Director of Agriculture
AAs	Agricultural Assistants
ICT	Information and Communication Technology
F	Frequency
N	Total number of respondents
SD	Standard deviation
Viz.,	Namely
&	And
%	Per cent
Fig.	Figure

Sl. No	Serial Number
TNI	Training Need Index
T&V system	Training and Visit system
VHSC	Vocational Higher Secondary Education
i. e.	That is

APPENDIX

Sl. No	Title	Appendix No.
1.	Interview schedule for the respondents	I

Introduction

1. INTRODUCTION

India consistently ranks second among most populous countries in the world. Agriculture being the backbone of Indian economy is a source of employment to almost 60 percent of the country's population and contributes 15 percent to its total GDP. The pressure on agriculture production is increasing day by day as the population increases. This requires greater co-ordination between research and extension. Hence, the need for strengthening the extension personnel through effective training programmes has become an integral part of the agricultural development strategy.

Likewise machines, Human's knowledge also gradually or in some instances rapidly become obsolete. Training is an excellent means to reduce obsolescence among people and in the organisation. The increase in a person's qualifications, proficiency, competence, understanding level and art of tackling situations are some of the major benefits offered to the trainees through attending training programs. A need based Training, when it is organised properly, reshapes a person's thinking dimensions and mould them to be fit to his or her job. This is not acquired in a day, It demands a change in the individuals know how, skills, attitude, understanding, decision making ability and tact while dealing with his current adversities of the day. For bringing these drastic changes into a layman, making available to the farming employees, the proper efficient and effective trainers is needed at hand.

According to Donald (1983), training need can be defined as "what attitudes, knowledge and skills do the functionaries need in order to do their job effectively". Analysing the situation and realizing what would be the training needs of the future is essential for any training programme to give an effective impact on the trainees. The training need analysis must be carried out before training activities are organized, since it guarantees the success of those activities. It ensures effectiveness, job performance, and strategic organizational development (Potter *et al*., 2003).

Training, the foremost vital input for human resource development, is the integral part of the Training & Visit system of Agricultural Extension. Almost all the functionaries involved in the system at various levels receive regular training to enhance their professional competency out of various training programmes, monthly workshops and fortnightly trainings. Monthly workshops are meant for the Subject Matter Specialists, to acquire the messages to be 'passed on' to the field level functionaries for onward transmission also to give feedback to the scientists with regard to the production recommendations, while in the fortnightly training, the Village Extension Officer and Agricultural Officer (AO) are trained in the transfer of technology to the farmers. Besides these, there are pre-seasonal training programmes, which are imparted to the village extension officers and Agricultural Officers before every ensuring season. In addition to these there are many in-service short and long duration special training courses for all the functionaries within the system, among or outside the state.

Agricultural Officers are the key technical personnel and their efficiency in working depends on their ability and competency backed with technical knowledge, understanding, and skills in agriculture and extension discipline. Due to technical break-through in agriculture, and for implementation of various developmental programmes to keep pace with the recent development, the constant periodical training is mandatory for extension functionaries. There are various training programmes chalked out for the Agricultural Officers in the T & V system. Apart from fortnightly training, they are also undergoing many short term training programmes in agriculture and allied subjects. Training imparted to the AOs, is distinct to persons depending upon their basic academic and technical qualifications, besides the service, experience and requirement. Sometimes a particular training may not fulfil the requirements of the whole participants attending it.

Several researches have recognized training as the supreme factor that influences the job effectiveness of the agriculture officers. To offer a systematic training, as already pointed out one should identify the existent training needs of

identified areas. It will help to refresh the training modules which were in progress and to formulate new training modules by the training institutes like KVK, Agricultural Universities, State and Central Agricultural training institutes, NGOs and other training institutes. The identified areas will also implicate the policymakers to find training programmes on new areas for an effective implementation of technology led extension services by the agriculture department. This is of paramount importance in order to plan strategies for effectively organising the training programmes in future.

Keeping this points in view, a study to assess the training need of Agricultural Officers of Department of Agriculture Development and Farmers' Welfare Kerala and attitude of the respondents towards training is of high relevance and importance. This study can further streamline the duties and responsibilities ofAgricultural Officers, working throughout the country.

OBJECTIVES OF THE STUDY

To assess the training need of agricultural officers. Attitude of the respondents towards training, their profile characteristics, constraints faced by them while implementing their duties and responsibilities were also studied.

SCOPE OF THE STUDY

This study was undertaken in the two districts of Kerala viz., Kannur from North, Thiruvananthapuram from South Kerala. An attempt has been made to measure the training need analysis of Agricultural Officers working in Department of Agriculture Development and Farmer Welfare, Government of Kerala. Very few research studies on this aspect have been undertaken so far in Kerala.

Hence it could be said that the results of this study could be useful not only toDepartment of Agriculture Development and Farmers' Welfare,Government of Kerala, Planners, administrators involved in formulating training programmes, the extension personnel but also academics interested in carrying out similar studies.

LIMITATIONS OF THE STUDY

The present study had the limitation of time and resources. Some of the Agricultural Officers were busy due to their heavy work. Theresearch was focused on the respondents expressed views, which may not be free from their individual subjective perceptions and prejudices despite efforts to achieve them in the most objective way possible.

PRESENTATION OF THE THESIS

The entire thesis is divided into five chapters. The first chapter deals with brief introduction, objectives, scope and limitations of the study. The second chapter 'Review of Literature' covers the review of the studies related to the research topic. The third chapter 'Methodology' explains the location of the study, selection of respondents, operationalization and measurement of the dependent variables, constraints perceived by the respondents, methods used for data collection and statistical tools used for the study. The fourth chapter deals with the 'Results and Discussions' of the present topic. The final chapter 'Summary' briefly summarizes the results of the major findings and suggestions for overcoming the constraints.

Review of Literature

2. REVIEW OF LITERATURE

The main aim of review of literature is to acquire knowledge on the earlier studies carried out by the researchers in a given field of study.This will helpto identify the knowledge accessible, which is relevant to the goals of the proposed study and help to delineate the problem area in addition to providing a basis for theoretical analysis and interpretation of the results. It facilitates to identify the gaps in selecting topics for research studies besides fetching the available techniques, which can be used to measure the factors under study and to compare the present results with that of the results of previous research.

An attempt has been made to review the relevant literature on "TRAINING NEED ANALYSIS OF AGRICULTURAL OFFICERS (AOs) OF DEPARTMENT OF AGRICULTURE DEVELOPMENT AND FARMERS' WELFARE KERALA" presented in a systematic manner under the following sub headings.

2.1 Definition of training

2.2 Need for training and its importance

2.3 Analysis of training need

2.4 Training needs of Agricultural Officers

2.5 Attitude of AOs towards training

2.6 Profile characteristics of AOs

2.7 Constraints faced by AOs

2.1 DEFINITION OF TRAINING

Lynton and Pareek (1978) defined training as being concerned with on job-in-organisation and as aiming not primarily at knowing more but for behaving definitely for lasting improvement on the job.

Turell (1980) defined training need as the gap between the true requirements of a given job and the incumbent's present capabilities.

Reddy (1983) stated that training is the organized procedure by which people acquire knowledge and skill for a definite purpose.

Ramchandrudu (1985) defined training as the method of helping employees gain efficiency in their present and future work by developing suitable habits of thinking, action, skills, knowledge and attitude.

Kaul and Nair (1989) stated that, training may be defined as the acquisition of new skills and attitudes to enable the task at hand to be more efficiently carried out. It requires a face to face interaction between the trainer and the trainee experiencing improvement in both skill and attitude.

2.2 NEED FOR TRAINING AND ITS IMPORTANCE

Benor (1984) emphasised that the Subject Matter Specialists who provide technical training and guidance to extension workers had an important role in the formulation of production recommendations and the functionary was a focus of link between extension and research.

Rao (1984) observed that the training was aimed at giving functionaries a sense of purpose, to promote extensive and broad based development indicative among beneficiaries and to generate self-confidence and belief in the efficacy and self-help.It was to equip the workers with the capability to find solutions to the problems.

Singh *et al.* (2011) reported that Training need identification is a tool used to identify what educational courses or activities should be delivered to employees in order to improve their work productivity and the focus on needs as opposed to employees' desires for a constructive result.

Khard*et al.*(2014) reported that Need assessment helps to recognize current problems and future challenges to be solve through training and development and is needed to define specific training needs from which to build their professional competencies to perform the assigned job in their organization.

2.3 ANALYSIS OF TRAINING NEED

Analysis training needs must be carried out before training activities are planned as this ensures the effectiveness of such activities. It ensures harmony between individual learning needs and the search for productivity, job performance, and strategic organizational development (Potter *et al*., 2003).The aim of an analysis of the training needs is to close the gap between the actual and desired situations by finding inconsistencies in results, prioritizing them and choosing the most appropriate for closure or reduction (Rothwell and Kazanas, 1990).

Nowack (1991) suggested 9 steps for Training Needs Analysis. They were (□) conducting a job profile (ii) developing the questionnaire (iii) administering the questionnaire, (iv) analyzing the questionnaire, (v) interpreting the results, (vi) small focus groups (vii) feedback, (viii) developing training objectives and(ix) evaluating training effectiveness.

Walton (1991) developed two steps model for Training Need Analysis. They were (i) Check list response and (ii) group process.

Rao (1992) reported that the first and foremost stage in the training process is training need analysis followed by Designing, Provision and Assessment and suggested that training needs should be defined in terms of knowledge required, skills to be acquired and attitudes to be modified.

2.4 TRAINING NEEDS OF AGRICULTURAL OFFICERS

Prakash (1992) concluded that 68.75 per cent of agricultural assistants belonged to medium training need category followed by 17.5 per cent of thembelonged tolow need and 13.75 per cent of them belonged to high training need category.

Khan *et al*. (2011) reported that operating modern machines, equipment's and implements, maintenance procedure of farm machinery and use of various agricultural machines were the major training need areas required by agricultural officers.

Krushnakanth (2012) reported that 72.50 per cent of respondents belonged to somewhat need training category whereas, most needed training group (14.17%) and not need training group (13.33%).

Nongtdu*et al*. (2012) revealed that majority (48.57%) of the respondent to low and medium training needs while only 2.86 per cent belonged to high training need category.

Yadav *et al.* (2012) concluded that majority (69.23%) of the agricultural extension officers perceived the medium training need followed by low training need (30.77%) in organic farming.

Mandloi (2013) concluded that majority (52.22%) of respondents belonged to the medium training need assessment while 25.55 per cent and 22.22per cent of respondents belonged to the category of high and low training need assessment.

Hanif and Waman(2015) reported that majority (73.64%) of the respondents require medium training need whereas 14.55 per cent and 11.82 per cent requires high and low training needs respectively.

Panjshiri*et al.* (2019) revealed that integrated nutrient management, integrated water management, integrated weed management, agricultural waste management, organic farming, and integrated pest management were the major training need areas required by the agricultural extension officers.

Mohan *et al*. (2020) concluded that important training areas needed by agricultural officers were disease diagnosis and management, pest identification and control, disaster management in agriculture, farm machinery and Integrated Farming Systems.

2.5 ATTITUDE OF AOs TOWARDS TRAINING

Singh (1993) revealed that majority (74.11%) of respondents had favourable attitude followed by 25.89 per cent had unfavourable attitude towards T and V system.

Moond (2001) reported that majority (72%) of ADOs had unfavourable attitude towards the T and V system while 23 per cent and only 5 per cent of them to favourable and highly favourable category.

Wankhade (2002) concluded that 38.00 per cent of AAs were found to be favourably disposed towards One Window Approach of Farm Technology Transfer and 34 per cent of them hadhighly favourable attitude followed by 28 per cent of respondents had unfavourableattitude.

Vijaibabu (2005) observed that majority (67.65%) of Agricultural Officers had neutral attitude towards T and V system while 17.65 per cent and 14.70 per cent had favourable and unfavourable attitude towards T and V system.

Singh *et al.*(2011) concludedthat there was a significant correlation between attitude towards agricultural profession and extent of training needs.

Gopika (2014) reported that 46.80 per cent of respondents had favourable attitude towards work whereas 40per cent and 13.80per cent had highly favourable and less favourable attitude towards work respectively.

Chandana (2017) reported that 31.66 per cent of AOs had neutral attitude towards ICT utilization while 20.84per cent had moderately unfavourable attitude and 19.16per cent and 15.84per cent had moderately favourable and highly unfavourable attitude.

2.6 PROFILE CHARACTERISTICS OF AOs

2.6.1 Age

Khan *et al.* (2008) reported that majority of Agricultural Officers were in the age group between 41-50 years, 27.93 per cent of AOs were in the age group between 51-60 years, followed by 17.12 per cent in the age group between 31- 40 years and 12.61per cent in the age group between 25-30 years.

Oladele*et al*. (2010) reported that 75 per cent of AOs were in age group between 40 and 50 years followed by 15 per cent were in the age group of less than 40 years and 10 per cent were above 50 years.

Mishra and Chandargi (2011) observed that 92.31 per cent of women extension officers were in the age category of 35-50 years followed by 7.69 per cent were under the age category of 35 years and no women extension officers were there in the age category of above 50 years.

Gummagolmath*et al*. (2012) reported that Majority (61.93%) of AOs belonged to middle age category while 23.86 per cent and 14.21 per cent belonged to the old and young age category respectively.

Kurbett (2012) found that 80 per cent of the Agriculture women officers belonged to the age category of 30 to 50 years, while 20.00 per cent were in young age group and no one was observed in the age category of above 50 years.

Victor (2018) observed that 43.33 per cent of AOs belonged to middle age category while 36.67 per cent and 20 per cent belonged to old and young age category respectively.

2.6.2 Educational qualification

Khan *et al*. (2008) observed that majority of AOs (88%) were post graduates in various subjects, 9 per cent of AOs were graduates and only 3 per cent Agricultural Officers had Ph.D. degree.

Oladele*et al.* (2010) reported 50 per cent AOs were graduates, while 45 per cent and 5 per cent of them were diploma holders and post graduates respectively.

Mishra and Chandargi (2011) reported that there was no significant association between the educational qualification and the job performance of men and women extension officers.

Kurbett (2012) in his study concluded that half (50.00%) of women officers were graduates followed by 45.00 per cent had Master's degree and only 5.00 per cent were Ph.D. holders.

Beevi (2016) reported that half of the (57%) of agricultural officers had Master's degree whereas 43 per cent had bachelor degree in agriculture.

Victor (2018) reported that half (54.44%) of the AOs had bachelor degree followed by 43.33 per cent were post graduates and 2.22 per cent had Ph.D. degree.

2.6.3 Job experience

Manjula (2000) reported that 39 per cent of Assistant Agricultural Officers had above 10 years of experience followed by 36 per cent of them had 7 to 10 years of experience and 24.2 per cent had almost less than 7 years of experience.

Nagananda (2005) reported that 58.30per cent of Assistant Directors of Agriculture comes under medium job experience category whereas 50.0 per cent of Agricultural officers belongs to low job experience category

Khan *et al*. (2008) studied that majority of the AOs (63%) had job experience of more than 15 years followed by freshly appointed AOs (20%) had five or more than five years of experience.

Khamitkar (2015) majority (55%) of AAOs were having medium level of experience whereas high (29.17%) and low (15.83%) had level of experience.

Kumar (2017) revealed that majority (70%) of the horticulture development officers had low level job experience whereas 23 and 7 per cent of the horticulture development officers had medium and high level of experience respectively.

2.6.4 No. of technical trainings undergone

Manjula (2000) reported that majority of (62.1%) of Assistant Agricultural Officers had undergone induction training for the period of 3 months, 26.1per cent were undergone training more than 6 months and only 11.7 per cent of them were undergone three to six months of training.

Vijaibabu (2005) observed that 89.22 per cent of respondents received medium training whereas 10.78 per cent received more training and no respondents comes under less training category.

Kurbett (2012) concluded that 48.33 per cent of women officers were undergone less than 10 trainings followed by 25.00 per cent received 11-20 training,

16.67 per cent received 21-30 trainings and only 10 per cent attended more than 30 trainings.

Khamitkar (2015) in his work on Achievement Motivation and Job Performance of Assistant Agricultural Officers, observed that only 6 per cent of Assistant agricultural officers had received training for more than 6 months followed by 12.50 per cent had received training for 4 to 6 months, 19.17 per cent received training for 4 to 6 months, 22.50 per cent and 40.00 per cent received training for 1 to 2 months and less than 1 month duration respectively.

Kumar (2017) reported that 36 per cent of that horticulture development officers had undergone 1-3 trainings followed by 30 per cent had undergone 4-8trainings and 24 per cent received 9-20 trainings while only 10 per cent had no training exposure.

2.6.5Exposure to technical and professional literature

Mishra (1991) revealed that majority (80%) of the respondents belonged to medium exposure group and only 20 per cent belonged to high exposure group.

Reddy (1991) observed a non-significant association between the exposure to professional/technical literature and the training needs of SMSs of Andhra Pradesh.

Prakash (1992) reported that majority(73.75%) of assistant agricultural officers had medium exposure whereas low exposure (13.75%) and 12.50 per cent had high exposure.

Passi (1994) concluded that 61.84 per cent of respondents were having low exposure and 38.16 per cent of them were having high exposure to professional and technical literature.

2.6.6 Mass media contact

Nongtdu*et al.* (2012) revealed that majority (68.57%) of the respondents had medium exposure to mass media due to lack of time and interest.

Gopika (2014) concluded that about 48.70per cent of respondents belonged to medium level of mass media contact followed by 36.30per cent belonged to high level

of mass media contact and only 15 per cent belonged to low level of mass media contact.

Shah (2014) reported that 40.62 percent of trained respondents and 28.12 per cent untrained respondents had high mass media contact whereas 34.37 per cent of trained and 37.5 per cent untrained respondents had medium mass media contact followed by 25 per cent trained and 34.37 per cent untrained respondents had low media exposure.

Kaur (2017) revealed that more than half (63%) of the respondents belonged to medium mass media contact category followed by high (32%) category and remaining with low (5%) mass media contact category.

2.6.7 Job satisfaction

Bosco (2000) in his study concluded that majority (67.07%) of the Assistant Agricultural Officers had medium job satisfaction followed by 20.73 per cent had low job satisfaction and 12.19 per cent had high job satisfaction.

Salim (2006) reported that 46 per cent of sub Assistant Agricultural Officers belonged to medium job satisfaction category followed by 42 per cent belonged to high job satisfaction category and only 12 per cent comes under low category.

Wankhade (2002) revealed that majority (54.67%) of the respondents were moderately satisfied while 17.33 per cent and 28 per cent were less and highly satisfied with their job and related job areas in One Window Approach of Farm Technology Transfer.

Nagananda (2005) reported that 65per cent Assistant Directors of Agriculture (ADAs) and 63.3 per cent AOs belonged to medium job satisfaction category followed by only 10per cent ADAs and 11.6 per cent AOs belonged to high job satisfaction category.

Kurbett (2012) reported that majority (63.33%) of the women officers belonged to low job satisfaction category while 23.33 per cent and 13.33 per cent belonged to high and medium job satisfaction category respectively.

Beevi (2016) concluded that 31.67per cent of Agricultural Officers were highly satisfied with their job while 23.33per cent and 20per cent had medium and low satisfaction and only 15per cent and 10per cent had very low level and very high level job satisfaction respectively.

Babu (2018) reported that half of the (52.9%) of the respondents had high level of job satisfaction whereas 35 per cent had medium level of satisfaction and only 12.1per cent had low level of job satisfaction.

2.6.8 Organisational commitment

Wankhade (2002) reported that 54.00 per cent of the AAs were committed to their job to medium extent followed by 29.33 per cent were committed to the extent of low degree and 16.67 per cent were committed to the extent of high degree.

Mishra (2005) revealed that majority (75.41%) of the respondents had medium level of organisational commitment followed by 14.75 per cent had high and 9.84 per cent had low level of organisational commitment.

Rahul (2006) reported that majority (67.62%) of horticultural officers were having medium organizational commitment while 17.14 per cent of them were having high commitment and 15.24per cent of respondents were with low organizational commitment

Gopika (2014) concluded that 66.20per cent of respondents had medium level of organizational commitment followed by high (21.30%) level of commitment and low (12.50%) level of commitment.

Khamitkar (2015) reported that majority (54.17%) of assistant agricultural officers had medium level of organisational commitment whereas 27.50per cent and 18.33per cent had high and low organisational commitment respectively.

2.6.9 Scientific orientation

Choudary (2006) concluded that majority (64%) of respondents had medium level of scientific orientation while 19per cent had low level and 17per cent had high level of scientific orientation.

Krushnakanth (2012) revealed that majority (71.67%) of respondents had medium scientific orientation followed by 15 per cent of them had low orientation and 13.33per cent of them had high scientific orientation.

Raksha and Meera(2014) reported that majority (64%) of respondents belonged to medium scientific orientation category followed by 23.33 per cent of respondents with high and 13.33 per cent with low scientific orientation.

Shah (2014) revealed that Half (53.12%) of the trained respondents, 25 per cent of the untrained respondents were fall under high scientific orientation category followed by 28.12 per cent of the trained and 31.25 per cent of the untrained respondents were fall under medium category and 18.75 per cent of trained, 43.75 per cent of untrained respondents were fall under low scientific orientation category.

Babu (2018) in his study on communication behaviour of extension personnel of Andhra Pradesh concluded that majority (39.02%) of the respondents belonged to medium scientific orientation category while 37.5per cent and 23.3 per cent belonged to low and high category respectively.

2.6.10 Facilities at the training centre

Somasundaram and Sundarajan (1989) reported that the AOs in the T & V system were provided with training hall facility, vehicle facility and sufficient staffing but there was a lack of adequate quarters and office building facility.

Yadav *et al.* (1993) reported that the communication facilities were the major factor affecting the role performance, professional growth, freedom of expression followed by provision of incentives and work load.

Wankhade (2002) revealed that 48.66 per cent of Agricultural Assistants were moderately satisfied with training facilities followed by 26.67 per cent were highly satisfied and 24.67 per cent were less satisfied with training facilities in one window approach of farm technology transfer.

2.7 CONSTRAINTS FACED BY THE AOs

Manjula (2000) found that the major problems faced by AAO were fewer promotional opportunities, travel difficulties in public transport, lack of advanced training, post-maternity work due to insufficient physical facilities,lack of advanced training, work outside field office hours, lack of opportunities to develop professional conations, continuous transition from one location to another and work burden.

Mohan (2000) reported that the main problems expressed by AAOs were non-availability of transport, lack of co-operation and interest from farmers, political interference, interest of farmers in physical inputs rather than adoption of innovative technology by the farmer, lack of support from seniors and non-availability of inputs on time.

Vijaibabu (2005) observed that political interference, lack of office accommodation, less opportunity for promotion, lack of inputs at proper time, additional charge of other posts, lack of transport facilities, lack of qualified AAOs, lack of scientific literature and lack of advance training were the major constraints faced by Agricultural Officers.

Khamitkar (2015) in his work on Achievement Motivation and Job Performance of Assistant Agricultural Officers reported that lack of transportation, political interference, lack of inputs, lack of training, frequent transfers and additional charge of other posts were major constraints faced by the Assistant Agricultural Officers.

Victor (2018) reported that major constraints faced by the Agricultural Officers were excessive workload, lack of promotional opportunities, lack of proper training schedule of the officer, lack of suitability of different schemes and its implementation in different localities and political interference in day to day activity.

Hamid *et al.* (2020) in his work on problems faced by the sub-assistant agriculture officers (SAAOs) working in department of agricultural extension reported that major problems faced by respondents were slow rate of promotion compared to other government jobs, shortage of man power, shortage of computers, limited financial budget to conduct extension programme, lack of internet access and poor road facilities.

Mohan *et al*. (2020) reported that heavy work load, general training topics, outdated training curriculum and no outside state exposure in conducting training programmes were the major constraints faced by Agricultural Officers.

Methodology

3. METHODOOGY

This chapter describes the research methods and techniques adopted in conducting the present research study. The methodological details used were given under the following section heads.

3.1. Locale of the study

3.2. Selection of Respondents

3.3. Operationalization and measurement of dependent variables

3.4. Operationalization and measurement of independent variables

3.5. Constraints faced by the respondents

3.6. Methods used for the data collection

3.7. Statistical tools used for data collection

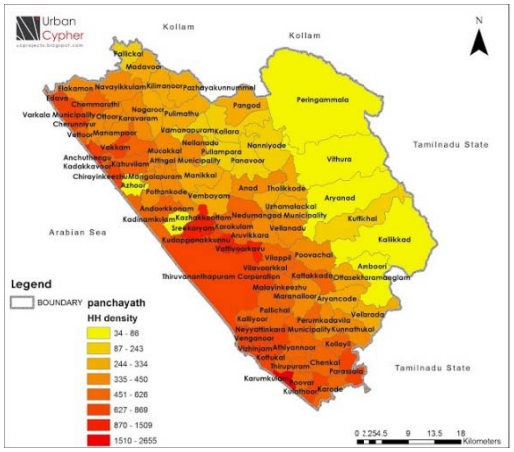
3.8. Conceptual model of the study

3.1. LOCALE OF THE STUDY

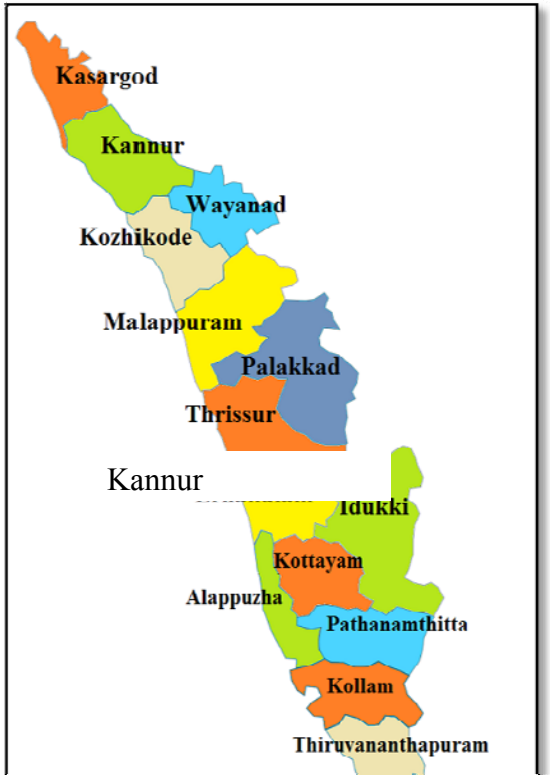
This particular study was undertaken in two zones of Kerala viz., Kannur from North Kerala and Thiruvananthapuram from South Kerala.

3.2. SELECTION OF RESPONDENTS

The Agricultural Officers working in Kerala State Department of Agriculture in Kannur and Thiruvananthapuram were randomly selected. Totally 90 Agricultural Officers of which 45 from Kannur and 45 from Thiruvananthapuram districts were randomly selected using simple random sampling procedure.



Thiruvananthapuram



Kannur

Fig. 1 Location of the study

3.3. OPERATIONALIZATION AND MEASUREMENT OF DEPENDENT VARIABLES

Based on the objectives, review of literature, discussion with experts and observation made by the researchers, the following dependent variables were selected for the study.

3.3.1 Dependent Variables

3.3.1.1 Training need analysis of AOs

3.3.1.2 Attitude of AOs towards training

3.3.1.1 Training need analysis of AOs

Training need analysis of AOs wasstudied in two dimensions mainly Training need in agricultural practices and Training need in extension.

The scale developed by Prasad (1990) was used for the study with slight modifications.

3.3.1.1.1. Training need in Agricultural Practices

It is operationalised as the expressed degree of training required by AOs as perceived by themselves with reference to each need item in agricultural practices.

3.3.1.1.2. Training need in Extension

It is operationalised as the expressed degree of training required by AOs as perceived by themselves with reference to each need item in extension.

Measurement of dependent variable

Based on the job chart of the AOs, 60 need items were prepared in consultation with the experts and literature. These items were edited and grouped into two categories namely agricultural practices and extension. Under training needs in agricultural practices, 36 items were grouped under the following sub-heads:

1. Seeds manures and fertilizers (6 items)
2. Agronomic practises (6 items)
3. Soil and water management (6 items)
4. Plant protection (6 items)
5. Post-harvest technology (6 items)
6. General (6 items)

With reference to extension needs, 24 need items were grouped under following sub heads:

1. Field extension activities (4 items)
2. Communication and audio visual (4 items)
3. Management (4 items)
4. Feedback and follow up (4 items)
5. Training activities (4 items)
6. Leadership (4 items)

Each need item was provided with three response categories namely Great need, some need and little need with the weightage of3, 2 and 1 respectively. Opinions were collected from the respondents for all the 60 training need items in the different categories of the training needs under agricultural practices and extension. The total score of each respondent on the scale was obtained by adding the score of all items in the scale, the score range was between 60 and 180. Training Need Index (TNI) was computed with the help of following formula.Based on the TNI, the need hierarchy rank was assigned for identification of most needed item.

$$TNI = \frac{\text{Total score obtained}}{\text{Maximum score obtainable}} \times 100$$

3.3.1.2 Attitude of AOs towards training

It was operationalised as the degree of favourableness or unfavourableness of the Agricultural Officers towards training programme.

The scale developed by Kulhari (1980) was used to quantify the attitude score. The measurement had 13 statements and the score range was between 13 and 65. It was measured using five point continuum namely, strongly agree, agree, undecided, disagree and strongly disagree with weightage of 5, 4, 3, 2 and 1 respectively for positive statements and reversed for negative statements.

3.4. OPERATIONALIZATION AND MEASUREMENT OF THE INDEPENDENT VARIABLES

3.4.1 Age

Age was operationally defined as the number of calendar years completed by the Agricultural Officers at the time of investigation.

Sl. No.	**Age**	**Score**
1	Less than 35 years	1
2	35- 45 years	2
3	More than 45	3

3.4.2. Educational qualification

Educational qualification was operationally defined as the level of formal education attained by the respondents at the time of interview. The different educational qualifications of the Agricultural Officers were scored as follows.

Sl. No	**Level of education**	**Score**
1	Diploma/ VHSC	1

2	B.Sc. (Agri.)	2
3	M.Sc.	3
4	Ph. D	4

3.4.3. Job Experience

Job Experience refers to the total number of completed years of service by the Agricultural Officers in Department of Agriculture Development and Farmers' Welfare, Government of Kerala. The score 1 was given to below 10 years, 2 for 10-20 years and 3 for more than 20 years.

3.4.4. No. of technical trainings undergone

Operationally defined as no. of training programmes undergone by the respondent at the time of enquiry. AOs were classified into 4 categories based on the number of trainings received. The scoring pattern developed by Kurbett (2012) used in the study is given below.

Sl. No.	**No of trainings**	**Score**
1	Less than 10 trainings	1
2	Between 11-20 trainings	2
3	Between 21-30 trainings	3
4	More than 30 trainings	4

3.4.5. Exposure to technical/professional literature

Operationalised as the number of journals AOs read and frequency of their exposure. This variable was quantified by using the scale developed by Chillapa (1984) and followed by Prakash (1992). It was measured using three point

continuum namely,regularly, frequently and occasionally with weightage of 3, 2 and 1 respectively.

3.4.6 Mass Media Contact

It refers to frequency of the use of mass media such as radio, television, newspaper by the respondent for getting information. This was measured using the procedure developed by Prasad (1990). Three point continuum was used to measure this variable namely, regularly, occasionally and never with weightage of 3, 2 and 1 respectively. There were three sources of mass media contact (Given in appendix) and the possible score range was between three and nine.

3.4.9 Job satisfaction

It was operationalised as the degree of satisfaction an individual gets regarding various aspects of his job.

The scale developed by Laharia (1978) and adopted by Kumar (1997) was used with slight modifications. It consists of 12 statements and the possible score range was between 0 and 48. Five point continuum was used to measure this variable namely, very much satisfied, satisfied, partially satisfied, dissatisfied and very much dissatisfied with weightage of 4,3,2, 1and 0 respectively

3.4.7 Organisational commitment

Organisational commitment operationalised as the degree to which an individual is committed to organisational goals and objectives.

The scale developed by Porter *et al.* (1974) was used. The scale consists of 15 statements and the possible score range was between 15 and 75. It was measured using five point continuum namely, strongly agree, agree, undecided, disagree and strongly disagree with weightage of 5, 4, 3, 2 and 1 respectively for positive and reversed for negative statements.

3.4.8 Scientific orientation

It was operationalised as the degree to which an individual communicator is oriented to the use of scientific methods in decision making in extension communication. The scientific orientation scale developed by Supe (1969) and modified by Gangadharappa (1988) was used to quantify this variable. The scale consists of 6 statements. The responses were obtained in a three point continuum viz., agree, undecided, disagree with scores of 2, 1 and 0 respectively. The possible score ranges from 0 to 12.

3.4.10 Facilities at the training centre

Operationalised as the satisfaction of respondent with the availability of training facilities in the Department of Agriculture.

This variable was quantified by using the scale developed by Wankhade (2002). This scale consists of 14 statements and the score rangewas between 0 and 28. The responses were obtained in a three point continuum namely very much satisfied, somewhat satisfied, dissatisfied with scores of 2, 1and 0 respectively.

3.5 CONSTRAINTS FACED BY THE RESPONDENTS

With the help of detailed review of literature and discussion with experts 16 constraints faced by Agricultural Officers were enlisted. The constraints so identified were included in the interview schedule and respondents were asked to indicate their response for each constraint on a four point continuum namely, most important, important, least important and not important with weightage of 4, 3, 2, 1respectively.

3.6 METHODS USED FOR DATA COLLECTION

The interview schedule was prepared in conformity with the objectives of the study. Data collection was done using the pre tested interview schedule developed for the study. The response collected from the 90 Agricultural Officers were analysed.

3.7 STATISTICAL TOOLS USED FOR THE STUDY

3.7.1 Mean

The respondents were grouped into categories with reference to the mean as check of the selected independent variables. Percentages were worked out after grouping the respondents into low, medium and high categories.

3.7.2 Percentage analysis

After grouping the respondents into various categories, simple percentage was worked out to find out the percentage distribution of the respondents.

3.7.3.Standard deviation

This measure was used to categorize the dependent and independent variables of AOs. Standard deviation is a measure of the amount of dispersion of a data set.

3.7.4. Correlation analysis

Correlation analysis was done to illustrate the relationship between the dependent and independent variables of study. Correlation coefficient measures the association or relation between the dependent variable and the different independent variables.

3.7.5 Garrett's score ranking

Garret score ranking was used to rank the constraints faced by the AOs. First the percent position estimated is converted into scores. Then for each factor, the scores of each individual are added and then total value of scores and mean values of score is calculated. Highest mean value is considered to be the most important factor.

3.8 CONCEPTUAL MODEL OF THE STUDY

The conceptual model was developed before for the study and is been presented in the fig.2. This facilitates to generate a brief idea about the present study. Training need analysis and attitude of AOs towards training were the dependent variables and were expected to be influenced by independent variables that are represented in the centre with arrows pointing towards the two dependent variables.

Fig. 2 CONCEPTUAL FRAMEWORK OF THE STUDY

Results& Discussion

4. RESULTS AND DISCUSSION

This chapter highlights the findings of the study. The findings in line with the objectives are presented in this section with appropriate discussions, under the following sub headings.

4.1 Training need analysis of AOs

4.2 Attitude of the AOs towards training

4.3 Profile characteristics of AOs

4.4 Correlation analysis of training needanalysis of AOs

4.5 Correlation analysis of attitude of AOs towards training

4.6 Constraints faced by AOs

4.7 Suggestions for overcoming the constraints

4.1 TRAINING NEED ANALYSIS OF AOs

The distribution of AOs based on their training need in agricultural practices, extension and total training needs in agricultural practices and extension is presented in this section.

Table 1. Distribution of AOs based on their training need in agricultural practices

Category	**Thiruvananthapuram (n=45)**		**Kannur (n=45)**		**Total (N=90)**	
	F	**%**	**F**	**%**	**F**	**%**
Low need	5	11.11	7	15.56	12	13.33
Medium need	25	55.56	29	64.44	54	60.00
High need	15	33.33	9	20.00	24	26.67
Total	45	100	45	100	90	100
Range=65-108, Mean = 86.93, SD = 13.87						

The above Table 1 reported that majority (60%) of the AOs belonged to medium training need group followed by 26.67 per cent of the AOs belonged to high training need group and only 13.33 per cent of them belonged to low training need group.

In Thiruvananthapuram district, 55.56 per cent of the respondents belonged to medium training need group, whereas 33.33 per cent of the respondents belonged to high training need group and remaining 11.11 per cent belonged to low training need group.

In Kannur district, majority (64.44%) of the respondents belonged to medium training need group, while 20 per cent and 15.56 per cent of the respondents belonged to high and low training need group respectively.

Category	**Thiruvananthapuram (n=45)**		**Kannur (n=45)**		**Total (N=90)**	
	F	**%**	**F**	**%**	**F**	**%**
Low need	5	11.11	10	22.22	15	16.67
Medium need	30	66.67	23	51.11	53	58.89
High need	10	22.22	12	26.67	22	24.44
Total	45	100	45	100	90	100
Range = 37-72, Mean = 59.11, SD = 10.78						

Table 2. Distribution of AOs based on their training need in extension

The above Table 2 reported that majority (58.89%) of the AOs belonged to medium training need group followed by 24.44 per cent of the AOsbelonged to high training need group and only 16.67 per cent belonged to low training need group.

In Thiruvananthapuram district, 66.67 per cent of the respondents belonged to medium training need group, whereas 22.22 per cent of the respondents belonged to

high training need group and remaining 11.11 per cent of them belonged low training need group.

In Kannur district, majority (51.11%) of the respondents belonged to medium training need group, while 26.67 per cent and 22.22 per cent of the respondents belonged to high and low training need group respectively.

Table 3. Distribution of AOs based on their total training need in agricultural practices and extension

Category	**Thiruvananthapuram (n=45)**		**Kannur (n=45)**		**Total (N=90)**	
	F	**%**	**F**	**%**	**F**	**%**
Low need	5	11.11	10	22.22	15	16.67
Medium need	30	66.67	26	57.78	56	62.22
High need	10	22.22	9	20.00	19	21.11
Total	45	100	45	100	90	100
Range =108-178, Mean = 146.83, SD = 21.15						

The above Table 3 reported that in Thiruvananthapuram district, 66.67 per cent of the respondents belonged to medium training need group followed by 22.22per cent of the respondents belonged to high training need group and only 11.11 per cent belonged low training need group.

In Kannur district, majority (57.78%) of the respondents belonged tomedium training need group, while 22.22 per cent and 20 per cent of the respondents belonged to low and high training need group respectively.

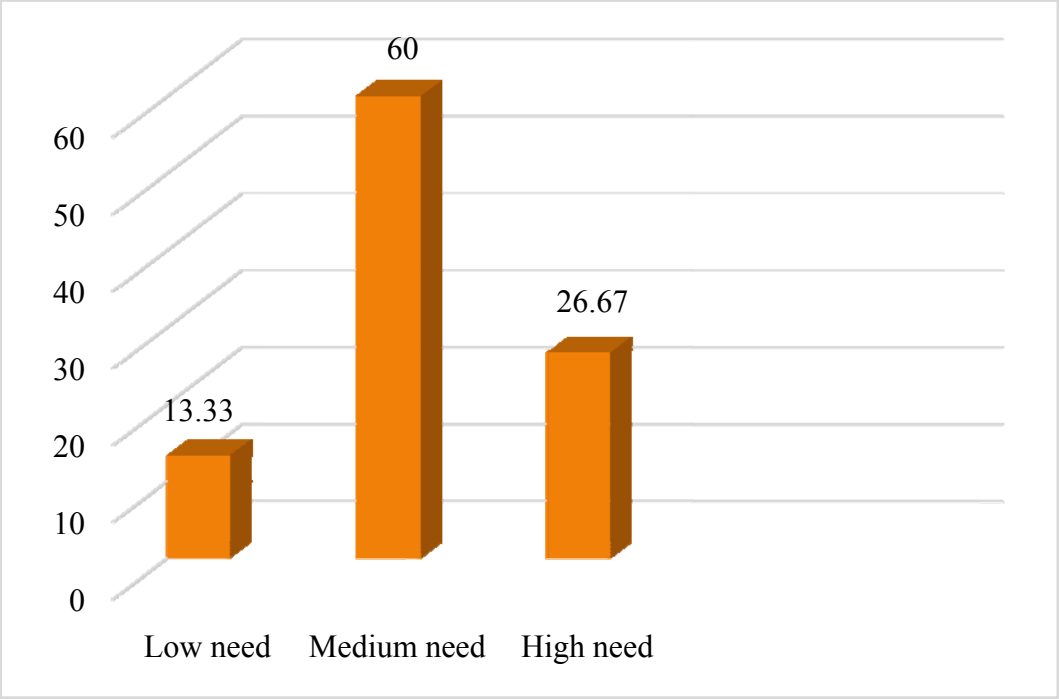


Fig 3. Distribution of respondents based on their training need in agricultural practices

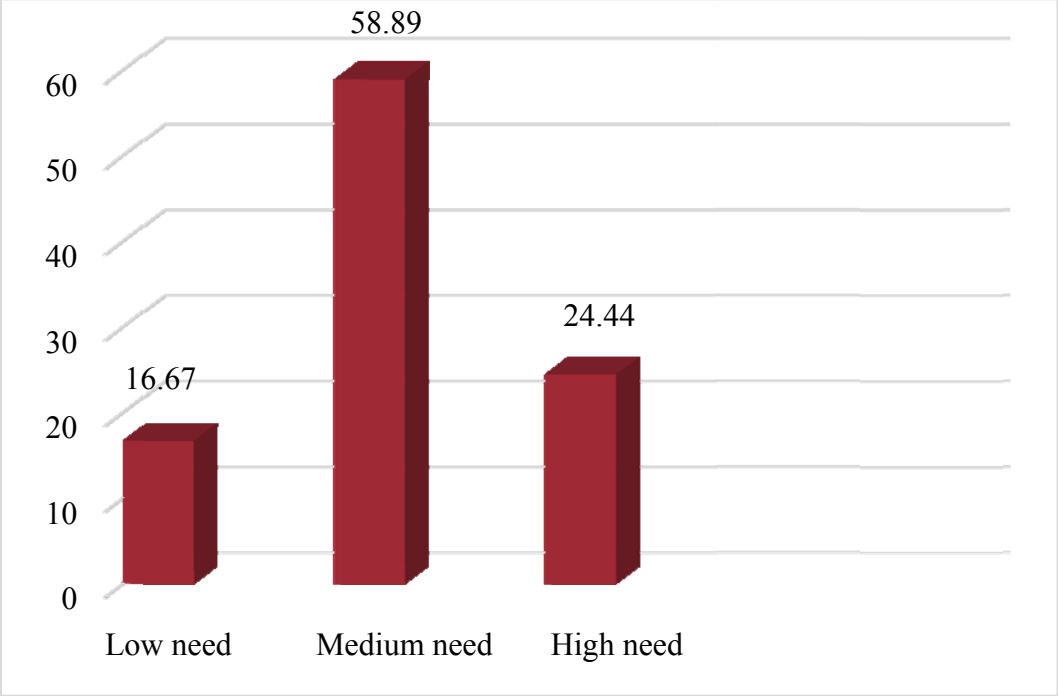


Fig 4. Distribution of respondents based on their training need in extension

The overall data reveals that majority (62.22%) of the AOs belonged to medium training need group, whereas 21.11 per cent of the AOs belonged to high training need group and only 16.67 per cent belonged to low training need group.

Table 1, table 2 and Table 3 revealed that Majority of the AOs were distributed in medium group with respect to training needs in agricultural practices, extension and total training need in agricultural practices and extension (60%, 58.89% and 62.22% respectively). The findings revealed that the AOs falling under medium and high need groups require training in agricultural practices as well as in extension for doing their work effectively. On the other hand AOs falling under low need group require very less training. So majority of AOs require training to the medium extent to update their knowledge. The present findings are in line with the findings of Prakash (1992) and Yadav *et al*. (2012).

Fig 5 shows the distribution of respondents based on their total training need in agricultural practices and extension.

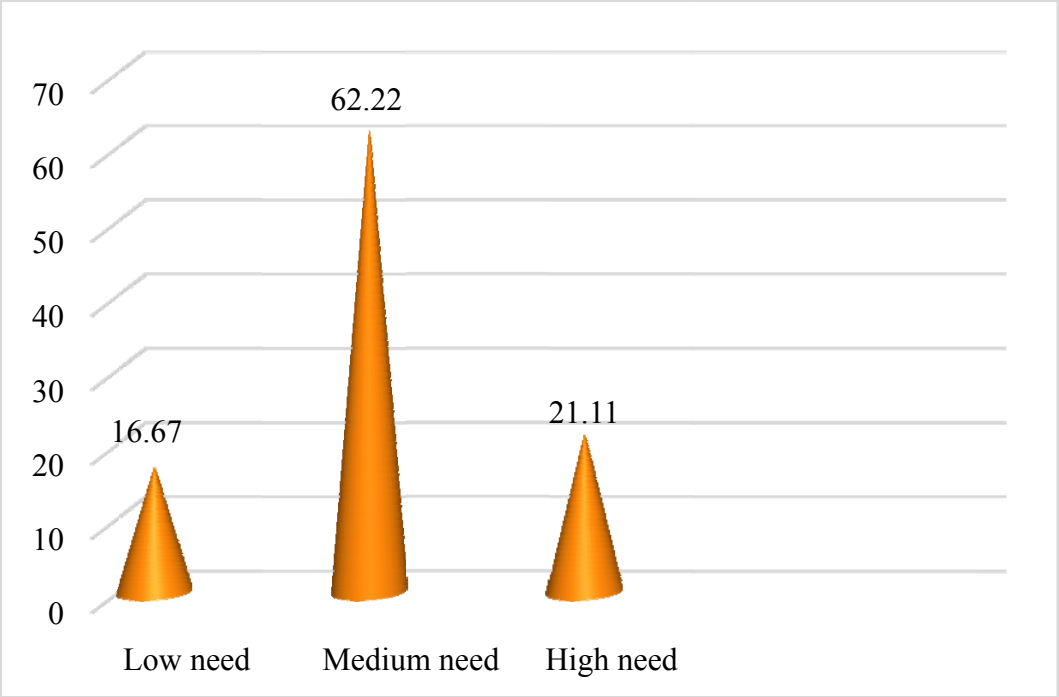


Fig 5. Distribution of respondents based on their total training need in agricultural practices and extension

Table 4. Training needs of AOs in agricultural practices with TNI score and rank

Sl. No.	TRAINING NEED ITEMS	Thiruvananthapuram		Kannur	
		TNI	RANK	TNI	RANK
Seed manures and fertilizers					
1	Improved varieties of important crops and selection of suitable varieties in field situation	91.85	6	88.14	9
2	Seed production	77.78	22	85.18	13
3	Different types of fertilizers	79.25	20	76.29	23
4	Improving soil fertility status with appropriate doses of manures and fertilizers	88.89	8	88.89	8
5	Seed multiplication methods	77.03	23	75.56	24
6	Compost making	71.85	29	78.51	21
Agronomic practices					
7	Preparatory tillage in important crops	70.37	31	66.67	35
8	Methods of nursery raising in paddy	80.00	19	69.62	31
9	transplanting	71.11	30	68.14	33
10	Chemical weed control	85.18	12	65.92	36
11	Intercultural operations	72.59	28	68.89	32
12	Maturity indices and identifying correct harvest stage of crops	74.07	26	74.07	25
Soil and water management					
13	Different types of soils and their management	91.11	7	71.85	28
14	Soil and water conservation in field situations	83.70	14	73.33	26
15	Importance and drawing of soil samples	78.51	21	67.40	34
16	Water and its management	68.89	33	85.92	12
17	Soil reclamation	75.56	25	94.07	4

18	Water management in important crops	76.29	24	80.74	18
	Plant protection				
19	Identification of pests and their control in important crops	96.29	1	96.29	1
20	Identification of diseases and their control in important crops	93.33	4	95.56	2
21	Preparation of different concentrations of spray solutions	94.07	3	83.70	14
22	Spraying techniques	92.59	5	86.67	11
23	Plant protection equipment and their maintenance	73.33	27	93.33	5
24	Integrated pest control	95.56	2	94.81	3
Post-harvest technology					
25	Harvesting threshing and drying the agricultural produce	82.96	15	82.22	16
26	Processing of produce	68.14	34	77.03	22
27	Sorting and grading of agricultural produce	69.62	32	72.59	27
28	Post-harvest technologies of important crops	80.74	18	92.59	6
29	Packaging of agricultural of produce	67.40	35	70.37	30
30	Important food grain storage techniques	81.48	17	79.25	20
	General				
31	Understanding and interpretation of meteorological data	82.22	16	80.00	19
32	Crop, estimation surveys	84.44	13	71.11	29
33	Use and maintenance of agricultural implements and machinery	66.67	36	87.40	10
34	Orientation on farm planning and contingency planning	88.14	9	81.48	17
35	Diversified farming	85.92	11	82.96	15

36	Agriculture credit and credit institutions	86.67	10	90.37	7

Table 4 shows the training need of AOs in agricultural practices in Thiruvananthapuram and Kannur districts with TNI score and rank. In Thiruvananthapuram district, it is evident that training needs of AOs are in the following rank order. The first preference was given to identification of pests and their control in important crops. Second rank was given to Integrated pest control followed by preparation of different concentrations of spray solutions, identification of diseases and their control in important crops and spraying techniques were ranked as top five training need areas required by AOs.

In Kannur district, it is seen that first rank was given to identification of pests and their control in important crops and identification of diseases and their control in important crops was given second rank followed by integrated pest control, soil reclamation and Plant protection equipment and their maintenance were ranked as top five training need areas required by AOs.

The findings in table 4 shows that majority of the AOs require more training in plant protection aspects in both districts. It is because, the crop continuously gets effected by pests and diseases and farmers need the help of AOs mainly for identification of pests and diseases. Hence AOs need to get updated on latest methods for effective control measures. Unless they are good in making recommendations for control of pests and diseases, they would not become effective extension worker.

Table 5. Training needs of AOs in extension with TNI score and rank

Sl No.	TRAINING NEED ITEMS	Thiruvananthapuram		Kannur	
		TNI	Rank	TNI	Rank
Field extension activities					
1	Selection of farmer groups and contact farmers	85.92	10	80.74	13
2	Procedures to make field visits and extra visits	88.89	7	71.85	22
3	Production recommendations of major crops and their implications	95.56	1	90.37	2
4	Conducting field demonstrations and farm trials, making observations and recording data	92.59	4	88.14	4
Communication and A.V aids					
5	Communication methods and techniques	83.70	12	85.18	8
6	Selection of appropriate communication techniques	80.74	15	75.56	18
7	Planning, preparation, use and evaluation of audio visual aids.	82.96	13	83.70	10
8	Use of extension literature	71.11	24	70.37	23
Management					
9	Basic principles of extension management	76.29	19	69.62	24
10	Effective utilization of available resources	86.67	9	80.00	14
11	Timeliness, feasibility and profitability of production recommendations	84.44	11	84.44	9
12	Time management in field visits	77.78	18	73.33	20
Feedback and follow up					

13	Selecting evaluation criteria	72.59	23	77.78	16
14	Evaluation of field problems	80	16	76.29	17
15	Methods of giving feedback about field and operational problems	75.56	20	74.07	19
16	Follow up action to be taken in adoption, partial adoption and non-adoption of recommended practices by farmers	79.25	17	72.59	21
	Training activities				
17	Effective participation methodology in fortnightly training sessions	90.37	6	82.96	11
18	Assessing the training needs of farmers	73.33	22	78.51	15
19	Conducting training sessions for farmers	74.07	21	81.48	12
20	Organizing farmers training programmes	93.33	3	86.67	6
	Leadership				
21	Identification and making use of opinion leaders and contact farmers in technology dissemination process	88.14	8	87.40	5
22	How to motivate and encourage farmers to adopt recommended practices	94.81	2	92.59	1
23	Human relations	91.85	5	88.89	3
24	Speaking in meetings (public speaking)	82.96	14	85.92	7

Table 5 shows the training need of AOs in extension in Thiruvananthapuram and Kannur districts with TNI score and rank.

In Thiruvananthapuram district, it is revealed that production recommendations of major crops and their implications was assigned first rank. Second rank was given to how to motivate and encourage farmers to adopt recommended practices followed by organizing farmers training programmes,

conducting field demonstrations and farm trials, making observations and recording data and human relations were ranked as top five training need areas required by AOs.

In Kannur district, it is seen that first rank was given to how to motivate and encourage farmers to adopt recommended practices and production recommendations of major crops and their implications was given second rank followed by human relations was assigned third rank. Conducting field demonstrations and farm trials, making observations and recording data and Identification and making use of opinion leaders and contact farmers in technologydissemination process were ranked as top five training need areas required by AOs in extension

Table 6. Total Training needs of AOs in agricultural practices and extension

Sl. No.	**TRAININGNEED ITEMS**	**Thiruvananthapuram(n=45)**		**Kannur (n=45)**		**Total (N=90)**	
		TNI	**Rank**	**TNI**	**Rank**	**TNI**	**Rank**
Seed manures and fertilizers							
1	Improved varieties of important crops and selection of suitable varieties in field situation	91.85	7	88.14	9	90.00	7
2	Seed production	77.78	24	85.18	13	81.48	17
3	Different types of fertilizers	79.25	22	76.29	25	77.78	22
4	Improving soil fertility status with appropriate doses of manures and fertilizers	88.89	10	88.89	8	88.89	9
5	Seed multiplication methods	77.03	25	75.56	24	76.29	25
6	Compost making	71.85	32	78.51	22	75.18	27
Agronomic practices							
7	Preparatory tillage in important crops	70.37	34	66.67	37	68.51	36
8	Methods of nursery raising in paddy	80.00	21	69.62	33	74.81	28

9	Transplanting	71.11	33	68.14	35	69.62	34
10	Chemical weed control	85.18	14	65.92	38	75.56	26
11	Intercultural operations	72.59	31	68.89	34	70.74	33
12	Maturity indices and identifying correct harvest stage of crops	74.07	29	74.07	27	74.07	29
Soil and water management							
13	Different types of soils and their management	91.11	8	71.85	30	81.48	17
14	Soil and water conservation in field situations	83.70	16	73.33	28	78.51	20
15	Importance and drawing of soil samples	78.51	23	67.40	36	72.96	30
16	Water and its management	68.89	36	85.92	12	77.40	23
17	Soil reclamation	75.56	27	94.07	4	84.81	13
18	Water management in important crops	76.29	26	80.74	19	78.51	20
Plant protection							
19	Identification of pests and their control in important crops	96.29	1	96.29	1	96.29	1
20	Identification of diseases and their control in important crops	93.33	5	95.56	2	94.44	3
21	Preparation of different concentrations of spray solutions	94.07	4	83.70	15	88.89	9
22	Spraying techniques	92.59	6	86.67	11	89.62	8
23	Plant protection equipment and their maintenance	73.33	30	93.33	5	83.33	15
24	Integrated pest control	95.56	2	94.81	3	95.18	2
Post harvest technology							
25	Harvesting threshing and drying the agricultural produce	82.96	17	82.22	17	82.59	16
26	Processing of produce	68.14	37	77.03	24	72.59	31

27	Sorting and grading of agricultural produce	69.62	35	72.59	29	71.11	32
28	Post-harvest technologies of important crops	80.74	20	92.59	6	86.67	12
29	Packaging of agricultural of produce	67.40	38	70.37	32	68.89	35
30	Important food grain storage techniques	81.48	19	79.25	21	80.37	19
General							
31	Understanding and interpretation of meterological data	82.22	18	80.00	20	81.11	18
32	Crop, estimation surveys	84.44	15	71.11	31	77.78	22
33	Use and maintenance of agricultural implements and machinery	66.67	39	87.40	10	77.03	24
34	Orientation on farm planning and contingency planning	88.14	11	81.48	18	84.81	13
35	Diversified farming	85.92	13	82.96	16	84.44	14
36	Agriculture credit and credit institutions	86.67	12	90.37	7	88.51	10
Field extension activities							
37	Selection of farmer groups and contact farmers	85.92	13	80.74	19	83.33	15
38	Procedures to make field visits and extra visits	88.89	10	71.85	30	80.37	19
39	Production recommendations of major crops and their implications	95.56	2	90.37	7	92.96	5
40	Conducting field demonstrations and farm trials, making observations and recording data	92.59	6	88.14	9	90.37	6
Communication and A.V aids							

41	Communication methods and techniques	83.70	16	85.18	13	84.44	14
42	Selection of appropriate communication techniques	80.74	20	75.56	26	78.14	21
43	Planning, preparation, use and evaluation of audio visual aids.	82.96	17	83.70	15	83.33	15
44	Use of extension literature	71.11	33	70.37	32	70.74	33
Management							
45	Basic principles of extension management	76.29	26	69.62	33	72.96	30
46	Effective utilization of available resources	86.67	12	80.00	20	83.33	15
47	Timeliness, feasibility and profitability of production recommendations	84.44	15	84.44	14	84.44	14
48	Time management in field visits	77.78	24	73.33	28	75.56	26
Feedback and follow up							
49	Selecting evaluation criteria	72.59	31	77.78	23	75.18	27
50	Evaluation of field problems	80	21	76.29	25	78.14	21
51	Methods of giving feedback about field and operational problems	75.56	27	74.07	27	74.81	28
52	Follow up action to be taken in adoption, partial adoption and non-adoption of recommended practices by farmers	79.25	22	72.59	29	75.92	26
Training activities							
53	Effective participation methodology in fortnightly training sessions	90.37	9	82.96	16	86.67	12
54	Assessing the training needs of farmers	73.33	30	78.51	22	75.92	26

55	Conducting training sessions for farmers	74.07	29	81.48	18	77.78	22
56	Organizing farmers training programmes	93.33	5	86.67	11	90.0	7
Leadership							
57	Identification and making use of opinion leaders and contact farmers in technology dissemination process	88.14	11	87.40	10	87.78	11
58	How to motivate and encourage farmers to adopt recommended practices	94.81	3	92.59	6	93.70	4
59	Human relations	91.85	7	88.89	8	90.37	6
60	Speaking in meetings (public speaking)	82.96	17	85.92	12	84.44	14

Table 6 shows the total training need items of AOs in agricultural practices and extension with TNI scores and rank

In Thiruvananthapuram district, first rank was given to identification of pests and their control in important crops followed by both integrated pest control and production recommendations of major crops and their implications were assigned second rank. Third rank was given to how to motivate and encourage farmers to adopt recommended practices. Next preference was given to preparation of different concentrations of spray solutions. Fifth rank was equally distributed to identification of diseases and their control in important crops and organizing farmers training programmes.

In Kannur district, first preference was given to identification of pests and their control in important crops and second rank was assigned to identification of diseases and their control in important crops. Integrated pest control and soil reclamation was given third and fourth rank respectively. Fifth was rank was distributed to plant protection equipment and their maintenance.

From the results of the training needs of AOs in agricultural practices and extension it is evident that, identification of pests and their control in important crops,

integrated pest control and identification of diseases and their control in important crops was given first, second and third rank respectively. It is because, the crop continuously gets effected by pests and diseases and farmers need the help of AOs mainly for identification of pests and diseases. Hence AOs need to get updated on latest methods for effective control measures. Unless they are good in making recommendations for control of pests and diseases, they would not become effective extension worker. Next preference was given to how to motivate and encourage farmers to adopt recommended practices. In most of the times AOs failed to motivate the farmers to adopt the technologies even though they were thorough with the subjects. Unless the farmers were properly motivated, it is not possible to make them adopt the new practices. They also got to be encouraged continuously to adopt the practices until they are fully satisfied about the performance and convinced with the results. Fifth rank was assigned to production recommendations of major crops and their implications. It is observed in most of the places of the study area farmers largely depend on the shopkeeper's advice to use chemicals to control pests and diseases. Some innovative farmers were very enthusiastic to try the new varieties of crops which are yet to be released by the Universities, or which are under trial. Hence AOs are likely to get questions from farmers on these aspects and if they are not trained to answer farmer's doubts, their credibility will be lost. As the AOs were responsible for making the production recommendations at the field level based on the existing resources and prevailing conditions, they must have a thorough knowledge about these aspects which involves more risk. Realising the importance of these areas, the AOs need training in these areas.

Sixth rank was obtained by three training need items namely conducting field demonstrations and farm trials, making observations and recording data and Human relations. It is important to raise farmer awareness about new practices. Those new practices must be carried under local condition in collaboration with the farmers. Hence AOs require training in conducting demonstrations. Improved varieties of important crops and selection of suitable varieties in field situation and organizing farmers training programmes were assigned with seventh rank. Farmers are desire to seek information about new high yielding varieties of different crops to enable them

to reap high yields and to get more income and also AOs should have the knowledge on organising farmers training programmes as they are vital in transferring the knowledge and skills of new practices to the farmers. Unless the training programmes are properly organised, it cannot yield desired results. Eighth rank was given to spraying techniques. Ninth rank was obtained by three training need items such as preparation of different concentrations of spray solutions and improving soil fertility status with appropriate doses of manures and fertilizers followed by Agriculture credit and credit institutions was ranked tenth. Remaining training need items were felt less important by AOs and training programmes on these areas can be conducted occasionally to benefit the newly recruited officers.

It is observed that AOs need more training in agricultural practices followed by extension. It also shows that some of the AOs failed to motivate farmers to adopt the recommended practices and disseminate the information of new varieties and other practices. This clearly indicates that, the AOs who are trained in agricultural practices should also be trained in extension failing which the purpose of Agricultural Extension System (T&V System) cannot be achieved. This findings are in the line with the findings of Prakash (1992) and Mohan *et al*. (2020).

4.2 ATTITUDE OF THE AOs TOWARDS TRAINING

It was operationalised as degree of favourableness or unfavourableness towards training programme.

Table 7. Distribution of AOs based on their Attitude towards training.

Category	**Thiruvananthapuram (n=45)**		**Kannur (n=45)**		**Total (N=90)**	
	F	**%**	**F**	**%**	**F**	**%**
Favourable	5	11.11	10	22.22	15	16.67
Neutral	27	60.00	35	77.78	62	68.89
Unfavourable	13	28.89	0	0	13	14.44

Total	45	100	45	100	90	100
Range =25-52, Mean = 39.81, SD = 6.79						

The findings in Table 7 revealed that,In Thiruvananthapuram district, 60 per cent of respondents had neutral attitude whereas, 28.89 per cent and 11.11 per cent had unfavourable and favourable attitude towards training respectively.

In Kannur district, Most (77.78%) of the respondents had neutral attitude followed by 22.22 per cent of the respondents had favourable attitude and no respondents were having unfavourable attitude towards training.

Overall data shows that, Majority (68.89%) of the respondents were having neutral attitude towards training, while 16.67 per cent had favourable attitude and 14.44 per cent had unfavourable attitude towards training. This might be due to the importance of training for respondents and their direct experience of in-service training programmes which they have attended last two years.

The present findings are in line with the findings of Vijaibabu (2005).

4.3 PROFILE CHARACTERISTICS OF AOs

4.3.1 Age

Table 8. Distribution of AOs based on Age

Category (Years)	Thiruvananthapuram (n=45)		Kannur (n=45)		Total (N=90)	
	F	%	F	%	F	%
<35	8	17.78	18	40.00	26	28.89
35-45	22	48.89	20	44.44	42	46.67
>45	15	33.33	7	15.56	22	24.44
Total	45	100	45	100	90	100

The findings in Table 8 concluded that less than half (46.67%) of the respondents belonged to the age category of 35-45 years, followed by 28.89 per cent of the respondents belonged to less than 35 years and 24.44 of them belonged to age category of more than 45 years.

In Thiruvananthapuram district, 48.89 per cent of the respondents belonged to the age category of 35-45 years, whereas 33.33 per cent of the respondentsbelonged to more than 45 years 35 years and 8 per cent of them belonged to age category of less than 35 years.

In Kannur district, 44.44 per cent of the respondents belonged to the age category of 35-45 years, while 40 per cent and 15.56 per cent of the respondents belonged to less than 35 and more than 45 years of age respectively. The results are on par with the results of Victor (2018).

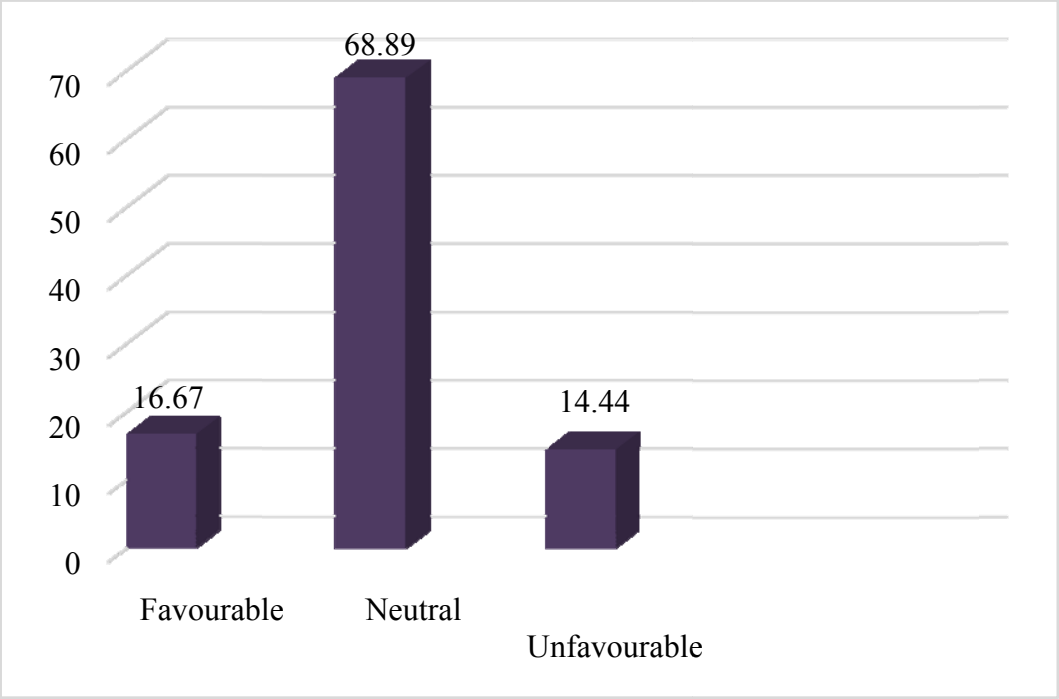


Fig 6. Distribution of respondents based on attitude towards training

4.3.2 Education

Table 9. Distribution of AOs based on education

Category	Thiruvananthapuram (n=45)		Kannur (n=45)		Total (N=90)	
	F	%	F	%	F	%
Diploma/VHSC	2	4.44	5	11.11	7	7.78
B.Sc. (Agri.)	22	48.89	15	33.33	37	41.11
M.Sc.	18	40.00	25	55.56	43	47.78
Ph. D	3	6.67	0	0.00	3	3.33
Total	45	100	45	100	90	100

It was inferred from Table 9 that, the results shows that 47.78 per cent of the respondents had master's degree, 41.11 per cent had bachelor's degree and 7.78 per cent of them were diploma holders, remaining 3.33 per cent had Ph.D. degree.

In Thiruvananthapuram district, Majority (48.89%) of the respondents had bachelor's degree degree, followed by 40 per cent had master's degree and 6.67 per cent and 4.44 per cent of them had Ph.D. degree and diploma/VHSC respectively.

In Kannur district, more than half (55.56%) of the respondents were post graduates, whereas 33.33 per cent of them were graduates and 11.11 per cent were diploma holders and none of them had Ph.D. degree.

Most of the respondents had a bachelor's degree in Thiruvananthapuramdistrict and this may be attributed to the fact that most of them entered for service immediately after graduation. In addition, bachelor's degree was

the minimum basic qualification needed to get into work.The results are on par with the results of Kurbett (2012).

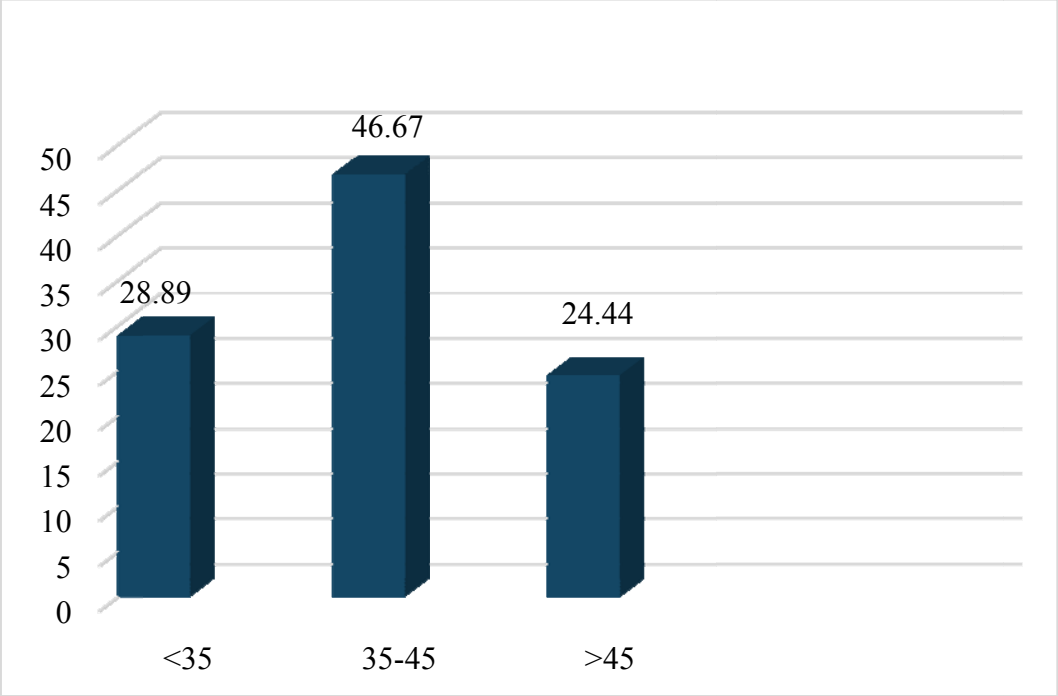


Fig 7. Distribution of respondents based on Age

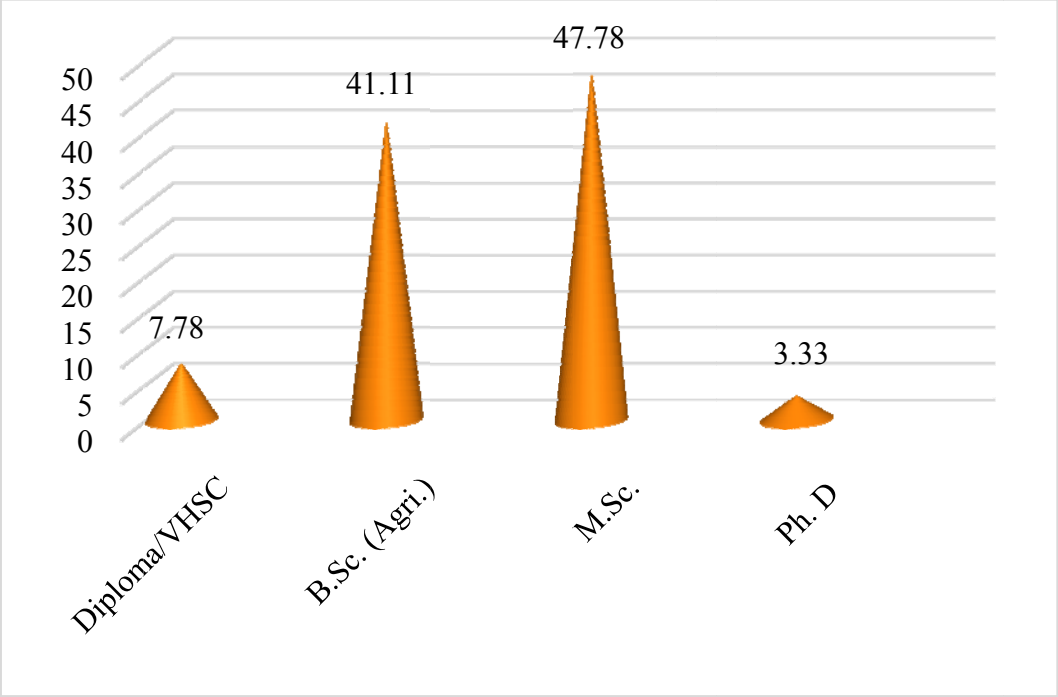


Fig 8. Distribution of respondents based on Education

4.3.3 Job experience

Table 10. Distribution of AOs based on Job experience

I Category	Thiruvananthapuram (n=45)		Kannur (n=45)		Total (N=90)	
	F	%	F	%	F	%
<10	17	37.78	20	44.44	37	41.11
10-20	23	51.11	18	40.00	41	45.56
>20	5	11.11	7	15.56	12	13.33
Total	45	100	45	100	90	100

t is evident from the table 10 that, Half (51.11%) of the respondents had 10-20 years of job experience followed by 37.78 per cent of them had less than 10 years of job experience and 11.11 per cent of respondents had more than 20 years of job experience in Thiruvananthapuram district.

In Kannur district, 44.44 per cent of the respondents had less than 10 years of job experience, while 40 per cent and 15.56 per cent of them had 10 -20 years and more than 20 years of job experience respectively.

Table 10 clearly shows that most (45.56%) of the respondents had 10-20 years of job experience, whereas 41.11 per cent had less than 10 years of job experience and only 13.33 per cent had more than 20 years of job experience. The results are in line with the results of Nagananda (2005).

4.3.4 No of technical trainings undergone

Table 11. Distribution of respondents based on their no of technical trainings undergone

Category	Thiruvananthapuram (n=45)		Kannur (n=45)		Total (N=90)	
	F	%	F	%	F	%
Less than 10 trainings	14	31.11	21	46.67	35	38.89
Between 11-20 trainings	16	35.56	13	28.89	29	32.22
Between 21-30 trainings	11	24.44	9	20.00	20	22.22
More than 30 trainings	4	8.89	2	4.44	6	6.67
Total	45	100	45	100	90	100

The findings in Table 11 reveals that 38.89 per cent of the respondents had undergone less than 10 trainings, 32.22 per cent of them undergone 11-20 trainings and 22.22 per cent had undergone 21-30 trainings and only 6.67 per cent of the respondents undergone more than 30 trainings.

In Thiruvananthapuram district, most (35.56%) of the respondents received 11-20 trainings followed by 31.11 per cent received less than 10 trainings and 24.44 per cent of them received 21-30 trainings and remaining 8.89 per cent had undergone more than 30 trainings.

In Kannur district, majority (46.67%) of the respondents had undergone lessthan 10 trainings followed by 28.89 per cent received 11-20 trainings and 20 per cent of them received 21-30 trainings and only 4.44 per cent had undergone more than 30 trainings. This indicates less training exposure of the AOs in the studyarea. A training programme allows an individual to strengthen those skills that each employ

needs to improve. It also build the personnel confidence and this confidence may push them to perform better job.

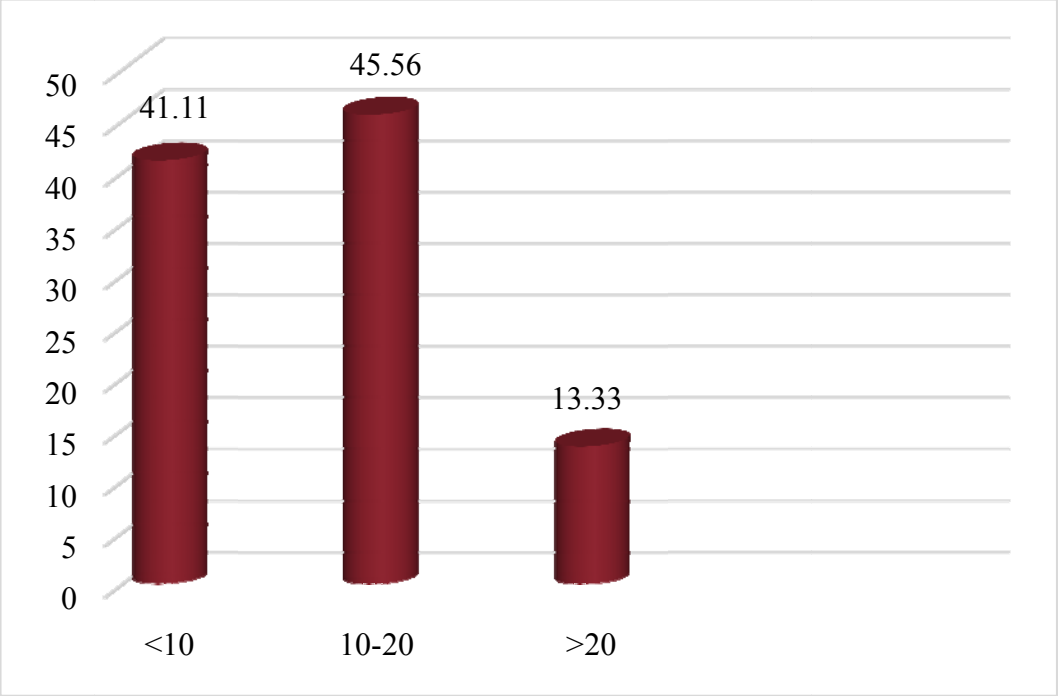


Fig 9. Distribution of respondents based on job experience

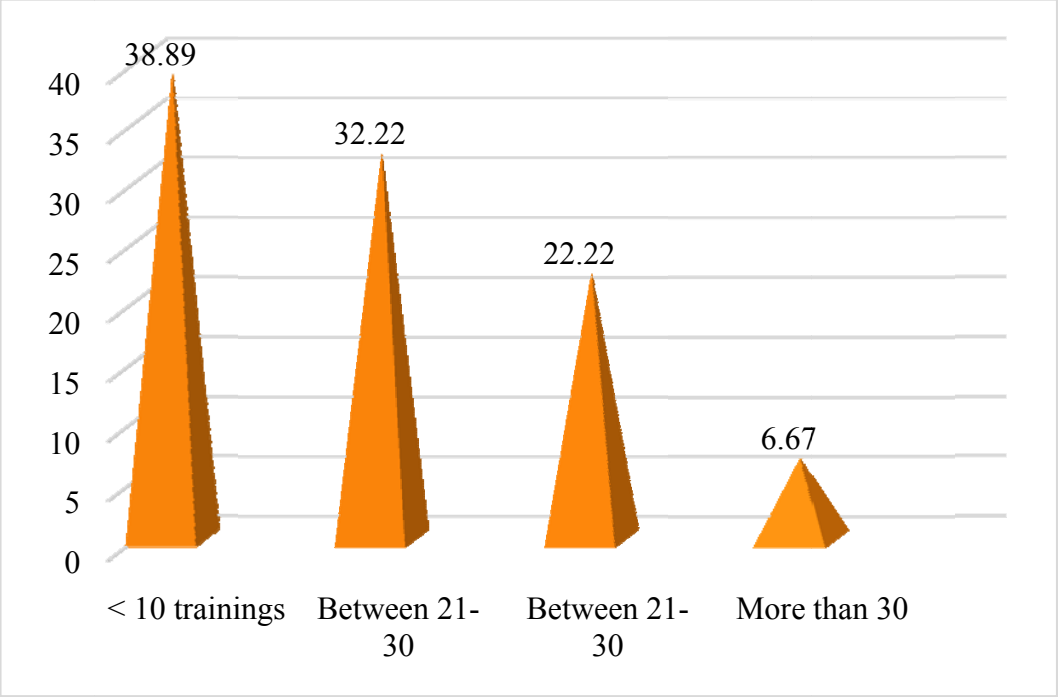


Fig 10. Distribution of respondents based on no of technical trainings undergone

Low training exposure might be due to that majority of AOs were new recruits in to service and are having less than 10 years of job experience. The findings are in line with results of Kumar (2017).

4.3.5 Exposure to technical/professional literature

Table 12. Distribution of respondents based on exposure to technical/professional literature

Category	Thiruvananthapuram (n=45)		Kannur (n=45)		Total (N=90)	
	F	%	F	%	F	%
Low exposure	0	0	0	0	0	0.00
Medium exposure	33	73.33	31	68.89	64	71.11
High exposure	12	26.67	14	31.11	26	28.89
Total	45	100	45	100	90	100
Range =1- 3, Mean= 2.12, SD = 0.66						

It is seen in the table 12 that, Majority (71.11%) of the respondents had medium exposure to literatures followed by 28.89 per cent had high exposure to technical or professional literature and none of the respondents belonged to the category of low exposure.

In Thiruvananthapuram district, 73.33 per cent of the respondents had medium exposure to literatures, whereas 26.67 per cent had high exposure to technical or professional literature and none of the respondents belonged to the low exposure. Most (68.89%) of the respondents in Kannur districts belonged to medium exposure category and remaining 31.11 per cent had high exposure. It was observed that almost all the respondents had medium to high exposure to technical/professional literatures.

The respondents have expressed that though they were not in receipt of literatures published outside the state regularly, department was supplying agricultural guide books and training manuals to them regularly and also technical bulletines during fortnightly training programmes. The results are in line with the results of Mishra (1991).

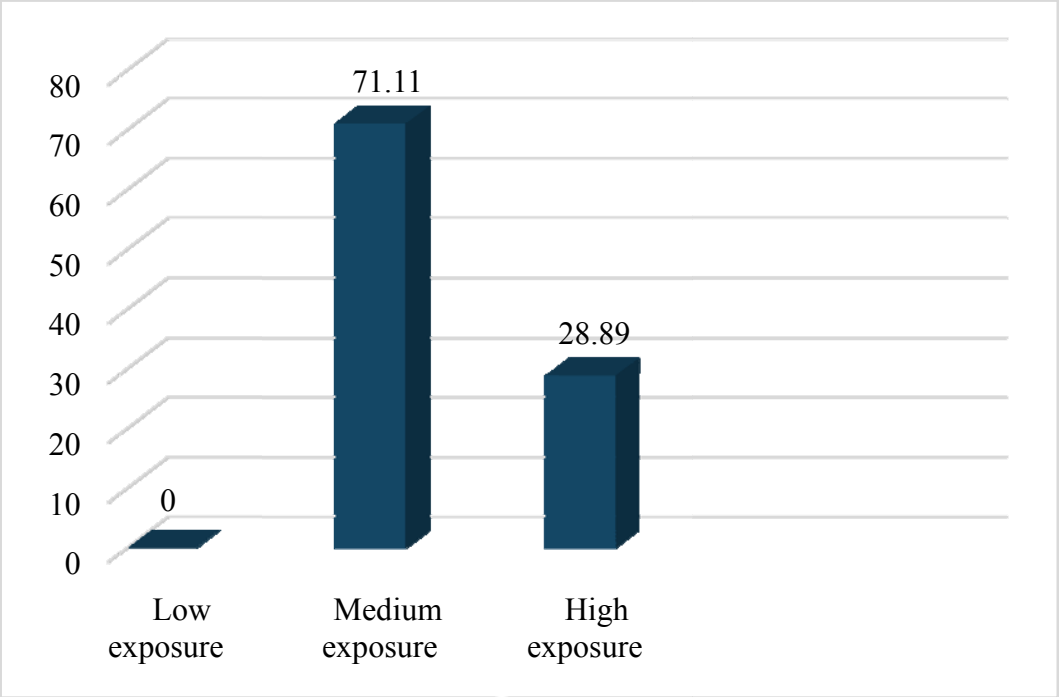
4.3.6 Mass media contact

Table 13. Distribution of respondents based on mass media contact

Category	Thiruvananthapuram (n=45)		Kannur (n=45)		Total (N=90)	
	F	%	F	%	F	%
Low exposure	0	0.00	2	4.44	2	2.22
Medium exposure	37	82.22	33	73.33	70	77.78
High exposure	8	17.78	10	22.22	18	20.00
Total	45	100	45	100	90	100
Range = 4 -9, Mean = 7.2, SD = 1.22						

On perusal of table 13, it was inferred that majority (82.22%) of the respondents in Thiruvananthapuram district belonged to the category of mediumexposure followed by 17.78 per cent belonged to the high mass media contact category. In Kannur district, 73.33 per cent of the respondents had medium exposure to mass media while 22.22 per cent and 4.44 per cent of them had high and low exposure to mass media respectively.

The overall data shows that most (77.78%) of the respondents had medium exposure to mass media, whereas 20 per cent had high exposure and only 2.22 per cent had low exposure to mass media.It was observed that majority of the respondents had medium to high exposure to mass media which are sources of farm information.



This might be the availability of radio and television facilities even in the interior most places of the State. The results are in line with the results of Kaur (2017).

Fig 11. Distribution of respondents based on exposure to technical/professional literature

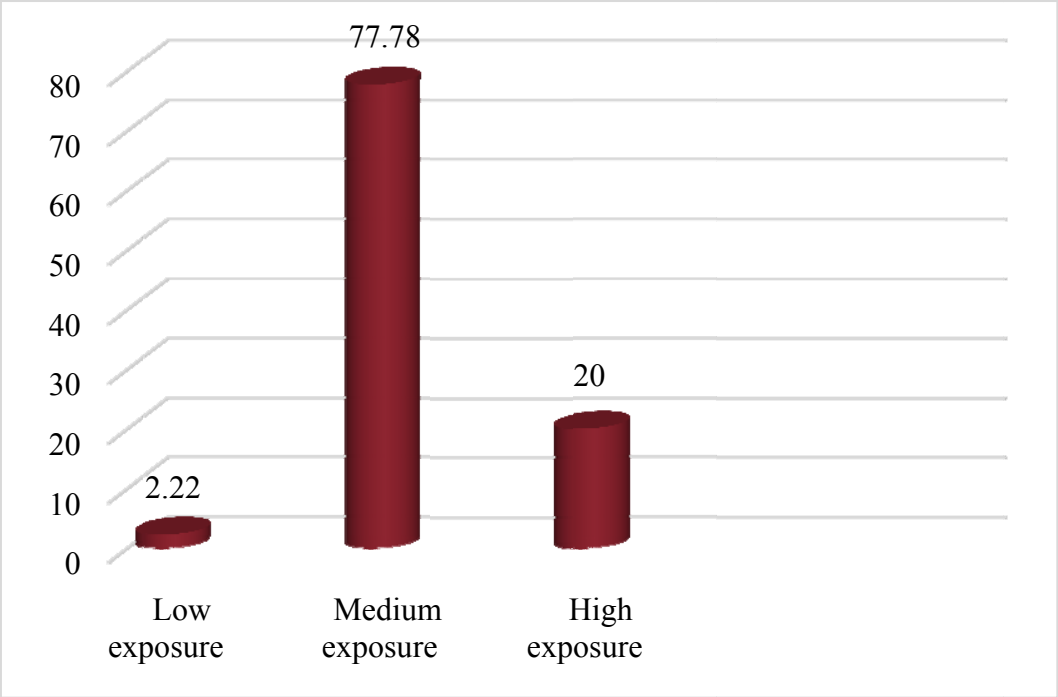


Fig 12. Distribution of respondents based on mass media contact

4.3.7 Job satisfaction

Category	Thiruvananthapuram (n=45)		Kannur (n=45)		Total (N=90)	
	F	%	F	%	F	%
Low	6	13.33	0	0.00	6	6.67
Medium	36	80.00	35	77.78	71	78.89
High	3	6.67	10	22.22	13	14.44
Total	45	100	45	100	90	100
Range =16 - 46, Mean = 28.92, SD = 6.45						

Table 14. Distribution of respondents based on Job satisfaction

It is shown in the table 14, In Thiruvananthapuram district 80 per cent of the respondents were having medium job satisfaction followed by 13.33 per cent were having low job satisfaction and 6.67 per cent of them were having high job satisfaction.

In Kannur, 77.78 per cent of the respondents had medium job satisfaction, whereas 22.22 per cent had high job satisfaction and none of them had low job satisfaction.

The overall data shows that majority (78.89%) of the respondents were having medium job satisfaction, 14.44 per cent were having high job satisfaction and only 6.67 per cent of them were having low job satisfaction. In general, job satisfaction depends upon the extent to which an individual derive personal and socio-

psychological benefits from his job. If the working conditions and facilities in the organisation are not up to one's expectation then the individual derives less satisfaction from his job. The AOs job satisfaction needs to be increased by salary,rewards and incentives, training, better promotional opportunities etc. The findings are on par with the results of Bosco (2000).

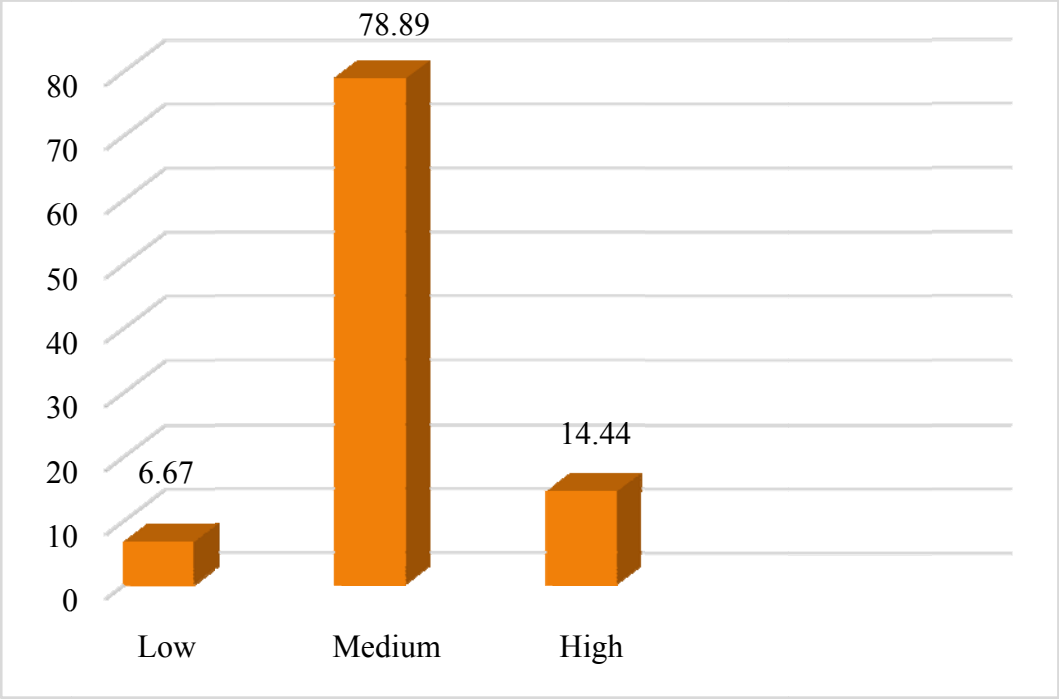
4.3.8 Organisational commitment.

Table 15. Distribution of respondents based on their organisational commitment.

Category	Thiruvananthapuram (n=45)		Kannur (n=45)		Total (N=90)	
	F	%	F	%	F	%
Low	10	22.22	5	11.11	15	16.67
Medium	25	55.56	30	66.67	55	61.11
High	10	22.22	10	22.22	20	22.22
Total	45	100	45	100	90	100
Range = 30 - 51, Mean = 39.89, SD = 5.08						

It is shows in the table 15 that, Half (55.56%) of the respondents in Thiruvananthapuram were having medium level of organisational commitment, while 22.22 per cent of them were having low organisational commitment and remaining 22.22 per cent were having high organisation commitment.

In Kannur district, 66.67 per cent of the respondents were having medium level organisational commitment, whereas 22.22 per cent of them were having highorganisational commitment and remaining 11.11 per cent werehaving low organisational commitment.



The overall data revealed that, majority (61.11%) of the respondents were having medium level organisational commitment followed by 22.22 per cent of them were having high organisational commitment and 16.67 per cent were having low organisation commitment. The probable reason may be that, they have accepted the organisation goals and line of action and meet the perceived goals. The results are in line with the results of Rahul (2006) and Gopika (2014).

Fig 13. Distribution of respondents based on job satisfaction

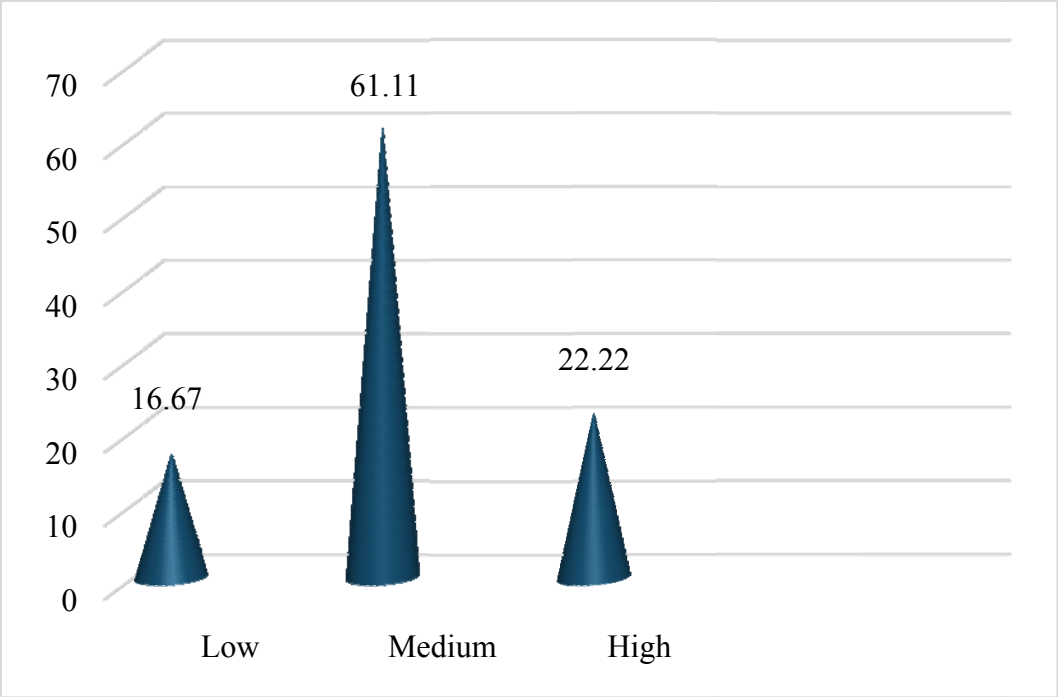


Fig 14. Distribution of respondents based on organisational commitment

4.3.9 Scientific orientation

Table 16. Distribution of respondents based on scientific orientation

Category	Thiruvananthapuram (n=45)		Kannur (n=45)		Total (N=90)	
	F	%	F	%	F	%
Low	5	11.11	0	0.00	5	5.56
Medium	31	68.89	34	75.56	65	72.22
High	9	20.00	11	24.44	20	22.22
Total	45	100	45	100	90	100
Range = 7 - 12, Mean = 9.94, SD = 1.47						

It is seen in the table 16 that, majority (68.89%) of the respondents in Thiruvananthapuram had medium scientific

orientation followed by 20 per cent of them had high scientific orientation and remaining 11.11 per cent had low scientific orientation.

In Kannur district, most (75.56%) of the respondents had medium scientific orientation, while 24.44 per cent of them had high scientific orientation and none of them belonged to low scientific orientation category. It is because majority of the respondents in Kannur districts were post graduates having high scientific orientation when compared to Thiruvananthapuram district.

The overall data shows that, 72.22 per cent of the respondents had medium scientific orientation, 22.22 per cent of them had high scientific orientation and remaining 5.56 per cent of them had low scientific orientation. The probable reason might be their high level of education. The findings are in line with the findings of Krushnakanth (2012).

4.3.10 Facilities at the training centre

Table 17. Distribution of respondents based on their facilities at the training centre

Category	**Thiruvananthapuram (n=45)**		**Kannur (n=45)**		**Total (N=90)**	
	F	**%**	**F**	**%**	**F**	**%**
Less satisfied	3	6.67	20	44.44	23	25.56
Moderately satisfied	32	71.11	15	33.33	47	52.22
Highly satisfied	10	22.22	10	17.78	20	22.22
Total	45	100	45	100	90	100
Range =5 - 28, Mean = 16.21, SD = 7.67						

On perusal of table 17, it was concluded that Half (52.22%) of the respondents were moderately satisfied with the training facilities followed by 25.56per cent of them were less satisfied and remaining 22.22 of the respondents were highly satisfied with the available training facilities.

In Thiruvananthapuram district, 71.11 per cent of the respondents were moderately satisfied with the training facilities, whereas 22.22 per cent of them were highly satisfied and 6.67 of the respondents were less satisfied with the available training facilities.

In Kannur district, most (44.44%) of the respondents were less satisfied with the training facilities, while 33.33 per cent of them were moderately satisfied and17.78 per cent of the respondents were highly satisfied with the available training facilities. It indicates that there is need to improve the existing training facilities to AOs with a view to benefit them and to achieve maximum satisfaction. The findings are in line with the findings of Wankhade (2002).

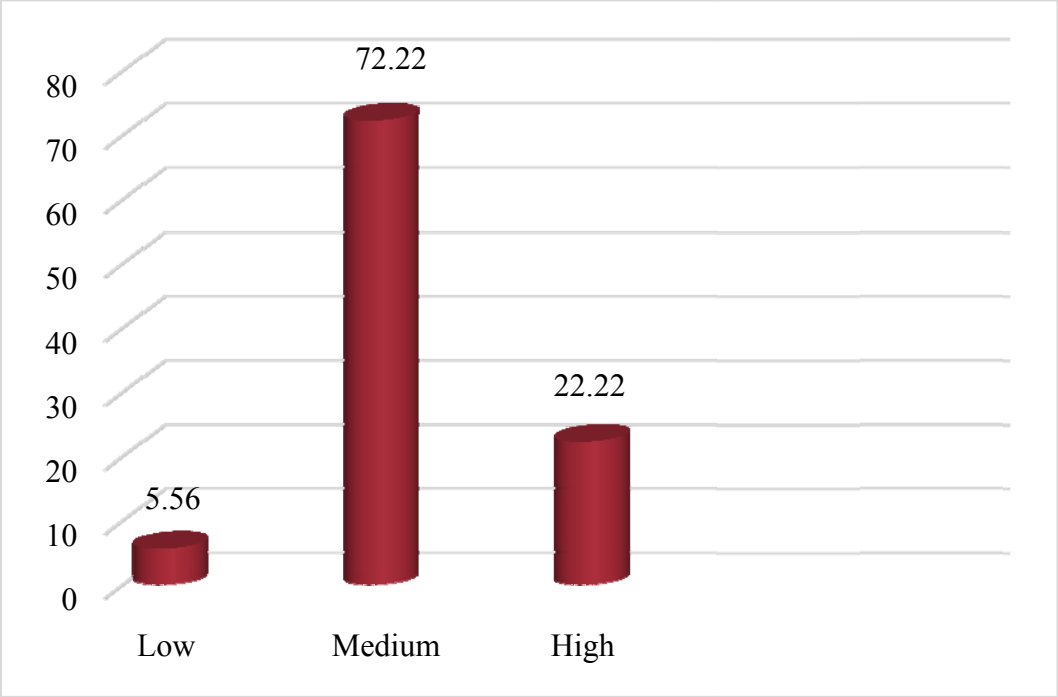


Fig 15. Distribution of respondents based on scientific orientation

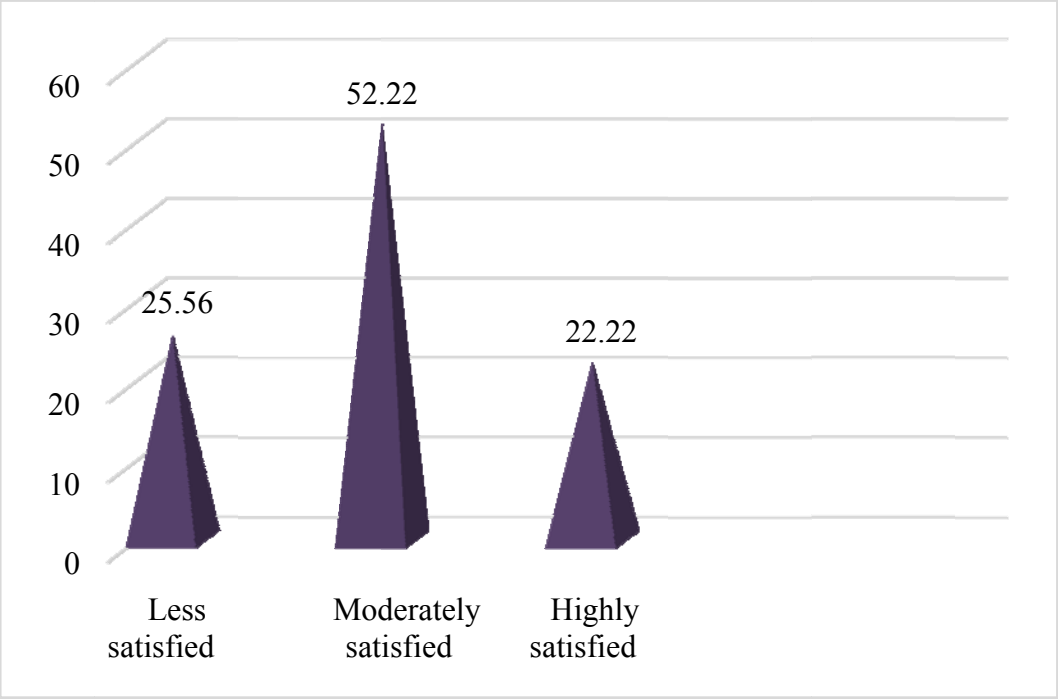


Fig 16. Distribution of respondents based on facilities at the training centre

4.4 CORRELATION ANALYSIS OF TRAINING NEED ANALYSIS OF AOs

4.4.1 Correlation analysis of training need of AOs in agricultural practices

Table 18. Correlation of training need of AOs in agricultural practices with profile characteristics

Sl. No.	Independent variable	Correlation coefficient 'r' value
1	Age	0.208
2	Education	-0.090
3	Job experience	-0.344**
4	No of technical trainings undergone	0.147
5	Exposure to technical/professional literature	0.053

6	Mass media contact	-0.302**
7	Job satisfaction	0.366**
8	Organisational commitment	0.170
9	Scientific orientation	0.377**
10	Facilities at the training centre	0.391**
** 1% significant *5% significant		

It is evident from the table 18 that job satisfaction, scientific orientation and facilities at the training centre are the three factors that possessed positive and significant relation with training need of AOs in agricultural practices at 1% level of significance.

The correlation analysis also shows that, the officers who had more satisfaction with the work, high scientific orientation and also more satisfaction at the facilities at the training centre had more desire for excellence and also had accurate idea about the duties and activities than others naturally desire to go for training to have more work effectiveness as an individual extension worker as it provides opportunities for acquisition of knowledge and skill.

4.4.2 Correlation analysis of training need of AOs in extension

Table 19. Correlation of training need of AOs in extension with profile characteristics

Sl. No.	**Independent variable**	**Correlation coefficient 'r' value**
1	Age	0.127
2	Education	-0.053
3	Job experience	-0.377**
4	No of technical trainings undergone	0.089
5	Exposure to technical/professional literature	0.016

6	Mass media contact	-0.284**
7	Job satisfaction	0.146
8	Organisational commitment	-0.112
9	Scientific orientation	0.354**
10	Facilities at the training centre	0.364**
** 1% significant *5% significant		

It is evident from the table 19 that scientific orientation and facilities at the training centre are the two factors that possessed positive and significant relation with training need of AOs in extension at 1% level of significance.

It is obvious that officers who had high scientific orientation tend to know the emerging techniques and recent advances in agriculture which might be the reason for positive correlation between the scientific orientation and training need in agricultural practices and extension and also the officers who are more satisfied with the facilities at the training centre had accurate idea about the duties and activities than others naturally desire to go for training to have more work effectiveness as an individual extension worker as it provides opportunities for acquisition of knowledge and skill so this might be the reason for positive correlation between facilities at the training centre and training need in agricultural practices and extension

4.4.3 Correlation analysis of total training needs of AOs in agricultural practices and extension

Table 20. Correlation of total training needs of AOs in agricultural practices and extension with profile characteristics

Sl. No.	**Independent variable**	**Correlation coefficient 'r' value**
1	Age	0.193
2	Education	-0.073
3	Job experience	-0.387**

4	No of technical trainings undergone	0.127
5	Exposure to technical/professional literature	0.049
6	Mass media contact	-0.300**
7	Job satisfaction	0.286**
8	Organisational commitment	0.050
9	Scientific orientation	0.375**
10	Facilities at the training centre	0.396**
** 1% significant *5% significant		

The results in table 20 reveals that out of the ten independent variables selected, three factors viz., Job satisfaction, Scientific orientation and Facilities at the training centre were significantly and positively correlated with the training need of AOs in agricultural practices and extension

The correlation analysis shows that, If officer satisfy with the job he will be motivated to carry out the given tasks more efficiently and when he likes to expand the activities he may require more training which might be the reason for the positive correlation between job satisfaction and training need in agricultural practices and extension.

It is obvious that officers who had high scientific orientation tend to know the emerging techniques and recent advances in agriculture which might be the reason for positive correlation between the scientific orientation and training need in agricultural practices and extension and also the officers who are more satisfied with the facilities at the training centre had accurate idea about the duties and activities than others naturally desire to go for training to have more work effectiveness as an individual extension worker as it provides opportunities for acquisition of knowledge and skill so this might be the reason for positive correlation between facilities at the training centre and training need in agricultural practices and extension.

4.5 CORELATION ANALYSIS OF ATTITUDE OF AOs TOWARDS TRAINING**.**

Table 21. Correlation of attitude of AOs towards training with profile characteristics

Sl. No.	Independent variable	Correlation coefficient 'r' value
1	Age	0.127
2	Education	0.169
3	Job experience	-0.050
4	No of technical trainings undergone	0.061
5	Exposure to technical/professional literature	-0.126
6	Mass media contact	0.215*
7	Job satisfaction	-0.206
8	Organisational commitment	-0.215*
9	Scientific orientation	0.222*
10	Facilities at the training centre	0.098
** 1% significant *5% significant		

The results in table 21 reveals that out of the ten independent variables selected, two factors viz., mass media contact and scientific orientation were significantly and positively correlated with the Attitude of AOs towards training at 5% level of significance.

It is evident from the table 21 that mass media contact was positively and significantly correlated with the attitude of AOs towards training. Thus it can be concluded that mass media contact had significant influence on their attitude towards training which might be due that respondents who are more exposure to mass media was likely to have relatively more favourable attitude towards training

The data in table 21 shows that scientific orientation of AOs was positively and significantly correlated with the attitude of AOs towards training. Thus it can be

concluded that scientific orientation had significant influence on their attitude towards training which might be due to that AOs with more scientific orientation were motivated to attend for more trainings. With this, their attitude towards training might become favourable positively.

4.6 CONSTRAINTS FACED BY AGRICULTURAL OFFICERS

Table 22. Distribution of respondents based on the major constraints in two districts

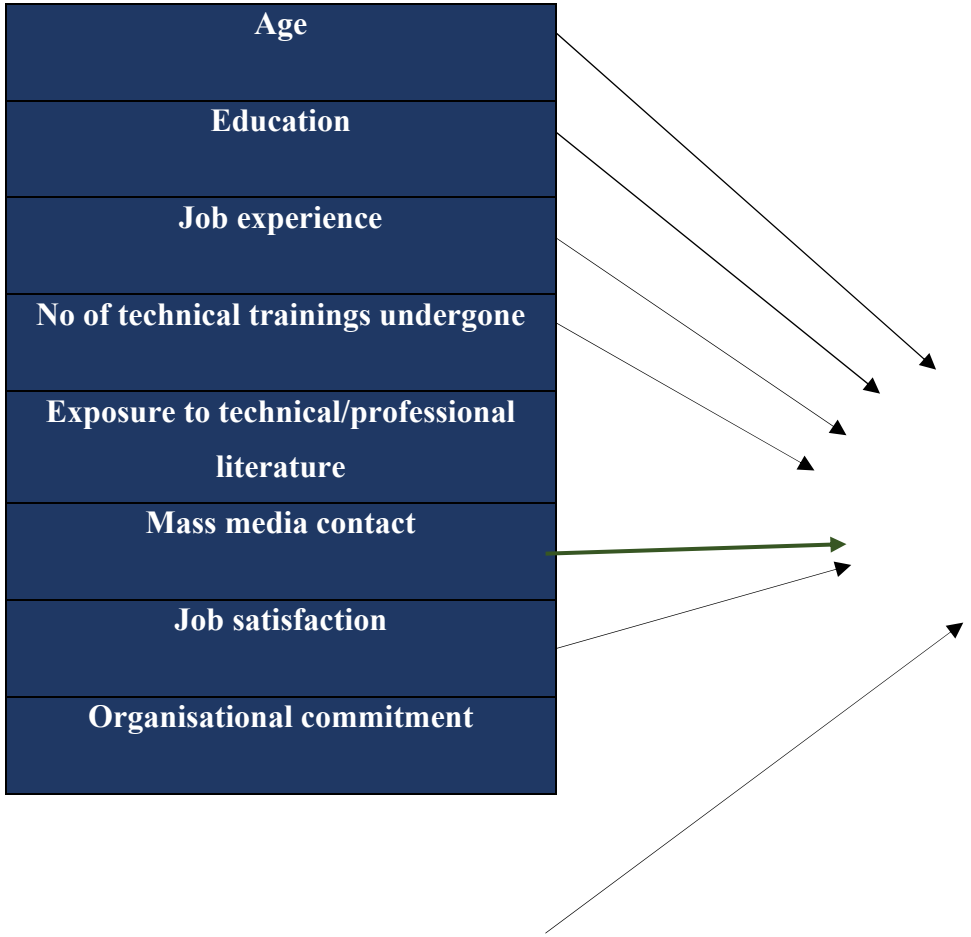
Sl. No	**Constraints**	**Garett score**	**Rank**
1	Lack of time for extension activities	59.99	1
2	Lack of transport facilities	44.11	2
3	Lack of incentives and reward system for better performance	42.83	3
4	Lack of training in extension communication	40.5	4
5	Lack of promotional opportunities	40.00	5

Out of several constraints studied, the major constraints identified in the case of Agricultural Officers were, lack of time for extension activities (rank 1),lack of transport facilities (rank 2), lack of incentives and reward system for better performance (rank 3),lack of training in extension communication (rank 4), lack of promotional opportunities (rank 5).

4.7 SUGGESTIONS FOR OVERCOMING THE CONSTRAINTS

A number of suggestions can be put forward for the better performance of the Agricultural officers based on this study conducted and constraints identified. They were,

- The major solution to the constraint lack of time for extension activities were solved by the introduction of Agricultural Knowledge Centres (AKCS) at the block level. The scientists from Kerala Agricultural University were deputed as the nodal officers of all 152 AKCs at the block level and the assistant director at the block level would be the conveners. The agricultural officers of all krishibhavans in the block will the members. The scientist will act as a key person in the information dissemination. These Agricultural Knowledge centres were inaugurated by Chief minister of Kerala on Chingam1st.
- Efforts should be made for providing adequate transport facilities.
- Officers need encouragement for the good work done by them. In the absence of incentives employees of organisation feel demoralised leads to job dissatisfaction.
- Proper need based training should be given to the agricultural officers.
- Time bound promotions should be strictly follow.
- Providing proper guidance and supervision by superior officers.


Age
Education
Job experience
No of technical trainings undergone
Exposure to technical/professional literature
Mass media contact
Job satisfaction
Organisational commitment

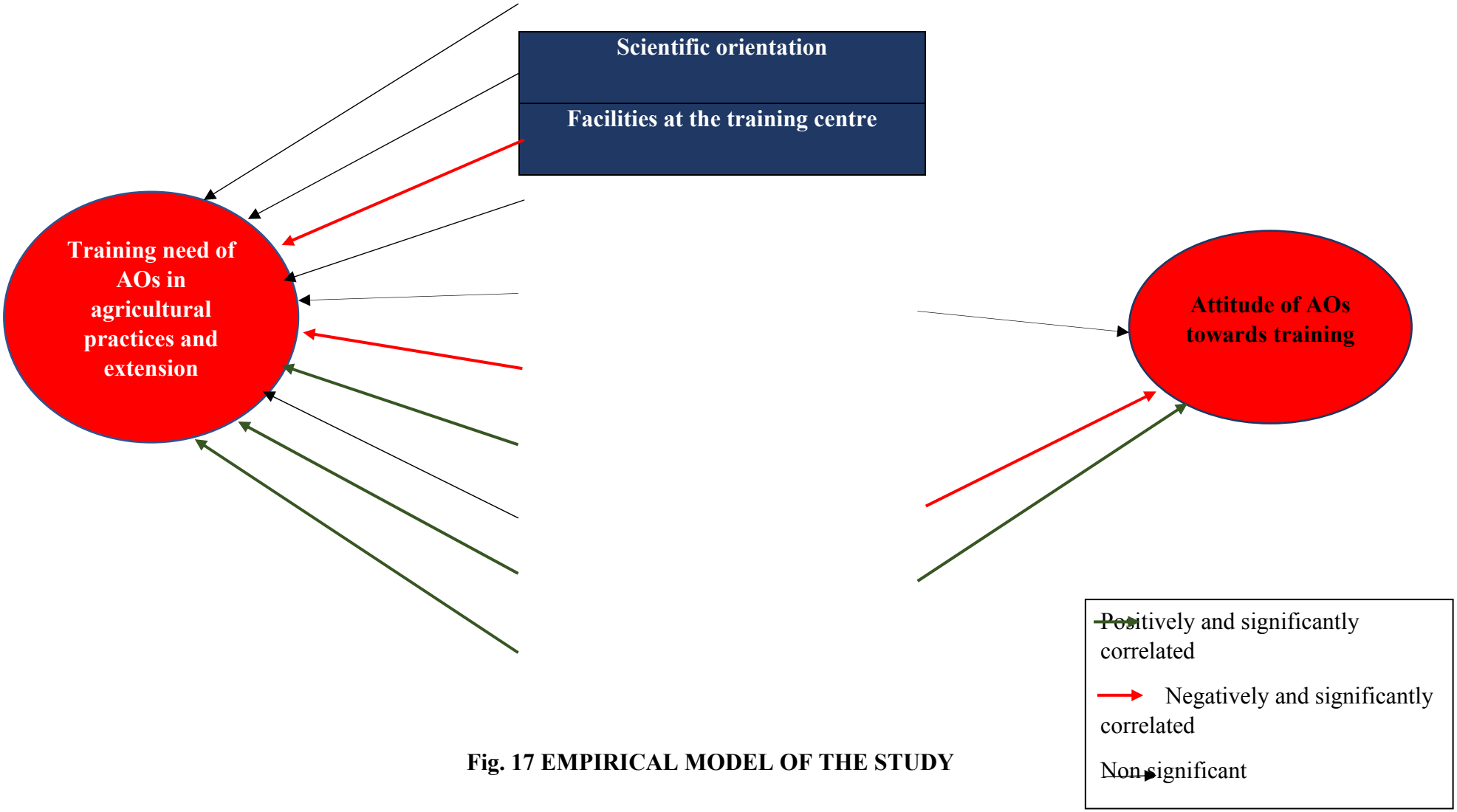


Fig. 17 EMPIRICAL MODEL OF THE STUDY

Summary

5. SUMMARY

The purpose of training is to enhance the quality of human resources to maximise their effectiveness and productivity in job performance.The major drawback in the present training system is that the training programmes are neither need based nor relevant to the field situation which ultimately prove to be a waste of human and material investment. This means that efforts must be made to establish training programmes that are important to the departmental functionaries' needs. To achieve this, a practical evaluation of the training needs of extension functionaries must be followed by the training operation.

Various workshops on Training Planning organised by the Directorate of Extension, Government of India in the country strongly stressed on the need for systematic assessment of training needs of extension functionaries before planning and designing the training programmes. It is through Agricultural officers the government executes various extension services, development policies and transfer of technology for development of farmers and agriculture itself.

Considering the above points, the present study on ‘Training need analysis of Agricultural Officers(AOs) of Department of Agriculture development and Farmers’ Welfare Kerala was designed with following specific objectives to assess the training need of agricultural officers, attitude of the respondents towards training, their profile characteristics, constraints faced by them while implementing their duties and responsibilities were also studied.

The present study was conducted in two districts of Kerala viz., Kannur from North Kerala and Thiruvananthapuram from South Kerala. The Agricultural Officers having minimum of five years’ experience were purposively selected from Thiruvananthapuram and Kannur districts for present study. Totally 90 AOs of which 30 from Kannur and 30 from Thiruvananthapuram were selected.

Detailed review of literature and discussion with experts and scientists were used in the selection of variables. The dependent variables selected for the study were Training need analysis of AOs and attitude of AOs towards training.

Ten independent variables viz., age, education, Job experience, no of technical trainings undergone, exposure to technical/professional literature, mass media contact, job satisfaction, organisational commitment, scientific orientation and facilities at the training centre were studied.

A structured interview schedule was prepared for data collection. Frequency, percentage analysis, mean, standard deviation, simple correlation and Garett score ranking were employed in the analysis and interpretation of data.

The salient findings of the study are summarized below:

1. The distribution of respondents based on training need in agricultural practices reported that majority (60%) of the AOs belonged to medium training need group followed by 26.67 per cent of the AOs belonged to high training need group and only 13.33 per cent belonged to low training need group.
2. From the training need in extension reported that majority (58.89%) of the AOs belonged to medium training need group followed by 24.44 per cent of the AOs belonged to high training need group and only 16.67 per cent belonged to low training need group.
3. The distribution of respondents based on the total training need in agricultural practices and extension revealed that majority (62.22%) of the AOs belonged to medium training need group, whereas 21.11 per cent of the AOs belonged to high training need group and only 16.67 per cent belonged to low training need group.
4. From the training need items it was evident that Identification of pests and their control in important crops was assigned first rank, integrated pest control was given second rank, third rank was given to identification of diseases and their control in important crops and how to motivate and encourage farmers to adopt recommended practices and production recommendations of major crops and their implications were given fourth and fifth rank respectively.

5. The distribution of respondents based on attitude of towards training revealed that majority (68.89%) of the respondents were having neutral attitude towards training, while 16.67 per cent had favourable attitude and 14.44 per cent had unfavourable attitude towards training.
6. Regarding age, it was inferred that less than half (46.67%) of the respondents belonged to the age category of 35-45 years, followed by 28.89 per cent of the respondents belonged to less than 35 years and 24.44 of them belonged to age category of more than 45 years.
7. Considering educational status, mostly 47.78 per cent of the respondents had master's degree, 41.11 per cent had bachelor's degree and 7.78 per cent of them were diploma holders, remaining 3.33 per cent had doctors degree.
8. In the case of job experience, most (45.56%) of the respondents had 10-20 years of job experience, whereas 41.11 per cent had less than 10 years of job experience and only 13.33 per cent had more than 20 years of job experience.
9. Regarding no of technical trainings undergone,38.89 per cent of the respondents had undergone less than 10 trainings, 32.22 per cent of them undergone 11-20 trainings and 22.22 per cent had undergone 21-30 trainings and only 6.67 per cent of the respondents undergone more than 30 trainings.
10. Considering exposure to technical or professional literature, majority (71.11%) of the respondents had medium exposure to literatures followed by 28.89 per cent had high exposure to technical or professional literature and none of the respondents belonged to the category of low exposure.
11. In the case of mass media contact, most (77.78%) of the respondents had medium exposure to mass media, whereas 20 per cent had high exposure and only 2.22 per cent had low exposure to mass media
12. It was observed that majority (78.89%) of the respondents were having medium job satisfaction, 14.44 per cent were having high job

satisfaction and only 6.67 per cent of them were having low job satisfaction.

13. Regarding organizational commitment,majority (61.11%) of the respondents were having medium level organisational commitment followed by 22.22 per cent of them were having high organisational commitment and 16.67 per cent were having low organisation commitment
14. Considering scientific orientation, 72.22 per cent of the respondents had medium scientific orientation, 22.22 per cent of them had high scientific orientation and remaining 5.56 per cent of them had low scientific orientation.
15. In the case of facilities at the training centre,Half (52.22%) of the respondents were moderately satisfied with the training facilities followed by 25.56 per cent of them were less satisfied and remaining 22.22 of the respondents were highly satisfied with the available training facilities.
16. The factors which influenced training need analysis of AOs in agricultural practices and extension were job satisfaction, scientific orientation and Facilities at the training centre possessed positive and significant relation with training need analysis of AOs at 1% level of significance.
17. Mass media contact and scientific orientation were significantly and positively correlated with the Attitude of AOs towards training at 5% level of significance.
18. The major constraints faced by AOs were lack of time for extension activities, lack of transport facilities, lack of incentives and reward system for better, lack of training in extension communication and lack of promotional opportunities.

SUGGESTIONS FOR OVERCOMING THE CONSTRAINTS

A number of suggestions can be put forward for the better performance of the Agricultural officers based on this study conducted and constraints identified. They were,

- The major solution to the constraint lack of time for extension activities were solved by the introduction of Agricultural Knowledge Centres (AKCs) at the block level. The scientists from Kerala Agricultural University were deputed as the nodal officers of all 152 AKCs at the block level and the assistant director at the block level would be the conveners. The agricultural officers of all krishibhavans in the block will the members. The scientist will act as a key person in the information dissemination. These Agricultural Knowledge centres were inaugurated by Chief minister of Kerala on Chingam1st.

- Efforts should be made for providing adequate transport facilities.
- Officers need encouragement out of good work done by them. In the absence of incentives employees of organisation feel demoralised leads to job dissatisfaction.
- Proper need based training should be given to the agricultural officers.
- Time bound promotions should be strictly follow.
- Providing proper guidance and supervision by superior officers

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Abstract

TRAINING NEED ANALYSIS OF AGRICULTURAL OFFICERS (AOs) OF DEPARTMENT OF AGRICULTURE DEVELOPMENT AND FARMERS' WELFARE KERALA

by

SANDIPAMU RAAHALYA

(2018-11-128)

ABSTRACT

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DEPARTMENT OF AGRICULTURAL EXTENSION

COLLEGE OF AGRICULTURE

VELLAYANI, THIRUVANANTHAPURAM- 695522

KERALA, INDIA

2020

ABSTRACT

The study entitled "Training need analysis of Agricultural Officers (AOs) of Department of Agriculture Development and Farmers' Welfare Kerala" was designed to assess the training need of agricultural officers. Attitude of the respondents towards training, their profile characteristics, constraints faced by them while implementing their duties were also studied The study was conducted in two zones of Kerala viz., Kannur from North Kerala, Thiruvananthapuram from South Kerala. Forty five Agricultural Officers were selected from both Thiruvananthapuram and Kannur districts. Ex-post facto research design was used for the study. Ten independent variables were selected through judges rating. Training need analysis of agricultural officers and attitude of AOs towards training were the dependent variables of the study.

On analysis of data, it was found that majority (46.67%) of AOs were middle aged (3545), 47.78 per cent of them were post graduates and 45.56 percent had 10-20 years of job experience.Majority of the respondents (71.11%) had medium exposure to technical or professional literature, mass media contact (77.78%), job satisfaction (78.89%),organisational commitment(61.11%),scientific orientation (72.22%) and satisfaction with the facilities at the training centre(52.22%). The study revealed that 38.89 per cent of the respondents had undergone less than ten trainings.

Training need analysis of AOs were studied in two dimensions mainly training need in agricultural practices and training need in extension. It was reported that majority (60%) of the respondents belongedto medium training need category in agricultural practices. More than half(58.89%) of the respondents belonged to medium training need category in extension and 62.22 per cent of them belonged to medium training need category in both agricultural practices and extension in the two selected districts. From the results of the training needs of AOs in agricultural practices and extension, it was evident that 'identification of pests and their control in important crops', 'integrated pest control' and 'identification of diseases and their control in important crops' were given first,

second and third rank respectively. ‘how to motivate and encourage farmers to adopt recommended practices’ and ‘production of recommendations of major crops and their implications’ were assigned fourth rank and fifth rank respectively.

The correlation analysis revealed that out of ten independent variables job satisfaction, scientific orientation and facilities at the training centre were positively and significantly correlated with the training need of AOs in agricultural practices. Scientific orientation and facilities at the training centre were positively and significantly correlated with the training need of AOs in extension whereas job satisfaction, scientific orientation and facilities at the training centre were positively and significantly correlated with the training need of AOs in agricultural practices and extension.

Majority (68.89%) of the respondents had neutral attitude towards training. The correlation analysis revealed that mass media contact and scientific orientation were positively and significantly correlated with the attitude of AOs towards training.

The major constraints identified were the lack of time for extension activities. Suggestive measures recommended were introduction of Agricultural Knowledge Centres (AKCs), proper need based training to the AOs, providing incentives and rewards for better performance and also increasing promotional opportunities.

To conclude, It was reported that majority of the respondents belonged to medium training need category in agricultural practices and extension. Even though majority of the agricultural officers had a neutral attitude towards training, they expressed their requirement of training in the areas ‘Identification of pests and their control in important crops’, ‘integrated pest control’ and ‘identification of diseases and their control in important crops’.

Appendices

APPENDIX □

KERALA AGRICULTURAL UNIVERSITY
COLLEGE OF AGRICULTURE, VELLAYANI,TRIVANDRUM
DEPARTMENT OF AGRICULTURAL EXTENSION

INTERVIEW SCHEDULE

'Training need analysis of Agricultural Officers (AOs) of Department of Agriculture Development and Farmers' Welfare Kerala.'

1. **Name :**
2. **Age**
3. **Educational status**

1 Diploma/ VHSC ☐

2 B.Sc. (Agri.) ☐

3 M.Sc ☐

4 Ph. D ☐

4. **Job experience**

a) Total number of years in the Dept. of Agriculture ☐

5. No of technical training undergone

1. Less than 10 trainings

2. Between 11-20 trainings
3. Between 21-30 trainings
4. More than 30 trainings

6. Exposure to technical/professional literature

Do you go through technical/professional journals- Yes/No

Category	Regularly	Occasionally	Never
Indian farming			
KarshikaKeralam			

Journal of tropical agriculture			
Any other specify			

7. Mass Media Contact

Category	Regularly	Occasionally	Never
Radio			
Television			
Newspaper			

8. Organisational commitment

SL NO	STATEMENT	SA	A	UD	DA	SDA
1	Iam willing to put a great deal of effort beyond what is normally expected in order to help Dept. of Agriculture to be successful					
2	I praise up the Dept. of Agriculture to my friends as a great organization to work for					
3	I feel very little loyalty to the Dept. of Agriculture					
4	I would accept almost any type of job assignment in order to keep working for the Dept. of Agriculture					
5	I find that my values and the values of Dept. of Agriculture are similar.					
6	I am forced to tell others that I am part of Dept. of Agriculture					
7	I could just as well be working for a different organization as long as the type of work is similar					
8	The Dept of agri. really inspires the very best of me in the way of job performance.					

9	It could take a very little change in my present circumstances to cause me to leave the Dept. of agri.					
10	I am extremely glad that I chose the Dept of agri to work over others, I was considering at the time of joining.					
11	There is not too much to be gained by sticking to Dept. of Agriculture indefinitely					
12	Often I find it difficult to agree with the Dept. of agri. Policies on important matters relating to its employees.					
13	really care about the fate of Dept of agri.					
14	For me this is the best of all possible organization for which to work					
15	Deciding to work for Dept. of Agriculture was a definite mistake on my part.					

Please indicate your degree of agreement/disagreement with the followed statement by putting tick mark in the appropriate column against each statement. (SA= Strongly Agree, A= Agree, UD = Undecided, DA= Disagree, SDA = Strongly Disagree)

9.Scientific orientation

Please indicate your degree of agreement/disagreement with the followed statement by putting tick mark in the appropriate column against each statement. (A= Agree, UD = Undecided, DA= Disagree,)

SL NO	**STATEMENT**	**A**	**UD**	**D**
1	New extension strategies of communication give better results than the old methods.			
2	Even a well-experienced extension worker should use new methods of communication.			
3	Though it takes time for an extension worker to learn new methods of communication it is worth to learn			

4	A good extension worker experiments with new ideas			
5	Traditional methods of communication/extension have to be revised in order to be more useful.			
6	The way an old colleagues are doing extension work is still the best way to communicate the information.			

10. Job satisfaction

Please indicate your degree of satisfaction with the followed statement by putting tick mark in the appropriate column against each statement. (VS= Very much satisfied, S=Satisfied, PS= Partially satisfied, DS= Dissatisfied, VDS=Very much dissatisfied)

SL NO	STATEMENT	VS	S	PS	DS	VDS
1	Your present salary					
2	feeling of Job security					
3	Praise and recognition for good work					
4	Physical facilities for work					
5	Opportunity to work with team spirit					
6	Amount of close supervision					
7	Opportunity for self development					
8	Promotion policy of the department					
9	Freedom of pursue original ideas					
10	Freedom of flexibility in work					
11	Status and prestige as a person in the department					
12	Type of work done					

11.Facilities at the training centre

Please indicate your degree of satisfaction with the followed statement by putting tick mark in the appropriate column against each statement.

Sl no	Statement	Very much satisfied	Somewhat satisfied	Dissatisfied	Reason for dissatisfaction
1	Training institute				
2	Topic of training				
3	trainers				
4	Method of training				
5	Syllabus of training				
6	Training arrangement				
7	Training period				
8	Duration of training				
9	Place of training				
10	Visits during training				
11	Supply of literatures and materials				
12	Library facilities				
13	Practical orientation of training				
14	Stay arrangement during training				

TRAINING NEED ANALYSIS OF AOs

a) TRAINING NEED IN AGRICULTURAL PRACTICES

Please indicate your need with the followed statement by putting tick mark in the appropriate column against each statement.

Sl no	Seeds manures and fertilizers	Great need	Some need	Little need
1.	Improved varieties of important crops and selection of suitable varieties in field situation			
2	Seed production			
3	Different types of fertilizers			
4	Improving soil fertility status with appropriate doses of manures and fertilizers			
5	Seed multiplication methods			
6	Compost making			

Sl no	Agronomic practices	Great need	Some need	Little need
1.	Preparatory tillage in important crops			
2	Methods of nursery raising in paddy			
3	transplanting			

4	Chemical weed control			
5	Intercultural operations			
6	Maturity indices and identifying correct harvest stage of crops			

Sl no	**Soil and water management**	**Great need**	**Some need**	**Little need**
1.	Different types of soils and their management			
2	Soil and water conservation in field situations			
3	Importance and drawing of soil samples			
4.	Water and its management			
5	Soil reclamation			
6	Water management in important crops			

Sl no	**Plant protection**	**Great need**	**Some need**	**Little need**
1.	Identification of pests and their control in important crops			
2	Identification of diseases and their control in important crops			
3	Preparation of different concentrations of spray solutions			
4	Spraying techniques			

5	Plant protection equipment and their maintenance			
6.	Integrated pest control			

Sl no	**General**	**Great need**	**Some need**	**Little need**
1.	Understanding and interpretation of metereological data			
2	Crop, estimation surveys			
3	Use and maintenance of agricultural implements and machinery			
4	Orientation on farm planning and contingency planning			
5	Diversified farming			
6.	Agriculture credit and credit institutions			

b) Training needin extension

Sl no	**Field extension activities**	**Great need**	**Some need**	**Little need**
1.	Selection of farmer groups and contact farmers			
2	Procedures to make field visits and extra visits			
3	Production recommendations of major crops and their implications			
4	Conducting field demonstrations and farm			

	trials, making observations and recording data			

Sl no	**Communication and A.V. Aids**	**Great need**	**Some need**	**Little need**
1.	Communication methods and techniques			
2	Selection of appropriate communication techniques			
3	Planning, preparation, use and evaluation of audio visual aids.			
4	Use of extension literature			

Sl no	**Management**	**Great need**	**Some need**	**Little need**
1.	Basic principles of extension management			
2	Effective utilization of available resources			
3	Timeliness, feasibility and profitability of production recommendations			
4	Time management in field visits			

Sl no	**Feedback and follow up**	**Great need**	**Some need**	**Little need**
1.	Selecting evaluation criteria			

2	Evaluation of field problems			
3	Methods of giving feedback about field and operational problems			
4	Follow up action to be taken in adoption, partial adoption and non-adoption of recommended practices by farmers			

Sl no	**Training activities**	**Great need**	**Some need**	**Little need**
1.	Effective participation methodology in fortnightly training sessions			
2	Assessing the training needs of farmers			
3	Conducting training sessions for farmers			
4	Organizing farmers training programmes			

Sl no	**Leadership**	**Great need**	**Some need**	**Little need**
1.	Identification and making use of opinion leaders and contact farmers in technology dissemination process			
2	How to motivate and encourage farmers to adopt recommended practices			
3	Human relations			
4	Speaking in meetings (public speaking)			

2. ATTITUDE OF AOs TOWARDS TRAINING

Please indicate your degree of agreement/disagreement with the followed statement by putting tick mark in the appropriate column against each statement. (SA= Strongly Agree, A= Agree, UD = Undecided, DA= Disagree, SDA = strongly disagree

SL NO	STATEMENT	SA	A	UD	DA	SDA
1	The majority of the AOs attending training programme not selected as per their needs					
2	For the sake of convenience, trainers spare sufficient time for discussions					
3	Trainers cannot spare time for discussion and thus time is wasted for simply sitting					
4	The trainers talk about something which the officers do not need					
5	The trainees AOs find answers for their immediate problems from the trainers					
6	The course content was not useful to the majority of the officers					
7	There was less emphasis on field visits in training programmes, hence the training programmes are ineffective					
8	SMSs themselves have no faith in training programmes, hence the training programmes are ineffective					
9	Due to lack of systematic efforts in preparing plans, training programmes are not effective					
10	SMSs who are conducting training programmes are effective in their communication, hence they are able to infuse confidence among trainees					
11	The time allotted for conducting training programme is fully utilised					
12	Ineffective use of audio visual aids in training progrmmes have made them dull and drab					
13	The SMS's who are imparting training, lack sufficient training experience hence they are unable					

	to impart effective training.					

CONSTRAINTS FACED BY AOs

Please tick wherever applicable (MI- Most important, I-Important, LI- Least important, NI- Not important)

Sl No.	STATEMENT	MI	I	LI	NI
1	Excessive office work				
2	Political interference				
3	Lack of promotional opportunities				
4	Lack of location specific technology				
5	Lack of proper training to the officer				
6	Lack of timely availability of inputs				
7	Lack of training in extension communication				
8	Lack of adequate staff in Krishibhavan				
9	Lack of sufficient transport facilities				
10	Lack of incentives and reward system for better performance				
11	Lack of proper guidance and supervision by superior officers				
12	Lack of time for extension activities				
13	Lack of sufficient knowledge in the latest agricultural technology				
14	Delayed disbursement of salary and other allowances				
15	Inadequate administrative support				
16	Lack of need based schemes and its implementation in different localities				