COMPARATIVE ANALYSIS OF VOCATIONAL TRAINING PROGRAMMES OF KRISHI VIGYAN KENDRAS

By

GEETHU A M

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THESIS

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DEPARTMENT OF AGRICULTURAL EXTENSION
COLLEGE OF AGRICULTURE
VELLAYANI, THIRUVANANTHAPURAM - 695522
KERALA, INDIA

2019

DECLARATION

I, hereby declare that this thesis entitled "Comparative analysis of vocational training programmes of Krishi Vigyan Kendras" 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 any of degree, diploma, associateship, fellowship or other similar title of any other university or society.

Vellayani

Date: 15/10/19

Geethu A M

(2017-11-072)

CERTIFICATE

Certified that this thesis entitled "Comparative analysis of vocational training programmes of Krishi Vigyan Kendras" is a research work done independently by Ms. Geethu A M (2017-11-072) 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.

Bindu Podikunju

Dr. Bindu Podikunju
(Chairman, Advisory committee)
Assistant Professor
Krishi Vigyan Kendra, Kollam
Kerala Agricultural University
Sadanandapuram, Kottarakkara

Vellayani
Date 15/10/19

CERTIFICATE

We, the undersigned members of the advisory committee of **Ms. Geethu A M (2017-11-072)**, a candidate for the degree of **Master of Science in Agriculture**, with major in Agricultural Extension, agree that the thesis entitled **"Comparative analysis of vocational training programmes of Krishi Vigyan Kendras"** is submitted by Ms. Geethu A M in partial fulfilment of the requirement for the degree.

Dr. Bindu Podikunju
(Chairman, Advisory committee)
Assistant Professor
Krishi Vigyan Kendra, Kollam
Kerala Agricultural University
Sadanandapuram, Kottarakkara

Dr. B Seema
Professor & Head
Department of Agricultural Extension
College of Agriculture, Vellayani
Thiruvananthapuram

Dr. Allan Thomas
Assistant Professor (Sel. Gr.)
Department of Agricultural Extension
College of Agriculture, Vellayani
Thiruvananthapuram

Dr. Brigit Joseph
Professor & Head
Department of Agricultural Statistics
College of Agriculture, Vellayani
Thiruvananthapuram

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LIST OF ABBREVIATIONS AND SYMBOLS USED

Abbreviations	Expansion
KVK	Krishi Vigyan Kendra
ICAR	Indian Council of Agricultural Research
SAU	State Agricultural University
NGO	Non-Governmental Organisation
ATIC	Agriculture Technology Information Centre
BDO	Block Development Officer
AEO	Agricultural Extension Officer
KAU	Kerala Agricultural University
KLM	Kollam
TVM	Thiruvananthapuram
F	Frequency
No.	Number
SHG	Self Help Group
MWS	Mean Weighted Score

INTRODUCTION

I. INTRODUCTION

India is a country which gives a lot of importance to agriculture and agriculture is the backbone of the Indian economy. Agriculture is the prime source of income and employment in India. Agriculture exports contribute to one fifth of the total exports. The spread of information and innovations in the field of agriculture is crucial for India's development. The farmers are one of the major consumers of these farm technologies. They adopt it in their farming system at micro and macro level. They must be constantly fed with the recent technology to increase their income by decreasing the cost of production. This is only possible when a strong link is developed between the farmers, researchers and extension workers. Various efforts for rural development and agriculture have been made by government organizations, non-government organizations and others from pre-independence to the present era. The efforts are mainly concerned to encourage farmers to adopt new agricultural technologies and scientific practices to change their situations for livelihood security and economic prosperity.

The Indian Council of Agricultural Research (ICAR), during the fifth five year plan, launched an innovative project for imparting training to the farming community and field level extension functionaries in the country by establishing Krishi Vigyan Kendras (KVKs). The education commission (1964-66) recommended that a vigorous effort be made to establish specialized institutions to provide vocational education in agriculture and allied fields at the pre and post matriculate levels to cater the training needs of a large number of boys and girls coming from rural areas. The recommendation of the commission was thoroughly discussed during 1966-72 by the Ministry of Education, Ministry of Agriculture, Planning Commission, Indian Council of Agricultural Research (ICAR) and other allied institutions. Finally the ICAR mooted the idea of establishing Krishi Vigyan Kendras (Agricultural Science Centers). The ICAR standing committee on agricultural education, in its meeting held in August 1973 observed that, since the establishment of KVKs was of national importance which would help in accelerating the agricultural production and also helps in improving the socio-

economic conditions of the farming community. The first KVK, on pilot basis, was established in 1974 at Pondicherry under the administrative control of the Tamilnadu Agricultural University, Coimbatore. Krishi Vigyan Kendras are being run under the State Agriculture Universities, ICAR institutes, Central University and non-governmental organizations. These KVKs have been assigned to take up the responsibilities of technology evaluation and impact assessment, demonstration of technology on the farmer's field, organising training courses for the extension functionaries to update their knowledge and skill and conduct trainings for the farmers including farm women and youth.

KVKs work with the following mandates;

- Conducting on-farm testing to identify the location specificity of agricultural technologies under various farming systems.
- Organising frontline demonstrations to establish production potential of various crops and enterprises on the farmers' fields.
- Organising need based training of farmers to update their knowledge and skills in modern agriculture technologies related to technology assessment, refinement and demonstration and training of extension personnel to orient them in the frontier areas of technology development.
- Creating awareness about improved technologies to larger masses through appropriate extension programmes.
- Production and supply of good quality seeds and planting materials, livestock's, poultry and fisheries breeds and products and various bio-products to the farming community.
- Work as resource knowledge centre of agricultural technology for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district.

Krishi Vigyan Kendra is one of the important strategy in the field of extension education for the transfer of technology. It has been launched with the

aim to reduce time lag between the generation of technology and their transfer to the farmers in the larger interest of the farmers and agriculture production. Trainings are perceived to be the fastest method of transfer of technology within a short span of time and reaching a large number of beneficiaries in an effective manner.

Training in general has been defined as acquisition of skills, knowledge and attitudes no matter what type, level or length of training is under consideration. Training helps to improve one's ability in solving production problems and adopting improved practices and techniques at the field level. Training of farmers have been conceived as a critical input for accelerating agriculture production through the adoption of newer and scientific technologies. While imparting training the attitudes of the participating farmers not only get sharpened but also moulded to suite the ever changing needs of environment of the society and technology. Meena and Gupta (2013), concluded that training programmes were an important tool for providing villagers with technical knowledge and skills. At the same time, the development of short-term training plays an important role for farmers to boost agricultural technology, resulting in increased earnings and profits. The trainings conducted at KVKs are designed to impart need based and skill oriented trainings to the practicing farmers, in- service field level extension workers and to those who wish to go for self -employment. Dubey *et al.* (2008) reported that training programs organized by KVKs help to improve poor social and economic conditions for farmers and women farmers as well as rural youth in rural India by raising employment, agricultural productivity and ultimately income with the application of agricultural innovation generated at the research station. He also disclosed that training and guidance provided to trainees played a key role in the impact of technological change, as well as management orientation.

In Kerala all 14 districts have Krishi Vigyan Kendra. These KVKs are being managed by ICAR (4 nos), SAU (7 nos), and NGO (3 nos). KVKs attempt to raise the net returns and also improve the opportunities of self-employment among the farming communities. These organizations predominantly work for transferring

agricultural and allied technologies to agriculture stakeholders of their respective districts.

1.1 Need of the study

Krishi Vigyan Kendra Thiruvananthapuram established in 1979 and Krishi Vigyan Kendra Kollam established in 1994 are one of the oldest KVKs in the state working restlessly for the betterment of the farming community in their respective districts. It is assumed that spread of different technologies is rapid through trainings and the farmers training programmes conducted by Krishi Vigyan Kendra's has vast potentiality of bringing socio-economic upliftment in the farming community through the dissemination of need based agricultural technologies. The Kendras have been organizing trainings of one day duration along with vocational trainings (1week to 15 days duration) for developing a more skilled and educated work force. Thus it is essential to evaluate trainings conducted by Krishi Vigyan Kendras. Therefore the study aims to evaluate vocational trainings conducted by Krishi Vigyan Kendras of Kollam and Thiruvananthapuram districts, so that essential changes can be brought about in the training programmes. Hence the present study was carried out with the following objectives:

1. To assess and compare the rate of adoption of acquired skill for livelihood security of trainees from KVK Kollam and Thiruvananthapuram.
2. To prepare technology inventories of the vocational trainings conducted at Krishi Vigyan Kendra Kollam and Thiruvananthapuram.
3. To assess perceived training need along with constraints
4. Measurement of profile characteristics

1.2 Scope of the study

The findings of the present study would help to realize the rate of adoption, attitude, training needs and constraints faced by the vocational trainees of Kollam

and Thiruvananthapuram KVK. This will provide a guideline to the planners, administrators and training organizers of Krishi Vigyan Kendra in modifying the training strategy and developing need based vocational trainings at the Krishi Vigyan Kendras.

1.3 Limitations of the study

- The study is limited to the trainees who have attended the vocational training regarding selected aspects of various training programmes from KVK, Kollam and Thiruvananthapuram.
- The study included vocational trainees who were trained at the KVK, Kollam and Thiruvananthapuram during the year 2012 to 2017.
- The study selected only the trainees who have received the vocational trainings on friends of coconut, training on agro-machinery and other plant protection equipment, mushroom cultivation, organic input production and processing and value addition techniques and it is only confined to the selected items of these training programmes in which the training was imparted.
- The study was restricted to only some part of Kollam and Thiruvananthapuram districts due to limitation of time.

1.3 Presentation of the study

The current investigation on 'Comparative analysis of vocational training programmes of Krishi Vigyan Kendras' is organized into five chapters. Chapter I is the introduction of the study and which attempts to focus on the objectives, need, scope and limitation of the study. Chapter II collects the relevant reviews related to the present study. Chapter III elaborates the operationalization of variables, methods of data collection and analysis of data. Fourth chapter deals with the results and discussion of the current study. The last chapter (V) is concerned with the summary, conclusions and implications of the study.

REVIEW OF LITERATURE

II. REVIEW OF LITERATURE

To clarify and focus on the research question, a detailed search through a variety of resources such as books, thesis, journals, summaries, internet and other electronic journals is very necessary. According to Kumar (1996), one of the initial crucial responsibilities of a researcher is to find and review the existing literature related to the research problem. Burton (2000) opined that for a social researcher, information search and information management skills are the basic components of all research problems. The review of the literature helps the researcher to understand the area in a broad sense and identify several theoretical approaches that have been previously applied. In this chapter, efforts have been made to collect the appropriate review of literature.

Consequently, the literature review was conducted under the following subtitles:

2.1 Importance and effectiveness of training interventions with special reference to KVK trainings

2.2 Rate of adoption of technologies

2.3 Attitude of trainees towards training programmes attended

2.4 Training needs of farmer trainees

2.5 Profile of the respondents

2.6 Constraints faced and suggestions given by the trainees

2.1. Importance and effectiveness of training interventions with special reference to KVK trainings

Sharma and Kushwah (2004), revealed that 72 per cent of the respondents perceived that the level of skill training was very good. The skills such as how to prepare spray solution, spray method, identification of beneficial and harmful

insects in field were transferred by various methods. Even though 28 per cent respondents perceived that the level of skill training was good.

Dubey *et al.* (2008) reported that training programs organized by KVKs help to improve poor social and economic conditions for farmers and women farmers as well as rural youth in rural India by raising employment, agricultural productivity and ultimately income with the application of agricultural innovation generated at the research station. He also disclosed that training and guidance provided to trainees played a key role in the impact of technological change, as well as management orientation.

According to Ajrawat and Kumar (2012), KVK is able to make significant changes in the socio-economic status as well as the level of knowledge among the different classes of trainees. The training and guidance provided to the trainees played a key role in effective technological change and management orientation.

Meena and Gupta (2013), concluded that training programmes were an important tool for providing villagers with technical knowledge and skills. At the same time, the development of short-term training plays an important role for farmers to boost agricultural technology, resulting in increased earnings and profits.

Singh *et al.* (2013), found out that, after attending 11 training programmes, there were increased knowledge gain in trainees. Adoption of the newer technologies by the entrepreneurs helped them to get more income and employment. He recommended that various KVKs should tailor and organize need based vocational training programs for entrepreneurship development so that the rural people are benefited.

Srinivas and Sailaja. (2013), reported that there were an increase in knowledge, attitude and acquisition of skills after exposed to the training on scientific beekeeping.

Singh *et al.* (2014), concluded that the beneficiaries of training on better production techniques for Basmati rice received highest knowledge about high

yielding varieties such as Pusa basmati 1121 (86.6%), followed by seed treatment (73.3%), harvesting time And method (59.0%), weed management (58.7%), nutritious management (58.6%), transplanting time (53.3%), method of transplantation (49.4%), irrigation scheduling (49.4%), plant protection measures (45.3 %), Seed rate (40.0%), nursery (34.7%), storage and marketing (32.0%) And the time for sowing of land preparation (9.4%).

According to Veeranjaneyulu *et al.* (2014), the beneficiaries got hands on experience during the training program and started individual units in their respective villages and also got employment in the nearby apparel companies and he reported that the KVK offering necessary technical support during the follow up visits.

According to Kapila (2015), about 75.6 percent of the participants were able to reach the level of highly skilled person and were considered fully employable in an assembly line of sewing operations, while only 13.3 persons were at the level of being semi-skilled after the completion of the training program and required further trainings and practices to reach the stage of being employable by the industry.

Muthuramu *et al.* (2015), stated that the socio-economic status of SHG members can be improved by various vocational training programs like entrepreneurship development. Most of the women were in the young age group and was a better sign for the impact of vocational training among rural women to create self-employment.

Sabharwal and Panwar (2015), concluded that the rural women had successfully acquired the knowledge after the exposure training on preservation.

Singh *et al.* (2015), showed that the practice of conducting on-campus vocational training programs had a positive impact on the knowledge gained by the beneficiaries. Trainers in the campus played an important role in developing skills among the trainees and benefitting them to obtain higher income especially for the women trainees.

Soumya and Podikunju (2016), found out that training and demonstration had a significant impact on those respondents who attended the training on value-added products in comparison to their counterparts, who did not participate in training programs and demonstrations.

Kaur and Garg (2017), found that majority of the trainees had adopted the skills received during various training programmes and they had a positive view about the training programmes.

Acharya *et al.* (2018), revealed that the training on mushroom increase the mushroom production in the district and it enhanced the livelihood security of small and marginal farmers who adopted this technology.

2.2. Rate of adoption of technologies

According to Tomar (2005), about 40 percent of the respondents were from high level of adoption in mustard practices and 31.67 and 28.33 percent had medium and low level of adoption, respectively. About 41.67 percent of the non-participating respondents were found in low level of adoption followed by medium (40%) and high (13.33%). It was noticed that higher percentage of non-participating respondents were observed in low and medium levels of adoption compared to participant respondents. Their representation in high level of adoption was very low i.e., 13.33 percent as against 44 percent of participating respondents.

Meena and Gupta (2013), revealed that none of the farmers were following the improved practices like soil testing, soil treatment, seed treatment, seed rate and spacing before training. Whereas after attending training programme they adopted seed treatment (68.3 %), seed rate and spacing (65.0 %), soil testing (51.7 %) and soil treatment (36.7 %).

Singh *et al.* (2013), reported that out of 315 farmers and rural youths, initially 175 farmers (55.5%) had adopted the scientific farming practices but at present only 88 poultry farms were only functioning (27.9%) in the area. The reason

for closing /non-functioning of poultry farms may be the more fluctuation in market and adoption of other enterprises.

Srinivas and Sailaja (2013), observed that there was an increase in knowledge and adoption regarding maize, groundnut, vegetable maize and wheat production technology after training programme conducted by KVK.

Singh *et al.* (2014), observed that after attending training programmes, the farmers started adopting the production technologies ranging from 18.7 per cent for storage to 86.6 per cent for high yielding variety i.e. Pusa basmati-1121. This might be due to the gain in knowledge, skills and confidence level of farmers through training programmes.

Manjarekar *et al.* (2015), found that the reason for higher rate of non-adoption could be that the farmers do not acquire trainings before starting any enterprise.

Malabasari and Hiremath (2016), revealed that more than sixty five per cent of trained women (66.67%) had low level of adoption followed by high (26.67%) and medium (6.66%) adoption level. With regard to integrated farming system, more number of women (36.67%) belonged to low level of adoption category while, 33.33 per cent and 30.00 per cent of them belonged to medium and high level of adoption respectively. In case of dairy management, more than fifty per cent of women (53.33%) had high level of adoption followed by low (30.00 %) and medium (16.67 %) adoption level. Non adoption was observed in case of vermi-compost making technology.

Patel and Vejapara (2016), revealed that majority of farmers had medium level of adoption regarding ratoon management in sugarcane. The variables such as age, annual income and mass media exposure were had negative and significant association between respondents level of adoption. Education, Social participation and Farming experience were showed higher significant association with rate of adoption.

Sabira (2016), observed that majority of the respondents had fully adopted the technologies recommended to them by the Subject Matter Specialists of KVK Trissur.

Devi *et al.* (2017), observed that knowledge level and adoption level of farmers in the four adopted villages were amplified after imparting training and conducting FLD by KVK scientists in Guntur district of Andhra Pradesh.

Kaur and Garg (2017), noticed that majority of the trainees had adopted the vocational training on domestic level. About 80 per cent of the trainees who have received stitching training had adopted only for self-sustainable level (house hold level) and only 13.3 per cent had adopted it into commercial level. The reason for domestic adoption may be due to less availability of resources and they cannot had too much income to spend on commercial level.

Medhi *et al.* (2017) found out that over half (50.83%) of the respondents had medium level adoption on improved technologies in rice cultivation followed by low (42.50%) and only 7.50 percent were found in the high adoption category.

Ranjitha *et al.* (2018), indicated that 80 percent of the trainees had adopted mushroom farming where as 20 percent did not adopt.

2.3. Attitude of trainees towards training programmes attended

Chhaya *et al.* (2001), shows that on-campus trainees have more favourable attitude towards KVK training programme than the off-campus trainees.

Singh *et al.* (2007), who revealed that majority of the respondents (61.67%) had favourable attitude towards NWDPRA.

Dubey *et al.* (2008), reported that on-campus trainee farmers had high level of attitude than the off-campus trainees. Thus serious attention is required to educate the off-campus trainees in order to develop their attitude positively towards KVK training programmes.

Jiyawan *et al.* (2012), who reported that both beneficiaries and non-beneficiaries had strong agreement with the statement "production of crop can be increase by the advice of scientist working at KVK.

Sharma *et al.* (2012), who reported that participation in extension activities was significantly associated with the attitude of farmers towards Kisan Mandal and Kisan Sewa Kendra.

Jain (2013), found that out of the total, 48.89 per cent of respondents were having medium attitude towards vocational training. About 27.78 per cent of respondents had low, and 23.33 per cent had high attitude towards vocational training. Therefore, it can be concluded that most of respondents (48.89%) belonged to the medium attitude category.

Sabharwal and Panwar (2015), noticed that before getting training, majority of the respondents (40.5%) had unfavourable attitude followed by somewhat favourable (31.0%) and favourable (25.5%). After getting training on preservation, majority of the respondents (64.5%) had favourable attitude, followed by somewhat favourable (19.5%) and not favourable attitude (16%) towards fruits and vegetables preservation.

Dobariya *et al.* (2018) reported that majority of the beneficiary farmers had favourable attitude towards various activities of Krishi Vigyan Kendra at Dang district.

2.4. Training needs of farmer trainees

Bajpai *et al.* (2007), concluded from his study that most of the farmers of the district Udham Singh Nagar wanted a package of practices on rice cultivation. The major areas in which farmers needed more considerations were plant protection measures, seed treatment, fertilizer treatment, improved and hybrid seed varieties, seed rate and spacing and land preparation.

Patil *et al.* (2009), reported that out of five broad areas of training on dairy farming, respondents expressed the desire to receive training in the descending

order of animal health care and disease control, breeding and animal management, feeding and clean milk production.

Sajeev and Singha (2010), found out that the farmers demanded maximum training on integrated agricultural systems, integrated insect and disease management and technologies for soil and water conservation and were found to be the most common training component in KVKs. Under horticulture sector the trend was in the order, nursery management ranking first followed by cultivation techniques of fruit bearing trees and layout and management of orchards. Under animal science, pig rearing followed by prevention and cure of diseases were at the top positions.

Srivastava *et al.* (2012), observed that the need was felt maximum in the field of plant safety measures (rank I) and after that application of manures and fertilizers, land preparation and plantation. The training demand for post-harvest techniques, intercultural operation and irrigation management was minimal.

According to Sharma *et al.* (2013), to run a dairy on commercial scale, farmers gave top priority to housing management, while under domestic and semi-commercial purposes, priority was on feed management.

Kiran *et al.* (2016), found out that a large number of women needed training on management of storage pests, information about control of pests, poisoning precautions for control of rodents, information about the control of insect pest and time of harvesting and time of drying.

Patel *et al.* (2016), reported that the expressed training requirements by tribal agriculture women in maize production techniques were chemical control of integrated pest management, weed management, land management and identification of disease.

According to Patel *et al.* (2016), most of groundnut growers preferred training on control measures of diseases and pests (rank 1 and 2) and after that application of organic manure and fertilizers was given to 3rd and 4th rank respectively.

2.5. Profile of the respondents

2.5.1. *Age*

Chandawat (2002), concluded that most of the beneficiary and non-beneficiary respondents were under middle aged category and after that there were youth and aged groups respectively.

David (2005), in her study found out that 68.80 percent of the respondents were belonged to young age group of up to 35 years. About 30.40 percent of the respondents were found in the middle age group and only 0.80 percent of the respondents were belonged in the old age group i.e. above 50 year.

Meena and Bhati (2010) reported that, most of the KVK-trained farmers were belonged to middle and young aged category, indicating that agriculture operations were mostly done by the people of young and middle-aged people.

Singh *et al.* (2010), reported that in case of mushroom farming, the majority of respondents (96%) were 35 years or below. This means that the youth who are more energetic and are looking for job opportunities and were attending the trainings.

Jain (2013), stated that out of a total of 90 respondents, 53.33 percent were of young age group, 35.55 percent were middle-aged and 11.11 percent were of old age group.

Bhattu *et al.* (2015), observed that trainees with age below 40 years was less interested in dairy farming, whereas the age of 40 years and above was mainly entered into this venture.

Chavai *et al.* (2015), revealed that the majority (43.64%) of the respondents of post-harvesting techniques of turmeric were of 36 to 45 years of age who were classified as middle aged respondents.

Sabira (2016), reported that there were almost equal Categorization of respondents between the middle and elderly categories. The major reason for this situation can be that most of the respondents were women and they were members of Kudumbashree. Therefore, it was clear that young respondents were very negligible.

Gupta (2017), observed that of the total 120 respondents, the vast majority were (75.00%) of the young age group (up to 35 years), followed by middle aged (14.16%) and old age group (10.84%).

Kaur and Garg (2017), observed that more than half of the respondents of KVK Ferozepur were young aged.

Ranjan *et al.* (2017), found that most of the beneficiaries were middle-aged.

Singhal and Vatta (2017), found out from the study that most of the beneficiary respondents are middle-aged (47.22%) followed by young age group (34.72%) and the old age group (18.06 %). The tendencies were almost similar in case of non-beneficiary respondents.

Thakur (2017), in her study revealed that 46.70 percent of the rural women were middle-aged, followed by old age (30.00%) and young age (23.30%) respectively.

Ranjitha *et al.* (2018), reported that 62 percent of the training participants were young aged and followed by middle-aged (32%) and 6 percent was over 50 years of age.

2.5.2. *Gender*

Biswas *et al.* (2014), observed that the male respondents had higher levels of awareness and the ability to adopt best practices compared to female respondents.

2.5.3. *Educational status*

Chandawat (2002), found that 62.5 percent beneficiaries and 70.83 percent non-beneficiary respondents were illiterate, whereas only 27.5 percent beneficiaries and 23.33 percent of non-beneficiary respondents were literate. Only 10 percent beneficiaries and 5.83 percent non-beneficiaries were found to be educated.

David (2005), in her study revealed that maximum number of respondents (43.20%) had education till middle school level and 33.60 percent were educated up to primary school level, whereas 6.40 percent were had education above primary level. 1.60 percent educated in the higher secondary and 15.20 percent were illiterate. It has been clearly indicated that most respondents had educational status till middle school.

Sunil and Manjula (2009), reported that the higher education level of the respondents had worked as a catalyst to gain more knowledge which in turn would have influenced in adoption. Higher education bring the respondents in contact with the print media and thereby received more information as a result more adoption occurred.

According to Meena and Bhati (2010), 75 percent of the respondents were had primary and secondary level school education and educated farmers had a better understanding of recent techniques in agriculture.

Rathi (2015), found out that there was a positive and important relationship with the adoption of indigenous knowledge of livestock management and respondents' education.

Sabira (2016), reported that there were no illiterate respondents who participated in KVK training programs for the cultivation of cool season vegetables.

Respondents of higher education and college education were distributed almost evenly.

Kaur and Garg (2017), stated that about 92 percent of the respondents were educated and only 8 percent of the trainees were illiterate. Nearly 74 percent of the educated trainees had primary education and 14 percent had senior secondary level of education.

Singhal and Vatta (2017), revealed that both the beneficiaries (69.99%) and non-beneficiaries (79.99%) in agricultural production had higher level of education.

Thakur (2017), found out that most of the rural women were belonged to the middle education group and was followed by illiterate, primary education and higher education groups.

Ranjitha *et al.* (2018), reported that majority of trainees (66%) studied above matriculation.

2.5.4. *Family size*

David (2005), found that most of the respondents (67.20%) had five to eight members. 28.8 percent of the respondents family size was above eight members and only 4 percent of the respondents were had less than five members. This indicates that majority of the respondents had middle size family.

Yadav (2010), reported that 35.83 percent of the respondents had a middle size family, followed by the size of small family (34.17%) and the large family size (30%).

Jain (2013), concluded that the majority of respondents i.e. 60 percent had a medium-sized family structure.

According to Ranjan *et al.* (2017), most beneficiaries were from middle family size.

Thakur (2017), found out that majority of the rural women had medium size family followed by small and large size family.

Ranjitha *et al.* (2018), concluded that most of the trainees were from an atomic family with urban backgrounds.

2.5.5. *Annual Income*

David (2005), reported that the annual income of most respondents (52%) was medium that is from Rs.35, 001 and 60,000 and was followed by respondents who were earning less (24.8%), their annual income was up to Rs.35, 000. Whereas the 20.80 percent respondents had high annual income from 65,000 to 100,000. About 2.40 percent of the respondents had very high income with an annual income of more than Rs. 1, 00,000.

Sahu (2006), revealed that the maximum number of farmers (47.78%) and farmwomen (70 %) was from lower income group (<35,000).

Sunil and Manjula (2009), found no relation between adoption of respondents and annual income.

Jain (2013), concluded that the maximum percentage of respondents were from the middle to low annual income category.

Kumar *et al.* (2013), stated that there was a positive and important relationship with the adoption and annual income of the farmers and the majority had high annual income.

Studies conducted by Chavai *et al.* (2015), shows that there was a positive and important relationship with adoption and annual income of respondents and most of the adopters had middle level of annual income.

Sabira (2016), reported that the income of most respondents (57.50%) was more than 10,000 INR per year (high income group). About 30 percent of respondents earned less than 5000 INR per year (low income group). The

percentage of respondents (11.70%) was between 5001 and 10000 INR per year belonged to middle income group.

2.5.6. *Information seeking behaviour*

Purnima (2004) from her study pointed that majority (42.08%) of the respondents were under the category of medium information gathering and followed by the category of low level (31.67%) and high level (26.25%).

Sreenivasulu (2011) showed that majority of the (59.44%) FFS farmers were belongs to medium information seeking group followed by low (22.78%) and high (17.78%) levels.

Vijayakumar (2011) reported that 37.5 percent of the total silkworm seed producers were belonged to low level category. About 31.67 percent belonged to medium and 30.83 percent were in high level information seeking category.

Oluvasuzi (2014) found that a major portion of the respondents rely up on the innovators and early adopters for getting information on various agricultural practices and few use newspapers for getting information regarding organic cultivation practices.

Thakur (2017), found that most of the rural women have moderate information seeking behaviour followed by high and low information seeking behaviour categories.

2.5.7. *Innovativeness*

Sunil and Manjula (2009), found that the innovativeness of the respondents was positively associated with the process of adoption. Majority of the respondents (45.25%) were having medium level of innovativeness followed by high and low level category.

Sreenivasulu (2011) revealed that about half of the FFS farmers were had medium innovativeness character followed by the high level (26.67%) and low

level (23.33%) categories. Majority (43.89%) of the non-FSS farmers also belonged to medium innovativeness group followed by 32.22 percent with low level and 23.89 percent with high levels.

Raghav and Rao (2013), concluded that the innovativeness of the respondents helped them to gain greater awareness on scientific farming and ultimately brought positive effect in adopting technologies.

According to Sabira (2016), majority of the respondents were coming to the category of early adopters.

2.5.8. *Number of trainings attended*

Tomar (2005), observed that of the total participating respondents, 50 percent of the respondents were participated in 2 to 3 training whereas 30 and 20 percent of the trainees participated in more than 3 trainings and 1 training respectively.

Jain (2013), concluded that the majority of respondents i.e. 60 percent had only received one training.

Singh *et al.* (2016), revealed that 49.05 percent respondents were participated in only one training, about 28.84 percent respondents participated in 2 to 3 trainings and only 22.11 percent of respondents received 3 or more training from Krishi Vigyan Kendra. Therefore, it can be concluded that the maximum number of respondents were participated in only one training in Krishi Vigyan Kendra, Kandhamal.

Kaur and Garg (2017), revealed that most of the trainees received one or more training on various aspects.

Thakur (2017), observed that most of the rural women were attended less number of training followed by medium and higher number of training received group.

2.5.9. *Social participation*

According to David (2005), most of the respondents had no membership (41.60%) in any social organization and about 36.80 percent of respondents had membership in one organization. Whereas, 13.60 percent of respondents had membership in more than one organization, while only 8.5 percent of respondents were from executive / office-bearers category.

Jain (2013), concluded that maximum percentage of respondents (73.33%) had less social involvement.

Study of Kumar *et al.* (2013), found that majority of the respondents (64.44%) had a low level social participation, followed by respondents of middle (24.44%) and high level (11.11%) social participation.

According to the study of Raghava and Rao (2013), social participation has no significant relationship with adoption of technologies.

Chavai *et al.* (2015) said that most of the trainees (79.09%) were from middle level social participation and had positive and important relationships with adoption of technologies.

Sabira (2016), reported that about 9 percent of the respondents were members in more than four organizations. About 16 percent of the respondents were members in three organizations. Most of the respondents (44.20%) were members in two organizations and 30 percent of respondents were involved in the activities of any one of the organizations.

According to Thakur (2017), most rural women were found in the middle social participation category following low and high social participation group.

2.5.10. *Training rigour*

Sharma and Kushwah (2004), found that the usefulness of the training subject is very important aspect because it has a direct connection with the growth / updating of knowledge, learning of new skills etc.

According to Kunche *et al.* (2011), training effectiveness was the applicability of the knowledge gained by trainees in their performance. The key elements that determine the effectiveness of the training program were training environment, training design and development, training delivery, training implementation and training evaluation.

Reddy *et al.* (2012), determined and quantified training with four indicators such as the relevance of curriculum content, knowledge acquisition, skill improvement and usefulness of the subjects. The results show that most of the material in training was higher reciprocity with acquiring higher knowledge and lower skill improvement by trainees.

Barman and Kumar (2013), concluded that in order to make the training program effective, the instructor should provide the training process with facilitation skill such as observation, active hearing, question, feedback, decision making, problem solving, acceptance, paraphrasing and summaries.

Gill and Sharma (2013), evaluated the effectiveness of vocational educational training (VET) from the perspective of trainee using Kirkpatrick's model and was showed that assistant organizational environments, skill of the trainer, design, the content of the program, opportunity to apply the learning process, motivation of the participants were unimportant to training effectiveness.

Medhi *et al.* (2017), reported that KVK were provides trainings for farmers in different areas and was resulting in the acquisition of knowledge and skills of the farmers, level of adoption, productivity, economic status, confidence, social recognition and material, shows the usefulness of the training programme.

Bathla *et al.* (2018), observed that the training was found 100 per cent need based. About 94.4 percent of the trainee said that timings was sufficient to acquire new skills while others (5.6%) was found timing was insufficient.

2.5.11. *Scientific orientation*

Raghava and Rao (2013), found that scientific orientation is the estimated variable for the development of entrepreneurship of trained farmers.

Tomar (2005), showed that the maximum number of respondents (participating and non- participating) was seen in the middle level of scientific orientation. About 37 percent of participating respondents had high level scientific orientation, compared to 3.33 percent of non-participating respondents.

2.5.12. *Risk orientation*

Goswami *et al.* (2012), reported that most of the respondents who had adopted the innovative technology were medium (55.00 %) risk takers.

According to Kumar *et al.* (2013), most of those who adopted chick pea farming technology had moderate (64.44%) risk orientation followed by low and high level risk orientation (24.44 and 11.12%) respectively.

Raghava and Rao (2013), said that the risk orientation nature of the respondents helped to combat the risk involved in the practice of new technology despite its consequences and helped them to gain knowledge of technology, which eventually resulted in positive and significant adoption to be happened.

Sabira (2016), observed that KVK Trissur had made substantial efforts to provide the necessary inputs for transplanting and bagging to the respondents with technical assistance through training interventions. Careful decision of the KVK Subject Matter Specialist (SMS), in adopting cold weather vegetables as well as encouraging respondents to set up seedling units, supported the respondents in avoiding risks in the initial stages of adoption.

Singh *et al.* (2016), revealed that 54.81 percent of the total respondents prefer lower risk, 32.69 percent respondents take moderate risk and only 12.5 percent were able to take higher risk. Therefore, it can be concluded that majority of the respondents (54.81%) fall under the lower risk category.

2.5.13. *Level of satisfaction*

Singh *et al.* (2015) revealed that higher level satisfaction was observed among 58.2 per cent of the respondents for boarding, 66.2 per cent for lodging, 52.9 per cent for physical facilities in class room, 77.2 per cent in exposure visit, 71.9 per cent for KVK's resource person, 61.8 per cent for outside resource persons and 75.3 per cent for availability of reading materials for the trainee participants.

Sabira (2016), showed that about 62.5 percent of the respondents of KVK were fully satisfied with the adequacy of training interventions to adopt cool season vegetables. Nearly 37.50 percent respondents said that KVK, Trissur will have to make more efforts to achieve adequacy in training interventions.

2.6. Constraints faced and suggestions given by the trainees

Sharma and Kushwah (2004), observed that majority of the respondents opined that each training programme must start with field visit as the most important measure for improving the training programme and ranked as first. The other measures suggested by the extension officers are during training programme, printed information/ material about the subject matter shall be distributed (ranked II). Training programme at KVK should conducted by external experts on the subject together with regular KVK trainers for better exposure and experiences, each training programme must start with skill training and trainers must use audio-visuals and other technical aids during the training programme to make the training session interesting.

David (2005) reported that the major suggestions offered by the trainees to overcome the problems associated with the training programmes of home-science

revealed that majority of the respondents (72.80%) suggested to increase the duration of the home-science training programme followed by 69.60 per cent of the trainees suggested that first aid facility should be increased in the training centre and 68.00 per cent of them suggested that the facilities of practical instruments, teaching materials should be increased.

Singh (2005) observed that most important constraints experienced by the trainees was short duration of training programme (75.00%), lack of library facilities (65.00%) ,lack of proper transportation facilities (59%) and lack of adequate accommodation (58%) at the training centre.

Tomar (2005), found that the participated respondent's required more practical demonstrations as part of every trainings. Categorization of inputs at end of training, self-employment generation trainings, need based training programmes and more off-campus trainings were the other important suggestions in order.

Gupta (2014), showed that due to lack of resources, inputs, motivation and recognition, the farm women do not participate in the effective implementation of KVK programmes. Lack of interpersonal relationships coupled with lack of transport and training facilities, lack or leadership and emphasis on table work lead to ineffective programme implementation.

Singh *et al.* (2015), found that 54.4 per cent participants required theory and practical aspects in equal proportion, 29.5 per cent suggested that duration of training programmes should be of at least one week, whereas 63.9 per cent participants suggested for power point presentation and 63.8 per cent also suggested that proper electricity supply must be ensured during the trainings.

Malabasari and Hiremath (2016) reported that majority of the trainees stated lack of adequate time (47.24 %) was their main constraint followed by lack of financial assistance (36.22%), lack of guidance (13.39%), non-availability of raw materials (11.81%), non-co-operation and lack of family encouragement (11.02%), lack of market facility (07.87%) and high cost of raw materials (03.14%) were other reasons in adoption of home science technologies.

Sabira (2016), observed that the major constraints faced by cool season vegetable farmers include high cost of production compared to other vegetables, lack of timely availability of seeds/seedling, lack of availability of fertilizers and organic manure, poor quality of onion seedlings and the lack of technical support in required time.

Oraon *et al.* (2018), concluded that unavailability of labour, high cost of hybrid seeds, lack of knowledge about plant protection measure and manipulation of price by middlemen were perceived to be important constraints and which create problem for the adoption of improved production technologies of tomato cultivation.

Ranjitha *et al.* (2018), observed that non remunerative price (42%), non-availability or poor quality of spawn (38%) lack of proper infrastructure (20%) were the major problems faced by the mushroom growers.

METHODOLOGY

III. METHODOLOGY

This chapter deals with the design and procedures followed in the research. The diverse features of this chapter have been conferred under the consecutive headlines:

3.1 Research design

3.2 Locale of the study

3.3 Selection of trainees

3.4 Operationalization of variables and their measurements

3.5 Method of data collection

3.6 Data analysis and statistical measures

3.7 Hypothesis for the study

3.1 RESEARCH DESIGN

Research designs are there to facilitate the researcher to answer research questions accurately, validly, economically and objectively. According to Kerlinger (2014) "Research design is the plan, structure and strategy of investigation formulated to acquire answers to research questions and to control variance."

Ray and Mondal (2011) stated that, in ex-post-facto research, the investigator has no direct control over the independent variables whose reflection occurs first and then their effects become pronounced. It is a sort of research in which the investigator makes an attempt to acknowledge an effect which has previously occurred to its probable causes. The effect becomes the dependent variable and the probable causes are the independent variables.

3.2 LOCALE OF THE STUDY

The current study was conducted at Krishi Vigyan Kendra Kollam under the jurisdiction of Kerala Agricultural University and Krishi Vigyan Kendra Thiruvananthapuram which is a NGO KVK under Mitraniketan.

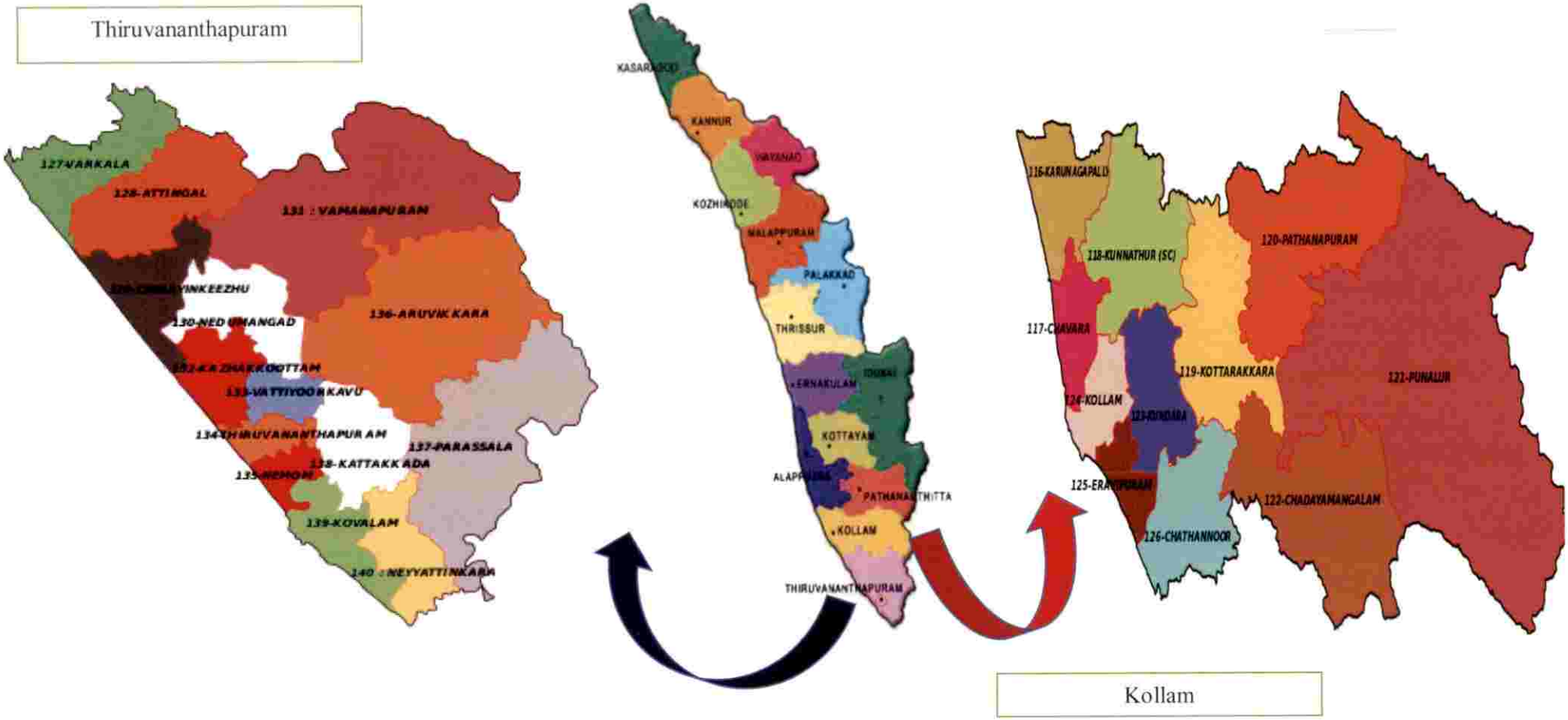


Plate 1: Location of the study

3.2.1 Selection of vocational trainings

A comprehensive list of all the vocational trainings organized by KVK Kollam and KVK Thiruvananthapuram was prepared in consultation with the Krishi Vigyan Kendras personnel's and going through the records mandated at respective KVKs. There were more than ten vocational trainings which were conducted by both the KVKs during the last (2012-2017) five years. The common trainings with more number of trainees were selected for the study and the selected vocational trainings included friends of coconut, training on agro-machinery and other plant protection equipment's, mushroom cultivation, organic input production and processing and value addition techniques.

3.3 SELECTION OF TRAINEES

The sample of the study comprised of 150 trainees i.e., 75 trainees each from KVK Kollam and KVK Thiruvananthapuram. From both the KVKs, five common trainings with maximum number of trainees were selected and from each of these trainings fifteen trainees were selected and was shown in Fig.1. Caution was taken to avoid the repeated selection of same trainee who had participated in all the five selected trainings.

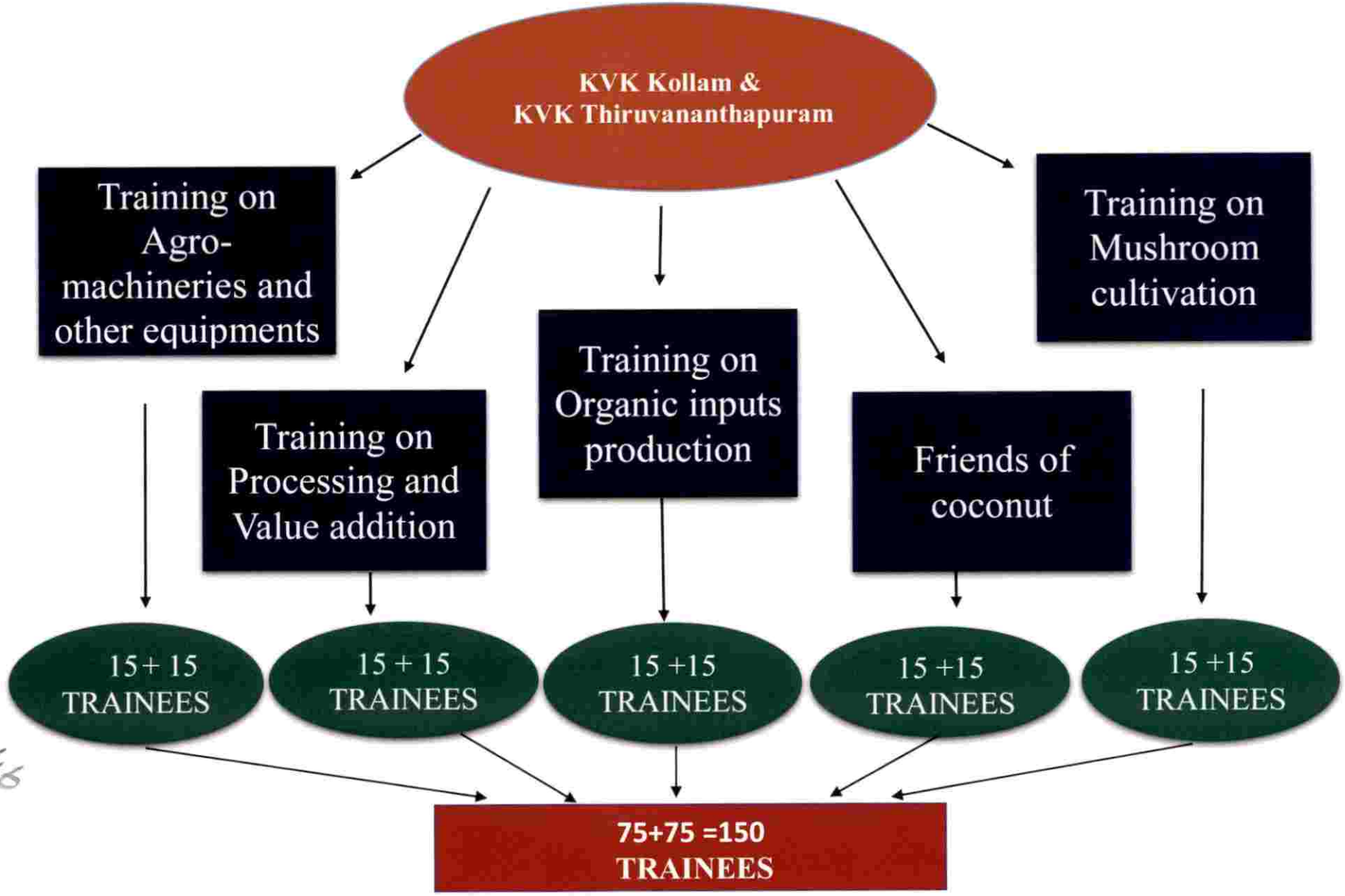
3.4 OPERATIONALISATION OF VARIABLES AND THEIR MEASUREMENTS

3.4.1 Dependent variables

The dependent variables selected for the study includes rate of adoption and attitude of the trainees.

3.4.1.1 Rate of adoption of technologies acquired in vocational trainings

In the current study adoption rate indicates the extent to which the trainees implemented the different practices and technologies acquired through vocational trainings they had participated.


KVK Kollam &
KVK Thiruvananthapuram
Training on Agro-machineries and other equipments
Training on Processing and Value addition
Training on Organic inputs production
Friends of coconut
Training on Mushroom cultivation
15+ 15 TRAINEES
15 + 15 TRAINEES
15 +15 TRAINEES
15 +15 TRAINEES
15 +15 TRAINEES
75+75 =150 TRAINEES

Adoption of technologies for each of the listed trainings were measured on a two point continuum (Appendix 2) with scores as follows: Fully adopted (2) meaning the technology was adopted in its totality; Not-adopted (score-1). (Partial adoption and discontinuance was also be included in the not- adopted category). The range of score that a trainee could get ranges from four to eight. The trainees were categorized into low, medium and high adoption group based on the adoption index. Adoption index was calculated using the following formula:

$$\text{Adoption Index} = \frac{\text{Total score obtained by an individual trainee}}{\text{Maximum obtainable score}} \times 100$$

3.4.1.2 Attitude of trainees towards training programmes attended

Attitude has been stated as the degree of positive or negative effect associated with some psychological object. Attitude in this study refers the feeling and reaction of the trainees towards the services and activities of Krishi Vigyan Kendra.

An arbitrary scale consist of 15 statements was used for the study. Out of which eight were positive and seven were negative statements (Appendix 2). Responses of trainees were marked on a four point continuum (Strongly agree-4, Agree-3, Disagree-2, and Strongly disagree-1). Score ranged from 15-60 and was grouped into three categories based on the mean value. Attitude towards each of the statement was calculated and ranked using the mean weighted score (MWS). The mean weighted value ranges from 1-4 and based on this value evaluation was carried out.

Positive statement	**Evaluation criteria**	**Negative statement**
Strongly disagree	MWS below 1	Strongly agree
Dis agree	MWS from 1 to 2	Agree
Agree	MWS from 2 to 3	Dis agree
Strongly agree	MWS more than 3	Strongly disagree

3.4.2 Independent variables

A record of 30 independent variables supposed to have close interrelation with the dependent variables were spotted after pervasive review of literature and consultation with extension adepts. The identified variables along with their operational definitions and objectives of the study were sent to 15 judges comprising of subject matter specialists, extension scientists and other extension experts in order to evaluate the relevancy of the variables in this field of study. For judges' rating, a form was created, where judges were requested to choose one choice most relevant, relevant, less relevant and not relevant and there was an additional column for other suggestions (Appendix 1). The form sent to each judges separately for getting their ratings. Finally the variables were chosen based on relevancy score. Those variables getting higher score than the mean score were selected for the study.

Table 1. Independent variables with their measurements

Sl. No	Independent variable	Scoring procedure adopted
1	Age	Census report, 2011
2	Gender	Male/ Female
3	Educational status	Scoring procedure used by Anupama (2014) with slight modification
4	Family size	Number of family members living together
5	Annual income	The total gross income in rupees earned by the family

6	Information seeking behaviour	Scale used by Manaki (2005) was modified and used
7	Innovativeness	Scale developed by Selvanayagam (1986) was used
8	Number of trainings attended	Arbitrary scale was developed for the study
9	Social participation	Scoring procedure developed by Fayas (2003) was used
10	Training Rigour	Scale developed by Remya (2015) with slight modification was used
11	Scientific orientation	Arbitrary scale was developed for the study
12	Risk orientation	Scale developed by Supe (1969) was used with slight modification
13	Level of satisfaction	Arbitrary scale was developed for the study
14	Training need	Arbitrary scale was developed for the study

3.4.2.1 Age

Operationalized as the chronological age of the respondent in completed years at the time of the study. Categorization of trainees was done into three age groups based on the census report, 2011.

Sl. No:	**Age group**	**No. of years**
1	Young	Less than 35
2	Middle age	35-55
2	Old age	More than 55

The Categorization of trainees based on age was then classified as frequency and percentage.

3.4.2.2 Gender

Gender described as those relative status of men and women in the society.

3.4.2.3 Educational status

The extent of literacy possessed by an individual trainee refers to their educational status. The scoring procedure followed by Anupama (2014) was used with slight modification. The Categorization of trainees based on educational status was classified as frequency and percentage.

Sl.no	Category	Score
1	Primary school	1
2	High school	2
3	Higher secondary	3
4	College education	4

3.4.2.4 Family size

Family size is defined as the total number of members in the family of trainees at the time of investigation. The family size was categorized as small, medium, large and very large. The Categorization of trainees based on family size was classified in terms of frequency and percentage.

Number of members	Category	Score
Up to 2	Small	1
3 to 4	Medium	2
5 to 6	Large	3
>6	Very large	4

3.4.2.5 Annual income

Annual income can be operationalized as the total income obtained through agriculture and allied sectors in one year expressed in rupees. It was collected by

directly asking the respondents. The trainees were categorized according to the mean value obtained.

Sl. No.	Category	Score
1	Low (10,000-50,000)	1
2	Medium (50,000-1,00,000)	2
3	High (More than 1,00,000)	3

3.4.2.6 Information seeking behaviour

The channels or sources from which the trainees receive information concerning training and other aspects. The scoring procedure of Manaki (2005) with slight modification was used in this study. The reactions were collected on a four point continuum, with score ranging from 4 to 1 for 'regularly' to 'never'. Responses category and scores assigned were as follows. The mean weighted score (MWS) of each of the information sources was calculated and ranking was done using the MWS.

	Sources	Regularly (4)	Once in fortnight (3)	Whenever problem arise (2)	Never (1)
Media Sources	Television				
	Radio				
	News papers				
	Agri. Literatures				
Formal Sources	Scientists of KAU/KVK				
	BDO, AEO				
Informal Sources	Family members				
Any other source					

3.4.2.7 Innovativeness

Innovativeness is referred as the degree to which an individual is relatively earlier in adopting new ideas than other members of the social system. This variable was measured using the method developed by Selvanayagam (1986).

The trainees were asked to when he/she would like to adopt the improved practices and technologies.

Sl. No	Statements	Score
1	As soon as it is brought to knowledge	3
2	After I have seen other farmers tried successfully in the farm	2
3	I prefer to wait and take my own time	1

The Categorization of trainees based on innovativeness was classified in terms of frequency and percentage.

3.4.2.8 Number of trainings attended

Number of trainings attended has been operationalized in this study as the total number of training undergone by the trainees in agricultural activities from different institutes. The trainees had been categorized into three, based on the average of number of trainings participated by the trainees.

Sl.no	Categories	Training attended
1	Low	Less than 2
2	Medium	2-4
3	High	≥ 5

3.4.2.9 Social participation

Social participation was operationalized as the nature of participation of trainee in various activities of different social organisations. The scoring procedure

of Fayas (2003) with slight modification was used in the current study. Social participation was divided into two sections:

i. Involvement in organisations
ii. Frequency of attending the meetings and other activities of organisation

The scoring pattern followed was given below:

Involvement in organisations

Sl. no	Category	Score
1.	Member in one organisation	1
2.	Member in two or more organisation	2
3.	Office bearer	3

Frequency of participation

Sl. No	Category	Score
1.	Never attending any meeting	1
2.	Sometimes attending meeting	2
3.	Always attending meeting	3

The total score for social participation was obtained by multiplying across the scores of each items of these two components and the score ranges from 9 to1. Categorisation of the trainees was done by taking the average value obtained.

3.4.2.10 Training rigour

The amount of endeavor taken by the training organizers to assure that all pliable elements of the learning situation are fine tuned to maximize training effectiveness. Training rigour was calculated as the consolidated score on a four point continuum (Strongly disagree-1, Disgree-2, Agree-3, Strongly agree-4). The scoring pattern followed by Remya (2015) was used with slight modification. Here the score ranges from 6 to 24 and the categorization was done using the mean value.

Sl.no	Statements	Strongly agree 4	Agree 3	Disagree 2	Strongly disagree 1
1	Training content was good and effective				
2	Trainers have immense knowledge in the field of study				
3	Quality of instruction was good				
4	Helps to meet the training objectives				
5	Class participation and interaction was good				
6	Adequate of time was there for discussion and clearing of doubts				

3.4.2.11 Scientific orientation

The degree to which a farmer trainee was oriented towards the scientific methods in farming and decision making was termed as scientific orientation. The scale consist of four positive and two negative statements. Responses were marked on a four point continuum (Strongly agree-4, Agree-3, Disagree-2, and Strongly disagree-1). Score ranges from 6-24 and based on the mean value obtained, categorization of trainees was done into low, medium and high.

	Statements	SA	A	DA	SDA
1	New methods of farming give better results than the old methods				
2	The way of farming by our fore fathers is the best way of farming today				
3	Even the farmers with a lot of farming experience should use new methods of farming				

4	A good farmer should experiment with new methods of farming				
5	Since it takes time for farmer to learn new methods in farming it is not so worthy				
6	Traditional methods of farming have to be changed in order to raise the living of the farmer				

3.4.2.12 Risk orientation

Risk orientation was operationalized as the degree to which the trainees are oriented towards confronting uncertainty and risk associated with the adoption of new technologies and ideas. The rating scale of Supe (1969) with slight modification was chose for the measurement. The scale consist of three positive and two negative statements and it was on a four point continuum (Strongly agree-4, Agree-3, Disagree-2, Strongly disagree-1). Score ranges from 5-20 and based on the mean value obtained, categorization of trainees was done into low, medium and high.

Sl. No:	**Statements**	**SA**	**A**	**D**	**SDA**
1	Trying entirely a new technology involves high risk				
2	It is good for a farmer to take risk when there is a possibility that the change will give a high level of success.				
3	A farmer who is willing to take greater risk than the average farmer usually does better.				
4	It is better to go with newer technologies, it helps to avoid risk				
5	Even though some practices are not traditionally practiced, it is worth trying to get profit and satisfaction				

3.4.2.13 Level of satisfaction

Operationally defined as the degree to which the trainees feel satisfied with the services and activities of Krishi Vigyan Kendra. An arbitrary scale was used for the measurement and was on a four point continuum (Extremely satisfied-4, Satisfied-3, Not satisfied -2, Dissatisfied -1). The score ranges from 6-24 and the trainees were categorized into low, medium and high category based on the mean value obtained.

Sl. No.	Statements	ES	S	NS	DS
1	Training was need based				
2	Satisfaction on training content				
3	Satisfaction on trainers knowledge				
4	Satisfaction on approach of trainers				
5	Satisfaction on duration of training				
6	Satisfaction on infrastructure availability				

3.4.2.14 Training need

In order to identify the training needs of the trainee trainees, a worthy plan was developed by enlisting all the possible trainings based on discussion with KVK personnel's and also by extensive review of literature. A four point rating scale containing most essential-4, essential-3, least essential-2 and not essential-1 was employed to assess the training needs. The total weighted score of each listed training was calculated and ranked to find the most essential training required for the trainees.

3.4.3 Constraints faced by the trainees of Krishi Vigyan Kendra

To identify the various constraints faced by the trainees, a well-defined schedule was developed by enlisting all the viable constraints based on discussion with trainees and through data obtained from review of literature. A table was provided in the interview schedule for ranking the constraints in the order of challenging nature of the constraint. The weighted score for each of the constraint was calculated to find out the prominent constraints faced by the trainees.

3.5 METHOD OF DATA COLLECTION

The data which were relevant for the study was collected from the trainee trainees with a pretested well-structured interview schedule prepared for the current study. Personal interview was carried out by the researcher for data collection and was recorded by the researcher herself. Thereafter the collected data were exposed for statistical analysis and interpretation in order to obtain meaningful conclusions

3.6 ANALYSIS OF DATA AND STATISTICAL MEASURES

The collected data were processed, tabulated and interpreted. The statistical tools used in the study are given below:

Frequency and Percentage Analysis:

Based on the frequency and percentage Categorization of trainees simple comparisons were made.

Mean Score:

Mean score was obtained by dividing the total score of each statement by total number of trainees.

$$\text{Mean Score} = \frac{\text{Total score for each statement}}{\text{Total number of trainees}}$$

Correlation Analysis:

Correlation analysis was done in order to find out the relationship between the dependent and independent variables. The significance of correlation coefficient was tested at five per cent and one per cent level of significance.

Weighted Mean:

Weighted mean was obtained by multiplying the weight associated with a particular event with its quantitative outcome and then summing all the products together.

Mann-Whitney Analysis:

Mann-Whitney, the non-parametric test is used to determine whether two independent samples selected from the populations having the same Categorization. In the present study Mann-Whitney test was done to find out the adoption and attitudinal difference of trainees from KVK Kollam and KVK Thiruvananthapuram.

Adoption Index:

Adoption index was calculated using the following formula:

$$\text{Adoption Index} = \frac{\text{Total score obtained by an individual trainee}}{\text{Maximum obtainable score}} \times 100$$

3.7 HYPOTHESIS FOR THE STUDY

Hypothesis is a hunch, guess, imaginative idea which becomes the basis for an action or investigation.

In the view of deliberations made in the chapter of review of literature and prospective arguments that could arise out of the study, the following hypotheses were set up and investigation was made to test these hypotheses.

H_1: There exist no significant relationship between profile characteristics of the vocational trainees and rate of adoption of technologies.

H_2: There exist no significant relationship between profile characteristics of the vocational trainees and their attitude towards training programmes attended.

H_3: There exist no significant difference between the rate of adoption of technologies between the vocational trainees of KVK Kollam and KVK Thiruvananthapuram.

H_4: There exist no significant difference between the attitude of vocational trainees of KVK Kollam and KVK Thiruvananthapuram towards the training programmes attended.

For testing the hypotheses, suitable analysis like Correlation and Mann-Whitney -U tests were done.

RESULTS AND DISCUSSION

IV. RESULTS AND DISCUSSION

This chapter is meant to spotlight the research findings obtained through analysis and interpretation of data. The discussions of the results are presented as follows:

4.1 Inventorization of vocational trainings conducted at KVK Kollam and KVK Thiruvananthapuram

4.2 Rate of adoption of technologies acquired during vocational trainings by the trainees

4.3 Comparative analysis of rate of adoption of technologies

4.4 Attitude of trainees towards training programmes attended

4.5 Profile characteristics of trainees

4.6 Relationship of profile characteristics of vocational trainees with rate of adoption and attitude

4.7 Training needs of trainees of KVK Kollam and Thiruvananthapuram

4.8 Constraints faced by the vocational trainees of KVK Kollam and Thiruvananthapuram

4.9 Validation of hypothesis

4.1 INVENTORIZATION OF VOCATIONAL TRAININGS CONDUCTED AT KVK KOLLAM AND KVK THIRUVANANTHAPURAM

Krishi Vigyan Kendra, the grass root level organisations were mainly meant for providing all kinds of support to the farmers, farm youth and farm women in the rural areas. To conduct short and long term vocational trainings in agriculture and allied sectors is one of the important mandates of Krishi Vigyan Kendras.

KVK Kollam and Thiruvananthapuram have an excellent track record for conducting vocational trainings. These two Krishi Vigyan Kendras have organized

vocational trainings in diversified topics in the last five years (2012-2017). The trainings conducted were listed below:

Sl. No.	**Vocational trainings conducted at KVK Kollam**	**Vocational trainings conducted at KVK Thiruvananthapuram**
1	Value addition and post-harvest technology	Tissue culture
2	Nursery management & ornamental gardening	Livestock and fisheries
3	Mushroom cultivation &spawn production	IPM
4	Computer application	Dairy management
5	Apiculture	PHT and value addition
6	Terrace farming and integrate farming system	Friends of coconut
7	Hi-tech seedling production	Tailoring, stitching, embroidery, dyeing
8	Organic inputs & bio control agents	Rural crafts
9	Friends of coconut	Commercial vegetable production
10	Micro nutrient deficiency management	Nursery management and grafting techniques
11	Integrated Pest Management	Organic input production & bio control agents
12	Seed and seedling production	Mushroom cultivation
13	Open precision farming	Farm machinery
14	Plant propagation technique	
15	Agro machinery	

At KVK Kollam vocational trainings were organised under 15 topics reaching 1544 trainees while during the same period KVK Thiruvananthapuram conducted vocational trainings on 13 topics training 1152 trainees. Out of these training programmes five common vocational training programmes having maximum number of participants were selected for the study purpose. Details as follows:

Table 2. List of selected vocational training programmes

Sl. No.	Title of vocational trainings	Total number of participants	
		Kollam	Thiruvananthapuram
1	Friends of coconut	626	441
2	Agro-machinery and other plant protection equipment's	61	96
3	Mushroom cultivation	98	176
4	Organic input production	409	128
5	Processing and value addition techniques	42	138
	Total	**1236**	**979**

4.2 RATE OF ADOPTION OF TECHNOLOGIES ACQUIRED DURING VOCATIONAL TRAININGS BY THE TRAINEES

One of the mandated activities of Krishi Vigyan Kendra is organisation of training programmes. These training programmes are organised to impart awareness and skill to the farm men and women, rural youth and extension functionaries. The farmers not only required the understanding and knowledge of the technologies, but also more skills in complex agricultural operations for adoption of the technologies. Adoption is the process of making the full use of an innovation and it may cause some beneficial changes in the living of the adopter. While rate of adoption refers the relative speed with which an innovation is adopted by the members of a social system. It was measured as the number of individuals

who adopt a new idea in a specified period and was a numerical indicant to find the steepness of the adoption curve for the innovation of a technology.

4.2.1 Categorization of trainees based on rate of adoption

To get an overall view of the rate of adoption of trainees, they were categorized into three categories, low adoption, medium adoption and high adoption based on the adoption index score.

Table 3. Categorization of trainees according to rate of adoption

N=150

Sl. No:	Category	Frequency	Percentage
1	Low (50-66)	47	31.33
2	Medium (67-83)	74	49.33
3	High (84-100)	29	19.33

From the Table 3 and Fig.2 it was clear that, of the total trainees nearly half of the trainees belonged to the category of medium level adopters followed by the low level adopter category. Nearly twenty per cent of the trainees were having high level adoption. Each vocational trainings comprised of different component technologies and some of the components were more relevant and needed by the farmers. These technologies were being adopted fully while others were adopted partially or not at all. Discontinuance and replacement of technologies were another factor for medium to low level adoption by trainees. Even though the trainings helped in rapid transfer of technology, the factors like income and the risk associated with the adoption of new technologies made them reluctant to adopt or to discontinuing the technology. The results are on par with the findings of Medhi *et al.* (2017) who reported that over half (50.83%) of the trainees had medium level of adoption followed by low (42.50%) and only 7.50 per cent were found in the high adoption category.

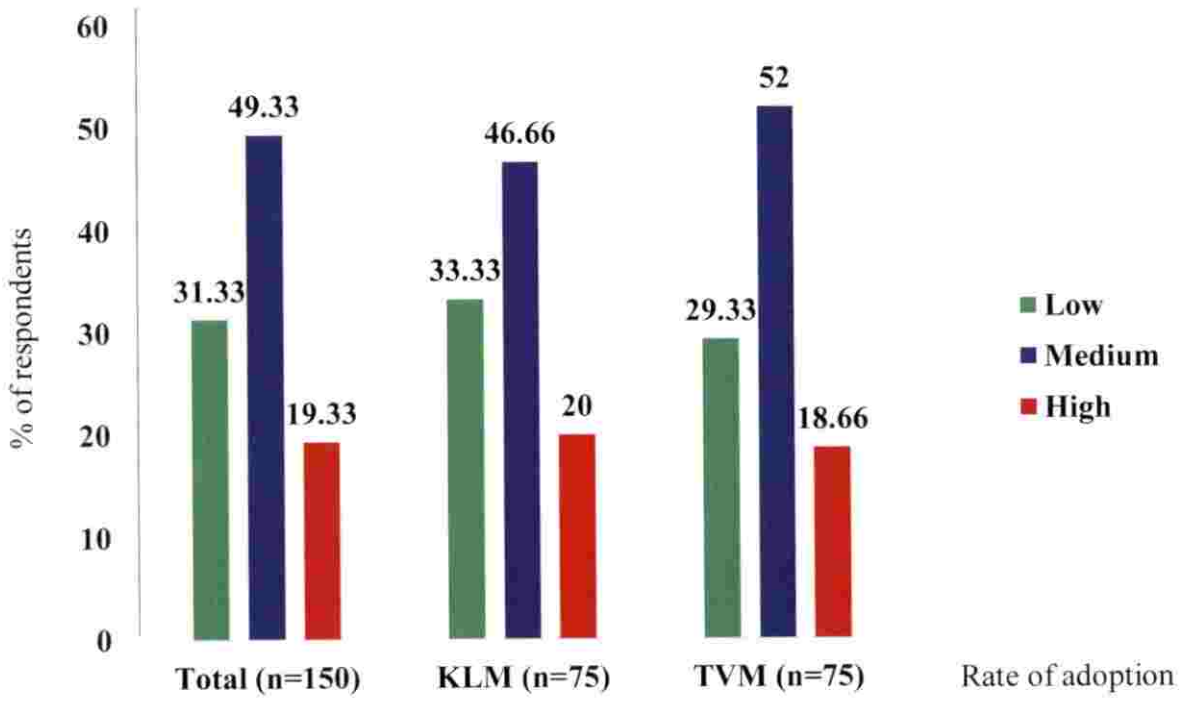


Fig.2. Distribution of trainees based on rate of adoption (n = 150)

It is further perceived from the current study that majority of the trainees (80.66%) had medium to low rate of adoption of technologies acquired through vocational trainings. Most of the trainees who had attended the training programmes were marginal farmers and were having low to marginal rate of adoption. Here most of the trainees belonged to low to medium income category and are reluctant to adopt new technologies in order to avoid the risk associated with the innovations. The findings are also fitting to the findings of Patel and Vejapara (2016).

4.3 COMPARATIVE ANALYSIS OF RATE OF ADOPTION OF TECHNOLOGIES

Vocational trainings were conducted in order to improve the knowledge, skill and livelihood security of the farming community and was a good tool for the dissemination of these technologies and thereby the adoption of technologies. Krishi Vigyan Kendra Kollam and Thiruvananthapuram had organized different vocational trainings in agriculture and allied fields in last five years viz. 2012-2017.

Table 4. Categorization of trainees of KVK Kollam and Thiruvananthapuram based on rate of adoption

N=150

Sl. No:	Category	Kollam n=75		Thiruvananthapuram n=75	
		F	%	F	%
1	Low	25	33.33	22	29.33
2	Medium	35	46.67	39	52
3	High	15	20	14	18.67
TOTAL		75	100	75	100

The Table 4 reveals that majority of the trainees of KVK Kollam (46.66%) and Thiruvananthapuram (52%) were coming under the category of medium level adoption. About 33.33 per cent trainees of KVK Kollam and 29.33 per cent trainees

of KVK Thiruvananthapuram were coming under the category of low adoption. Which indicates that nearly one third of the total trainees of both the KVKs were belonged to low adoption category. Under the higher adoption category 20 per cent of the trainees of Kollam KVK and 18.66 per cent trainees of Thiruvananthapuram KVK were belonged.

4.3.1 Training wise rate of adoption of technologies

Five trainings that were common for both KVK Kollam and Thiruvananthapuram with more number of trainees were selected for the study and it was comprised of friends of coconut, agro machinery and other equipment's, mushroom cultivation, organic input production and value addition and processing techniques.

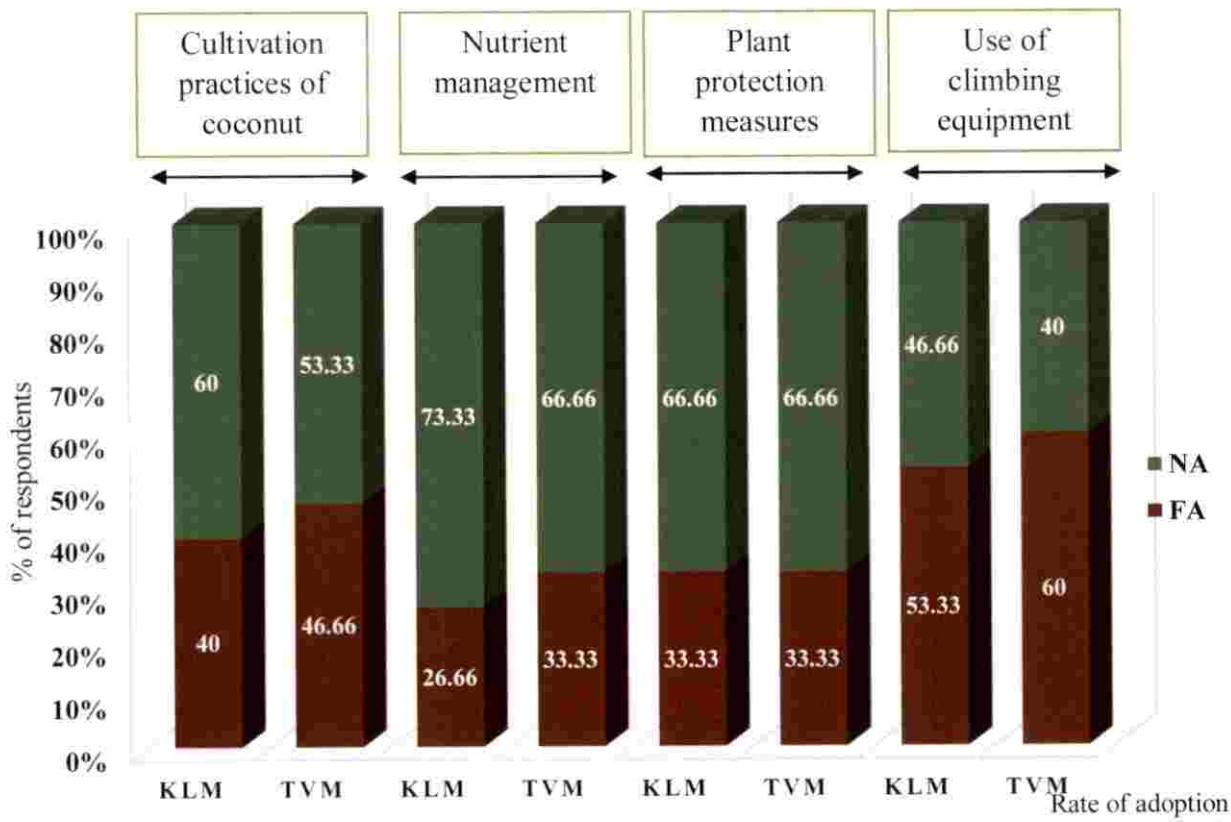
4.3.1.1 Rate of adoption of technologies under Friends of coconut

Table 5. Rate of adoption of technologies under Friends of coconut

n=15

Training components	Adoption (%)		Non-adoption (%)	
	KLM	TVM	KLM	TVM
Cultivation practices of coconut	40	46.67	60	53.33
Nutrient management of coconut	26.67	33.33	73.33	66.67
Plant protection measures	33.33	33.33	66.67	66.67
Use of climbing Equipment	53.33	60	46.67	40

From Table 5 and Figure 3 it was clear that in friends of coconut out of the four components two components viz. cultivation practices (land preparation, spacing) and use of climbing equipments were comparatively adopted by more number of the trainees of Kollam and Thiruvananthapuram when compared with other two components of the training. Most of the trainees of both KVK Kollam (73.33%) and KVK Thiruvananthapuram (66.66%) had discontinued or were not adopting the recommended practices of nutrient management and same is perceived for plant



NA- Non adoption **FA- Full adoption**

Fig.3. Distribution of trainees of friends of coconut based on rate of adoption (n=15)

protection measures (66.66 per cent). This might be due to the fact that most of the trainees who participated in the Friends of Coconut training programmes were coconut palm climbers who had participated in the training programme to reduce their drudgery. Hence their only objective was acquire skill in use of climbing devices. They were trained in all the aspects of coconut cultivation which had no practical utility for them.

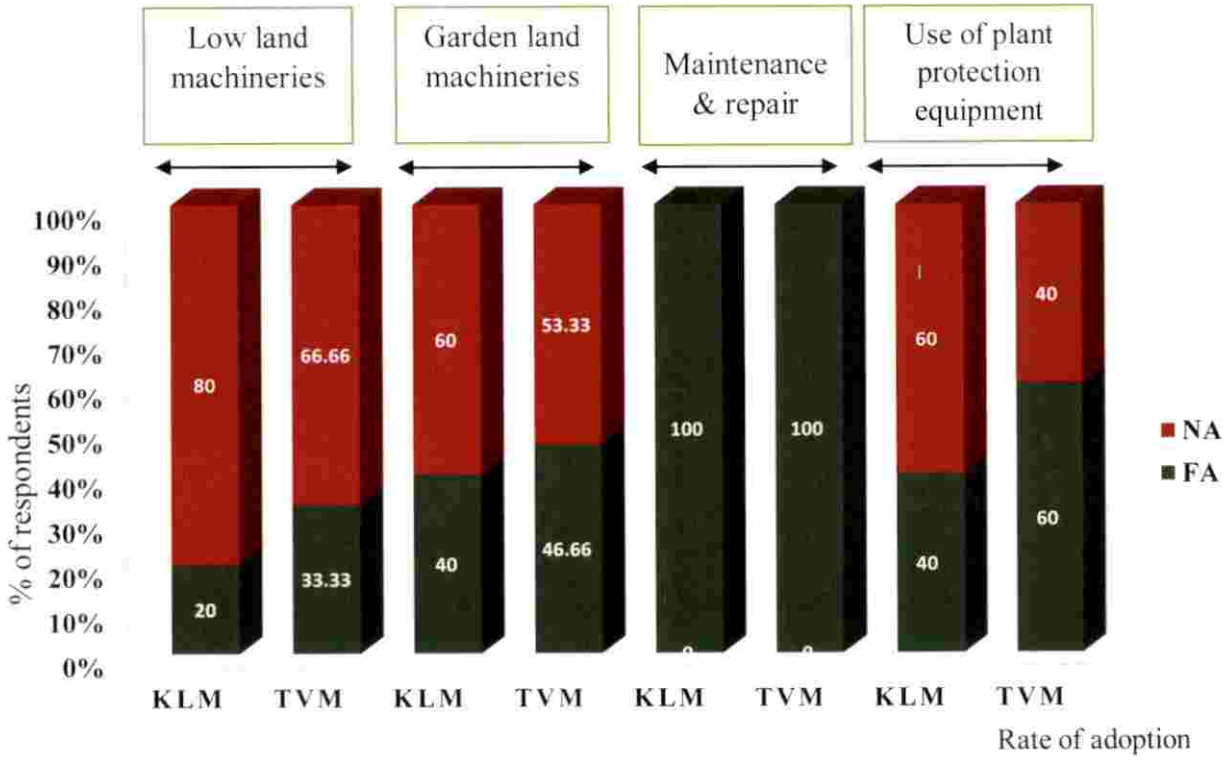
4.3.1.2 Rate of adoption of technologies under Agro machineries and other plant protection equipments

Table 6. Rate of adoption of technologies under Agro machineries and other plant protection equipment's

n=15

Training components	Adoption (%)		Non adoption (%)	
	KLM	TVM	KLM	TVM
Low land machineries	20	33.33	80	66.67
Garden land machineries	40	46.67	60	53.33
Maintenance & Repair	0	0	100	100
Use of sprayer & other plant protection equipments	40	60	60	40

Table 6 and Figure 4 revealed that Agro - machineries for garden lands showed a higher rate of adoption in comparison to low land machineries irrespective of the location. This may be due to the reason that there is a reduction of low land farming activities compared with the garden lands in the recent years. None of the trainees were adopting the maintenance skills. The maintenance and repairing of agro machineries required more technical knowledge and most of the trainees find difficulty in it. More than half (60%) of the trainees of KVK Thiruvananthapuram were using plant protection equipment's whereas, 40 per cent of KVK Kollam trainees were using plant protection equipments. There was no significant



NA-Non adoption **FA- Full adoption**

Fig.24. Distribution of trainees of agro-machinery and other plant protection equipment's based on rate of adoption (n=15)

difference in the rate of adoption of agro-machineries and equipments between the KVKs.

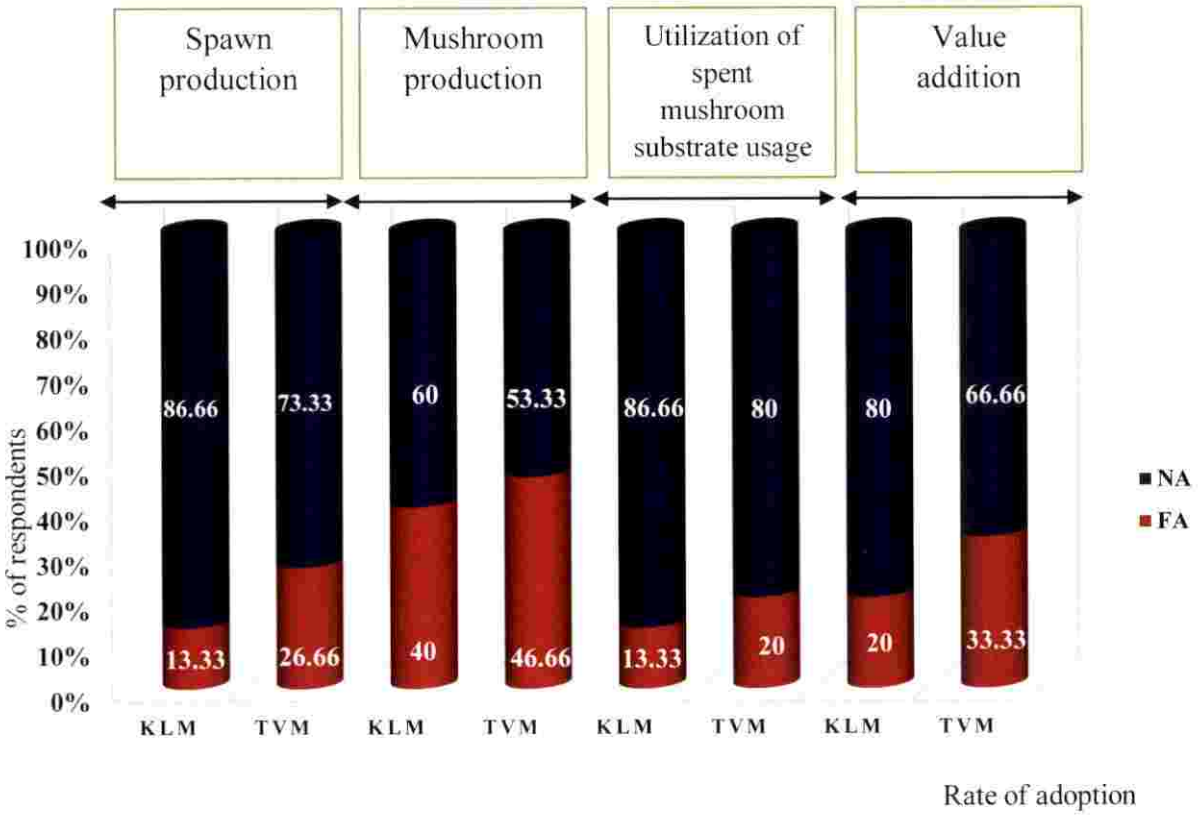
4.3.1.3 Rate of adoption of technologies under Mushroom cultivation

Table 7. Rate of adoption of technologies under Mushroom cultivation

n=15

Training components	Adoption (%)		Non-adoption (%)	
	KLM	TVM	KLM	TVM
Spawn production	13.33	26.67	86.67	73.33
Mushroom production	40	46.67	60	53.33
Utilization of spent mushroom substrate	13.33	20	86.67	80
Value addition	20	33.33	80	66.67

Considering the different components of training in mushroom cultivation, higher adoption was shown by trainees of Thiruvananthapuram KVK (Table 7 and Figure 5). About 86.66 per cent trainees of Kollam KVK and 73.33 per cent trainees of Thiruvananthapuram KVK were not adopting the spawn production technology. Spawn production requires sterile conditions or Laboratory facilities and the technology was costly. A minute error may cause contamination of the entire spawn produced resulting in economic loss. These could be the factors responsible for the non-adoption or discontinuance of spawn production. About 40 and 46.66 per cent of the trainees of Kollam and Thiruvananthapuram have undertaken mushroom cultivation. Most of them are practicing it in a small scale and the number of commercial cultivators was more in Thiruvananthapuram. Further from the table it was perceived that 86.66 and 80 per cent of the trainees from Kollam and Thiruvananthapuram, respectively were not using the spent mushroom substrate which was obtained as a bye product of mushroom cultivation. When it comes to value addition of mushroom it was done by 20 per cent trainees of Kollam KVK and 33.33 per cent trainees of Thiruvananthapuram KVK. Mushroom cultivation



NA-Non adoption **FA- Full adoption**

Fig.5. Distribution of respondents of mushroom cultivation based on rate of adoption (n=15)

was being practiced in small scale and the produce so produced was sold in open market with no leftover for value addition. This attributed to the low adoption rates of mushroom value addition.

4.3.1.4 Rate of adoption of technologies under organic input production and use of bio-control agents

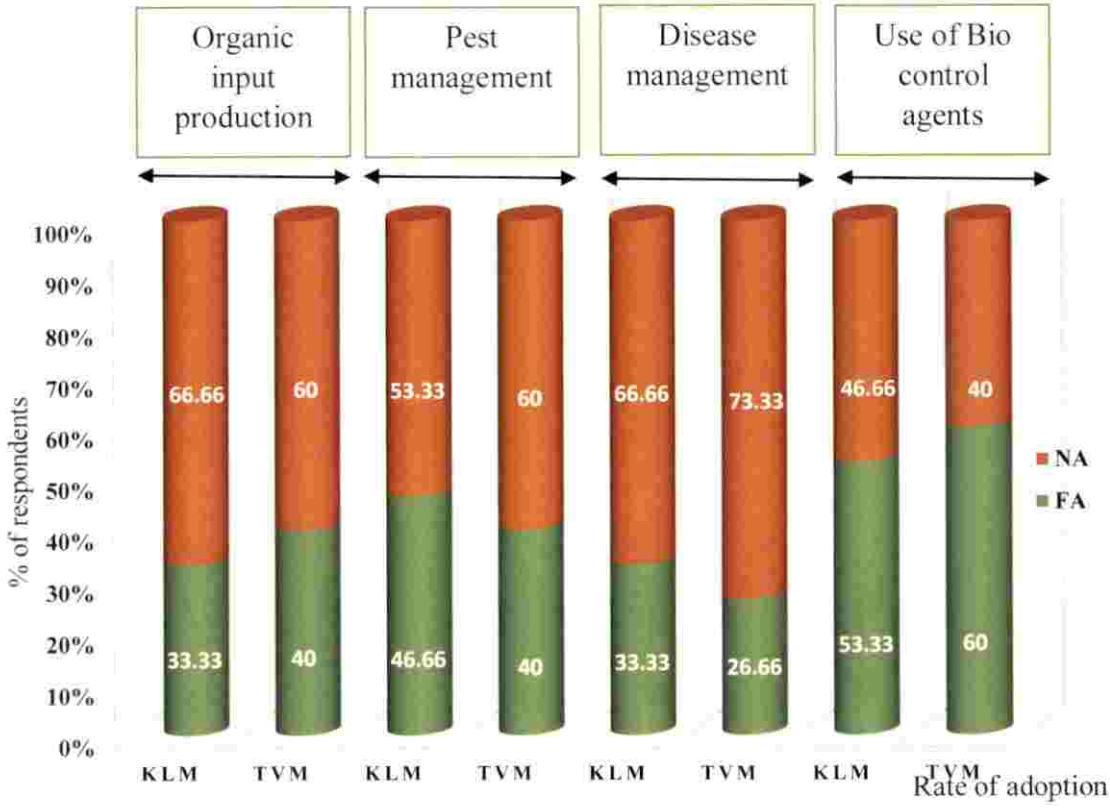
Table 8. Rate of adoption of technologies under organic input production and use of bio-control agents

n=15

Training components	Adoption (%)		Non adoption (%)	
	KLM	TVM	KLM	TVM
Organic inputs production	33.33	40	66.67	60
Pest management	46.67	40	53.33	60
Disease management	33.33	26.67	66.67	73.33
Use of bio control agents	53.33	46.67	60	40

Table 8 and Fig.6 revealed that more than one third of the respondents were fully adopting all the four components of organic input production and use of bio control agents. Organic pest management practise and use of bio control agents are more common among the trainees and there were not much difference in rate of adoption of technologies between the Krishi Vigyan Kendras. This might be due to the fact that there is more emphasis on organic production.

Sasidharan (2015) in his study with regard to adoption of organic farming practices in banana cultivation reported that, 72 per cent of the banana growers belonged to medium category followed by 15 per cent in high category and 13 per cent in low category.



NA-Non adoption **FA- Full adoption**

Fig. 6. Distribution of trainees of organic inputs production and use of bio-control agents based on rate of adoption (n=15)

4.3.1.5 Rate of adoption of technologies under organic input production and use of bio-control agents

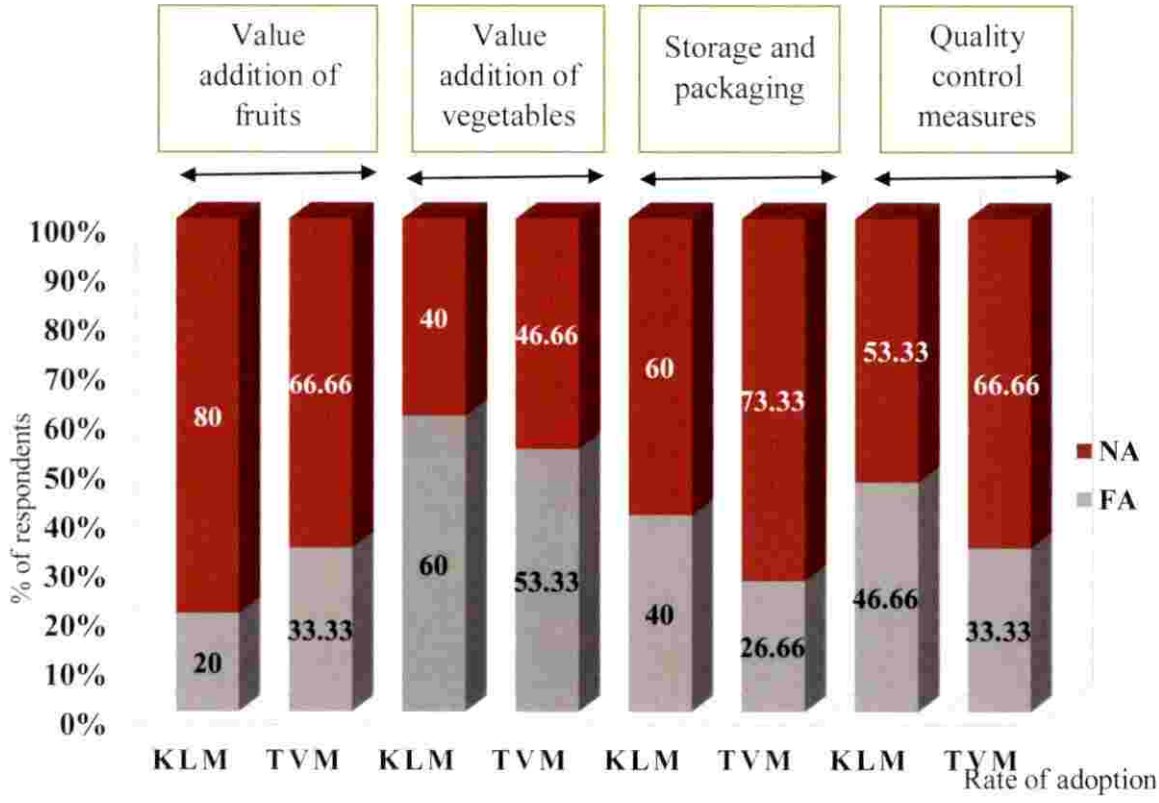
Table 9. Rate of adoption of technologies under Processing and value addition

n=15

Training components	Adoption (%)		Non adoption (%)	
	KLM	TVM	KLM	TVM
Value addition of vegetables	20	33.33	80	66.67
Value addition of fruits	60	53.33	40	46.67
Storage and packaging	40	26.67	60	73.33
Quality control measures	46.67	33.33	53.33	66.67

From the Table 9 and Fig.7 it was clear that value addition of fruits was adopted more than that of the value addition of vegetables. This may be due to the fact that the market for value added products of fruits are more in comparison to value added products of vegetables. Further it is seen that 60 per cent trainees of Kollam KVK and 53.33 per cent trainees of Thiruvananthapuram KVK were adopting the value addition of fruits. While it was about 20 and 33.33 per cent in case of value addition of vegetables. More than half of the respondents of Kollam (60%) and Thiruvananthapuram (73.33%) KVK were not adopting the storage and packaging practices. Quality control measures were fully adopted by 46.66 per cent trainees of Kollam KVK and 33.33 per cent trainees of Thiruvananthapuram KVK. This may be due to the fact that most of the trainees adopt or practice these technologies only at house hold level.

Sabharwal and Panwar (2015) reported that most of the respondents have favourable attitude to adopt processing unit at a small scale as it is easy to manage small enterprise at village level.



NA-Non adoption **FA- Full adoption**

Fig.3. Distribution of respondents of processing and value addition based on rate of adoption (n=15)

4.3.2 Comparison of training wise rate of adoption

Table 10. Comparison of training wise rate of adoption

N=150

Training programmes n=15	Average score of rate of adoption			
	KVK KLM	KVK TVM	Mann-Whitney U	Asymp. Sig. (2-tailed)
Friends of coconut	79.16	80.83	101.000	0.653
Training on agro-machineries and other plant protection equipment's	65.83	63.33	112.000	0.983
Training on mushroom cultivation	67.5	68.33	106.500	0.794
Training on organic input production	76.66	75	111.000	0.948
Training on processing and value addition	69.16	71.66	105.500	0.749

The table on comparison of training wise rate of adoption of technologies (Table 10) revealed that the p value of Mann-Whitney U test was more than 0.05 and there were no significant difference observed in the rate of adoption of technologies of all the five trainings among the trainees of the KVKs. Hence it can be find that rate of adoption was almost at par for all the technologies irrespective of KVKs.

4.4 ATTITUDE OF TRAINEES TOWARDS TRAINING PROGRAMMES ATTENDED

The fame or forfeit of many a rural social reforms would mainly be built upon the follower's attitude towards it. Preferred attitude of trainee participants is an essential component for the better fulfilment and success of KVK training programmes. The attitude of trainees towards training programmes attended was categorized based on frequency and percentage.

Table 11. Categorization of trainees based on attitude

N=150

	Kollam n =75		Thiruvananthapura n=75		Total N=150	
	F	F	F	%	F	%
Low (15-30)	0	0	0	0	0	0
Medium (30-45)	24	38	38	18.67	38	25.33
High (45-60)	57	112	112	81.33	112	74.67

The Table 11 and Fig.8 on Categorization of trainees based on attitude showed that majority (74.66%) of the trainees were having highly positive attitude towards the trainings of the Krishi Vigyan Kendras.

About 82 per cent of the trainees of Thiruvananthapuram KVK were having higher positive attitude whereas it was about 68 per cent in case of Kollam KVK. Most of the trainees of Thiruvananthapuram KVK had attended training programmes organized by other organisations functioning in the same field, hence they were getting a chance to compare the trainings given from these organisations with KVK. In case of trainees of Kollam KVK they were having lesser opportunities to compare the trainings of KVK with other organisations and it was reflected in their attitude also. The table also showed that there were no trainees coming under the category of low attitude towards the trainings of both the Krishi Vigyan Kendras.

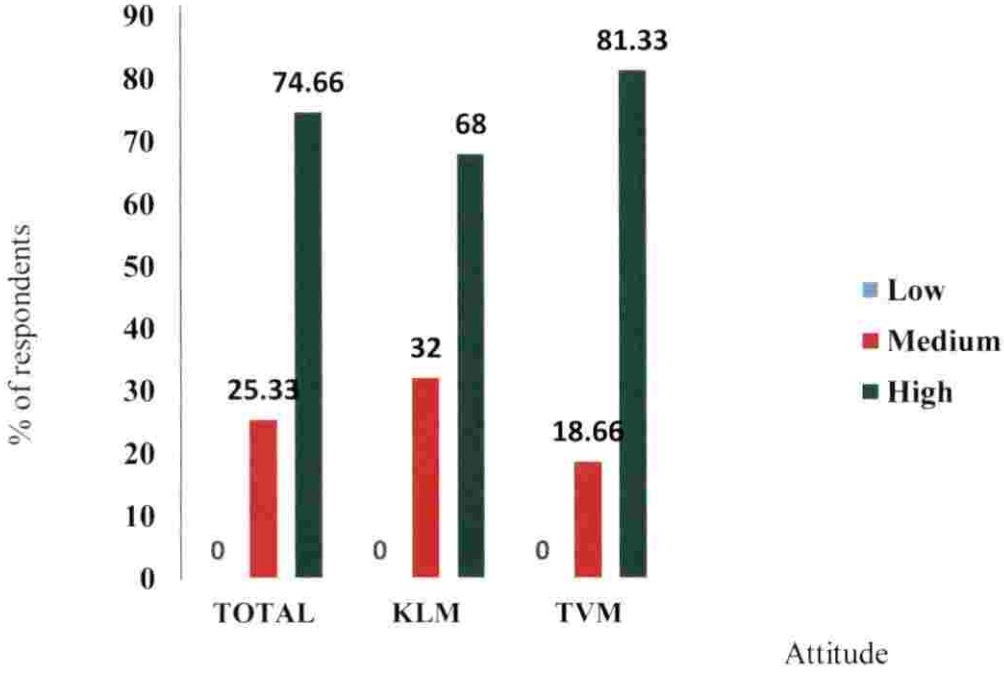


Fig. 8. Distribution of respondents based on attitude (N=150)

Table 12. Attitude of trainees towards the training programmes of Krishi Vigyan Kendras

N=150

Sl. No.	Statements	MWS	Evaluation	Rank
1	The trainers deals with certain things which the farmers do not require	**3.44**	**SDA**	**4**
2	The course content in KVK programme is well designed	**3.57**	**SA**	**1**
3	KVK training programmes helps to increase agriculture production	**3.41**	**SA**	**5**
4	There is no adverse effect if the KVK is closed	**3.52**	**SDA**	**2**
5	Provide unique opportunity for all	**2.16**	**A**	**9**
6	The training programmes are in accordance with season and time	**3.09**	**SA**	**8**
7	The training method followed at KVK are not in accordance with the course content	**3.4**	**SDA**	**6**
8	Training facilities are accessible to selected farmers	**1.89**	**A**	**10**
9	KVK maintained poor coordination with the other organization engaged in the farmers training	**1.75**	**A**	**12**
10	KVK conduct well attended training programme as well on campus and off campus to the farmers	**3.50**	**SA**	**3**
11	The farmers get all sorts of technological helps from the KVK	**3.52**	**SA**	**2**
12	The training approach is not innovative but simply a traditional	**1.90**	**A**	**11**

13	KVK has very much added to the farmers knowledge about improved methods of farming	**3.50**	**SA**	**3**
14	The trainee's find answer for their immediate problem by the trainers	**3.26**	**SA**	**7**
15	There is no adequate follow – up of the training programmes at KVK	**1.70**	**A**	**13**

(SA- Strongly agree, A- Agree, D- Disagree, SDA- Strongly disagree)

The attitude of trainees of Krishi Vigyan Kendra was also measured using MWS (Mean Weighted Score). There were 15 statements to assess the attitude of respondent's depicted as in table given above , which indicated that the attitude towards the statement that the course content in KVK programme is well designed was on the top most position according to relative importance in the scale for the beneficiary farmers. Which means that the curriculum of the training was well furnished by the KVK functionaries. Other statements which were given priority by the trainees were, the farmer will be adversely affected if the KVK is closed, the farmers get all sorts of technological helps from the KVK in related to agriculture matters, KVK conduct well attended training programme as well on campus and off campus to the farmers etc. The statements on which the trainees showed less favourable attitude includes there is no adequate follow – up of the training programmes at KVK, Krishi Vigyan Kendras maintained poor coordination with other organizations engaged in the farmers training, The training approach is not innovative but simply a traditional, Training facilities are accessible to selected farmers etc.

Dobariya *et al.* (2018) also found that the attitude towards the statement that productivity of crops was increased by the advice of scientists working at KVK was high.

Table 13. Comparison of attitude of trainees of Krishi Vigyan Kendra Kollam and Thiruvananthapuram

N=150

Categories	Total N=150		Kollam n=75		Thiruvananthapuram n=75	
	F	%	F	%	F	%
Low (15-30)	0	0	0	0	0	0
Medium (30-45)	38	25.33	24	32	14	18.67
High (45-60)	112	74.67	57	68	61	81.33
Average	46.02		45.70		46.33	
Range			39-54		43-51	

Test Statistics

	Attitude
Mann-Whitney U	2.318E3
Z	-1.877
Asymp. Sig. (2-tailed)	.060

Table 13 revealed that, the average score of attitude of trainees of Kollam KVK were 45.70 and it was 46.33 for the trainees of Thiruvananthapuram KVK. In order to find out the attitudinal difference of trainees of KVKs Mann-Whitney test was performed and the table above shows that, there were no significant difference in the attitude of trainees.

From the findings of the study it was clear that almost all the beneficiary trainees of both the Krishi Vigyan Kendras were had most favourable to favourable attitude towards the functioning of the KVKs and there were no significant difference in the attitude of trainees of both the Krishi Vigyan Kendras. The finding was on par with the findings of Dobariya *et al.* (2018) who concluded that majority

of beneficiary (90.0%) farmers had favourable to most favourable attitude toward various activities of KVK of Dang district, Gujarat.

4.5 PROFILE CHARACTERISTICS OF TRAINEES

Profile characteristics of the trainees were studied in order to understand the current status of the trainees and also to detect how they relate and interfere with the dependent variables.

4.5.1 Age

Age was operationalized as the chronological age of the respondent in completed years at the time of the study.

Table 14. Categorization of trainees based on age

N=150

Sl. No.	Age (In Years)	Category	KLM n=75		TVM n=75		Total N=150	
			F	F	F	%	F	%
1	Less than 35	Young	16	39	39	30.67	39	26
2	35-55	Middle	48	91	91	57.33	91	60.67
3	More than 55	Old	11	20	20	12	20	13.33

Age is a major factor as it reveals the maturity of an individual to take decisions on achieving the higher living status. The data in the table above showed that 26 per cent of the total trainees were in the young age category i.e. below 35 years. Majority (60.66%) of the trainees were coming under the middle aged category that is from 35-55 years age. Only 13.33 per cent of the trainees were old aged. The district wise Categorization of trainees based on age revealed that 21.33 per cent of the trainees of Kollam and 30.66 per cent trainees of Thiruvananthapuram were under the young age category. More than half of the trainees of both the KVKs were middle aged.

The reason behind this would be that, most of the trainees were middle aged house wives and they were more enthusiastic for subsistence level farming activities

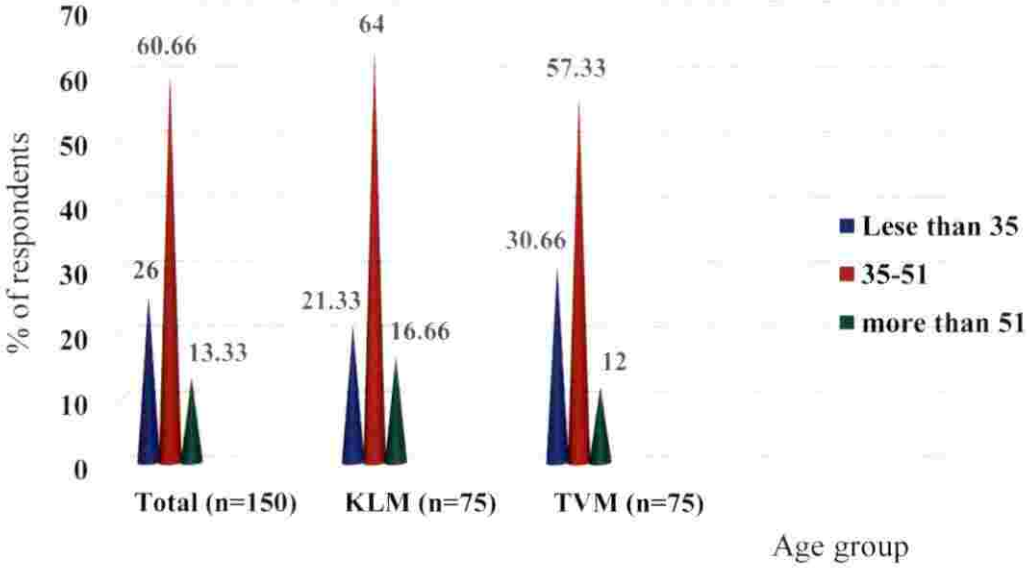


Fig. 9. Distribution of trainees based on age (N=150)

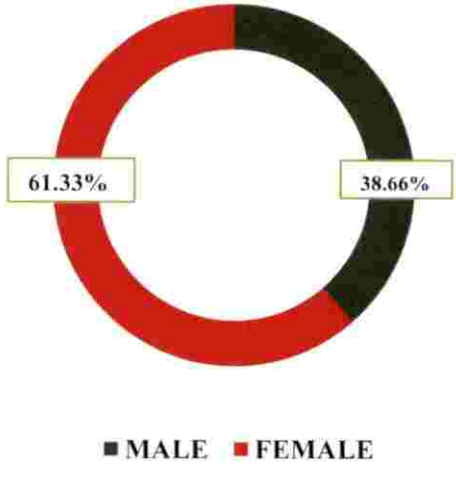


Fig. 10. Distribution of trainees based on gender (N=150)

and possess moderate experience in farming. Moreover the educated youth perceive farming and allied activities as a profession with less profit and intense labour. So the number of youngsters who attended the vocational trainings of agriculture and allied aspects was less.

The results were in concurrence with the results of Meena and Bhati (2010) who reported that farmers trained by KVK belonged to middle and young aged group, which showed that agricultural operations were mostly carried out by young and middle aged farmers.

4.5.2 Gender

Table 15. Categorization of trainees according to their gender

N=150

Particulars	Kollam n =75		Thiruvananthapuram n =75		Total N=150	
	F	F	F	%	F	%
Male	27	58	58	41.33	58	38.67
Female	48	92	92	58.67	92	61.33

The table 15 on Categorization of trainees based on gender showed that the female (61.33%) trainees were more than that of the male trainees (38.66%) and the trend was similar in both the Krishi Vigyan Kendras. This may be due to the fact that women were more enthusiastic towards subsistence level farming activities and were from marginal family background and were part of the self-help groups like Kudumbashree.

4.5.3 Educational status

The extent of literacy possessed by an individual trainee refers to their educational status.

Table 16. Categorization of trainees based on educational status

N=150

Educational status	Kollam n=75		Thiruvananthapuram n=75		Total N=150	
	F	%	F	%	F	%
Primary Education	0	0	0	0	0	0
High School	21	28	20	26.67	41	27.33
Higher Secondary	32	42.67	34	45.33	66	44
College	22	24.33	21	28	43	28.67

Educational status of trainees of Krishi Vigyan Kendras are presented in Table 16. From the table it can be inferred that more than 40 per cent of the trainees were having higher secondary level of education followed by collegiate and high school education. Interestingly there were no respondent having an education level below high school. The result is a true reflection of higher literacy percentage of Kerala state.

Majority of the trainees of Kollam (42.67%) were having higher secondary level of education followed by high school education (28%) and 24.33 per cent of the total trainees were having collegiate education. In case of trainees of Thiruvananthapuram KVK 45.33 per cent were having higher secondary education followed by collegiate education (28%) and high school level of education (26.67%).

Findings of the current study were adhering with the results of Sabira (2016) who reported that there were no illiterate trainees who had attended training programmes of KVK, Trissur. Trainees with higher education and collegiate education were high in number and were almost equally distributed. The results was also in confirmation with the results of Ranjitha *et al.* (2018), who reported that majority of the trainees (66%) studied above matriculation.

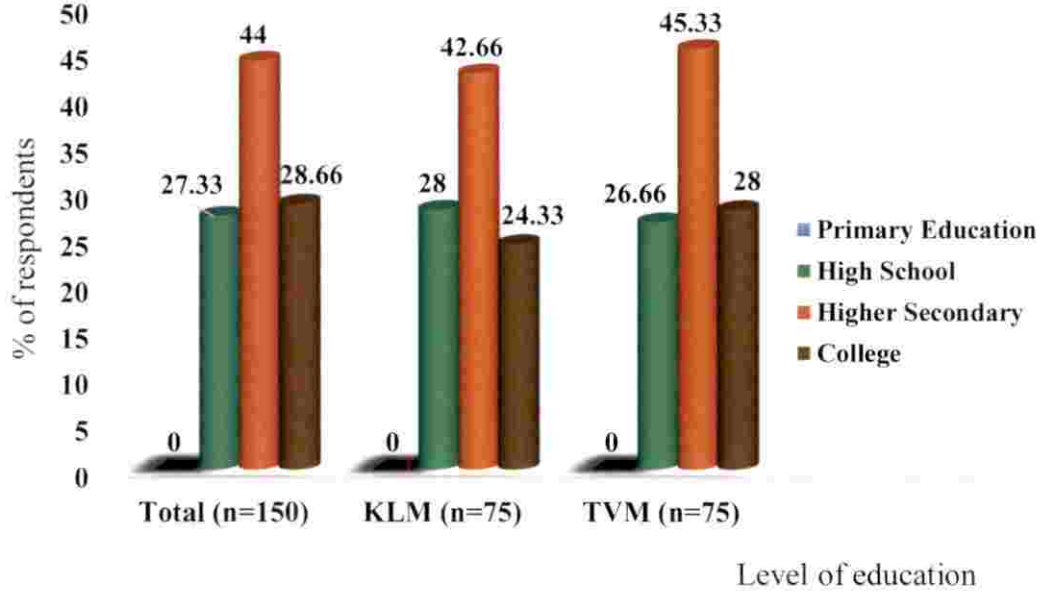


Fig. 11. Distribution of trainees based on educational status (N=150)

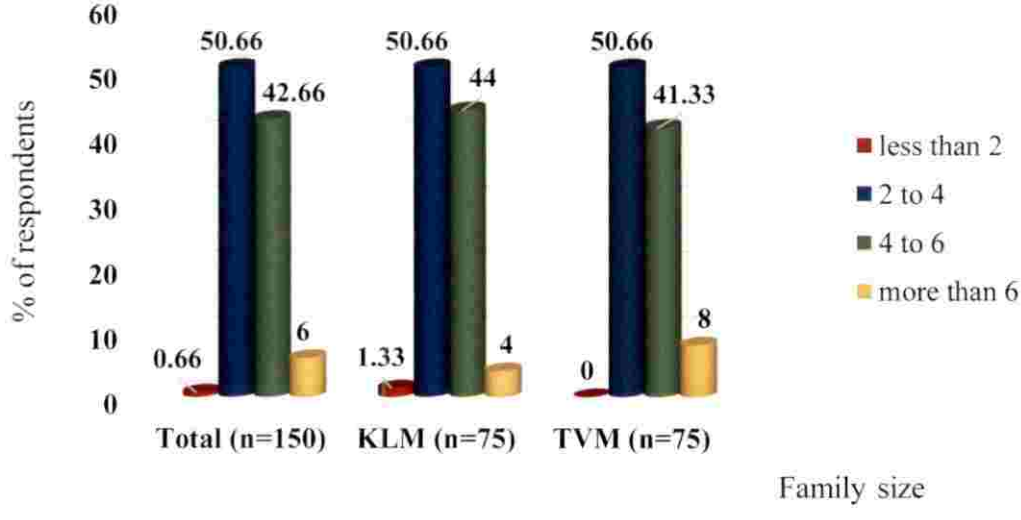


Fig. 12. Distribution of trainees based on family size (N=150)

4.5.4 Family size

Family size is defined as the total number of members in the family of trainees at the time of investigation.

Table 17. Categorization of trainees based on size of family

N=150

Family size	Kollam n =75		Thiruvananthapuram n =75		Total N=150	
	F	%	F	%	F	%
Less than 2	1	1.33	0	0	1	0.67
2-4	38	50.67	38	50.67	76	50.67
4-6	33	44	31	41.33	64	42.67
More than 6	3	4	6	8	9	6

Family size refers the total number of members in the family. From the table it was observed that 50.67 per cent of the respondent were having two to four members in their family followed by the four to six family size (42.67%) group. Only 6 per cent trainees had a family size of more than six. The trend was similar in case of both the Krishi Vigyan Kendras.

The result were in adherence with the findings of Borban (2007), who reported that maximum number of the trainees had medium size of family (40.95%).

4.5.5 Annual income

Annual income can be operationalized as the total income obtained through agriculture and allied sectors in one year expressed in rupees.

Table 18. Categorization of trainees based on annual income

N=150

Income level	Kollam N=75		Thiruvananthapuram N=75		Total N=150	
	F	%	F	%	F	%
Low (Rs.10,000-50,000)	15	20	10	13.33	25	16.67
Medium (Rs.50,000-1,00,000)	47	62.67	48	64	95	63.33
High (More than Rs.1,00,000)	13	17.33	17	22.67	30	20

The above table revealed that majority (63.33%) of the trainees belonged to medium annual income category ranging from Rs.50000 to Rs. 100000. Twenty per cent of the trainees had an annual income of more than Rs. 100000 and followed by the low annual income category (16.67%). From the table it was also observed that 22.66 per cent of the trainees of Thiruvananthapuram KVK were coming under the category of higher income whereas it was about 17.33 per cent in case of Kollam KVK. The middle income category preferred to attend the training programmes because they had higher aspiration to achieve higher income by enhancing their skill in that particular field.

The findings were in line with the findings of Chavai *et al.* (2015), that majority of adopters had medium level of annual income.

4.5.6 Innovativeness

Innovativeness is referred as the degree to which an individual is relatively earlier in adopting new ideas than other members of the social system.

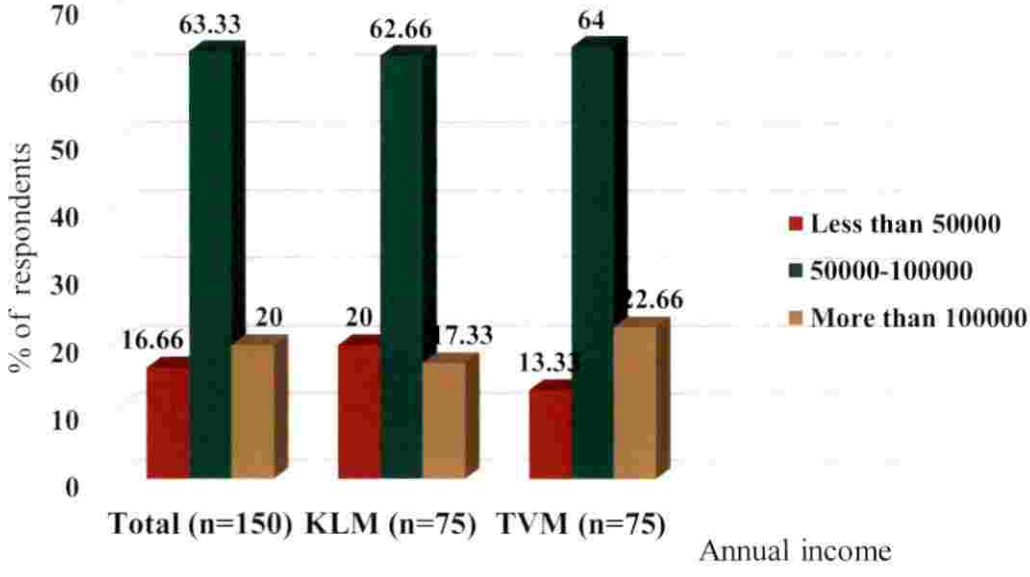


Fig. 13. Distribution of trainees based on Annual income (N=150)

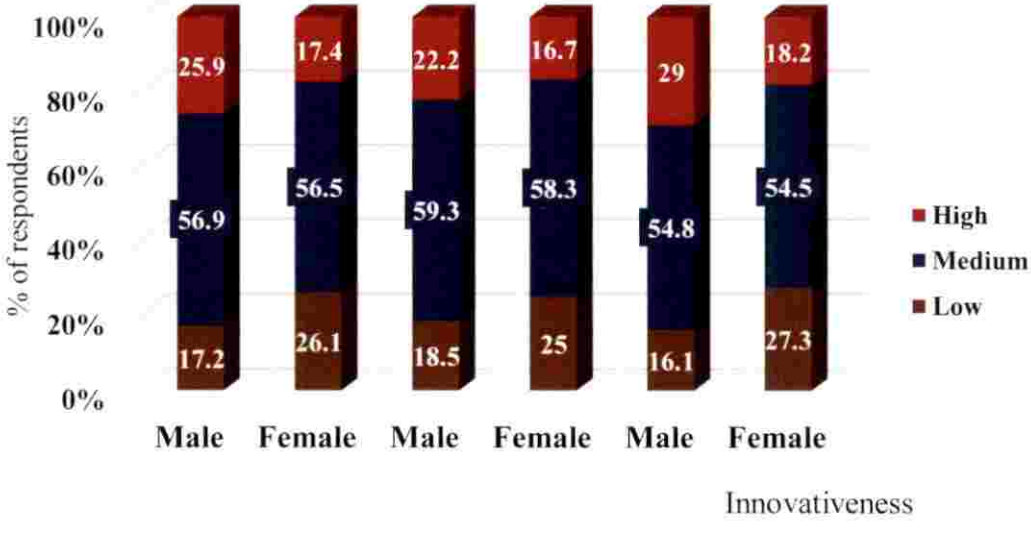


Fig.No. 14. Gender based comparison on innovativeness of trainees (N=150)

Table 19. Categorization of trainees based on innovativeness

N=150

Innovativeness	Kollam n=75		Thiruvananthapuram n=75		Total N=150	
	F	%	F	%	F	%
Low	17	22.67	7	9.33	24	16
Medium	49	65.33	45	60	94	62.67
High	9	12	23	30.67	32	21.33

The Table 19 on innovativeness revealed that majority of the trainees (62.67%) had medium innovativeness followed by trainees with higher innovativeness (21.33%). Low innovativeness was observed in 16 per cent of the trainees. In case of trainees of Thiruvananthapuram KVK, 60 per cent of the trainees were showing medium innovativeness and it was followed by the high innovativeness category (30.67%). While in case of Kollam KVK , 65.33 per cent trainees showing medium innovativeness and followed by low innovativeness category (22.67%) and only 12 per cent trainees were having high innovativeness.

The reason behind the medium level innovativeness may be due to their middle age which restricted them to adopt a new technology without knowing fully about it.

The study by Sunil and Manjula (2009) found out that a major portion of the trainees (45.25%) were having medium level of innovativeness and the result was on par with the findings of the current study.

Table 20. Gender based comparison on innovativeness of trainees

N=150

Categories	Total N=150				Kollam n =75				Thiruvananthapuram n =75			
	Male		Female		Male		Female		Male		Female	
	F	%	F	%	F	%	F	%	F	%	F	%
Low	10	17.2	24	26.1	5	18.5	12	25	5	16.1	12	27.3
Medium	33	56.9	52	56.5	16	59.3	28	58.3	17	54.8	24	54.5
High	15	25.9	16	17.4	6	22.2	8	16.7	9	29	8	18.2

Innovativeness refers to the relative earliness in adopting new ideas. Table 20 and Fig.14 compare the innovativeness of male and female trainees. From the table it was clear that the male trainees were more innovative than female trainees. Out of the total, 25.9 per cent male trainees had higher innovativeness while it was 17.4 per cent in case of female trainees and the trend was almost similar in case of trainees of Kollam and Thiruvananthapuram KVK.

Most of the trainee families were headed by male persons and were earning for the family. This might be prompting the male to take decisions on adoption of newer technologies which is reflected in the low innovativeness of female trainees.

4.5.7 Information Seeking Behaviour

The channels or sources from which the trainees receive information concerning training and other aspects.

Table 21. Categorization of trainees based on information seeking behaviour

n=75

Source of Information	Kollam (n =75)		Thiruvananthapuram (n=75)	
	Weighted mean	Rank	Weighted mean	Rank
Tele Vision (TV)	3.61	2	3.25	2
Radio	2	5	2.17	4
News Paper	3.64	1	3.57	1
Ag. Literature	1.74	7	1.68	7
Sc. KAU/KVK	2.04	4	1.88	5
BDO,AEO	1.90	6	1.81	6
Family/friends	3.41	3	3.22	3

The Table 21 shows the major sources of information to the trainees of the two KVKs. It was clear from the table that newspaper was at the top position followed by television and other informal sources like family members and peer groups. Newspaper was at the top position may be due to the fact that it was very cheap and easy to obtain. The table also revealed that the formal sources were ranked only after the mass media sources and informal sources. Majority of the trainees consulted the formal sources when there was a problem in the field.

The findings were in accordance with the report of Sahu (2006), who reported that friends and neighbours, TV and radio were utilized as a source of information by more than half of the respondents (75.55, 54.44 and 46.66%) respectively.

4.5.8 Number of trainings attended

Number of trainings attended has been operationalized in this study as the total number of training undergone by the trainees in agricultural activities from different institutes.

Table 22. Categorization of trainees based on number of trainings attended

N=150

Number of trainings attended	Total (N=150)		Kollam (N=75)		Thiruvananthapuram (N=75)	
	F	%	F	%	F	%
Low (≤2)	26	17.33	15	20	11	14.67
Medium(3-5)	57	38	20	34.67	31	41.33
High (More than 5)	67	44.67	34	45.33	33	44

The data presented in the Table 22 and Fig.15 revealed that more than 40 per cent of the trainees had attended five trainings or more in the last five years followed by trainees attended medium (38%) number of trainings i.e., three to five trainings and lower category (17.33%) attending two or less training. Here most of the trainees were women and most of them were house wives and part of the Kudumbashree mission. As part of the self -help group they were attending the training programmes to establish their own businesses.

The findings of the current study was on par with the findings of Patel (2000), who reported that majority (73.33%) had attended more than 5 trainings.

4.5.9 Social participation

Social participation was operationalized as the nature of participation of trainee in various activities of different social organisations.

Table 23. Categorization of trainees based on social participation

N=150

Categories	Kollam n=75		Thiruvananthapuram n=75		Total N=150	
	F	%	F	%	F	%
Low	30	40	29	38.67	59	39.33
Medium	42	56	43	57.33	85	56.67
High	3	4	3	4	6	4

In this study social participation refers the involvement and frequency of attending the meetings of organizations. Table 23 on Categorization of trainees based on social participation pointed out that majority of the trainees (56.67%) had medium social participation followed by the low social participation (39.33%) category. From the table it was also clear that the number of trainees who belonged to higher social participation category was very less. When considering the district wise social participation, it was observed that the trend was almost similar in both the Krishi Vigyan Kendras.

The medium level social participation may be due to their less involvement in the activities of these social organisations. Most of them are members in two or more organisations, but they were not at all attending the meetings conducted by these organizations.

The study by Chavai *et al.* (2015) also reported that majority of the adopters (79.09 %) were having medium level of social participation.

4.5.10 Training rigour

The amount of endeavor taken by the training organizers to assure that all pliable elements of the learning situation are fine tuned to maximize training effectiveness.

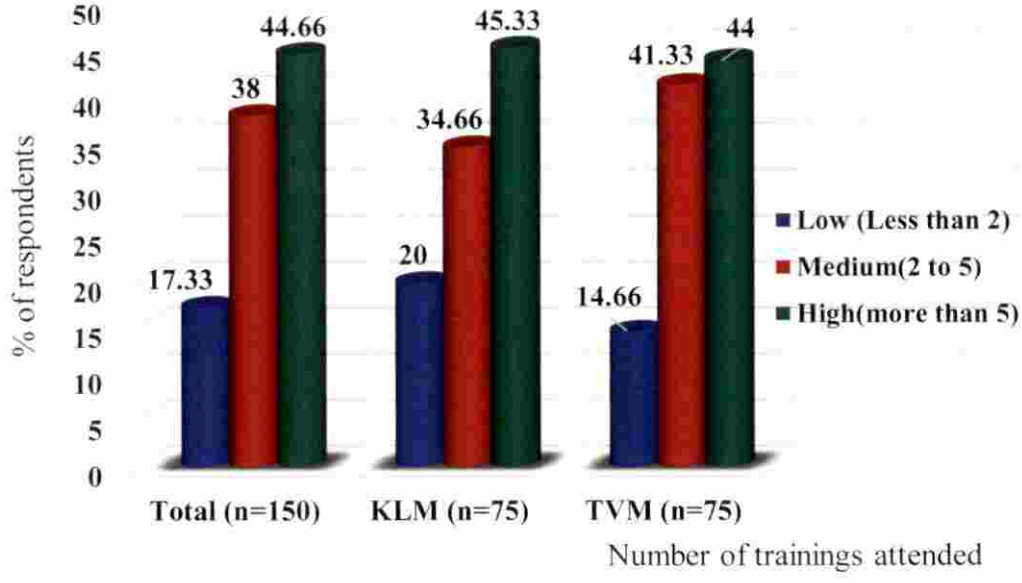


Fig. 15. Distribution of trainees based on number of trainings attended (N=150)

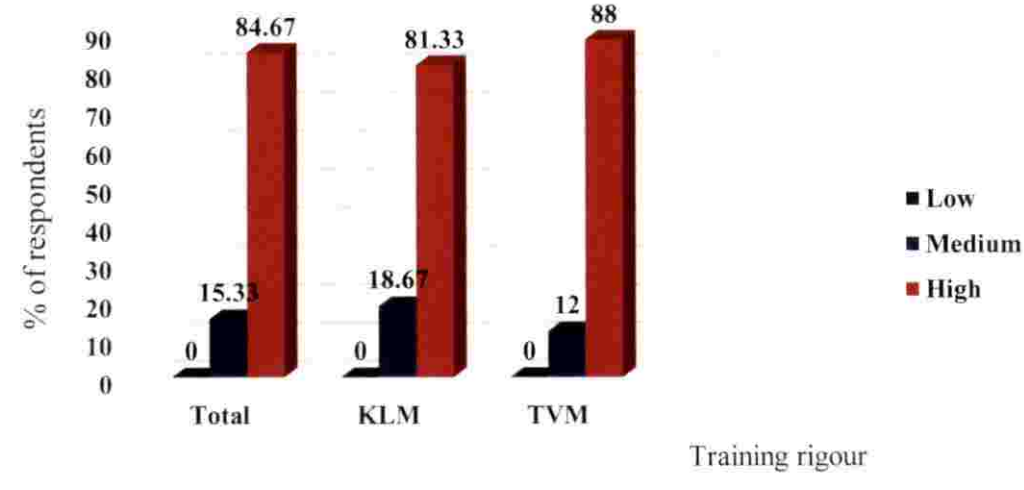


Fig. No. 16. Distribution of trainees based on training rigour (N=150)

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Table 24. Categorization of trainees based on training rigour

N=150

Categories	Kollam n =75		Thiruvananthapuram n =75		Total N=150	
	F	%	F	%	F	%
Low (6-12)	0	0	0	0	0	0
Medium (12-18)	14	18.67	9	12	23	15.33
High (18-24)	61	81.33	66	88	127	84.67

Training rigour refers the amount of endeavor taken by the training organizers to assure that all pliable elements of the learning situation are fine tuned to maximize training effectiveness. The table 24 and Fig.16 on training rigour divulged that 84.67 per cent of the trainees categorized the vocational trainings attended by them as having higher training rigour and 15.33 per cent categorized the trainings into medium training rigour category. None of the trainings were in low training rigour. Coming to the KVK wise training rigour, 81.33 per cent of Kollam KVK trainees and 88 per cent of Thiruvananthapuram KVK trainees categorised the vocational trainings attended by them as having higher training rigour. This may be due to the fact that the trainees perceived that the trainings attended by them were beneficial to them and they have categorized the trainings into medium to high training rigour category.

Remya (2015) has also reported that trainings were perceived as rigorous by most of the respondents (80%).

4.5.11 Scientific orientation

The degree to which a farmer trainee was oriented towards the scientific methods in farming and decision making was termed as scientific orientation.

Table 25. Categorization of trainees based on scientific orientation

N=150

Scientific orientation	Kollam n=75		Thiruvananthapuram n=75		Total N=150	
	F	%	F	%	F	%
Low (6-12)	0	0	0	0	0	0
Medium (12-18)	36	48	24	32	60	40
High (18-24)	39	52	51	68	90	60

Categorization of trainees based on scientific orientation (Table 25 and Fig.17) showed that, 60 per cent of the trainees were having higher scientific orientation while the remaining 40 per cent had medium level of scientific orientation. Coming to the district wise scientific orientation, 68 per cent trainees of Thiruvananthapuram KVK had high scientific orientation whereas it was 52 per cent in case of Kollam KVK. No trainees were included in the category of lower scientific orientation in either KVK.

The number of old aged trainees was more at Kollam KVK than Thiruvananthapuram and this may be the reason behind the less scientific orientation of Kollam KVK trainees compared to that of trainees of Thiruvananthapuram KVK trainees.

Borban (2007) also concluded in his study that majority of the farmers had high scientific orientation.

4.5.12 Risk orientation

Risk orientation was operationalized as the degree to which the trainees are oriented towards confronting uncertainty and risk associated with the adoption of new technologies and ideas.

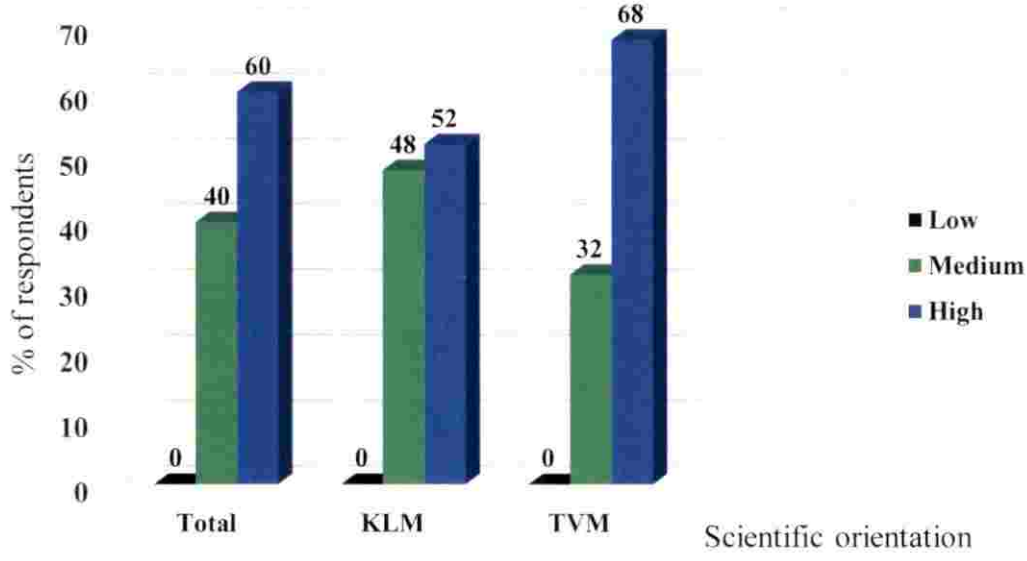

Fig. 17. Distribution of trainees based on scientific orientation (N=150)

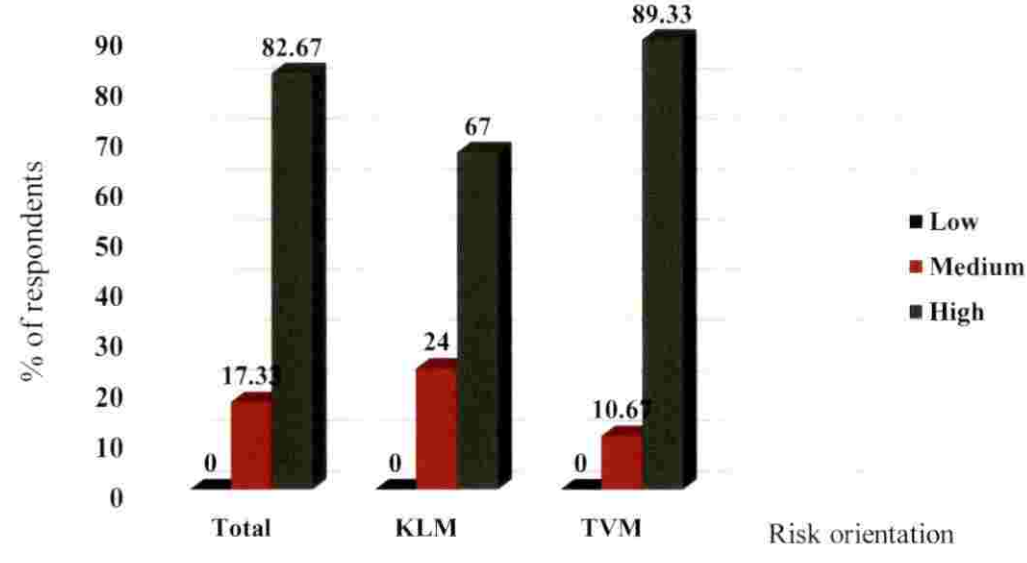

Fig.18. Distribution of trainees based on risk orientation (N=150)

Table 26. Categorization of trainees based on risk orientation

N=150

Risk orientation	Kollam N=75		Thiruvananthapuram N=75		Total N=150	
	F	%	F	%	F	%
Low (5-10)	0	0	0	0	0	0
Medium (10-15)	18	24	8	10.67	26	17.33
High (15-20)	57	76	67	89.33	124	82.67

Risk orientation was referred as the degree to which a person was directed towards encountering risk and uncertainty in adopting new ideas. The data in the Table 26 and Fig. 18 revealed that 82.67 per cent of the trainees had higher risk orientation and the 17.33 per cent of the trainees had medium level risk orientation. Most of the trainees of Thiruvananthapuram KVK (89.33%) had higher risk orientation and it was 76 per cent in case of Kollam KVK. The reason behind is that the trainees of Thiruvananthapuram KVK were coming under the medium to higher income category while it was low to medium in case of trainees of Kollam KVK. Moreover the trainees of Thiruvananthapuram KVK had higher innovativeness than that of trainees of Kollam KVK trainees.

4.5.13 Level of satisfaction

Operationally defined as the degree to which the trainees feel satisfied with the services and activities of Krishi Vigyan Kendra.

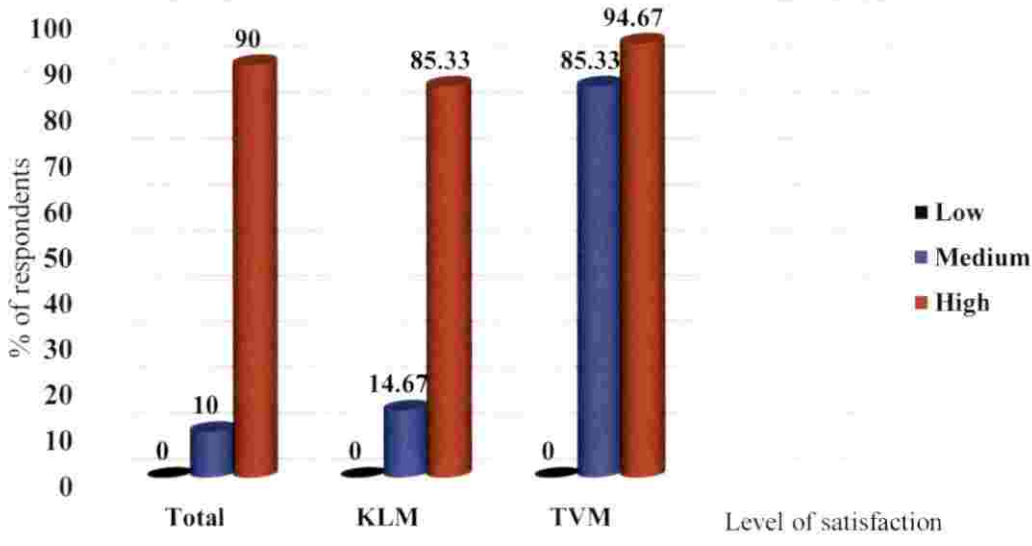

Fig.19. Distribution of trainees based on level of satisfaction (N=150)

Table 27. Categorization of trainees based on level of satisfaction

N=150

Categories	Kollam n=75		Thiruvananthapuram n=75		Total N=150	
	F	%	F	%	F	%
Low (5-10)	0	0	0	0	0	0
Medium (10-15)	11	14.67	4	5.33	15	10
High (15-20)	64	85.33	71	94.67	135	90

Table 27 and Fig.19 revealed that majority of the trainees (90%) were highly satisfied with the trainings conducted by the Krishi Vigyan Kendras. About 95 per cent of the trainees of Thiruvananthapuram KVK and 85.33 per cent trainees of Kollam KVK recorded higher satisfaction with the training conducted. None of the trainees were dissatisfied by trainings organized. The probable reason could be that the trainees perceived the trainings they attended as benefitting to them.

4.6 RELATIONSHIP OF PROFILE CHARACTERISTICS OF VOCATIONAL TRAINEES WITH RATE OF ADOPTION AND ATTITUDE

Table 28. Correlation between independent variables and rate of adoption

Sl.no	Variables	Correlation coefficient
1	Age	-0.004
2	Education	0.14
3	Annual income	0.168*
4	No: of trainings attended	0.321**
5	Innovativeness	0.186*

6	Training rigour	0.313**
7	Scientific orientation	0.278**
8	Risk orientation	0.164*
9	Satisfaction	0.154
10	Attitude	0.148
11	Information seeking behaviour	0.172*
12	Family size	0.05
13	Social participation	0.181*

*Significant at 5 per cent level ** Significant at 1 per cent level

From the correlation table (Table 28) of adoption and other independent variables it was clear that the rate of adoption of technologies was significantly and positively correlated with annual income, number of trainings attended, innovativeness, training rigour, scientific orientation, risk orientation, information seeking behaviour and social participation. Among these variables number of trainings attended, training rigour and scientific orientation were correlated with rate of adoption at both 5 per cent and 1 per cent level of significance.

Annual income had a positive and significant correlation with rate of adoption. It means that as the yearly income of the respondent was higher the speed with which he adopted the technology was also higher. As the annual income is more, the better income status of a person helps him to adopt new technology which requires some amount of investment. This might be the reason for the observed result. Kumar *et al.* (2013) also stated that annual income of the farmers had positive and significant relation with adoption of technologies.

Trainings helped to gain the experience and provide an opportunity to buy the technology. Hence more number of trainings leads to an increased rate of adoption. The result was also in line with that of Namitha (2017).

Innovativeness showed positive and significant correlation with adoption and the findings was similar to that of Sunil and Manjula (2009).

Training rigour was the variable that contributed higher training effectiveness. The higher training effectiveness refers to the higher exposure given to the trainees and it in turn helps to increase the rate of adoption.

Scientific orientation and risk orientation was significantly and positively correlated with adoption of technologies.

Information seeking character had positive correlation with adoption and it plays a role in the dissemination of information and creating awareness among the trainees. Thus it indirectly helps in adoption. The findings of Suresh (2004) was in line with the result.

Rate of adoption and social participation were correlated. The higher level social participation of the trainees exposes them to different knowledge and information regarding agricultural practices and which helps them to improve their skills. The results were on par with the results of Aparna (2009) and Chandran (2018).

Table 29. Correlation between independent variables and attitude

Sl.no	Variables	Correlation coefficient
1	Age	0.063
2	Education	0.138
3	Annual income	0.142
4	No: of training attended	0.202*
5	Innovativeness	0.146
6	Training rigour	0.361**

7	Scientific orientation	0.247**
8	Risk orientation	0.108
9	Satisfaction	0.301**
10	Adoption	0.148
11	Information seeking behaviour	0.128
12	Family size	0.042
13	Social participation	0.264**

*Significant at 5 per cent level ** Significant at 1 per cent level

The above table (Table 29) revealed that the independent variables, such as number of trainings attended, training rigour, scientific orientation, satisfaction and social participation were significantly and positively correlated with the attitude of trainees towards the Krishi Vigyan Kendras. Training rigour, scientific orientation, satisfaction and social participation were significant at both 5 per cent and 1 per cent level of significance. Number of trainings attended was significantly correlated with attitude at 1 per cent level.

Attitude of trainees towards the KVKs was positively correlated with the number of trainings attended by the trainees. When the trainees were attending more trainings from the institute the bond with the trainees and training organization becomes strong and which makes a favourable attitude among the trainees.

Training rigour was positively and significantly correlated with attitude of trainees. The higher effort taken by the training institute leads to skill enhancement and knowledge improvement of trainees and in turn creates a positive attitude towards the training organisations.

The scientifically oriented trainees were more enthusiastic to attend training on newer technologies and they were having a positive attitude towards those organisations providing trainings on that particular field.

Attitude shows a positive and significant correlation with satisfaction and social participation.

Dobariya *et al.* (2018) has also reported that social participation and scientific orientation were having positive and significant relationship with attitude.

4.7 TRAINING NEEDS OF FARMER TRAINEES OF KVK KOLLAM AND THIRUVANANTHAPURAM

Table 30. Training needs of trainees of KVK Kollam and KVK Thiruvananthapuram

Sl. No.	Trainings	KLM (n=75)		TVM (n=75)	
		MWS	Rank	MWS	Rank
1	Mushroom production	2.91	5	2.81	2
2	Integrated farming systems	2.18	9	2.14	7
3	Seed & seedling production	2.18	9	2.08	9
4	Organic cultivation and input production	2.97	3	2.62	4
5	Protected cultivation	1.66	11	1.85	12
6	Bee keeping	2.38	8	2.61	5
7	Agro machinery	2.98	2	2.90	1
8	Nursery management	3.49	1	2.33	6

9	Processing and value addition	2.94	4	2.77	3
10	Quality animal products	1.78	10	2.04	10
11	Dairying	2.18	9	1.98	11
12	Poultry	1.66	11	1.85	12
13	Tailoring	2.86	6	2.13	8
14	Rural craft	2.41	7	1.98	11

The table above showed the trainees preference or need on different vocational trainings. From the table (Table 30) it was clear that the trainees of Kollam KVK prefer training on nursery management at the top most position and it was followed by trainings on agro machinery, organic cultivation, processing and value addition and mushroom production.

Coming to the training needs of trainees of Thiruvananthapuram KVK, they mostly prefer training on Agro-machinery followed by trainings on mushroom production, processing and value addition, organic cultivation and bee keeping.

The study by Sajeev and Singha (2010) also reported that training on production of organic inputs was a relevant topic among the farmers. He further found that there was a training need on income generating activities like processing and value addition. The findings of Borban (2007) revealed that highest number of respondents showed training need on improved agricultural equipment's and machineries and on bee keeping.

The trainings on protected cultivation, integrated farming, dairy farming and production of quality animal products, poultry, seed and seedling production and rural craft and tailoring were less preferred by the trainees of both the KVKs. This might be due to the fact that field implementation of these trainings require extra

investment and infrastructure. Moreover most of the trainees have been practising dairying and were dependent on their traditional ways of rearing cattle.

4.8 CONSTRAINTS FACED BY THE VOCATIONAL TRAINEES OF KVK KOLLAM AND THIRUVANANTHAPURAM

Table 31. Constraints faced by trainees of KVK Kollam and KVK Thiruvananthapuram

Sl. No	Constraints	KLM (n=75)		TVM (n=75)	
		MWS	Rank	MWS	Rank
1	Lack of awareness about the trainings	10.2	2	11.33	1
2	Most of the trainings are of short duration	11.16	1	10.17	3
3	Lack of need based training programmes	5.92	7	6.34	7
4	Trainings are not given in time	6.97	6	6.44	6
5	subject matter knowledge of trainers are poor	1.85	12	2.22	11
6	Practical orientation was less	3.02	10	4.6	9
7	Poor training content	2.30	11	2.01	12
8	Training on new technologies are less	5.25	8	4.78	8
9	Training methods selected are not good	3.84	9	2.42	10
10	Training facilities are available to the selected farmers only	9.77	4	9.36	4
11	Poor coordination with other training organizations	7.38	5	7.85	5
12	No adequate follow up	10.08	3	10.42	2

Constraints are the difficulties faced by the trainees. Most of the trainees of Kollam KVK ranked short duration of training as the major constraint and it was

followed by lack of awareness about the trainings, lack of adequate follow up, availability trainings to the selected farmers and the poor coordination of training with other organisations.

Considering the major constraints of trainees of Thiruvananthapuram KVK, were lack of awareness on training programmes was at the first position with a mean weighted score of 11.33 and was followed by lack of adequate follow up (10.42), short duration of training (10.17), availability of training to selected farmers (9.36) and poor coordination with other organisations (7.85).

The training organizers of KVKs considering the full time field level farmers who were found difficulties to attend the training of more than one week. But here the fact is that more than half of the trainees were women who were members of any one of the self -help group and not a full time field worker. They preferred training in the field of Agro machineries, Processing and value addition, Mushroom cultivation and like that in order to start a business as part of their SHG. So they need more time to learn all the aspects i.e. both theory and practical of that particular training programme. KVKs are considering newspapers as the main source for transfer of information regarding vocational training programmes among the farming community. But it couldn't reach to all may be due to the fact that these kinds of news getting less preference in the newspapers and they were giving the news on a short paragraph at anywhere in the newspaper.

Singh *et al.* (2005) and Malabasari and Hiremath (2016) were also reported that short duration of training programme was a major constraint faced by most of the trainees.

4.10 VALIDATION OF HYPOTHESIS

A research hypothesis is a statement created by the researcher when they speculate upon the outcome of the experiment. It must be testable and realistic. In this study the hypothesis set and established were:

1. **There exist no significant relationship between profile characteristics of the vocational trainees and rate of adoption of technologies.**

From the correlation table (Table 28) of adoption and other independent variables it was clear that, rate of adoption of technologies by the trainees was significantly and positively correlated with annual income, number of trainings attended, innovativeness, training rigour, scientific orientation, risk orientation, information seeking behaviour and social participation. Among these variables number of trainings attended, training rigour and scientific orientation were correlated with rate of adoption at both 5 per cent and 1 per cent level of significance. Hence H_0 rejected.

2. **There exist no significant relationship between profile characteristics of the vocational trainees and their attitude towards training programmes attended.**

The results from Table 29 revealed that the independent variables, such as number of trainings attended, training rigour, scientific orientation, satisfaction and social participation were significantly and positively correlated with the attitude of trainees towards the Krishi Vigyan Kendras. Training rigour, scientific orientation, satisfaction and social participation were significant at both 5 per cent and 1 per cent level of significance. Number of trainings attended was significantly correlated with attitude at 1 per cent level of significance. Hence H_0 rejected.

3. **There exist no significant difference between the rate of adoption of technologies between the vocational trainees of KVK Kollam and KVK Thiruvananthapuram.**

The table on comparison of training wise rate of adoption of technologies (Table 10) revealed that the p value of Mann-Whitney test was more than 0.05 and there were no significant difference observed in the rate of adoption of technologies of all the five trainings among the trainees of the KVKs. Hence it can be concluded that rate of adoption was almost at par for all the technologies irrespective of KVKs. Hence H_0 accepted.

4. **There exist no significant difference between the attitude of vocational trainees of KVK Kollam and KVK Thiruvananthapuram towards the training programmes attended.**

Table 13 revealed that, the average score of attitude of trainees of Kollam KVK were 45.70 and it was 46.33 for the trainees of Thiruvananthapuram KVK. In order to find out the attitudinal difference of trainees of KVKs Mann-Whitney test was performed and the test statistics table shows that, there were no significant difference in the attitude of trainees. Hence H_0 accepted.

SUMMARY

V. Summary

It is presumed that agriculture is the backbone of the Indian economy. The Indian farmer is not only the producer of food for rural and urban areas, but also an important entity in the country's economic growth. The role of Indian farmers is changing rapidly due to the dramatic advance in agricultural technology. All this depends on the generation of technology and its subsequent dissemination among farmers, so that they can take advantage of the improved technologies for effective use on their farms. Krishi Vigyan Kendra's (KVK's) were primarily rooted in the country for aiding the rural farmers by delivering new technologies to them. They are running as an innovative establishment for organising vocational training to the school dropouts, practicing farmers and field level extension functionaries. Most of the technologies are developed by research plan, but to disseminate these technologies to the ultimate users, the role of KVK is very important. Training is one of the most effective strategy for dissemination of agricultural technologies among the farming community. It is an educational tool which can be effectively used to improve, refresh or update the farmer's knowledge. Thus, the importance of training is an indispensable instrument for human resource development and cannot be ignored. Training programmes conducted by KVK are more effective in changing the knowledge and skill of the trainees. The Krishi Vigyan Kendra at Sadanandapuram, Kottarakkara under KAU functions as the linkage organization between the University and stakeholders in agriculture, most importantly the farmers, in Kollam district. KVK Kollam attempts to increase the net returns to farmers and also self-employment opportunities among farming communities. Krishi Vigyan Kendra Thiruvananthapuram or Mitraniketan KVK is the Farm Science Centre of Indian Council of Agricultural Research (ICAR) work for transferring agricultural and allied technologies to farmers, rural youth and extension functionaries of Thiruvananthapuram district.

Krishi Vigyan Kendra Kollam and Thiruvananthapuram organize trainings to work closely with trainees in developing a more skilled and educated workforce. It is assumed that spread of different technologies is rapid through trainings. Thus it is essential to evaluate trainings conducted by Krishi Vigyan Kendras. Therefore the study aims to evaluate the trainings conducted by Krishi Vigyan Kendras of Kollam and Thiruvananthapuram districts, so that essential changes can be brought about in the training programmes. Hence the present study seeks to carry out with the following objectives:

1. To assess and compare the rate of adoption of acquired skill for livelihood security of trainees from KVK Kollam and Thiruvananthapuram.
2. To prepare technology inventories of the vocational trainings conducted at Krishi Vigyan Kendra Kollam and Thiruvananthapuram.
3. Perceived training need along with constraints were studied.
4. Profile characteristics was also be measured.

The current study was conducted at Krishi Vigyan Kendra Kollam and Thiruvananthapuram. The vocational trainings were conducted on more than ten aspects in both the KVKs during the last five (2012-2017) years. The common trainings with more number of trainees were selected for the study and the selected vocational trainings included Friends of coconut, training on Agro-machinery and other plant protection equipments, Mushroom cultivation, Organic input production and use of bio-control agents and Processing and value addition techniques. The sample of the study comprised of 150 respondents i.e., 75 respondents each from KVK Kollam and KVK Thiruvananthapuram. From both the KVKs, five common trainings with maximum number of participants were selected and from each of these trainings fifteen respondents were selected. The data which were relevant for the study was collected from the respondent trainees with a pretested well-structured interview schedule prepared for the current study. Personal interview was also carried out by the researcher for data collection and was recorded by herself.

Thereafter the collected data were exposed for statistical analysis and interpretation in order to obtain meaningful conclusions.

Rate of adoption of technologies acquired through vocational trainings and attitude of trainees towards the KVK trainings were selected as the dependent variables and the independent variables includes Age, Gender, Educational status, Family size, Annual income, Information seeking behaviour, Innovativeness, Training need, Number of trainings attended, Social participation, Training Rigour, Scientific orientation, Risk orientation and Level of satisfaction.

5.1 Salient Findings of the Study

The key findings of the study were presented below:

- Results of the current study revealed that nearly half of the respondents belonged to the category of medium level adopters followed by the low adopter category and about twenty per cent of the respondents were having high level adoption.
- The current study revealed that majority of the respondents of KVK Kollam (46.67%) and Thiruvananthapuram (52%) were in the category of medium level adoption followed by the low adoption category.
- In Friends of coconut training programme cultivation practices of coconut (land preparation, spacing) and use of climbing equipment were comparatively fully adopted by most of the trainees of Kollam and Thiruvananthapuram. Most of the respondents of both KVKs had discontinued or not adopting the nutrient management and plant protection practices.
- Agro - machineries for garden lands showed a higher rate of adoption in comparison to low land machineries irrespective of the location. More than half of the trainees were not adopting the maintenance skills. Half of the trainees of KVK Thiruvananthapuram were using plant protection equipment's

whereas, it was nearly 40 per cent at KVK Kollam. It was statistically proved that there was not much difference in the rate of adoption of agro-machineries and other plant protection equipments between the two KVKs.

- Considering the different components of training on mushroom cultivation, better adoption rate was shown by trainees of Thiruvananthapuram KVK.
- In case of trainings on organic input production and processing and value addition, there was not much difference in the rate of adoption of KVK Kollam and Thiruvananthapuram.

- From the correlation table of adoption and other independent variables it was clear that the rate of adoption of technologies was significantly and positively correlated with annual income, number of trainings attended, innovativeness, training rigour, scientific orientation, risk orientation and social participation. Among these variables number of trainings attended, training rigour and scientific orientation were correlated with rate of adoption at both 5 per cent and 1 per cent level of significance and all other variables were significant only at 5 per cent level of significance.

- Categorization of respondents based on attitude showed that majority (74.67%) of the respondents were having highly positive attitude towards the trainings of the Krishi Vigyan Kendras. About 81.33 per cent of the respondents of Thiruvananthapuram KVK were showing higher positive attitude whereas it was about 68 per cent in case of Kollam KVK.

- The attitude towards the course content in KVK was the highest according to relative importance in the scale for the beneficiary farmers. Other important attitude of respondents were the farmer will be adversely affected if the KVK is closed, the farmers get all

sorts of technological helps from the KVK in related to agriculture matters, KVK conduct well attended training programme as well on campus and off-campus to the farmers etc.

- The statements on which the respondents showed less favourable attitude includes, there is no adequate follow – up of the training programmes at KVK, Krishi Vigyan Kendras maintained poor coordination with other organizations engaged in the farmers training programmes, training approach is not innovative but simply a traditional, Training facilities are accessible to selected farmers etc.
- The study showed that most of the beneficiary respondents of both the Krishi Vigyan Kendras had most favourable to favourable attitude towards the vocational training programmes of the KVKs and there were no significant difference in the attitude of trainees of both the Krishi Vigyan Kendras towards training programmes.

- Results of the current study showed that majority (60.67%) of the trainees were in the middle aged category i.e. 35-55 years age.
- The female (61.33%) respondents were more than that of the male respondents (38.67%).
- Regarding the educational status of trainees, more than 40 per cent of the trainees were having higher secondary level of education followed by collegiate and high school education. There were no one having an education level below high school.
- It was observed that 50.67 per cent of the respondents were having two to four members in their family followed by the four to six family size (42.67%) group. Only 6 per cent trainees had a family size of more than six.

- Majority (63.33%) of the respondents belonged to medium annual income category ranging from Rs.50000 to 100000. Twenty per cent of the respondents had an annual income of more than Rs. 100000 and followed by the low annual income category (16.67%). It was also observed that 22.67 per cent of the trainees of Thiruvananthapuram KVK were coming under the category of higher income whereas it was about 17.33 per cent in case of Kollam KVK.

- More than half of the trainees (62.67%) had medium innovativeness followed by trainees with higher innovativeness (21.33%). Low innovativeness was observed in 16 per cent of the trainees. In case of respondents of Thiruvananthapuram KVK, 60 per cent of the trainees were showing medium innovativeness and it was followed by the high innovativeness category (30.67%). While in case of Kollam KVK, 65.33 per cent trainees showing medium innovativeness and followed by low innovativeness category (22.67%) and only 12 per cent trainees had high innovativeness.
- Male respondents were more innovative than female respondents. Out of the total, 25.9 per cent male trainees had higher innovativeness and it was only 17.4 per cent in case of female trainees.

- Newspaper was mostly chosen by the respondents for getting information and it was followed by television and other informal sources like family members and peer groups. The formal sources were consulted only after the mass media sources and informal sources and majority of the respondents consulted the formal sources when there was a problem in the field.

- More than 40 per cent of the respondents attended five trainings or more in the last five years followed by respondents attending

medium (38%) number of trainings i.e., three to five trainings and lower category (17.33%) attended two or less training.

- Categorization of respondents based on social participation pointed out that majority of the trainees (56.67%) had medium social participation followed by the low social participation (39.33%) category. From the table it was also clear that the number of respondents belonged to higher social participation category was very less.

- Regarding training rigour, 84.67 per cent of the trainees were categorizes the trainings having higher training rigour and 15.33 per cent were categorized them into medium training rigour. None of the trainings were categorized in low training rigour. Coming to the KVK wise training rigour, 81.33 per cent of Kollam KVK trainees and 88 per cent of Thiruvananthapuram KVK trainees were concluded that the trainings attended by them had high training rigour.

- More than half (60 %) of the trainees were having higher scientific orientation and the remaining 40 per cent had medium level of scientific orientation. The district wise scientific orientation indicated, 68 per cent trainees of Thiruvananthapuram KVK had high scientific orientation whereas it was about 52 per cent in case of Kollam KVK. None of the respondents were included in the category of lower scientific orientation.

- Results of the study revealed that 82.67 per cent of the respondents had higher risk orientation and the 17.33 per cent of the trainees had medium level risk orientation. Most of the trainees of Thiruvananthapuram KVK (89.33%) had higher risk orientation and it was 76 per cent in case of Kollam KVK.

- Majority of the trainees (90%) were highly satisfied with the trainings conducted by the Krishi Vigyan Kendras. About 95 per cent of the trainees of Thiruvananthapuram KVK and 85.33 per cent trainees of Kollam KVK were highly satisfied with the trainings attended by them.

- Results revealed that the independent variables, such as number of trainings attended, training rigour, scientific orientation, satisfaction and social participation were significantly and positively correlated with the attitude of trainees towards the vocational training programmes of Krishi Vigyan Kendras. Training rigour, scientific orientation, satisfaction and social participation were significant at both 5 per cent and 1 per cent level of significance. Number of trainings attended was significantly correlated with attitude at 1 per cent level of significance.

- The most preferred training programmes of Kollam KVK was on Nursery management and was followed by trainings on Agro machinery, Organic cultivation, Processing and value addition and Mushroom production.

- The training needs of farmers of Thiruvananthapuram KVK indicated topics such as training on Agro-machinery, Mushroom production, Processing and value addition, Organic cultivation and Bee keeping in the order of preference.

- Most of the trainees of Kollam KVK opined short duration of trainings as the major constraint, followed by lack of awareness about the trainings, lack of adequate follow up, trainings were given to the selected farmers and the poor coordination of training with other organisations.

- ❖ The major constraints perceived by trainees of Thiruvananthapuram KVK, were lack of awareness on training programmes were ranked first with a mean weighted score of 11.33, followed by lack of adequate follow up (10.42), short duration of training (10.17), availability of training to selected farmers (9.36) and poor coordination with other organisations (7.85).

5.2 Implications of the study

The findings of the present study would serve as a pace setter for future endeavours of researchers and extension personnels in the field of vocational trainings. Hence an attempt was made to document the rate of adoption attitude among the trainees to different vocational trainings organised by KVKs.

A major portion of the trainees belonged in the middle level adoption category which implies that more attention is needed to increase the rate of adoption of improved technologies, this will help the trainees to enhance their living standards. Also, efforts should be taken to ensure that all the technologies are disseminated among the farming community.

About 75 per cent of the trainees had favourable attitude towards the training programmes attended which implies that these vocational trainings are being perceived useful by the trainees and hence these should be promoted further.

The training needs and constraints enlisted by the trainees will act as a benchmark for future trainings and also constraints to be mitigated.

5.3 Future line of work:

1. Since the study was confined to trainees who have attended the vocational trainings of Krishi Vigyan Kendras, the same work can be replicated among other organizations providing training to gain better insights about the rate of adoption of technologies among the farming community.
2. The study was limited to the KVK Kollam and Thiruvananthapuram, the extension of the same work to all other KVKs in Kerala will helps to

evaluate the training efficiency and thereby helps to make essential changes in the training programmes to increase the rate of adoption among the Kerala farmers.

3. Comparative study can also be undertaken to know the difference in rate of adoption of technologies between the beneficiary and non-beneficiary farmers.

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ABSTRACT

COMPARATIVE ANALYSIS OF VOCATIONAL TRAINING PROGRAMMES OF KRISHI VIGYAN KENDRAS

By

GEETHU A M

(2017-11-072)

ABSTRACT

Submitted in partial fulfilment of the

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ABSTRACT

The study entitled "Comparative analysis of vocational training programmes of Krishi Vigyan Kendras" had its main objective, to assess and compare the rate of adoption of acquired skill for livelihood security of trainees from KVK Kollam and Thiruvananthapuram and inventorization of vocational trainings conducted at Krishi Vigyan Kendras, Kollam and Thiruvananthapuram. The study also focused on identifying perceived training need along with constraints and profile characteristics of trainees. The sample of the study comprised of 150 respondents i.e., 75 respondents each from KVK Kollam and KVK Thiruvananthapuram. From both the KVKs, five common trainings with maximum number of trainees were selected and from each of these trainings fifteen respondents were selected. The selected vocational trainings included friends of coconut, agro machinery and other equipment's, mushroom cultivation, organic input production and value addition and processing techniques. The study was conducted in the academic year 2017 -19.

Profile characteristics of the respondents in the study area were collected and analysed. Out of 150 respondents, a greater percentage of respondents were middle aged (60.66%) and females (61.33%). About 72.66 per cent of the respondents were with higher secondary education and above. There were no respondents coming under the category of primary level education. In case of annual income, about 63.33 per cent of the respondents belonged to medium level income group (Rs. 50000-100000). A major portion of the trainees of Thiruvananthapuram KVK belonged to medium to high income category whereas trainees of Kollam KVK belonged to medium to low income level. Half of the respondents (50.66%) had a family size of two to four members and 42.66 per cent had a family size of four to six members. As high as 62.66 per cent were having medium level of innovativeness and they were adopting the technology only after others tried it

successfully on their farm. About 30.66 per cent of the trainees of Thiruvananthapuram KVK showed higher innovativeness while in case of Kollam only 12 per cent of the trainees showed higher innovativeness. Results revealed that male respondents were more innovative than female. Nearly half of the respondents were frequently getting information regarding agriculture and allied sectors from the mass media like television and newspapers and from the informal sources like family and peer groups. Majority of the respondents consulted the formal sources when there was a problem. More than forty per cent of the respondents (44.66 %) attended five training programmes or more and 56.66 per cent of the trainees had medium level of social participation and only four per cent had high social participation.

The results showed that training efficiency of KVK Kollam and Thiruvananthapuram were higher and it was about 81.33 and 88 per cent respectively. Trainees of Thiruvananthapuram KVK had higher scientific orientation and risk orientation than trainees of Kollam KVK. Most of the respondents (90%) were satisfied with the trainings conducted and in case of Thiruvananthapuram KVK 94.66 per cent of respondents were highly satisfied whereas in case of Kollam KVK 85.33 per cent were satisfied. Nearly three fourth (74.66%) of the total respondents showed high positive attitude towards the KVKs. About 68 per cent and 81.33 per cent of the Kollam and Thiruvananthapuram KVK trainees had higher positive attitude respectively.

Nearly half of the respondents moderately adopting the technologies and only 19.33 per cent showed higher rate of adoption. The training wise rate of adoption, in friends of coconut showed that cultivation practices (land preparation, spacing) and use of climbing equipment's were comparatively fully adopted by most of the trainees of Kollam and Thiruvananthapuram. Most of the respondents of both KVKs had discontinued or not adopting the manure and fertilizer application and pest and disease management practices. Agro - machineries for garden lands showed a higher rate of adoption in comparison to low land machineries irrespective of the location. More than half of the trainees were not

adopting the maintenance skills. Half of the trainees of KVK Thiruvananthapuram were using plant protection equipment's whereas, it was nearly 40 per cent at KVK Kollam. There was not much significant difference in the rate of adoption of agro-machineries and equipment's between the two KVKs. Considering the different components of training on mushroom cultivation, better adoption rate was shown by trainees of Thiruvananthapuram KVK. In case of trainings on organic input production and processing and value addition, there was not much difference in the rate of adoption of KVK Kollam and Thiruvananthapuram.

Short duration of training programme, lack of awareness of training programmes, lack of adequate follow up were ranked as the first three major constraints by the trainees of Kollam KVK, whereas, lack of awareness of trainings was the most serious constraint faced by respondents of Thiruvananthapuram KVK, followed by lack of adequate follow up, short duration of the programme. Nursery management technique was ranked first in training needs by respondents of Kollam KVK, followed by value addition and post-harvest technologies, training on agro machineries and other equipment's and organic input production respectively. Respondents of Thiruvananthapuram KVK placed training on agro machinery and other equipment's at the top and was followed by mushroom cultivation, value addition and post-harvest technologies and bee keeping.

From the findings of the study it can be concluded that both the KVKs were conducting well organized training programmes for improving the knowledge, skill and attitude of the farming community. Almost half of the respondents from both the KVKs were moderately adopting the technologies and no significant difference was observed in the rate of adoption of technologies by the trainees of both KVKs. Coming to the major training needs of the farmer trainees it includes training on agro machinery and other equipment's, mushroom cultivation, value addition and post-harvest technologies and bee keeping. The major constraints faced by the trainees include short duration of vocational trainings, lack of awareness on training programmes and lack of adequate follow up.

APPENDICES

APPENDIX I

KERALA AGRICULTURAL UNIVERSITY

Krishi Vigyan Kendra, Kollam
Kerala Agricultural University
Sadanandapuram

Dr. Bindu Podikunju
Assistant professor and Major advisor
Email: bindupodikunju75@gmail.com
Mobile no: 9745643733

Dated:

Sir/Madam,

Ms. Geethu A M (Ad. No.2017-11-072), the post graduate scholar in the Department of Agricultural Extension, College of Agriculture, Vellayani is undertaking a research study entitled 'Comparative analysis of vocational training programmes of Krishi Vigyan Kendras' as part of her research work. Variables supposed to have close association with the study have been identified after extensive review of literature.

Considering your vast experience and knowledge on the subject, I request you to kindly spare some of your valuable time for examining the variables critically as a judge to rate the relevancy of them. Kindly return the list duly filled at the earliest in the self -addressed stamped envelope enclosed with this letter.

Thanking you

Yours faithfully

Bindu Podikunju

Comparative analysis of vocational training programmes of Krishi Vigyan Kendras

Objectives

The objective of the study is to assess and compare the rate of adoption of acquired skill for livelihood security of trainees from KVK Kollam and Thiruvananthapuram. To prepare technology inventories of the vocational trainings conducted at Krishi Vigyan Kendras, Kollam and Thiruvananthapuram. Perceived training need along with constraints will be studied. Profile characteristics will also be measured.

Personal, Socio-psychological variables taken for the study

Variables are given in bold cases and their respective meaning is explained for easy understanding of intended meaning. You may please rate the statement with a tick mark in the appropriate column against the statement with special reference to its importance to meet the objectives of the study.

Independent variables for farmers

Sl. No.	Variable	Operational definition	Relevancy rating (R - relevant)				
			Most R	More R	R	Less R	Least R
1	**Age**	The age of the beneficiaries was measured in terms of actual years from the birth to the time of interview on the basis of their statement. The score was allotted on chronological age method.					
2	**Gender**	Gender described as those relative status of men and women in the society					

3	**Education**	Education of beneficiaries was measured in terms of years of schooling completed by them.					
4	**Caste**	Caste is a status of an individual which the beneficiaries acquire by birth.					
5	**Size of family**	Family size refers to the number of members in family living together under one roof and having common mode of cooking and eating.					
6	**Innovativeness**						
6	**Use of interpersonal channel**	It was operationalized as the degree to which a respondent was exposed to the face-to-face communication between two or more individuals					
7	**Information seeking behaviour**	It refers to the degree of frequency of contact by respondent with various information sources. This is the pattern by which respondents get information either seeking on its own or as a consequence of behaviour.					
8	**Training experience**	The experience of training perceived by respondents determines duration of training given by KVK personnel.					
9	**Training need**	Refers to the factors that act as a driven force for undertaking training					
10	**Economic motivation**	Economic motivation refers the extent to which individual is oriented towards achievement of the maximum economics profit through his own farm.					

11	**Innovativeness**	Innovativeness is conceived as a disposition of a person to accept the innovations					
12	**Social participation**	It refers to the participation of beneficiaries in any social or political organization.					
13	**Socio economic status**	It is the position occupies with respondent in reference to the prevailing average standard of land holding, literacy level, type of house, annual income, animal possession, farm power possession and material possession etc. The scoring pattern was adopted according to structural schedule.					
14	**Extension participation**	It was operationalized as the degree to which a respondent was involved in different extension activities for obtaining information and help					
15	**Mass media exposure**	It was operationalized as the degree to which a respondent was exposed to the information of different trainings from various mass media					
16	**No. of trainings attended**	Operationally, training has been defined in this study as a kind of learning process where selected groups of individuals undergo learning experience to internalize the skills, resulting in the modification of behaviour towards specific job performance.					
17	**Income generation**	Income earned is the end result of work and employment. Income refers to the total income earned in8terms of rupees by the respondents					

18	**Risk orientation**	It is the degree to which a farmer is oriented towards risk and uncertainty in agriculture and has the courage to face the various risks involved in agricultural aspects.					
19	**Type of vocational training**	Refers the type of training obtained by the respondent					
20	**Achievement motivation**	It is defined as the degree to excel regardless of social rewards. It is the desire to do well not so much for the sake of social recognition or prestige, but to attain an inner feeling of personal accomplishment					
21	**Scientific orientation**	It is the degree to which a farmer is orientated in the use of scientific methods in decision making and farming					
22	**Attitude**	Attitude has been defined as the degree of positive or negative effect associated with some psychological object. Attitude in this study refers to the feeling and reaction of the farmers towards the improved agricultural practices.					
23	**Cosmopoliteness**	It is defined as the degree to which an individual is visiting or oriented outside the social system.					
24	**Annual income**	It refers to the total income of the respondents obtained from farming and subsidiary occupation in a year.					

25	**Infrastructural facilities**	The essential facilities for increasing agricultural production and agricultural income by encouraging the farmers in performing farm operational work and adoption of agricultural technologies are also considered as infrastructural facilities.					
26	**Perception of trained farmers**	Perception has been operationalized as view or experience of the trained farmers about the training programmes attended by them.					
27	**Employment generation**	Refers the degree to which a training programme leads to employment generation					
28	**Level of satisfaction**	Operationally defined as the degree to which the respondents feel satisfied with the service of KVK personnel.					
	If any other, specify						

APPENDIX II

Comparative analysis of vocational training programmes of Krishi Vigyan Kendras

Interview schedule for farmers

No.

Date:

1. **Name and address of the respondent:**

2. **Name of the block and panchayath:**
3. **Age :**
4. **Gender :**
5. **Educational status:**
   - ✓ Mark in appropriate column

	score
Primary school	1
High school	2
Higher secondary	3
College education & above	4

6. **Family size :**
   - ✓ Mark in appropriate column

Number of members	score
Up to 2	1
3 to 4	2
5 to 6	3
>6	4

7. **Annual income :**
8. **Social participation**

Member in one organization	1
Member in two or more organization	2
Office bearer	3

Frequency of visit	score
Attend all meetings	3
attend some meetings	2
Never attend meetings	1

9. Innovativeness

✓ Mark in appropriate column

As soon as it is brought to knowledge	3
After I have seen other farmers tried successfully in the farm	2
I prefer to wait and take my own time	1

10. No: of trainings attended :

✓ Mark in appropriate column

Training attended	Score
1	1
2-4	2
≥ 5	3

11. Training need :

(Indicate your response to the following statements in appropriate columns)

Sl.no	Training	ME	E	LE	NE
1	Mushroom production				
2	Integrated farming				
3	Seed production/ Planting material production				
4	Production of organic inputs				
5	Protected cultivation of vegetable crops				
6	Bee keeping				
7	Repair and maintenance of farm machinery and implements				
8	Nursery management of horticultural crops				
9	Value addition				
10	Production of quality animal products				
11	Dairying				
12	Sheep and goat rearing				
13	Poultry production				
14	Post-harvest technology				

15	Tailoring and stitching				
16	Rural crafts				
17	If any other, please specify				

(ME – Most Essential, E – Essential, LE- Least Essential, NE – Not Essential)

12. Training effectiveness:

Please express your feelings about following statements

Sl.no	Statements	Strongly agree	Agree	Disagree	Strongly disagree
1	Content of training was good and presentation was effective +				
2	Trainers have adequate knowledge +				
3	Quality of instruction was not good -				
4	Helps to Meet the training objectives +				
5	Class participation and interaction was good +				
6	Limited time for discussion and clearing doubts -				

13. Information seeking behaviour:

	Sources	Regularly	Once in fortnight	Whenever problem arise	Never
Media Sources	Television				
	Radio				
	News papers				
	Agri. Literatures				
Formal Sources	Scientists of KAU/KVK				
	BDO, AEO				
Informal Sources	Family members				

Any other source					

14. Scientific orientation

	Statements	SA	A	DA	SDA
1	New methods of farming give better results than the old methods +				
2	The way of farming by our fore fathers is the best way of farming today -				
3	Even the farmers with a lot of farming experience should use new methods of farming +				
4	A good farmer should experiment with new methods of farming +				
5	since it takes time for farmer to learn new methods in farming it is not so worthy -				
6	Traditional methods of farming have to be changed in order to raise the living of the farmer +				

15. Risk orientation

Sl. No:	Statements	SA	A	UD	DA
1	Trying entirely a new technology involves high risk -				
2	It is good for a farmer to take risk when there is a possibility that the change will give a high level of success. +				
3	A farmer who is willing to take greater risk than the average farmer usually does better. +				
4	It is better to go with newer technologies, it helps to avoid risk -				
5	Even though some practices are not traditionally practiced, it is worth trying to get profit and satisfaction +				

SA-Strongly Agree, A-Agree, U-Undecided, DA-Disagree

16. Attitude towards training programmes

Please give your degree of agreement about each of the following statements

	Statements	SA	A	D	SDA
1	The trainers talk about something which the farmers do not need -				
2	The course content in KVK programme is well designed +				
3	Because of the KVK training farmers have considerably increased their production of agriculture +				
4	The farmer will be not adversely affected if the KVK is closed -				
5	KVK provides unique opportunity to the farmers for undergoing need based skill oriented training +				
6	The training programme of KVK are planned according to season and time +				
7	The training method followed at KVK are not in accordance with the course content -				
8	KVK training facilities are available only to the new selected farmers -				
9	KVK maintained poor coordination with the other organization engaged in the farmers training -				
10	KVK conduct well attended training programme as well on campus and off campus to the farmers +				
11	The farmers get all sorts of technological helps from the KVK in related to agriculture matters +				
12	The training approach is not innovative but simply a traditional -				
13	KVK has very much added to the farmers knowledge about few improved methods of farming +				
14	The trainee's farmers find answer for their immediate problem by the trainers +				
15	There is no adequate follow – up of the training programmes at KVK -				

17. Adoption of technology

Sl.no	ITEMS	FA 4	PA 3	DE 2	NA 1
1	**Organic and eco- friendly farming practices**				
	Production of organic inputs (manures, compost etc.)				
	Organic pest management				
	Organic disease management				
	Weed management				
2	**Processing and value addition techniques**				

	Value addition of vegetables				
	value addition of fruits				
	Storage and packaging techniques				
	Quality control measures				
3	**Friends of coconut**				
	Cultivation practices				
	Manure and fertilizer application				
	Pest and disease management				
	use of climbing machine				
4	**Farm mechanization &other plant protection equipments**				
	In low land				
	In garden land				
	Plant protection equipments				
	Repair and maintenance of farm machineries				
5	**Mushroom cultivation**				
	Spawn production				
	Mushroom production				
	Spent composting				
	Value addition of mushroom				

FA- Fully adopt, PA- partially adopt, DE/RE- Disenchantment/Replaced, NA- not adopted

18. Level of satisfaction

Please give your level of satisfaction on following statements

Sl.no.	Statements	ES	S	NS	DS
1	Training was need based				
2	Satisfaction on Training content				
3	Satisfaction on trainers knowledge				
4	Satisfaction on approach of trainers				
5	Satisfaction on duration of training				

19. Constraints Analysis of farmers:

Please rank the following statements in descending order according to your experience

Sl. no	Constraints	Rank
1	Lack of awareness about the trainings	
2	Most of the trainings are of short duration	
3	Lack of need based training programmes	

4	Trainings are not given in time	
5	subject matter knowledge of trainers are poor	
6	Practical orientation was less	
7	Poor training content	
8	Training on new technologies are less	
9	Training methods selected are not good	
10	Training facilities are available to the selected farmers only	
11	Poor coordination with other training organizations	
12	No adequate follow up	
13	If any other, please specify	

20. Suggestions to improvement:

What all are you expecting from KVK so as to increase its quality of training

i)

ii)

iii)