

EXTENT OF ADOPTION OF MESSAGES BY CONTACT FARMERS IN T & V SYSTEM

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THESIS

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TRIVANDRUM.

1987

DECLARATION

I hereby declare that this thesis entitled "EXTENT OF ADOPTION OF MESSAGES BY CONTACT FARMERS IN T&V SYSTEM" is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any other University or Society.

Vellayani,

1st September 1987


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CERTIFICATE

Certified that this thesis entitled "EXTENT OF ADOPTION OF MESSAGES BY CONTACT FARMERS IN T&V SYSTEM" is a record of research work done independently by Sri.K.M. PRASANNAN under my guidance and supervision and that it has not previously formed the basis for the award of any degree fellowship or associateship to him.



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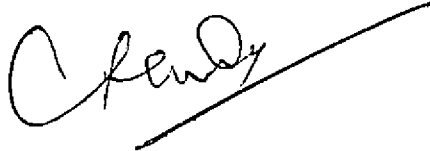
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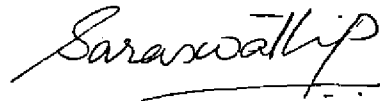
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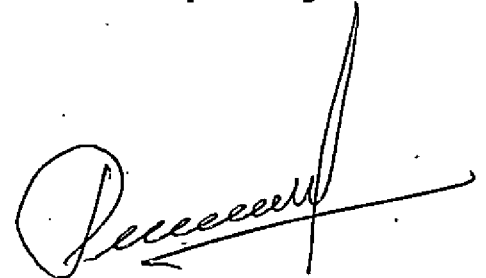
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A handwritten signature in black ink, appearing to read 'Prasannan', with a long horizontal stroke extending to the right.

(PRASANNAN, K.M.)

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INTRODUCTION

CHAPTER I
INTRODUCTION

Training and Visit System of Extension developed by Daniel Benor, which has been introduced in projects assisted by the World Banks in a number of countries with good results. The system has been put in to operation in areas where the need is to improve the level of agricultural production by large numbers of farmers cultivating mostly small farms using low level technology and usually traditional methods.

Agriculture forms one of the major sectors of the Indian economy and 70 percent of our population is dependent for lively hood and which contributes to over 40 percent of the gross national product. The performance of Indian agriculture during the past few decades has been remarkable, setting in motion the process of transformation of an age old traditional agriculture in to a modern farming system great strides have been made in the agricultural front since the sixties following large scale application of Science and Technology. This has helped substantially in achieving self sufficiency in food grain production.

Inspite of all these glorious achievement, the farm front in Kerala does not present a rosy picture as yet. It is an admitted fact that improved technologies orginated from research institutions have not percolated down uniformly to

all the farmers. The pre-requisites for agricultural development is the successful transfer of useful technologies or ideas from scientists to the farmer. All though many sophisticated technologies have been developed in the field of agriculture during the last two decades the per hectare yield of crops grown in our State is still far below the standard of other states especially in rice production. Rice plays a significant role in the cultural, religious, social and economic life of the people of Kerala and it is the staple food of the people of the state and will continue to be so for many more years to come. The reason attributed to the low per hectare yield seems to be the failure in the proper transfer of technology from research station to the farming community. So the need of the hour is the transfer of technology developed from time to time to the farmers as speedily as possible to increase yields through well organised extension system.

In order to achieve the above objective, the Kerala Agricultural Extension Project was introduced on a pilot basis in three districts of Kerala viz. Trivandrum, Quilon and Alleppey during 1981 Later in 1983 the programme was extended to the remaining ten districts also. The Kerala Agricultural Extension Project popularly known as Training and Visit System

(T & V System) envisages the transfer of proven and low cost technology to selected contact farmers by the Village Extension Worker (V.E.W) through systematic and regular fortnight visit.

The T & V system of Agricultural Extension offers many advantages compared to other development programmes. The main idea of the system is to have competent, well informed village level extension worker, who will visit the contact farmers in every fortnight regularly with relevant technical messages and bringing farmers problems back to research for finding out suitable solutions. The contact farmers represents the range of socio-economic and farming conditions in the farmers group to which they belongs. The results of recommended practices adopted by them should convince most of the other farmers of what can be achieved. Imitable contact farmers become demonstrators of introduced recommended practices and their example leads to the wider adoption of these practices among the other farmers.

The ultimate purpose of the T&V system is to communicate the needed information to contact farmers and motivate them to adopt these technology in their field. Many factors affect the adoption of improved technology and the extent of adoption of these technologies is greatly influenced by their

personal, socio-psychological and economic characteristics. However, no research study has established this relationship in the case of contact farmers in Kerala. Therefore, with the objective of studying the extent of adoption of messages on paddy and coconut communicated to contact farmers in T&V System and also to explore its relationship with their personal, socio-psychological and economic characteristic, a research study was undertaken in Trivandrum district, where the system was introduced first. The specific objectives of the study were :

- A To identify messages on improved agricultural practices on major crops communicated to contact farmers under T&V system
- B To assess the extent of adoption of messages during the season
- C To study the relationship of the personal, psychological and economic characters of contact farmers with their extent of adoption
- D To delineate the constraints experienced by contact farmers in the adoption of messages

Scope of the study

Training & Visit programme is a new system of agricultural extension introduced in Kerala since 1981. The success

or failure of this system largely depends upon the extent of adoption of scientific practices by the farming community. Therefore, a systematic indepth study on the extent of adoption of messages on important crops by contact farmers are important to assess the efficiency of the system. As such, no earlier studies has been reported on the extent of adoption of messages so far. Hence, a study of this type will help to understand the extent of adoption of messages on improved agricultural practices by contact farmers, who forms the king-pin in dissemination of scientific innovation to the farmers around them. An understanding of the extent of adoption of such messages by contact farmers will certainly help the scientists and field level workers to streamline their field of extension activities to make the T&V system function effectively.

Limitation of the study

The study was conducted as a part requirement for the M.Sc.(Agri.) Programme and so it was not possible for the student researcher to explore the area in greater depth and in a more comprehensive manner. However, with limited resources and time available to the student researcher all the 3 agricultural sub-divisions within the Trivandrum district were selected for the study in which T&V system was first introduced in the State.

But number of respondents and variables related were limited due to lack of time and sufficient resources at the disposal of researcher. Despite all these, sincere and devoted efforts have been made to make this study as objective and systematic as possible. However, the generalisations made in the study, based on the research findings, may have only limited application to other areas.

Presentation of study

The study is presented in six chapters. The introduction, objectives, importance of the study and its limitations are presented in the first chapter. The second chapter deals with review of literature. The third chapter of the study is devoted to the methodology adopted for investigation. This is followed by presentation of results of the study in Chapter 4. The findings of the study have been discussed in Chapter five followed by summary and conclusions, references, appendices in subsequent Chapter.

REVIEW OF LITERATURE

CHAPTER II

REVIEW OF LITERATURE

A review on researches conducted in the area of study aids the investigator to get acquainted with the various empirical procedures adopted in previous studies and also the findings obtained by these studies. The critical review helps to identify the basis for formulating a theoretical orientation for the study.

In this chapter the review is presented under the following heads

- A) Theoretical orientation, including the explanations of dependent variable, identification of specific variables general and theoretical concepts and definitions of the independent variables.
- B) Review of the results of the studies related to the variables studied.
- C) Review on constraints in the adoption of messages by the contact farmers.

Wilkening (1953) postulated the adoption of an innovation as a process composed of learning, deciding and acting over a period of time. The adoption of decision to act have a series of actions and decisions.

Emery and Oeser (1958) viewed adoption of farm practices as a consequence of communication.

Copp, Sill and Brown (1958) defined adoption as an activity of farmer taking place over a period of time. They viewed adoption of farm practice as a bundle of related events following through time, not an instantaneous metamorphosis.

According to Rogers (1962) adoption process is the mental process through which an individual passes from first hearing of an innovation to its final adoption.

Chattopadyaya (1963) defined adoption as the stage in the adoption process where decision making is complete regarding the use of a practice and action with regard to such practice commences.

According to Rogers and Shoemaker (1971) adoption is a decision to continue full use of an innovation as the best course of action.

Adoption behaviour

Behaviour refers to any thing the individual does. It is not a chance or random phenomenon. It is a response to a course or stimulus and it is purposeful and goal-oriented. It is intended to accomplish some objective which in turn would satisfy or at least reduce some need of the individual.

Drever (1952) defined behaviour as the total responses, motor and glandular, which an organism make to any situation with which, it is faced.

Skinner (1952) defined behaviour as all forms of process, adjustments, activities and experience of the organism.

Sherif and Sherif (1956) considered experience and behaviour together and conceptualised them as an outcome of interacting influences stemming from individual himself and impinging from outside.

Dandekar (1976) considered behaviour as the expression of one's experience. Adoption of a practice or idea is the expression of one's experiences in the form of action. Therefore adoption can be considered as a part of human behaviour.

Factors related to adoption

Anthropologist like Suttle (1951) and Sharp (1952) attempted to emphasize the social consequences of innovation and their effect on adoption.

Wilkening (1953) opined that socio-psychological approach was found to be the main criterion in the research related to adoption.

Coleman (1955) in his study on adoption of soil conservation practices by farmers observed that the adoption of farm practices by farmers was influenced by social, psychological and economic factors of individual respondents.

Jha (1960) rightly emphasised the importance of psychological principles involved in the decision making.

Sawhney (1961) examined the factors and forces contributing towards the wide differences in adoption and enhancing the process of acceptance and found that they can be explained better from social, psychological and economic point of view.

Basaram (1966) carried out a study on motivational and resistance forces in Indian farming and concluded that sociological, psychological and economic variables of farmers were important in explaining their attitude towards new ideas and techniques and final adoption by them.

Voh (1982) in a study conducted in a Nigerian village on the factors associated with adoption of recommended practices reported that levels of literacy and education, contact with extension and urban centres, socio-economic status empathy and leadership roles in agricultural matters are found to be significantly related with adoption of recommended practices.

Osuntogun, Ademoyo and Anyanwn (1986) reported that the extent of adoption of recommended farm practices among cooperative rice farmers in selected local Government areas of Imo States, Nigeria showed that 69 percent of farmers in the survey area were following the recommended farm practices for rice production. Extension contacts and mass media exposures were

found to be significantly related to the adoption of recommended practices, but age and cooperative credit were less important.

From the above discussions it may be found that adoption behaviour is a multivariate phenomenon. The above research studies clearly shows that extent of adoption depends upon adoption behaviour of a farmer, adoption and various factors associated with adoption process.

Reviews on the results of studies related to selected independent variables

Age

The United Nations has defined age as the estimated or calculated interval of time between the date of birth and the date of census expressed in completed solar years.

According to Wolman (1973) age means the period of time from birth to any given time and life or chronological age.

Sevenson (1942) found that younger farmers adopted the innovations, before other farmers.

Wilkening (1952) found negative relationship between age and adoption behaviour.

Pandit (1964) reported that age was positively related with adoption.

Kamalsen (1971) observed an increase in the rate of adoption of agricultural practices with increase in age as expressed by the trainees of farmers training camp.

Appa Rao (1971) reported that age of farmers was not associated with adoption of demonstrated practices.

Anbalgan (1976) found that young farmers accepted more number of improved agricultural practices of high yielding varieties of paddy than older farmers.

Pillai (1978) while studying the impact of soil conservation programme found that age was negatively and significantly related with adoption of soil conservation practices.

Annamalai (1980) found that there was no significant relation between age and adoption behaviour of both farmer demonstrators and nearby farmers.

Sanoria and Sharma (1983) found that age of beneficiaries of T&V system had significant association with their adoption behaviour.

Farm size

Land is the primary resource in farming. It is a scarce resource. The importance of land as a factor for adoption needs no over emphasis.

Viswanathan, Oliver and Menon (1975) stated that there was significant influence of farm size on the adoption of high yielding varieties of paddy by farmers.

Vijaya Raghavan (1976) concluded that farm size was positively and significantly associated with adoption of high yielding varieties of paddy.

Pillai (1978) and Subadhra (1979) concluded that farm size had influence over, adoption of improved practices.

Vijaya (1982) stated that farm size had no influence on the extent of adoption among farmers under T&V system.

Sanoria and Sharma (1983) illuminated that size of holding was significantly related to adoption behaviour in the case of beneficiaries of T&V system.

Educational status

According to Chambers Dictionary (1971) education is bringing up or training, instructing, strengthening of power or body or mind or culture.

Pillai (1978) defined the term "educational status" as the number of years of formal School or College studies undergone by an individual.

Several researchers have shown that educational level of farmers as positively related with their adoption behaviour.

Wilkening (1953) Van Den Ban (1957) Lionberger (1960) Reddy (1962) Pandit (1964) Rai (1965) Rajendra (1968) Grewal & Sohal (1971) while studying the comparative role of two social system in their speed of adoption of some farm practices, found greater level of adoption in group which had higher educational level.

Viswanathan (1972) reported that educational status seemed to influence the adoption of recommended farm practices.

Subramonyan and Lakshmana (1973) as well as Chandra Kandan (1973) reported that education of farmers was positively related to the extent of adoption of recommended farm practices.

Kamble (1973) found that social values namely efficiency and education were found to have positive significance, with adoption.

Ramamoorthy (1973) found that educational status was having positive association with adoption.

Vella Pandian (1974) reported that education was positively associated with the adoption of farm practices.

Supe and Salode (1975) reported that formal education had no significant relationship with the adoption of demonstrated farm practices.

Agarwal (1984) found that better educated farmers are generally early adopters of innovation.

Social participation

According to Rogers and Shoemakers (1971) participation is the degree to which members of social system are involved in the decision making process. Member satisfaction with and acceptance of, collective innovation decision is positively related to the degree of participation, in the decision by members of the social system.

Pillai (1978) used this concept as the association of an individual with formal organization.

Several researchers have revealed that social participation of farmers positively influenced their adoption behaviour.

Notable amongst them are Rahim (1960) Reddy (1962) Reddy and Kivilin (1968) Singh (1968) Sundara swamy (1971) Rao (1972) and Viswanathan (1972) inferred that there was significant and positive relationship between adoption and social participation.

Chandrakandan (1973) found that better social participants were better adopters of farm practices.

Anbalagan (1974) observed that adopters of improved farm practices had more social participation.

Supe and Salode (1975) reported that social participation was not related with adoption of demonstrated cultivation practices.

Salunke and Thorat (1975) found that there was significant relationship between organizational participation and adoption behaviour of small farmers.

Sundara Swamy and Duraiswami (1975) reported that adoption of recommended practices were more among the farmers who had more social participation.

Saini (1975) Kappse (1976) found that social participation and its influence over adoption was positively related to adoption.

Somasundaram (1976) revealed that a significant and positive association between social participation and extent of adoption in the case of small farmers.

Rajendran (1978) found that social participation of farmers were positively and significantly related with the adoption behaviour of farmers.

Joshi (1978) Subhadra (1979) stated that there was no significant relationship between social participation and adoption.

Naik (1981) opined that attitude of contact and other farmers towards T&V system was not associated with extent of social participation.

Ferreira, Machado - Filho and Francis (1983) found that farmer with higher social participation tended to adopt more technology.

Risk orientation

Heady and Jensen (1954) pointed out that the term risk orientation commonly refers to all outcomes which leads to loss of realisation from expectation.

Supe (1969) defined risk orientation as the degree to which a farmer is oriented towards risk and uncertainty and also has the courage to face the problems in farming.

A number of research studies have revealed that risk taking capacity of farmers positively influenced the adoption behaviour of farmers. Among them are Ramsey and Polson (1959) Fliegall (1959) Rogers and Havens (1961). Hobbs (1964) reported a positive relationship between risk orientation and adoption of improved farm practices.

Singh (1968) found a positive and significant influence between risk orientation and adoption.

Nair (1969) while conducting a multivariate study on the adoption of high yielding paddy varieties by the farmers of Kerala, found that risk orientation as an important variable which affected the adoption behaviour.

Singh and Singh (1970). Roshansing and Singh (1970) also found such relations.

Binswanger (1978) reported that risk orientation was an important variable in the adoption of new technology.

Rajendran (1978) found that risk orientation was positively and significantly related with adoption behaviour.

Economic motivation

Nair (1969) defined economic motivation of farmers as their attitude towards farming as a profit oriented enterprise.

Hobbs (1964) reported that there was positive relationship between the economic motivation of farmers and their adoption behaviour.

Beal and Sibley (1967) and Singh (1968) reported positive relationship between economic motivation and adoption of improved practices.

Das and Sarkar (1970) found that (1) farmers adopted improved practices for economic gains (2) the socio-cultural factors influenced farmers to adopt improved practices only for economic gains. They concluded that higher the economic motivation more favourable the attitude towards adoption of improved farming practices would be.

Singh and Singh (1970) reported that economic motivation was positively contributing to the adoption of improved practices by farmers.

Brady (1982) argued that even though small scale farmers are not well educated and appear resist change, their rapid adoption of new wheat and rice varieties is evidence of their willingness to adopt technology if it provide them decided economic or social benefit.

Extent of cosmopolitaness

According to Rogers and Svenwing (1969) cosmopolitaness is the degree to which an individual is oriented outside his social system.

Fliegel (1960) found that there is no significant relationship between cosmopolitaness and innovativeness among Brazelian farmers.

Chauhan and Sinha (1976) found negative relationship between cosmopolitaness and adoption of farm technology among farmers.

Kittur (1976) found that cosmopolitaness was positively related with adoption of farm practices.

Channegowda (1977) found positive relationship between cosmopolitaness and extent of adoption of recommended practices by farmers.

Mahadev Swamy (1978) found positive relationship between cosmopolitanism and adoption.

Kamarudeen (1981) found a positive relationship between cosmopolitanism and adoption.

Ferreira Machado - Filho and Francis (1983) found that cosmopolitan farmers were more inclined to adoption technology.

Information source utilization

Rai (1965) observed that adopters of new ideas had favourable attitude towards government programme and also said that greater the number of information source sought, greater was the extent of adoption.

Dhaliwal and Sohal (1965) concluded that frequency of contact with extension agency was significantly related to the adoption of agricultural practices.

Singh and Jha (1965) concluded that the noninstitutionalised sources of information were rated high over institutionalised sources in the initial stages of adoption whereas the institutionalised sources of information were rated high over non-institutionalised sources in the advanced stage of adoption.

Lakshmana and Satyanarayana (1967) viewed that for effective agricultural development through the adoption of innovation of the sources of information like the government agency and mass media have to be strengthened to play a much bigger part in future.

Champawat and Intodia (1970) observed that result demonstration acted as a useful source of information.

Patel and Singh (1970) revealed that the formal source of information were extensively used by both adopters as well as non-adopters. The informal sources of information were found to be less conspicuous, where as sources of mass communication were found to be effective to 68.33 percent of adoption and 36.67 percent of non-adoption.

Mathur et al (1974) studied the media utilization pattern of respondents against back ground of decision making for adoption. The media were categorised as interpersonal media and mass media. In the interpersonal media neighbours, friends and relatives, forms the background of decision making of farmers for adoption.

Padheria and Patel (1975) concluded that majority of respondents sustained information about improved farm practices of the selected crops from the village level workers and the most important source of informations were neighbours and relatives.

Nanjaiyan et al (1977) observed that for the selection of variety and season, neighbours and friends were the most utilized sources followed by radio.

Scientific orientation

According to Supe (1969) scientific orientation is the degree to which a farmer is oriented to the use of scientific methods in decision making in farming.

Beal and Sibley (1967) found that farmers favourable attitude towards science was positively related with the adoption of farm practices.

Reddy and Kivlin (1968) observed that scientific attitude was not related with the adoption of recommended practices by the farmers.

Supe and Salode (1975) reported that the scientifically oriented farmers had high extent of adoption of the demonstrated cultivation practices of Javer.

Management orientation

Kahlon and Acharya (1967) indicated higher management input had significant effect on farm income.

Samantha (1977) found that cultivators with high management orientation were likely to repay the loan in time because they exhibited a higher level of adoption.

Shanmukhappa (1978) pointed out to the significant relationship between managerial ability of arecanut growers with their adoption of improved cultivation practices.

Constraints in the adoption of messages

Important problems perceived in the adoption of improved agricultural practices have been reported in many studies.

Sundaraswamy (1971) reported that lack of knowledge and lack of money were main constraints in the adoption of recommended farm practices.

Anbalagan (1974) found that the major limiting factor for the adoption of paddy practices were lack of knowledge, non availability of inputs and high cost of cultivation.

Viswanathan (1975) in his study of impact of high yielding varieties of rice on small farmers revealed that the high cost of cultivation was the main limiting factor in the adoption process.

Tripathy (1977) reported that institutional constraints leading to technological gap in adoption of new rice technology were absence of liberal credits, high rates of interest, complicated procedures and unauthorised changes for getting credit as pointed out by farmers.

Sripal (1981) reported that the factors responsible for the non-adoption of improved practices in cotton cultivation were not in a practice, not profitable high cost, not known

and no effect. He stated that the main problem was the high rise in the price of inputs.

Waghmare and Pandit (1982) found that lack of knowledge, technical guidance and inputs and small size of holdings were the important constraints in adoption of wheat technology.

METHODOLOGY

CHAPTER III

METHODOLOGY

In this chapter, the methodology employed for the study is presented under the following headings

3.1. Locale of the study

3.2. Sampling procedure

3.3. Methods used for data collection

3.4. Measurement of variables

1. Measurement of dependent variable

2. Measurement of independent variables

3.5. Statistical tools used

3.1. Locale of the study

This study was conducted in Trivandrum District of Kerala State. Trivandrum is one of the three southern districts of Kerala where the Training & Visit System was first implemented in Kerala in 1981. This district was purposely selected for undertaking the investigation as the researcher was much familiar with sociocultural milieu of the farmers, village extension workers and the officials of the district which will be helpful in establishing quick rapport and obtaining correct information from the respondents. The study was confined to one district due to the limited time and resources available at the disposal of the investigator.

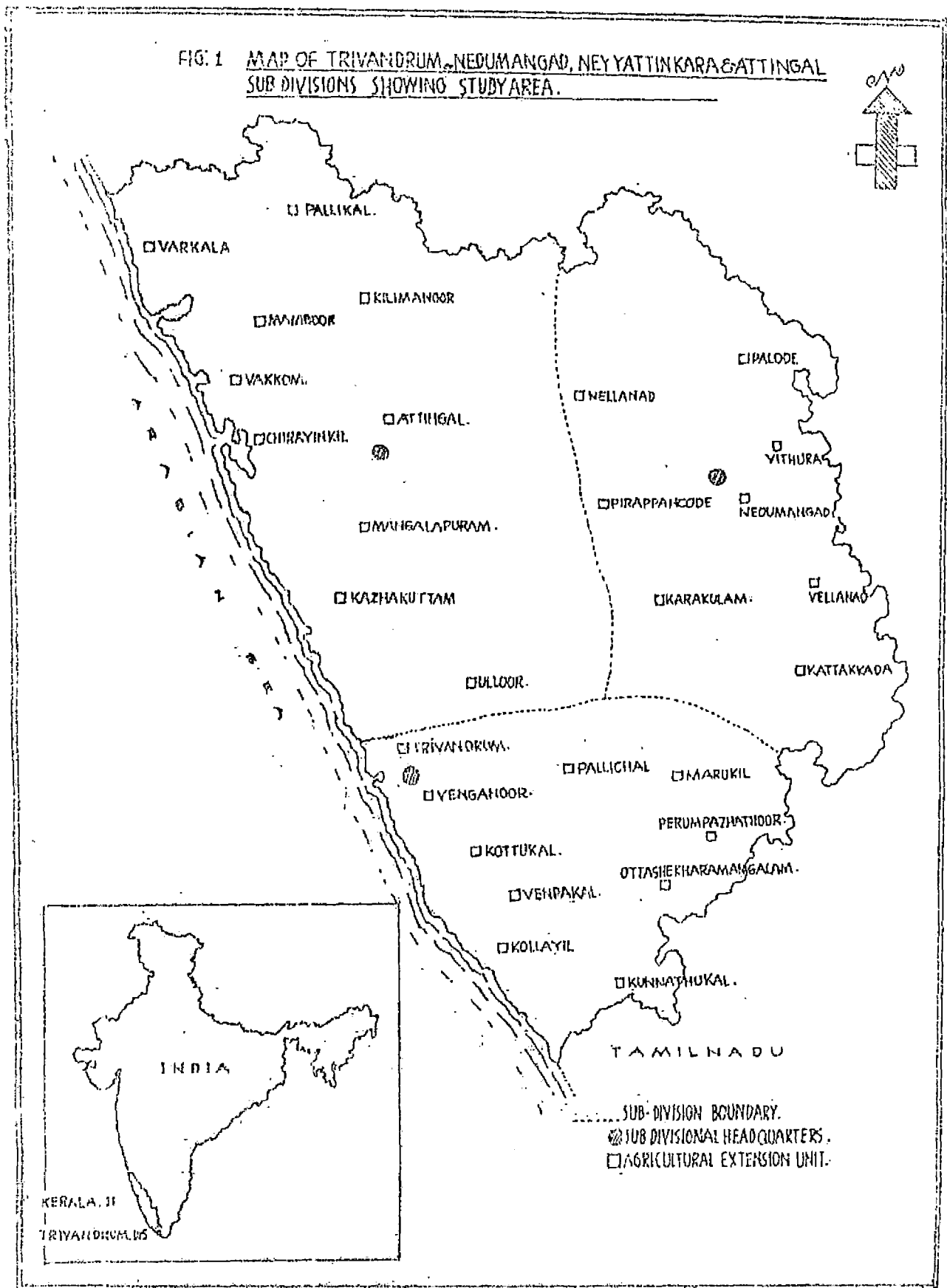
The Trivandrum district is divided for administrative convenience of T&V system into three sub divisions viz. Attingal, Neyyatinkara and Nedumangad. Attingal and Neyyatinkara sub-divisions consist of 10 Agricultural Extension Units each, where as Nedumangad sub-divison has 8 Agricultural Extension Units (A.E.Units). Each A.E. Unit is in charge of an Agricultural Officer. Based on the density of population, cropping intensity, accessibility and local conditions each unit is divided into 5 to 8 circles. Each circle will have 1000-1200 farm families that are again divided into eight groups each group of 120-150 families each. Ten percent of the farmers

Table 1.- Sub-division-wise distribution of the Agricultural
Extension Units of Trivandrum district

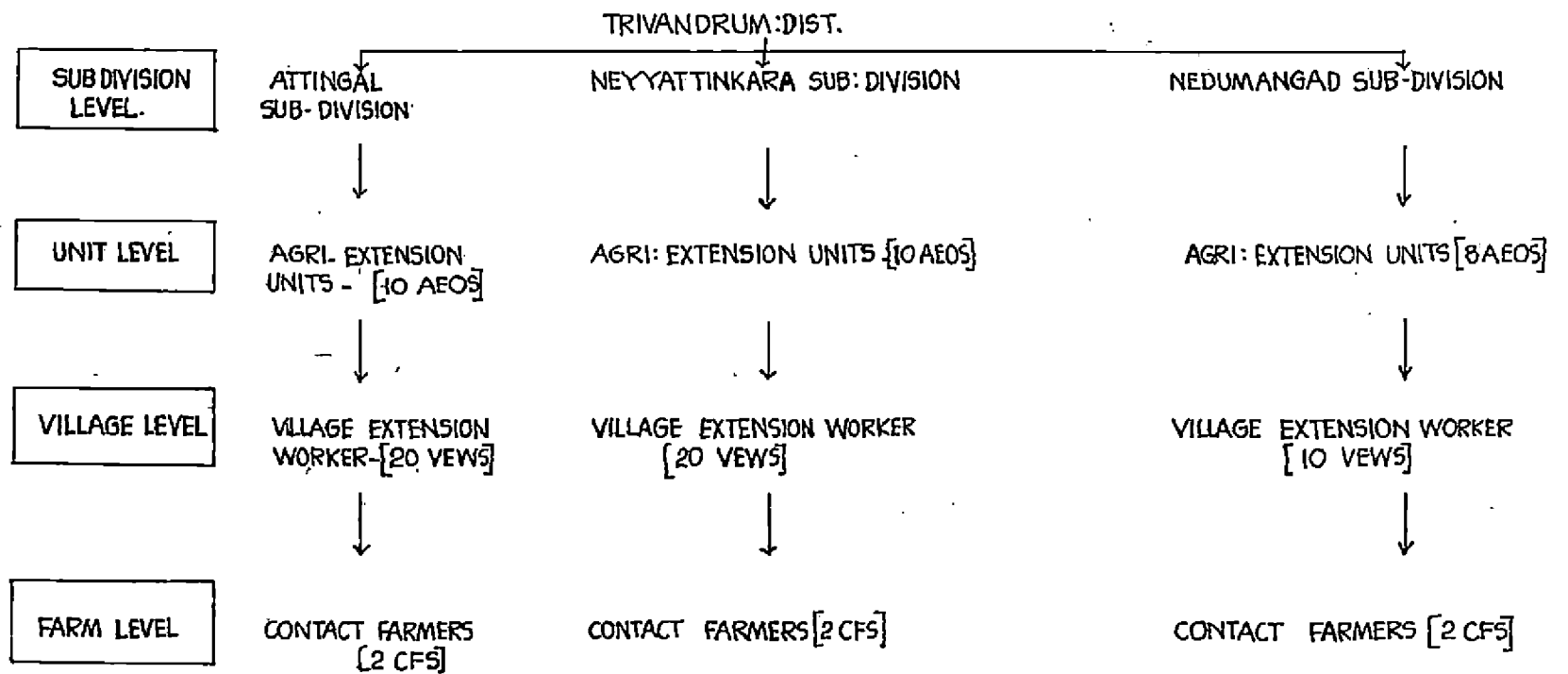
Attingal SD	Nedumangad SD	Neyyatinkara SD
1. Ulloor	1. Karakulam	1. Otasekharamangalam
2. Kazhakuttom	2. Kattakada	2. Marukil
3. Mangalapuram	3. Vellanad	3. Perumpazhuthur
4. Attingal	4. Vithura	4. Kunnathukal
5. Chirayinkil	5. Nedumangad	5. Kollayil
6. Varkala	6. Palode	6. Venpakal
7. Vakkom	7. Nellanadu	7. Venganoor
8. Pallikkal	8. Pirappancode	8. Pallichal
9. Manampur		9. Kottukal
10. Kilimanoor		10. Trivandrum

SD = Sub division

FIG. 1 MAP OF TRIVANDRUM, NEDUMANGAD, NEYYATTINKARA & ATTINGAL SUB DIVISIONS SHOWING STUDY AREA.



FLOW CHART OF THE SAMPLE STUDIED



of each group are selected as contact farmers. Village Extension Worker visits the contact farmers in each group on a fixed day of the week in a fortnight. The Agricultural Extension units of the three sub-division of Trivandrum district is given in Table 1 and Fig. No.1.

3.2. Sampling procedure

Multistage random sampling was adopted in selecting the respondents. The sampling was done at 3 stages. Twenty eight Agricultural Extension Units within the 3 sub division were selected. Random selection was made amongst the village Extension workers. This forms the first stage of selection. Thus 50 village level workers were selected from a total of 157 village level workers. Within one village level worker, there are 8 groups of farmers, and each group consisted 8-10 farmers. Random selection was done to select 2 groups from the selected village level workers which formed the second stage of selection. From each group two contact farmers cultivating both coconut and paddy were randomly selected which formed the final stage.

Operational definitions

T&V Programme

Training and Visit System is the reorganised agricultural extension programme which aims at ensuring transfer of

know-how available at research station to widespread area through an effective systematic and time bound programme.

Contact farmers are those selected farmers who are willing to adopt the relevant farm recommendations in their field and will assist in spreading the new technology to farmers in their area.

Extent of adoption Extent of adoption is defined as the extent to which the recommended messages on paddy and coconut are put into practice in their field by the contact farmers under T&V system.

T&V messages are the recommended practices pertaining to paddy and coconut that are to be followed by the contact farmer in their farm.

3.3. Methods used for data collection

A structured interview schedule was prepared including the appropriate questions for obtaining the required data relating to various socio-psychological and economic characters and the adoption of T&V messages by the contact farmers. The interview schedule framed was discussed with a group of Agricultural experts and personnel of Department of Agriculture and necessary modifications were made to avoid ambiguity and redundancy in the questions. The schedule was then pre-tested amongst
/ farmers in a non sample locality and necessary alteration made in the schedule. The data were collected through interview personally by the researcher using the final interview schedule. Interview schedule used for the study is furnished in Appendix I.

3.4. Measure of variables

3.4.1. Dependent variables

Several methods have been used to quantify the adoption behaviour by various research workers. Notable among those who utilized a scale for measuring adoption in some form or other were Wilkening (1952) Duncan and Kretlow (1959) Marsh and Coleman (1955) Fliegel (1956) Emery and Oeser (1958) Linderstor (1958) Ramsey and others (1959) Beal and Rogers (1960) Chattopadhyay (1963) Beal and Sebley (1967) and Supe (1969).

Wilkening (1952) used an index for measuring the adoption of improved farm practices. He realised the importance of potentiality of adoption. The index of adoption used was the percentage of practices adopted to the total number of practices applicable for that operator. Because of the differential nature of practices he suggested differential weights in the adoption index.

Duncan and Kretlow (1954) used a 25 item index of farm practices adoption, adopted from the index developed by Wilkening. Each respondent was given a score based on the number of practices he has adopted from the list of twentyfive.

Marsh and Coleman (1955) also used a "Practice adoption score". Computed on the percentage of applicable practices adopted.

Fliegel (1956) constructed an Index of adoption of farm practices using the correlation of several adoption variables. He factor analysed each of the 11 practices selected. Non adoption was given a value of "zero" and adoption score of "one".

Beal and Rogers (1960) studied in details the adoption of two farm practices. A simple adoption scale was computed which credited an individual with one point for adoption and zero for non adoption.

Chattopadhyay (1963) has constructed an adoption quotient to measure farm practice adoption. He has taken into consideration the different variable like potentiality, extent, weightage and time in developing the adoption quotient.

Beal and Sibley (1967) used various methods of scoring of. They are

- 1) Unweighted proportional adoption score
- 2) Weighted proportional adoption score
- 3) Weighted aggregate adoption score

They found that unweighted proportional adoption score was highly correlated with other types of scores. In this method each practice adopted was given a score of one and a total adoption score was made proportional by deviding the number of practices adopted with the total number of relevant practices.

Supé (1969) used an unweighted practice adoption scores.

He selected 10 practices of cotton and for each practice the total score for complete adoption was 6. The practices divisible were assigned partial scores for partial adoption.

Sundaraswamy and Duraiswamy (1975) developed "Adoption Quotient" to measure the adoption behaviour. They took 13 practices and the farmers were classified as low adopters (AQ:10-40 medium adopters (AQ:40-80) and high adopters (AQ: 80-100%).

Subramanyan and Lekshmana (1975) used the adoption quotient in a little different way. Adoption of a practice for three or more years, two years and one year was suitably quantified by arbitrarily assigning a score of six, two and one respectively. Fourteen practices were selected. Farmers whose adoption score was 37 and above were rated on high adopters while those securing less than 37 as low adopters.

An "adoption index" was developed by Chandrakandan (1975) for measuring the adoption behaviour. The total number of practices taken was six for every year of adoption of each practices a score of 1 was given, on limiting the number of years of adoption of three. The total adoption index score of each farmer ranged from 0-18. Based on the total adoption score the farmers were then categorised as low adopters (0-6 scores) medium adopters (7-12 scores) and high adopters (13-18 scores).

Beal and Rogers (1960) developed the adoption scale to measure the practice adoption of farmers. In this scale, for each of the selected improved practice, adopted by the farmer a score of one was given and practice not adopted by farmer a score of zero was given. Then the respondents were categorised as adopters and non-adopters for each practice.

With slight modification of above study, computation of the scores for the selected messages on paddy and coconut, communicated to contact farmers were taken here. The messages fully adopted by the farmers were given a score of two and message not adopted by the farmers were given a score of zero. Those farmers who have partially adopted the messages were given a score one. The total score for the adoption of recommended practice of paddy and coconut, on each individual respondents were worked out and the mean adoption score for entire sample of respondents was calculated. Based on the mean score \pm one standard deviation respondents were categorised in to low, medium and high groups.

Selection of T&V messages of scientific importance

Nair (1969) defined improved agricultural practices as those practices which increase productivity more than the traditional ways of farming.

The student researcher was constrained to select only the most important improved practices recommended for rice and coconut. Selection of the messages was made on the basis of the T&V guidelines issued at fortnight training to extension workers. The important messages were identified in consultation with subject matter specialist of the State department of Agriculture and Extension experts of Agricultural University. Based on their opinion 16 messages on improved agricultural operations were selected. The areas of the identified messages on paddy and coconut cultivation is as follows:

Areas on Paddy cultivation

- (1) Selection of HYV seed
- (2) Seed treatment
- (3) Nursery techniques
- (4) Method of planting
- (5) Soil testing
- (6) Lime application
- (7) Organic manure application
- (8) Chemical fertilizer application
- (9) Plant protection measures

Areas on Coconut cultivation

- (1) Green manure cultivation
- (2) Inter culture practices
- (3) Organic manure application
- (4) Lime application
- (5) Chemical fertilizer application
- (6) Irrigation
- (7) Plant protection measures

Messages framed during monthly workshop on the above areas were considered to measure the extent of adoption of T&V messages by the respondent.

Categorisation of the respondents on the basis of the extent of adoption of T&V messages

The respondent were categorised into 'Low', 'Medium' and High levels, based on the formula mean \pm standard deviation where the mean score was 19.68. The score range of each category was as follows:

<u>Sl.No.</u>	<u>Level of Adoption</u>	<u>Score range</u>
1	Low adoption	Below 15.65
2	Medium	15.65 - 23.71
3	High	Above 23.71

3.4.2. Measurement of the independent variables

The independent variables were selected on the basis of an extensive review of literature, discussion with experts and on the basis of observation made among contact farmers. A list of twentyone variables considered to be important were given to judges for their judgement with regard to their relevance to the dependent variable extent of adoption. The judges were the Scientists of Agricultural Extension Department of Agricultural University and the officers of Kerala Agricultural Extension Project namely the Training and Visit System. Variables judged by them as most relevant to the dependent variables were selected for detailed investigation.

On the basis of the theoretical orientation of the present study the following personal, socio-economic and psychological characteristics of contact farmers were selected as independent variables to test their relationship with the extent of adoption of T&V messages on paddy and coconut by the contact farmers.

- 3.4.2.1. Age
- 3.4.2.2. Farm size
- 3.4.2.3. Educational status
- 3.4.2.4. Social participation

- 3.4.2.5. Risk orientation
- 3.4.2.6. Economic motivation
- 3.4.2.7. Extent of cosmopolitaness
- 3.4.2.8. Information source utilization
- 3.4.2.9. Scientific orientation
- 3.4.2.10. Management orientation

3.4.2.1. Age

Age was operationally defined as the number of years the respondent has completed since his date of birth at the time of interview.

The classification suggested by Shankariah et al (1980) was followed here. Accordingly the respondents were classified into three groups viz. young middle age, and old farmers.

<u>Sl.No.</u>	<u>Category</u>	<u>Age</u>
1	Young farmers	Below 30 years
2	Middle age	30 - 50 year
3	Old farmers	Above 50 year

3.4.2.2. Farm size

Farm size was operationally defined as the number of acres of land the contact farmer possessed and cultivated by him. This includes both paddy and coconut cultivated area. The farm size was measured following method used by Cherian (1984) for classifying the non-contact farmers in T&V system

under Kerala condition. Accordingly the respondents were classified into three categories as suggested below

<u>Sl.No.</u>	<u>Category</u>	<u>Score</u>
1	Marginal farmers	Below 0.4 ha
2	Small farmers	0.4 - 1.2 ha
3	Medium farmers	Above 1.2 ha

3.4.2.3. Educational status

Educational status of a contact farmer is operationally defined as the extent of formal education acquired by him.

The different educational levels of the farmers were scored as per the system followed in socio-economic status scale of Trivedi (1963) with a slight modification.

<u>Sl.No.</u>	<u>Category</u>	<u>Score</u>
1	Illiterate	0
2	Can read only	1
3	Can read & write	2
4	Primary school	3
5	Middle school	4
6	High school	5
7	College & above	6

The score obtained by the respondent were classified into three categories keeping the mean value on Educational status.

<u>Sl. No.</u>	<u>Category</u>	<u>Score</u>
1	Low	Below 2.75
2	Medium	2.75 - 5.61
3	High	Above 5.61

3.4.2.4. Social participation

Social participation is operationally defined as the degree of involvement of contact farmers in a formal organisation in terms of membership office holding and frequency of participating in meeting.

The procedure developed by Lokhande (1974) is used for the purpose of measurement of social participation. The scoring procedure is as follows

<u>Sl.No.</u>	<u>Category</u>	<u>Score</u>
1	No membership	0
2	Membership in one organization	1
3	Membership in more than one organization	2
4	Office bearer in one organization	3
5	Office bearer in more than one organization	4
6	Distinctive feature (MLA, MP etc.)	5

Attendance to meeting either as a member or as an office bearer was considered important, Scores for attending regularly occasionally, and never were given 3, 2 and 1 respectively. To obtain the final score of a respondent the score given as a member or office bearer were multiplied with score given for attendance to meeting by virtue of his status as member or office bearer and added up.

Based on the mean social participation score of the respondents, they were categorised into three groups according to their social participation as indicated below:

<u>Sl.No.</u>	<u>Categories</u>	<u>Score</u>
1	Low	Below 0.49
2	Medium	0.49 to 2.43
3	High	Above 2.43

3.4.2.5. Risk orientation

Risk orientation is defined operationally as the degree to which contact farmer is oriented towards risk and uncertainty and also has the courage to face the problem in farming.

To measure risk orientation, the risk preference scale developed by Supe (1969) was followed. This consist of six statements rated on a five point continuum ranging from "Strongly agree" "agree" undecided disagree and strongly

disagree with scores 7, 5, 4, 3 and 1 respectively for the positive items and scores 1, 3, 4, 5 and 7 for the negative items respectively. The respondents were asked to respond to each statement in terms of their own degree of agreement or disagreement. The total score for a respondent was the sum of the product of overall statement.

Based on the mean score on risk orientation of the respondents they were categorised into three groups as indicated below:

<u>Sl.No.</u>	<u>Category</u>	<u>Score</u>
1	Low	Below 25.58
2	Medium	25.58 - 34.86
3	High	Above 34.86

3.4.2.6. Economic motivation

Here economic motivation of contact farmer is operationally defined as the attitude towards farming as a profit oriented enterprise. It also indicates the degree of willingness of farmers for investment of available potential resources in adopting farm innovations.

In this study, economic motivation of contact farmer was measured using the scale developed by Supe (1969). This

scale consist of six items against a five point continuous ranging from 'strongly agree', 'agree' 'neutral', disagree and strongly disagree with score 7, 5, 4, 3 and in for positive items and 1, 3, 4, 5 & 7 for the negative items respectively.

The total scores of the respondents and means were taken. Above mean was taken as high economic motivation and below mean as low economic motivation as indicated below:

<u>Sl.No.</u>	<u>Category</u>	<u>Score</u>
1	Low	Below 27.11
2	Medium	27 to 36.59
3	High	Above 36.59

3.4.2.7. Extent of cosmopolitaness

Extent of cosmopolitaness is operationally defined as the degree to which a contact farmer is oriented to his immediate social system outside his locality.

This variable was measured using the schedule developed by Desai (1981). The two dimensions of the variable measured were

- a) The frequency of visit to the nearest town in a month
and
- b) The purpose of the visit to the town in a month

a) Frequency of visit to the nearest town in a month

<u>Frequency of visit</u>	<u>Score</u>
Twice or more in a week	5
Once in a week	4
Once in a fortnight	3
Once in a month	2
Very rarely	1
Never	0

b) Purpose of visit to the town in a month

<u>Purpose of visit</u>	<u>Score</u>
All visits relating to agriculture	5
Some relating to agriculture	4
Personal or domestic matters	3
Entertainment	2
Any other purpose	1
No purpose	0

The total score of cosmopolitanism for each respondent was calculated by adding the score of the above two dimensions of cosmopolitanism. Based on the mean score, the respondents fell into three level of cosmopolitanism as follows:

<u>Sl.No.</u>	<u>Level of cosmopolitanism</u>	<u>Score range</u>
1	Low	Below 5.58
2	Medium	5.58 - 9.00
3	High	Above 9.00

3.4.2.8. Information source utilization

Information source utilization is operationally defined as all activities performed by contact farmer for acquisition of scientific and technical knowledge of farm practices from various sources.

The procedure followed by Nair (1969) was adopted in the present study to find out the respondents information source utilization.

Each respondent was asked to indicate as to how often he got information regarding scientific farming from different sources like news papers, radio, extension personal, agricultural scientists friends and relatives etc. The scoring pattern was as follows

<u>Frequency of utilizing information source</u>	<u>Score</u>
a) Never	0
b) Once in a month	1
c) Once in a fortnight	2
d) Once in a week	3
e) Two to six times in a week	4
f) Every day	5

The response of each farmer was indicated on the frequency of utilization of the above mentioned information source.

By this the maximum score a farmer can get is 30. The total information source utilisation score was obtained in respect of each type of sources used and frequency of using the various sources. Based on this, the score of all the three respondents were added to get the mean value and were ranked into 3 categories on utilisation of information source as below:

<u>Sl.No.</u>	<u>Category</u>	<u>Score</u>
1	Low	Below 9.64
2	Medium	9.64 to 16.12
3	High	Above 16.12

3.4.2.9. Scientific orientation

Scientific orientation is operationally defined as the degree to which a contact farmer is oriented to the use of scientific methods in decision making in farming.

The scientific orientation scale developed by Supe (1969) was used for the present study. The response were collected in a 5 point continuum with the response categories being strongly agree, agree, undecided, disagree and strongly disagree, and scoring were given as 7, 5, 4, 3, 1 and for negative statement scoring were just reverse, ie. 1, 3, 4, 5 & 7.

A total of 6 statements relevent to this study were included for measuring the scientific orientation of contact

farmers. The maximum score a farmer can attain for scientific orientation is 42.

Based on the mean scientific orientation score the respondents were classified into the following three categories against their scientific orientation.

<u>Sl.No.</u>	<u>Category</u>	<u>Score</u>
1	Low	Below 26.83
2	Medium	26.83 - 36.57
3	High	Above 36.57

3.4.2.10. Management orientation

Management orientation is operationally defined as the degree to which a farmer is oriented towards scientific farm management comprising of planning, production and marketing function of his farm enterprises.

The management orientation scale developed by Samantha (1977) was used for this study. It consisted of 18 statements. Six statements each for planning production and marketing orientation. In each group positive and negative statements were mixed retaining at the same time a more or less psychological order of the statements. In the case of positive statement a score of one was given for agreement and zero was given for disagreement. For negative statement the

scoring pattern was just reverse. The sum of the score obtained by a respondent was taken as his score for management orientation.

The scores obtained under each item, ie. planning orientation, production orientation and marketing orientation, were added to get the total scores, which formed the level of management orientation of the contact farmers under T & V system. Then the respondents were grouped into the following three categories on their management orientation keeping the mean value as a measure of check.

<u>Sl.No.</u>	<u>Category</u>	<u>Scores</u>
1	Low	Below 13.31
2	Medium	13.31 - 17.55
3	High	Above 17.55

Statistical Analysis of the data

Parametric statistical methods are used to test the empirical hypothesis. The relationship between the dependent variable and independent variables in this study were tested by using of the correlation analysis. Multiple correlation analysis was done to find out the contribution of independent variables to dependent variables. For making simple comparison percentages were also worked out.

Simple correlation analysis

Correlation coefficient is a measure of the association between two or more variables. Correlation coefficient was worked out to test the association between extent of adoption and different independent variables. The formula used to compute the simple correlation coefficient was

$$r_{x y} = \frac{P_{x y}}{S_x S_y} \text{ where}$$

$r_{x y}$ = correlation between x and y

$P_{x y}$ = Product moment of x and y

S_x and S_y = Standard deviations of the variables x and y respectively.

RESULTS

CHAPTER IV

RESULTS

The results of this study are presented in this chapter, keeping in view the objectives of the study, the results are presented in the following lines.

- 4.1. Extent of adoption of T&V messages on paddy and coconut by the contact farmers of the Trivandrum district
- 4.2. Relationship between age of contact farmers with their extent of adoption of T&V messages
- 4.3. Relationship between farm size and extent of adoption of T&V messages by contact farmers
- 4.4. Relationship between educational status of contact farmers with their extent of adoption of T&V messages
- 4.5. Relationship between social participation of contact farmers with the extent of adoption of T&V messages
- 4.6. Relationship between risk orientation and extent of adoption of T&V messages by contact farmers
- 4.7. Relationship between economic motivation and extent of adoption of T&V messages by contact farmers
- 4.8. Relationship between cosmopolitaness and extent of adoption of T&V messages by contact farmers

- 4.9. Relationship between information source utilization and extent of adoption of T&V messages by contact farmers
- 4.10. Relationship between scientific orientation and extent of adoption of T&V messages by contact farmers
- 4.11. Relationship between management orientation and extent of adoption of T&V message by contact farmers
- 4.12. Relationship between independent variables and dependent variables under Neyyattinkara, Nedumangad and Attingal sub divisions (A comparative study)
- 4.13. The relationship between the independent variable and dependent variable
- 4.14. Inter correlation among the independent variables
- 4.15. Constraints in the extent of adoption of T&V messages on paddy and coconut by contact farmers of Trivandrum district
- 4.1. Extent of adoption of T&V messages on paddy and coconut by the contact farmers of the Trivandrum district

The data pertaining to the extent of adoption of T&V messages on paddy and coconut by the contact farmers of Trivandrum district is given in the Table 2 and 3. From Table 2,

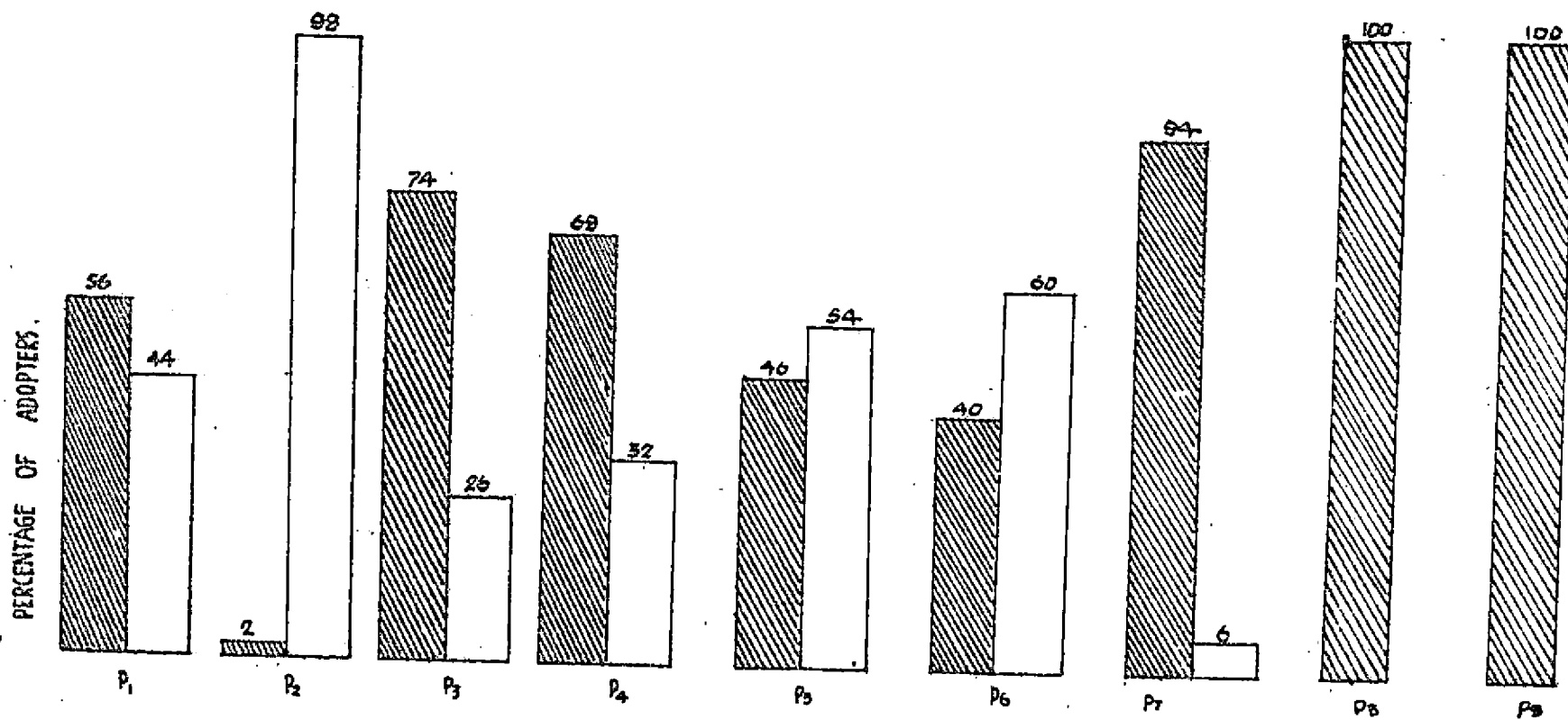
EXTENT OF ADOPTION OF MESSAGES

Table 2.- Adoption of messages on paddy cultivation by the contact farmers of the Trivandrum district

Sl. Messages on paddy cultivation practices (P)	Contact farmers (N = 100)	
	Adopters	Non adopters
P1 Selection of High Yielding variety seeds	56	44
P2 Seed treatment	2	98
P3 Nursery techniques	74	26
P4 Method of planting	68	32
P5 Soil testing	46	54
P6 Lime application	40	60
P7 Organic manure application	94	6
P8 Chemical fertilizer application	100	0
P9 Plant protection measures	100	0

it could be seen that more than half of the contact farmers adopted the technical messages on paddy pertaining P1, P3, P4, P7, P8 and P9. Message on P8 and P9 were fully practiced by the entire contact farmers. 54 percent of contact farmers and 60 percent of contact farmers does not practice scientific messages on P5 and P6 respectively. Almost all the contact farmers (98%) are non-adopters of the message on P2.

FIG. 2 EXTENT OF ADOPTION OF MESSAGES ON PADDY BY CONTACT FARMERS.



MESSAGES

■ PERCENTAGE OF ADOPTERS.
□ PERCENTAGE OF NON ADOPTERS.

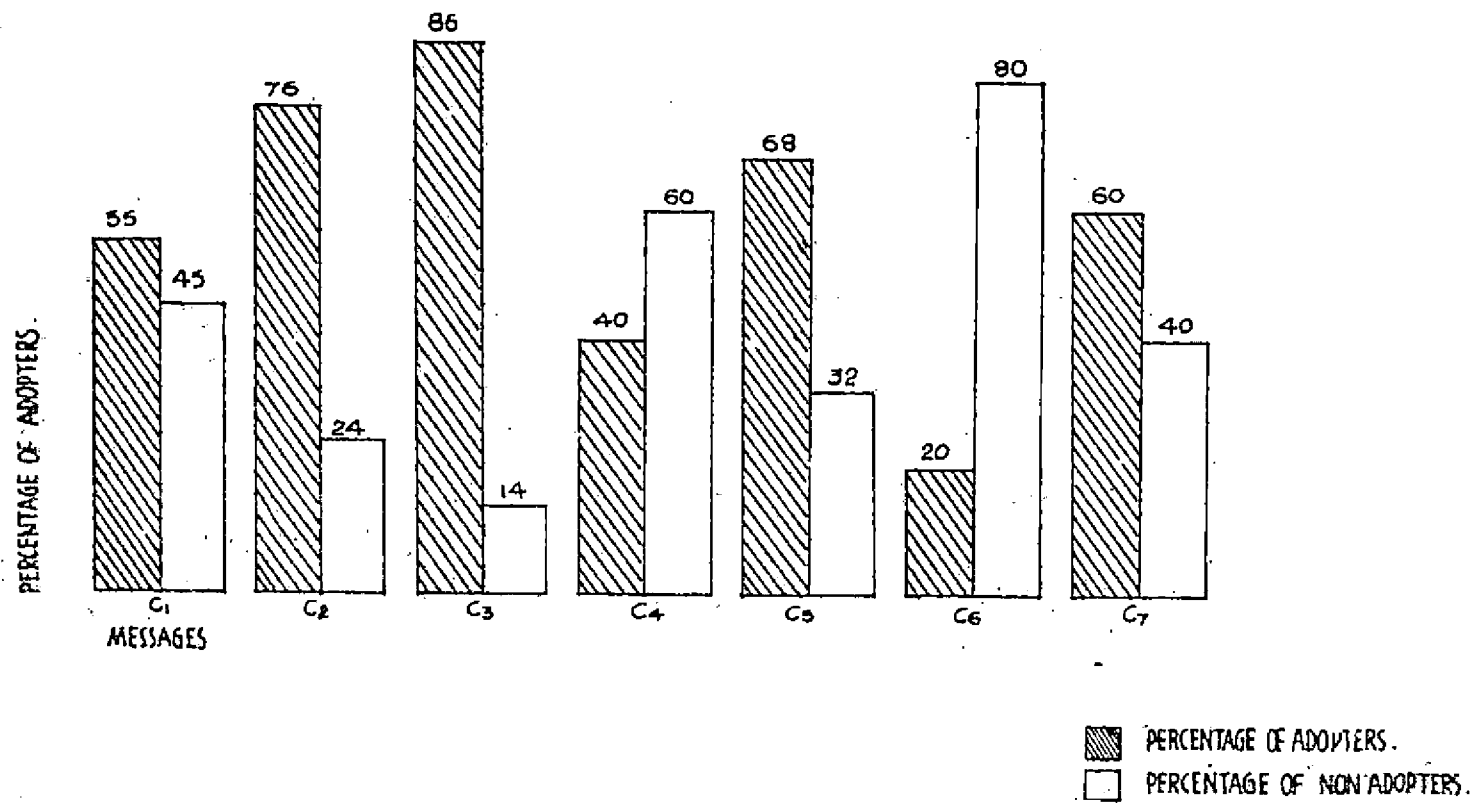
Table 3 reveals the extent of adoption of T&V message on coconut by contact farmers of Trivandrum. Out of the seven messages expect for C4 and C6 message, all the other scientific messages are being adopted by 55 percent and above of the contact farmers. This clearly shows the non-adopters of scientific messages amongst the coconut farmers are less.

Table 3.- Adoption of messages on coconut cultivation by the contact farmers of the Trivandrum District

Sl. No.	Messages on coconut cultivation practices (C)	Contact farmers (N=100)	
		Adopters	Non adopters
C1	Green manure cultivation	55	45
C2	Inter-culture practices	76	24
C3	Organic manure application	86	14
C4	Lime application	40	60
C5	Application of chemical fertilizer	68	32
C6	Irrigation	20	80
C7	Plant protection measures	60	40

Incidentally the adoption of the message C4 by 60 percent and C6 by 80 percent were categorised as the highest non-adopted message by contact farmers on coconut cultivation.

FIG. 3 EXTENT OF ADOPTION OF MESSAGES ON COCONUT BY CONTACT FARMERS.



4.2. Relationship between age of contact farmers with their extent of adoption of T&V messages

The data in Table 4 revealed that 62 per cent of the respondents were old aged while 37 per cent belonged to middle aged category. Only one respondent was categorised into young with a mean highest adoption score of 24. The next highest was for the old category with a score of 20.29 while the mean score for middle aged category was of 19.40.

Table 4.- Relationship between Age of contact farmers with their extent of adoption

Sl. No.	Contact farmers	Frequency (n=100)	Percentage	Mean adoption score	Correlation coefficient
1.	Young Below (< 30 years)	1	1	24.00	
2.	Middle (30-50 years)	37	37	19.40	-0.0930
3.	Old (> 50 years)	62	62	20.29	

The correlation coefficient between extent of adoption of T&V messages and age was found to be negative and non-significant.

4.3. Relationship between farm size and extent of adoption of T&V messages by contact farmers

A glance at the results furnished in Table 5 revealed that majority of the respondent belonged to small farmers (90 per cent) while 10 respondents were categorised into medium category. There were no marginal farmers under this

Table 5.- Relationship between Farm size and Extent of Adoption by contact farmers

Sl. No.	Contact farmers	Frequency (N=100)	Percentage	Mean adoption score	Correlation coefficient
1.	Marginal (< 1 acre)	-	-		
2.	Small (1 - 5 acre)	90	90	19.40	0.3369**
3.	Medium (> 5 acre)	10	10	22.20	

** Significant at 1% level

study. The mean adoption score worked out showed a decreasing trend with the increase in age. The mean adoption score for small farmers was 19.40 while that of the contact farmers with medium farm size was 22.20. The correlation coefficient

between extent of adoption T&V messages and farm size of contact farmers was 0.3369 and highly significant.

4.4. Relationship between educational status of contact farmers and extent of adoption of T&V messages

It is evident from the Table 6 that majority of the respondent (66 per cent) had medium level of educational status. Over 18 per cent had low educational status. With regard to their mean adoption score contact farmers of all educational status was found in the medium levels of adoption category (20.33) followed by 'high' and 'low' categories with

Table 6.- Relationship between Educational Status of contact farmer and extent of adoption

Sl. No.	Educational status	Contact farmers		Mean adoption score	Correlation coefficient
		Frequency (n=100)	Percentage		
1.	Low	18	18	16.77	
2.	Medium	66	66	20.33	0.2653**
3.	High	16	16	20.25	

*** Significant at 1% level

mean scores of 20.25 and 16.77 respectively. The coefficient of correlation between extent of adoption and educational status of the contact farmers was 0.2653 which was significant at 1 per cent level.

4.5. Relationship between social participation of contact farmers and extent of adoption of T&V messages

It is evident from Table 7 that majority of contact farmers (90 per cent) had medium level of social participation. The rest of the respondents (10 per cent) had high social participation. The mean adoption score worked for

Table 7.- Relationship between social participation of contact farmers and extent of adoption

Sl. No.	Social participation	Contact farmers		Mean adoption score	Correlation coefficient
		Frequency (n=100)	Percentage		
1.	Low	0	-		
2.	Medium	90	90	19.51	0.2809**
3.	High	10	10	22.20	

'**' Significant at 1% level

these two category were 19.51 and 22.20 for the 'medium' and 'high' categories respectively. The coefficient of correlation between social participation and extent of adoption as 0.2809, which was significant at 1 per cent level.

4.6. Relationship between risk orientation and extent of adoption of T&V messages by contact farmers

The data pertaining to the relationship between risk orientation and extent of adoption of T&V messages by contact farmers are presented in Table 8.

Table 8.- Relationship between Risk Orientation and Extent of adoption by contact farmers

Sl. No.	Risk orientation	Contact farmers		Mean adoption score	Correlation coefficient
		Frequency (n=100)	Percentage		
1.	Low	12	12	22.16	
2.	Medium	71	71	18.90	0.0749
3.	High	17	17	22.00	

It is evident from the Table 8, though not significant with their extent of adoption majority of respondents (71 per cent) had medium level of risk orientation. Only 17 per cent had high level of risk orientation and the rest of the respondents (12 per cent) belonged to the low category. The adoption score worked out were 22.16, 18.90 and 22.00 for the low, medium and high categories respectively.

4.7. Relationship between economic motivation and extent of adoption of T&V messages by contact farmers

The data in Table 9 revealed 68 per cent of respondents had medium level economic motivation. This was followed by low category (17 per cent). Only 15 per cent respondents had 'high' level of economic motivation. The mean adoption score in each of the above categories worked out and the highest mean score (21.60) was found in the 'high' group followed by the 'low' and medium with mean score of 19.76 and 19.52 respectively. The correlation coefficient between extent of adoption and economic motivation was 0.1294 which was found to be not significant.

Table 9.- Relationship between Economic Motivation and Extent of adoption by contact farmers

Sl. No.	Economic motivation	Contact farmers		Mean adoption score	Correlation coefficient
		Frequency (n=100)	Percentage		
1.	Low	17	17	19.76	
2.	Medium	68	68	19.52	0.1294
3.	High	15	15	21.60	

4.8. Relationship between extent of cosmopolitanism of the contact farmers with their extent of adoption

The distribution of the respondents according to their level of cosmopolitanism is presented in Table 10.

Table 10.- Relationship between cosmopolitanism and extent of adoption by contact farmers

Sl. No.	Cosmopolitanism	Contact farmers		Mean adoption score	Correlation coefficient
		Frequency (n=100)	Percentage		
1.	Low	19	19	19.57	
2.	Medium	80	80	19.65	-0.0303
3.	High	1	1	24.00	

As indicated in Table 10, majority of respondents (80 per cent) had medium level of cosmopolitanism only one respondent had 'high' level of cosmopolitanism and 19 percent had low level of cosmopolitanism. With regard to their mean adoption score, the highest mean score was found for the 'high' category (24) followed by medium (19.65) and low (19.57) categories. The coefficient of correlation between extent of adoption and level of cosmopolitanism was 0.0303 which was found to be negative and not significant.

4.9. Relationship between information source utilization and extent of adoption by contact farmers

The data pertaining to the information source utilization of the respondents are presented in Table 11.

Table 11.- Relationship between Information Source Utilisation and extent of adoption by contact farmers

Sl. No.	Information Source utilisation	Contact farmers		Mean adoption score	Correlation coefficient
		Frequency (n=100)	Percentage		
1.	Low	13	13	18.15	
2.	Medium	74	74	19.89	0.1003
4.	High	13	13	20	

A cursory glance at the results presented in the Table 11 clearly shows that 74 percent had medium level of information source utilisation. The rest of the respondents were found to be equally distributed (13 respondents) in the 'low' and 'high' category. The mean adoption score worked out show increasing trend from to high category. The mean adoption score for the above category were 18.15, 19.89 and 20 for low, medium and high category respectively.

The coefficient of correlation worked out between extent of adoption of T&V messages and information source utilisation by contact farmers was 0.1003, which was found to be not significant.

4.10. Relationship between scientific orientation and extent of adoption of T&V messages by contact farmers

The data pertaining to the scientific orientation and extent of adoption of T&V^{messages} by contact farmers is presented in Table 12.

Table 12.- Relationship between Scientific orientation and extent of adoption by contact farmers

Sl. No.	Scientific orientation	Contact farmers		Mean adoption score	Correlation coefficient
		Frequency (n=100)	Percentage		
1.	Low	12	12	18.66	
2.	Medium	68	68	19.26	0.1493
3.	High	20	20	21.40	

As indicated in Table 12, majority of the respondents (68 percent) had medium level of scientific orientation. Only

20 percent of the respondent had high level of scientific orientation where are 12 percent of the respondents had 'low' level of scientific orientation with regard to their mean adoption scores the highest score (21.40) was found in the high level of scientific orientation category followed by 'medium' and 'low' categories with mean scores of 19.26 and 18.66 respectively. The coefficient of correlation between extent of adoption of T&V messages and scientific orientation of contact farmers was 0.1493 which was found to be not significant.

4.11. Relationship between management orientation and extent of adoption by contact farmers

The data pertaining to the management orientation of contact farmers are presented in Table 13

Table 13.- Relationship between Management orientation and extent of adoption by contact farmers

Sl. Management No. orientation	Contact farmers		Mean adoption score	Correlation coefficient
	Frequency (n=100)	Percentage		
1. Low	16	16	19.25	
2. Medium	66	66	20.09	0.0980
3. High	18	18	19.88	

A cursory glance at the results presented in the Table 13 clearly shows that majority of the respondents (66 percent) fall in the 'medium' category. The other categories namely 'low' and 'high' had 16 and 18 percent of respondents respectively. The mean adoption score worked for each of the above categories and the highest mean score was 20.09 was found in the medium category, followed by 19.88 and 19.25 for 'high' and 'low' category respectively. The correlation coefficient between extent of adoption and the management orientation was 0.0980 which was found to be not significant.

4.12. Relationship between independent variables and dependent variables under Neyyatinkara, Nedumangad and Attingal Sub Divisions (A comparative study)

The extent of adoption of T&V messages on paddy and coconut with the independent variables (in table 14) indicates that the extent of cosmopolitaness of the Neyyatinkara farmers was found to be highly significant. Incidentally farm size, social participation and information source utilization has also been positively and significantly correlated with the extent of adoption of the messages on paddy and coconut by the contact farmers.

Though not significant, the economic motivation as well as scientific orientation depicted a negative relationship with regard to the adoption messages on paddy cultivation.

Neyyatinkara sub-division

Table 14.- Relationship between independent and dependent variables

Independent variables	Dependent variables		
	Adoption of messages on paddy	Adoption of messages on coconut	Adoption of messages paddy and coconut
1. Age	0.1152	0.0564	0.1127
2. Farm size	0.2301	0.3315	0.3655*
3. Educational status	0.1294	0.3188	0.2905
4. Social participation	0.2554	0.3626*	0.4023*
5. Risk orientation	0.1080	0.0464	0.1015
6. Economic motivation	-0.0104	0.0361	0.0162
7. Extent of cosmopolitaness	0.5732**	0.2366	0.5326**
8. Information source utilization	0.2747	0.2773	0.3604*
9. Scientific orientation	-0.0319	0.3220	0.1954
10. Management orientation	0.0938	0.0271	0.0797

** Significant at 1% level of probability

* Significant at 5% level of probability

Nedumangad

The table (15) shows that farm size is the only independent variable showing relationship with regard to the adoption of messages on both crops paddy and coconut put together by contact farmers

Nedumangad sub-division

Table 15.- Relationship between independent and dependent variables

Independent variables	Dependent variables		
	Adoption of messages on paddy	Adoption of messages on coconut	Adoption of messages paddy and coconut
1. Age	0.1318	-0.3591*	-0.1444
2. Farm size	0.1729	0.4688**	0.4355*
3. Educational status	-0.1540	0.4090*	0.1617
4. Social participation	-0.0863	0.3688*	0.1835
5. Risk orientation	-0.2560	0.0624	-0.1418
6. Economic motivation	-0.0654	0.1888	0.787
7. Extent of cosmopoliteness	-0.4606*	-0.0241	-0.3457
8. Information source utilization	0.2729	-0.2410	0.0351
9. Scientific orientation	-0.0898	-0.0318	-0.0854
10. Management orientation	-0.1682	-0.1365	-0.2112

** Significant at 1% level of probability

* Significant at 1% level of probability

At the same time adoption of messages on coconut was found to be positively and significantly related to the Farm size educational status as well as the social participation of the

contact farmers. Age was the only independent variable found negatively significant with the extent of adoption of messages on coconut.

Interestingly though not significant all the independent variable except age, farm size and information source utilization depicted a negative relationship between the adoption of messages on paddy by the farmers. Similarly negative relationship was also depicted with regard to their relationship between the independent variable, age, extent of cosmopolitaness. Information source utilization scientific orientation as well as management orientation with the adoption of messages on coconut among contact farmers of Nedumangad sub division.

Attingal sub division

In the case of adoption of messages on paddy and coconut in Attingal table No.16 dictates that very high negative relationship existed between the extent of cosmopolitaness and adoption of messages on paddy and coconut by contact farmers. At the same time very high positive relationship existed with their adoption of messages and management orientation.

Incidentally 'education/status' and 'economic motivation' were found to be the only related independent variable with the extent adoption of messages on paddy cultivation alone.

Attingal Sub-Division

Table 16.- Relationship between independent and dependent variables

Independent variables	Dependent variables		
	Adoption of messages on paddy	Adoption of messages on coconut	Adoption of messages paddy and coconut
1. Age	-0.1982	-0.1776	-0.2071
2. Farm size	0.2592	0.0950	0.2006
3. Educational status	0.4302*	0.2986	0.4050*
4. Social participation	0.2832	0.1332	0.2342
5. Risk orientation	0.3215	0.1712	0.2761
6. Economic motivation	0.3347*	0.2903	0.3448*
7. Extent of cosmopoliteness	-0.3966*	-0.4596**	-0.4678**
8. Information source utilization	-0.3329	-0.2185	-0.3070
9. Scientific orientation	0.2492	0.1177	0.2063
10. Management orientation	0.6553**	0.4400**	0.6094**

* Significant at 5% level

** Significant at 1% level

Interestingly both 'age' and 'information source utilization' though not significant showed negative relationship regard to adoption of messages on paddy and coconut by the contact farmers in the Attingal Sub Division.

4.13. Relationship between the independent variables and dependent variable

Correlation analysis was done on the overall responses from the three sub division to assess the nature of relationship between the independent variables and the dependent variables. The dependent variables had two parts namely. Extent of adoption of messages on paddy and extent of adoption of messages on coconut. The results are furnished in Table 17.

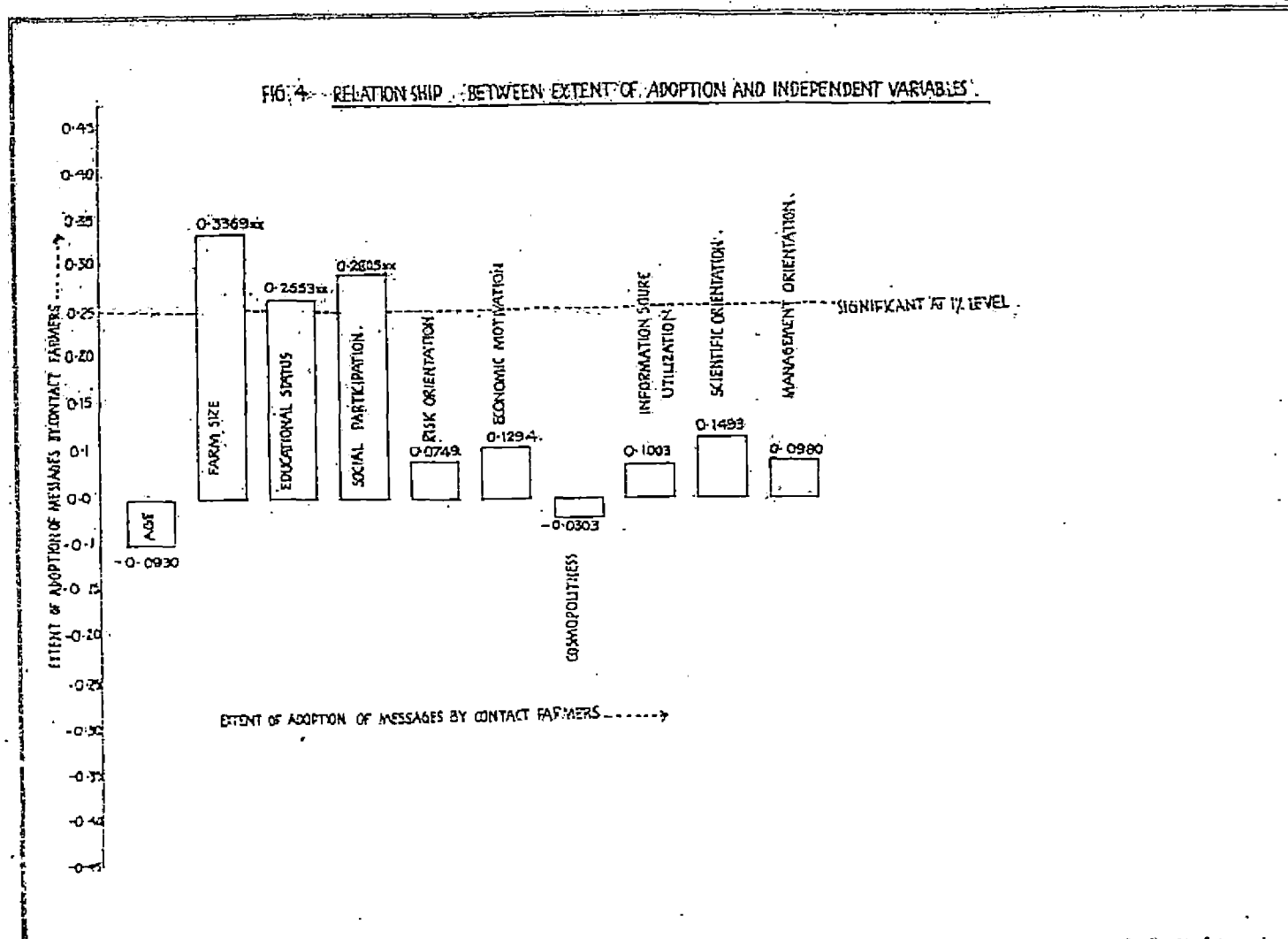
Table 17.- Relationship between independent and dependent variables

Independent variables	Dependent variables		
	Adoption of messages on paddy	Adoption of messages on coconut	Adoption of messages paddy and coconut
1. Age	0.0177	-0.1722	-0.0930
2. Farm size	0.1942*	0.3386**	0.3369**
3. Educational status	0.0922	0.3337**	0.2653**
4. Social participation	0.1366	0.3163	0.2805**
5. Risk orientation	0.0232	0.0974	0.0749
6. Economic motivation	0.0362	0.1725	0.1294
7. Extent of cosmopoliteness	-0.0132	-0.0351	-0.0303
8. Information source utilization	0.01807	-0.0348	0.1003
9. Scientific orientation	0.0384	0.2077*	0.1493
10. Management orientation	0.0421	0.1159	0.098

* Significant at 5% level

** Significant at 1% level

FIG. 4 - RELATIONSHIP BETWEEN EXTENT OF ADOPTION AND INDEPENDENT VARIABLES.



A perusal of the results in Table 17 bring to focus some interesting findings. Extent of adoption of messages on paddy was found to be positively and significantly correlated with 'farm size' only whereas it was found to be negatively related with extent of cosmopolitaness. All the other variables viz., age, education&status, social participation, risk orientation economic motivation, information source utilisation scientific orientation and management orientation was positively related but not significant. With regard to extent of adoption of messages on coconut, farm size, education&status, social participation and scientific orientation was found positively and significantly correlated. 'Age' and 'Extent of cosmopolitaness' were the independent variable found to negatively related. The other independent variables 'risk orientation' 'economic motivation', information source utilisation scientific orientation and management orientation were found to be positively related by not significantly correlated.

4.14. Inter correlation Matrix:

Correlation among the independent variable

Coefficients of correlation among the independent variables selected for the study were computed to test the inter relationships among the ten socio-economic and psychological characteristic. The correlation coefficients are furnished in Table 18 'Age' was found to be negatively and significantly

Table 18.- Inter Correlation Matrix - Correlation among the independent Variable

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀
X ₁		-0.0492	-0.2100*	0.1585	-0.2949**	-0.2970**	-0.0261	0.0662	-0.2162*	-0.1218
X ₂			0.1857	0.2783**	0.0849	0.2017*	0.0541	-0.0415	0.1001	-0.1901
X ₃				0.2603**	0.5867**	0.4954**	0.0980	0.3027**	0.6256**	0.3773**
X ₄					0.1480	0.2484*	0.2719**	0.0917	0.2075*	0.0602
X ₅						0.6425**	0.1823	0.1264	0.5915**	0.5241**
X ₆							0.0763	0.0251	0.6188**	0.2981**
X ₇								0.1626	0.1159	-0.0820
X ₈									0.2695**	-0.0277
X ₉										0.4123**

* Significant at 5% level

** Significant at 1% level

X₁ = Age
 X₂ = Farm size
 X₃ = Educational Status
 X₄ = Social Participation
 X₅ = Risk orientation

X₆ = Economic motivation
 X₇ = Extent of cosmopolitaness
 X₈ = Information source utilization
 X₉ = Scientific orientation
 X₁₀ = Management orientation

correlated with 'Education status', 'Risk orientation', 'Economic motivation' and 'Scientific orientation' 'Farm size' was to be positively and significantly correlated with 'Social participation' and 'economic motivation' 'Educational status' was found to be positively and significantly correlated with social participation, Risk orientation, Economic motivation, Information source utilisation, Scientific orientation and Management orientation. 'Social participation' was found to be positively and significantly correlated with economic motivation, cosmopolitaness and scientific orientation.

Risk orientation was found to be positively and significantly correlated with economic motivation, scientific orientation and management orientation. Economic motivation was found to significantly and positively related with scientific orientation and management orientation. Information source utilisation was found to significantly and positively related scientific orientation. Scientific orientation was positively and significantly related with Management orientation.

4.15. Constraints experienced in the extent of adoption of messages on paddy and coconut by contact farmers of Trivandrum District

Percentage was calculated for finding the important constraints in adopting the messages on paddy.

(1) The constraints experienced by the contact farmers in selecting high yielding variety seeds, 56 percent of the contact farmers adopted this messages and 44 percent were not adopted the messages.

Table 19.- Constraints experienced by the contact farmers in selecting high yielding variety seeds

Constraints	Percentage of farmers (N = 100)
1. Low straw yield	20
2. High cost of cultivation	11
3. High labour cost involved	8
4. Not suited for the soil condition in that area	2
5. Non availability of seed in time	3

The above table clearly reveals that "low straw yield" from high yielding variety of paddy is considered most important - constraint experienced by the 20 percent of contact farmers. 11 percent of them have not cultivated high yielding variety due to high cost of cultivation. 8 percent of them have experienced high labour cost involved and 2 percent of them experienced unsuitable to the soil condition and 3 percent of them have not adopted because of non availability of seed in time.

(2) Constraints experienced by contact farmers in the seed treatment

Table 20.- Constraints experienced by contact farmers in the seed treatment

No.	Constraints	Percentage of farmers (N=100)
1.	Non availability of chemicals	46
2.	Hazardous effect of chemicals	30
3.	High cost involved	22

Most of the farmers were aware of this practice. Only 2 percent have adopted this practice. 46 percent of farmers expressed the non availability of chemicals for the seed treatment as the most important constraint. The next constraint identified is the psychological one and 30 percent of them expressed their inability to resort to this practice due to the hazardous effect of chemical which is used for seed treatment. But 22 percent of the contact farmers expressed "high cost of involvement" prevented them from adopting this practice.

(3) Constraints experienced by contact farmers in nursery technique

Out of 100 contact farmers 74 percent of them raised their seedling in the nursery itself

Table 21.- Constraints experienced by contact farmers in Nursery technique

No.	Constraints	Percentage of farmers (N=100)
1.	No separate space is available for the purpose	14
2.	Extra labour cost involvement	10
3.	High cost of cultivation	2

Twenty six percent of the farmers expressed their inability in raising seedlings in the nursery. They are sowing the seeds in the main field itself. From the table it could be seen that 14 percent of farmers expressed the non availability of separate space for raising nursery. 10 percent of them not raised their seedling in nursery due to "extra labour involvement and 2 percent of them were of opinion that they have not resorted to this practice because of cost of cultivation would be more when nursery practice is adopting.

(4) Constraints experienced by contact farmers on method of planting

Sixty five percent of the farmers transplanted the seedlings to the main field with proper spacing

Table 22.- Constraints experienced by contact farmers on method of planting

No.	Constraints	Percentage of farmers (N= 100)
1.	It is a time consuming process	21
2.	Extra labour involvement	11

From the above table it is seen that 21 percent of farmers had not transplanted the seedlings with recommended spacing because it is a time consuming process and 11 percent of them not adopted because of extra labour involvement.

(5) Constraints experienced by contact farmers on soil testing

Table 23.- Constraints experienced by contact farmers on soil testing

No.	Constraints	Percentage of farmers (N=100)
1.	Importance of soil testing not known	20
2.	Soil collection procedure is much complicated	30
3.	Technology not known	4

Forty six percent of contact farmers adopted the messages 54 percent of them did not resorted this practice.

From the above table 20 percent of the contact farmers were "not known the importance of soil testing" and 30 percent of them did not tested their soil due to complicated procedure of soil sample collection. 4 percent of them did not adopted the practice because of the "technology was not known".

(6) Constraints experienced by contact farmers on Lime application

Forty percent of the farmers have applied lime material to their paddy field and 60 percent does not resorted to this practice.

Table 24.- Constraints experienced by contact farmers on lime application

No.	Constraints	Percentage of farmers (N=100)
1.	Materials not available	34
2.	Un yielding operation	26

Non availability of liming material is the important constraints expressed by 34 percent of the farmers. 26 percent of them have applied lime previously, but they have not received any extra benefit. So now they are not adopting of the practice since it is an "un yielding operation".

(7) Constraints experienced by contact farmers on organic manure application

Table 25.- Constraints experienced by contact farmers on organic manure application

No.	Constraint	Percentage of farmers (N=100)
1.	Materials not available during the season	4
2.	High cost of the materials	2

Ninty four percent of contact farmers applied organic manure in their paddy field. Out of 6 contact farmers who does not apply organic manures, 4 of them expressed their inability to apply due to non availability material during the season and 2 percent of them expressed they have not adopted this practice due to the high cost of the material.

(8) Messages on chemical fertilizer application

All the 100 contact farmers applied chemical fertilizers as per the message communicated to them.

(9) Messages on Plant Protection measures

Messages on plant protection measures all the 100 contact farmers have adopted.

Constraints experienced by contact farmers for adoption messages on coconut cultivation

1) Constraints experienced by contact farmers on cultivation of green manure seeds

The study revealed that 55 percent of contact farmers cultivated green manure crops in the coconut garden as a source of green manure for coconut. 45 percent of them does not adopt this practice.

Table 26.- Constraints experienced by contact farmers on cultivation of green manure

No.	Constraints	Percentage of farmers (N=100)
1.	Non availability of green manure seed	35
2.	High labour cost involved	6
3.	Non availability of labour during the season	4

The table shows that 35 percent of contact farmers does not adopt this practice due to the non availability of seed. 6 percent of them opined that "high labour cost prevented them from adopting this practice and 4 percent of them not adopted due to the non availability of labour during the season.

2) Constraints experienced by contact farmers on intercultural operations

Seventy six percent of the contact farmers are regularly practicing the intercultural operations and 24 percent of them who does not resorted to this practice regularly out of this 14 percent of them expressed their inability due to non-availability of

Table 27.- Constraints experienced by contact farmers on intercultural practices

No.	Constraints	Percentage of farmers (N= 100)
1.	Non availability of labour during the season.	14
2.	High cost of cultivation	10

labour during the season. "While 10 percent of expressed the high cost of cultivation" as an important constraint in adopting the inter cultural operation regularly.

3) Constraints experienced by contact farmers on application of organic manure

Eighty six percent of the contact farmers applied organic manure in their coconut cultivation. 14 percent of them does not apply organic manure regularly out of this 8 percent of contact farmers expressed that "non availability of organic manure during the

Table 28.- Constraints experienced by contact farmers on application of organic manure

No.	Constraints	Percentage of non adopters (N= 100)
1.	Non availability of organic manure during the season	8
2.	High cost of the material	6

season as an important constraint for adoption of this practice. 6 percent of them expressed "high cost of material" prevented them from adopting this practice.

4) Constraints experienced by contact farmers on application of lime

Forty percent of contact farmers applied lime to their coconut garden. 60 percent of them does not resorted to this practice out

Table 29.- Constraints experienced by contact farmers on lime application

No.	Constraints	Percentage of non adopters (N=100)
1.	Materials not available	34
2.	Unyielding operation	26

thus 34 percent of them is not using the material due to non availability of the material and 26 percent of contact farmers expressed that lime application is an unyielding operation since they are not interested in doing so.

5) Constraints experienced by contact farmers on application of chemical fertilizers

Sixty eight percent of contact farmers applied chemical fertilizers to their coconut cultivation and 32 percent of them were not

Table 30.- Constraints experienced by contact farmers on application of chemical fertilizers

No.	Constraints	Percentage of non adopters (N=100)
1.	High cost of the material	24
2.	Non availability of fertilizer in time	8

applied. Out of this 24 percent of them does not adopt this practice due to the high cost of the material and they does not have enough money for purchasing the fertilizer during the season. 8 percent of the contact farmers could not apply due to non availability of the fertilizer during the season.

(6) Constraints experienced by contact farmers on irrigation practices

This study shows that only 20 percent of the contact farmers irrigate their coconut palm and 80 percent of them does not. Out of this 50 percent of the contact farmers have not adopted due to high cost involvement for providing irrigation

Table 31.- Constraints experienced by contact farmers on irrigation practices

No.	Constraints	Percentage of non adopters (N = 100)
1.	High cost involvement for providing irrigation facilities	50
2.	Non availability of water ^{for} irrigation during summer	30

facilities and 30 percent of them were of opined that "non availability of water for irrigation during summer.

(7) Constraints experienced by contact farmers on plant protection measures

Sixty percent of the contact farmers adopted this message. A perusal of the result given in the table shows that 30 percent of the contact farmers does not adopt this practice due

Table 32.- Constraints experienced by contact farmers on
plant protection measures

No.	Constraints	Percentage of non adopters (N=100)
1.	Non availability of plant protection equipments for conducting spraying	30
2.	Non availability of labour	6
3.	High labour cost involved	4

to non availability of plant protection equipment for conducting spraying and 6% of them does not adopt due to the non availability of labour and 4 percent of them not adopted due to the high labour cost involvement.

DISCUSSION

CHAPTER V

DISCUSSION

The study conducted in Trivandrum District with the objective of assessing the extent of adoption of messages pertaining to improved practices on paddy and coconut were done. Trivandrum district comprises of Neyyatinkara, Nedumangadu and Attingal sub division under T&V programme of Kerala. The hundred farmers in the sample were the contact farmers identified under the programme. The T&V programme in Trivandrum district started in 1981 and completed in the year 1986.

Only messages on important and common farming practices was taken up for this study. More or less these practices has been constantly cared for in the transfer of technology process under T&V system. Accordingly nine messages on paddy and seven messages on coconut were taken up for the study.

The Table 2 and Table 3 indicates that, the farmers while caring for cultivation of both paddy and coconut, application of fertilizer and plant protection materials has been equally taken care of in adoption of messages concerned. This might be due to the necessity of enhancement of the yield for both the crops perceived by the farmers in the context of the price structure in the market of this commodities.

Interestingly, though coconut fetch more price and is a waterloving crop farmers has not taken care to irrigate their crops. This might be due to lack of availability of water at sources or lack of facilities to irrigate. It is interesting to note that though our soils are mostly acidic the messages on application of lime to coconut palms does not materialise in terms of adoption. This can only be due to lack of availability of materials to the farmers as this technology has been long standing for last 30 years.

The study also depicts a go back in the use of high yielding paddy varieties by farmers in comparison to the high yielding variety era of the 60's. No reason other than cost of cultivation of high yielding varieties shall be the reason for this. In paddy cultivation only 50 percent of the farmers taken up soil testing as a practice. In paddy cultivation though soil testing facilities expanded throughout the State, the slackness of the T&V System in coordinating with the soil testing laboratories shall be the reason. The adoption of organic manure application in paddy cultivation is to an extent of 94, percent, which is a practice continued in existence in years ago.

The tables 4 to 13^{shows} relationship between personal, socio psychological and economic characters of contact farmers with their extent of adoption.

Discussing on the independent variables selected for the study the farm size, educational status and social participation of the contact farmers were found to be highly significant in terms of relationship with their extent of adoption of improved agricultural practices on paddy and coconut cultivation in Trivandrum district.

Table 6 depicts that 66 percent of the farmers are high schoolers with capacity to read and understand and apply the messages transferred to them under T&V system. More than 90 percent of the farmers have high degree of social participation. Never the less the above two characters has combined very well towards their extent of adoption of high technology in paddy and coconut cultivation. Incidentally none of the other independent variable evidenced any significant relationship with extent of adoption by contact farmers of the Trivandrum District. From the above result it could be infered that new technological advances like growing improved varieties of paddy requires large doses of fertilizers and careful periodic plant protection operations. This warranted substantial economic resource mobilization among the small farmers. Farmers with microscopic and mini scale operational holdings as in Kerala, it cannot be expected to command the required resources for adopting the cost intensive improved agricultural technologies and quiet naturally, their access and their quest for

agricultural information and their adoption may also be marginalised leading to poor adoption behaviour. The above findings were confirmity with studies reported by Viswanathan, Oliver and Menon (1975), Vijayaraghavan (1976) and Pillai (1978).

Similarly educational status of the contact farmers were highly significant with their extent of adoption. It is known fact the educational level of farmers is influenced by their knowledge, skill and altitude towards farming which in turn influence their extent of adoption as found in this study. The studies of Wilkening (1955) Vandenban (1957) Lionberger (1960) Kamble (1973) Ramamoorthy (1973) Vellpandian (1973) confirmed the above findings of the present study.

Social participation was found to have a significant positive relationship with the extent of adoption of T & V messages by contact farmers. This might be due to the fact that as their social participation increases the contact farmers establish more contact with other farmers, extension personals who are the main source of improved technologies. This in turn resulted in getting improved agricultural practices and adopting in their field. This result is in conformation with the study reported by Saini (1975) Rajendran (1978).

It is also interesting to note in this context, though not significant the relationship of the farmers age and cosmopolitaness, with their extent of adoption was found to be negative.

Age of the contact farmers and their extent of adoption were found to be negatively correlated. This clearly shows that age was a discriminating factor in influencing their extent of adoption. It is a common belief that young farmers have a greater tendency to adopt new agricultural techniques than old farmers. The change proness of young farmers will also be appreciable. The old farmers are relatively conservative and conditioned to follow traditional practices. The studies of Anabalgan (1976) Pillai (1978) Sanoria and Sharma (1983) confirmed the above finding of the present study.

The perusal of the results bring to focus the finding that extent of cosmopolitaness of contact farmers were negatively related to their extent of adoption of T&V messages. The results of the study draw support from the earlier studies conducted by Fliegel (1960) Chauhan and Sinha (1976). It can also be seen that except in the case of age and farm size the relationship of other independent variables of the contact farmers in respect to their extent of adoption was to the medium level. Interestingly the 90 percent of the contact farmers who had farm holding 1 to 5 acres showed significant

level of adoption of the improved farming practices. Any how the mean scores on the relationship between independent and dependent variable ranged from 19.40 to 22.20. This depicts that contact farmers under study were either small farmers or medium farmers.

A sub divisional level discussion pertaining to the relationship between independent and dependent variable is given in the tables 14, 15 and 16. It is interesting to note that significant relationship existed between farm size and extent of adoption only in Neyyatinkara and Nedumangad sub division. This might be due to the costal feature of the Attingal sub division which is thickly populated in comparison to other two sub division. With regard to age though not significant negative relation was depicted among the farmers of Attingal sub division in respect to their extent of adoption on the messages to paddy and coconut cultivation. Where as in the case of farmers of Nedumangadu sub division the relationship with their age and extent of adoption of messages on coconut alone was found to be significantly negative. This might be due to comparatively higher age of the farmers of the Nedumangad sub division who shall be partly sceptic and economically weak for the adoption of messages on coconut cultivation.

Between the three sub divisions, the farmers of the Attingal sub division revealed significant relationship between their level of education and extent of adoption of messages on paddy and coconut cultivation. Incidentally it is interesting to note that while farmers of the Attingal sub division showed significant positive relationship as compared to negative relationship (not significant) by the farmers of the Nedumangadu sub division with regards to their extent of adoption and educational status.

While social participation of the contact farmers of the Neyyatinkara sub division was significant with that of their extent of adoption, the relationship of the same variable among the farmers of the other two sub divisions was not found significant.

The relationship of the risk orientation of the farmers with their extent of adoption of the farmers of the three sub divisions were not found to be significant at all. This finding is in agreement with the result obtained by Singh (1968) Nair (1969).

The Tables 14, 15 and 16 depicted significant relation between economic motivation and extent of adoption of messages on paddy cultivation amongst farmers of Attingal sub division, whereas the same in the case of other two sub division though not significant was found to be negative.

It is interesting to note that the extent of cosmopolitanness of the farmers of Attingal Sub division was found to be significantly related and negative in relation. Where as the relation was found to be significantly positive in case of farmers of Neyyatinkara sub division in respect of paddy cultivation. This might be due to absent land lordism as well as influence of occupation other than farming subducing the effect of the extent of adoption by the farmers of the Attingal sub division.

Again in Attingal sub division, the utilization of information source though not significant has been found to be negatively related to the extent of adoption of messages by the contact farmers, where as adoption of messages on paddy and coconut cultivation by farmers of the Neyyattinkara sub division was found to be significantly related to their information source utilization. This shall be due to the orientation of the contact farmers more towards farming as well as the suitability of the area for adoption of scientific farm management. Similar results have been obtained by Padhoria and Patel (1975) Patel and Singh(1970) and Nanjayan ^{et al} (1977).

Though not significant the information source utilization has found to be negative in terms of its relationship to the extent of adoption of messages by the farmers of Neduman-gadu sub division in case of coconut cultivation.

Regarding scientific orientation, though not significant, it was found to be negatively related to the extent of adoption by the farmers of the Nedumangad sub division but not in the case of other two.

It is interesting to note that very high significance seems to be exhibited in the relationship of the management orientation of the contact farmers of the Attingal sub division and their extent of adoption. Similar results were obtained by Kalhon and Acharya (1967) Samantha (1977) and Shanmughappa (1978) where as though not significant such a relation was found to be negative in case of contact farmers of Nedumangad sub division. This might be due to high extent of cosmopolitanism found among the farmers of Attingal sub division as against a negative orientation in cosmopolitanism among the farmers of Nedumangad sub division.

In total as a summing up the above findings, the combined adoption of the messages on paddy and coconut by the farmers of the three sub division put together namely Trivandrum District (Table No.18) shows a high relationship between farm size, educational status and social participation where as non significant relationship existed with regard to other variables namely, social participation, risk orientation, economic motivation, information source utilization and management orientation,

with extent of adoption by the farmers of all three sub division. At the same time though not significant negative relation was exhibited with extent of cosmopolitaness and extent of adoption by the farmers of this district.

The above finding reflects the combined role played by both system of education and the social aspects which is complimentary to each other, whereas the extent of cosmopolitaness found to be subdued by the combined effect of the other two. Similarly the other variables which was found to be non significant has also been in total inactive in increasing the extent of adoption among the farmers of the Trivandrum district. The above total effect shall be accrued to the condition of the Trivandrum District being the capital district, where in many of the independent variables under study found to be a built in factor.

Constraints experienced by the contact farmers in the adoption of messages on paddy and coconut cultivation.

Analysing on the constraints felt by the contact farmers of Trivandrum District (Table No.19) showed that low straw yield and high cost of cultivation was stressed by the farmers towards adopting high yielding paddy varieties. Majority of the farmers were unable to treat their seeds due to non availability of chemicals in their localities. Many of the contact farmers

felt that the management of nurseries were difficult for want of space and high labour cost. 22 percent of the farmers felt constraint of lack of soil testing facilities and their cumbersome procedure. 34 percent farmers expressed lack of availability of liming materials in their locality. Green manure seeds were found to be short by 3/4 of the contact farmers under study. 76 percent of the contact farmers though regularly practicing interculturing operations experiences high cost of labour. 2/3 of the farmers though apply fertilizers felt high cost as the constraint in adopting that message. The same held true with regard to irrigation also. Non availability of equipment and chemicals was felt by 1/3 of the contact farmers under study.

Discussing on the above constraints it is very evident that farming in the new era of advanced agricultural development is becoming increasingly costly which the marginal farmers are unable to cope up with scientific management on paddy and coconut. This seneario suggests for implementation of low cost technology combined with mechanised and timely services built in with incentives like subsidies and community inputs. The transfer of this messages should be tuned with appropriate services and supply, reached at the farming locations for farmers to adopt.

SUMMARY

SUMMARY

The Training and Visit system in Agricultural Extension has helped increase agricultural productivity impressively in several areas. The Kerala Agricultural Extension Project was introduced in the three districts of Kerala viz. Trivandrum, Quilon and Alleppey on a pilot basis. In 1981 and later the programme was extended to the remaining ten districts also. The main objective of the Training and Visit System (it is popularly known as T & V System) is the transfer of proven low cost and no cost technology to selected contact farmers by the village extension worker, (they are known as V.E.W.) through systematic and regular fortnight visit.

The study was conducted in Trivandrum district with the objective of identifying messages on improved agricultural practices on major crops communicated to contact farmers under T&V system, to assess the extent of adoption of messages during the season, to study the relationship of the personal, psychological and economic characters of contact farmers with their extent of adoption and to delineate the constraint experienced by contact farmers in the adoption of messages. The Trivandrum district comprising of Neyyattinkara, Nedumangadu and Attingal Sub division. Multistage random sampling technique was adopted to select 100 contact farmers who constituted the sample population. The entire 28 Agricultural Extension Unit was included in selecting the sample. The data for the study related to paddy was taken Virippu 1985 and for Coconut the adoption procedure adopted during 1984-85. The extent of adoption of messages communicated to contact farmers on

paddy and coconut was the dependent variable and was measured by using the adoption scale developed by Beal and Rogers (1960) with slight modification. Messages on paddy and coconut cultivation were selected on the basis of the Training and Visit guide lines issued at fortnight training to extension workers. The important messages were identified in consultation with Subject Matter Specialists of the state department of Agriculture and Extension experts of Agricultural University. Based on their opinion 16 messages on improved agricultural practices were selected. The areas on paddy cultivation selected for these study were selection of high yielding variety seed, seed treatment, nursery techniques, methods on planting, soil testing, lime application, organic manure application, chemical fertilizer application, plant protection measures. The areas on coconut cultivation selected for the study were green manure cultivation, interculture practices, organic manure application, lime application, chemical fertilizer application, irrigation and plant protection measures.

The independent variables selected were age, farm size, educational status, social participation, risk orientation, economic motivation, extent of cosmopolitaness, information source utilization, scientific orientation and management orientation. The age was decided on the basis of classification suggested by Shankariah et al (1980). The farm size was measured

by the method used by Cherian (1984). The educational status was measured on the basis of the scale developed by Trivedi (1963). The social participation was measured by the scale developed by Lokande (1974), the risk orientation and economic motivation was measured by the scale developed by Supe (1969). The extent of cosmopolitaness of the farmers were

measured by the scale developed by Desai (1981), information source utilization was measured by the scale developed by Nair (1969). The scientific orientation was measured by the scale developed by Supe (1969) and the management orientation of the contact farmers was measured with the help of scale developed by Samantha (1977). Data were collected using a pre-tested structured interview schedule.

The study conducted on the extent of adoption of T&V messages on paddy and coconut among the contact farmers of Trivandrum district revealed that majority of the contact farmers have adopted most of the T&V message communicated to them in their farm. But none of them have adopted all the sixteen practices with regard to paddy messages it is interesting to note that the contact farmers under study are adopted messages related to all chemical fertiliser application and plant protection measures. 94 percent of the contact farmers adopted the messages on organic manure application in their paddy field. Only 2 percent of contact farmers were adopting messages on seed treatment.

With regard to extent of adoption of messages on coconut, 86 percent of the contact farmers ~~were~~ adopted messages on organic manure application and 75 percent of them were adopting the practice related to interculture operation in their coconut garden. More than 50 percent of the farmers ~~were~~ adopted messages on fertiliser application and green manure cultivation. It is interesting to note that 80 percent of the farmers never adopted the messages related to irrigation and 60 percent of them never adopted messages on lime application.

Farm size, Educational status and Social participation of contact farmers were found to be highly significant in terms of relationship with their extent of adoption of improved agricultural practices on paddy and coconut cultivation.

With regard to Age and Extent of cosmopolitanness of the contact farmers with their Extent of adoption of T & V messages were found to be negatively related and non significant. All the other variables viz. Risk orientation, Economic motivation, Information source utilization, Scientific orientation and Management orientation were positively related but not significant.

Comparison of dependent variable among the three sub divisions namely Neyyatinkara, Nedumangadu and Attingal with independent variables.

The Extent of adoption of messages on paddy and coconut with independent variable shows that the Extent of cosmopolitaness of the Neyyatinkara farmers were highly significant. The 'Information source utilization' and 'Farm size' are positively correlated with the adoption of the messages on paddy and coconut. At the same time 'Economic motivation' and 'Scientific orientation' depicted a negative relationship with adoption of messages on paddy.

The 'Farm size' is the only independent variable showing relationship with regard to the adoption of messages on both crops paddy and coconut put together by the farmers of Nedumangadu sub division. At the same time adoption of messages on coconut was found to be significantly related to the 'Age', 'Educational status' and 'Social participation' and remaining independent variables shows a negative relationship with Extent of adoption.

'Educational status' and 'Economic motivation' are found to be the only related independent variable with adoption of messages on paddy cultivation alone among the farmers of Attingal sub division. Very high negative relationship existed between the 'Extent of cosmopolitaness' and Adoption of the

messages on paddy and coconut. 'Age' and 'Information source utilization' though not significant showed negative relationship with regard to adoption of messages on paddy and coconut.

Constraints experienced by contact farmers in adoption of messages on paddy and coconut

The constraints experienced by the contact farmers in adoption of cultivating high yielding varieties of paddy were due to its low straw yield, high cost of cultivation, non availability of seed in time, high labour involvement and the soils not suited for cultivating this variety. Non availability of chemicals and its hazardous effect were the major constraints in adopting seed treatment. Extra labour involvement and high cost of cultivation prevented the contact farmers in adopting the messages on nursery technique and transplanting. Some of the farmers were not aware of the importance of soil testing. With regard to Lime application, the contact farmers are of opinion that it is an unyielding practice and it prevented the farmer to follow that practice. Regarding the application of organic manure, materials not available during the season and high cost of the material prevented them to adopt the messages on organic manure application.

The constraints experienced by the contact farmers in adopting messages on green manure cultivation in the coconut

garden were the non availability of seed in time and high labour cost involvement for the cultivation. Non availability of labour during the season and high cost of cultivation prevented the farmer in adopting interculture operations every year. Non availability of organic manure during the season and high cost of the material prevented them in adopting the practices related organic manure application. Unyielding operation and materials not available is the important constraints experienced in application of lime. High cost of fertilizers ranked first among the barriers standing in the way of adoption of messages on fertilizers followed by non availability of fertilizer in time. High cost involvement for installation of pumpsets and non availability of water in summer season for irrigation was the constraints experienced for adopting messages on irrigation to coconut cultivation. Non availability of plant protection equipment and non availability of labour for conducting spraying and high labour cost involvement were the important constraints perceived by the contact farmers in adopting the messages on application of plant protection chemicals.

In conclusion, majority of the contact farmers were fully aware of the messages communicated to them. At the same time few of them does not known their actual role in the T&V System. This will deter the diffusion of innovations in the farmers field. This may be due to improper selection of farmers as contact farmers. This can be prevented by selecting appropriate persons as contact farmers having more rapport with their neighbouring farmers.

In the era of advanced agricultural development becoming costly to the marginal farmers they are unable to cope with scientific management of their crop. This suggests for implementation of low cost technology combined with mechanised and timely services built in with incentives like subsidies and community inputs. Transfer of messages should be tuned with appropriate services and supply reached at the farming locations for farmers to adopt.

Suggestions for future research

The findings of this study revealed that information obtained were not adequate to project the results of this study for the entire State. Therefore a more comprehensive study taking the whole State as the universe which would yield results that can be projected for the entire State is suggested. Further, problem felt by the contact farmers at field level have to be studied in depth.

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APPENDICES

APPENDIX I

Extent of Adoption of Messages by contact
farmers in Training and Visit System

No.

Date:

Department of Agricultural
Extension, College of Agriculture,
Vellayani.

Interview schedule

1. Name and address of the respondent
2. Age
3. a) Main occupation of the respondent
b) Subsidiary occupation if any
4. Family status:

Family members Age Education Occupation

5. Size of Holding in Hectars

Wet land Dry land Total

6. Educational Status

Standard	Score
Illiterate	0
Can read	1
Can read & write	2
Primary school	3
Middle school	4
High school	5
College & above	6

7. Social participation

Please indicate whether you are a member or office bearer in the following organization and if so, how frequently you attend the meeting

Sl. No.	Organi- sation	As member	As Office bearer	Attend meeting		
				Regularly	Occasionally	Never

- 1) Panchayat
- 2) Cooperative Society
- 3) Rural Radio forum
- 4) Youth Club
- 5) Distinctive feature
MLA, MP etc.
- 6) Any other

8. Risk Orientation

Statements	SA	A	UD	DS	SDA
1) A farmer should grow large number of crops to avoid greater risks involved in growing one or two crops					
2) A farmer should rather take more of chance in making big profit than to be content with smaller but less risky profit					
3) A farmer who is willing to take greater risks than the average farmers usually does better financially					
4) It is good for farmer to take risks when he knows his chance of success is fairly high					
5) It is better for a farmer not to try farming unless most other farmers have used them with success					
6) Trying an entirely new method in farming by a farmer involves risks but it is worth it					

SA = Strongly Agree; A = Agree; UD = Undecided;
DS = Disagree; SDA = Strongly Disagree

9. Economic motivation

Please give your opinion about the following statements:-

No. Statements	SA	A	N	DS	SDA
1) A farmer should work towards larger yield and economic profit					
2) The most successful farmer is one who make the most profit					
3) A farmer should try any new farming idea which may earn him more money					
4) A farmer should grow cash crops to increase monetary profits in comparison to growing of food crops for home consumption					
5) It is difficult for the farmers children to make good start unless he provides them with economic assistance					
6) A farmer must earn his living but the most important thing in life cannot be defined in economic terms					

SA = Strongly Agree; A = Agree; N = Neutral
 DS = Disagree; SDA = Strongly Disagree

10. Extent of cosmopolitanness

Please indicate how frequently did you visit the nearest town and the purpose of your visit

Frequency of visit	Score
1) Two or more times in a week	5
2) Once in a week	4
3) Once in fifteen days	3
4) Once in a month	2
5) Occasionally	1
6) Never	0

B Purpose of visit

1) All visit relating to Agriculture	5
2) Some relating to agriculture	4
3) Personal/domestic matters	3
4) Entertainment	2
5) Other purpose	1
6) No response	0

11. Information source utilization

Please indicate how often did you get information regarding scientific farming

Source of information	Frequency of utilization					
	Every day	Two to six times in a week	Once in a week	Once in a fortnight	Once in a month	Never
	5	4	3	2	1	0
1) News papers						
2) Radio						
3) Extension personnel						
4) Agricultural Scientists						
5) Friends & relatives						
6) Others specify						

12. Scientific orientation

Statements	SA	A	UD	DS	SDA
1) New methods of farming give better results to a farmer than the old methods					
2) The way a farmers' forefathers farmed is still the best way to farm to day					
3) Even a farmer with lot of experience should use new methods of farming					
4) Though it takes some time for a farmer to learn new methods in farming it is worth the efforts					
5) A good farmer experiments with new ideas in farming					
6) Traditional methods of farming have to be changed in order to raise the level of living of farmer					

SA = Strongly Agree; A = Agree; UD = Undecided;
 DS = Disagree; SDA = Strongly Disagree

13. Management orientation

What is your opinion about the following statements and please state the degree of your agreement or disagreement to the each of the statement given below

A Planning orientation

Statements	Agree 1	Disagree 0
1) Each year one should think a fresh about the crop to be cultivated in each type of land		
2) It is not necessary to make prior decision about the variety of crop to be cultivated		
3) The amount of seed, fertilizer, plant protection chemicals need for raising a crop should be assessed before cultivation		
4) It is now necessary to think ahead of the cost involved in raising a crop		
5) One need not consult any agricultural expert for crop planning		
6) It is possible to increase the yield through farm production plan		

B Production orientation

- 1) Timely planting of crop ensures good yield
- 2) One should use as much fertilizer as he likes
- 3) Determining fertilizer dose by soil testing saves time
- 4) For timely weed control one should even use suitable herbicides
- 5) Seed rate should be given, as recommended by the specialist
- 6) With low water rates one should use as much irrigation water as possible

C Marketing orientation

- 1) Market use is not so useful to the farmers
- 2) A farmer can get good price by grading his produce
- 3) Ware house can help a farmer to get better price for his produce
- 4) One should sell his produce to the nearest market irrespective of price
- 5) One should purchase his inputs from the shop where his relative purchase
- 6) One should grow those crops which have more market demand



(Extent of adoption of messages communicated)

PADDY

1. Are you cultivating high yielding varieties of paddy ? Yes/No
If "Yes" what are the variety usually cultivated

Name of variety	Total area of wet land	Area under High yielding variety	Season	Yield obtained	Regularity Regular- Not regular
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If "no" What is the reason for non adoption and what is the variety you are cultivating

1. Technology not known
2. Non availability of seed/not insufficient quantity
3. Non availability of seed in time
4. High cost of cultivation
5. Not suited for the soil condition
6. Low straw yield
7. High labour cost involved
8. Others specify

2. Do you adopt treatment of seed with chemicals? Yes.

If "Yes" What are chemicals used for seed treatment

Name of chemicals	Quantity used	Regularity	
		Regular	Not regular

If "no" What is the reason for non adoption

1. Technology not known
2. Non availability of chemicals
3. Hazardous effect of chemical
4. High cost involved
5. Others specify

3. Do you raise seedlings in the nursery? Yes/No

If "Yes" What is criteria for selecting the site

-
- 1.
 - 2.
 - 3.
 - 4.
-

If no what is the reason for non adoption

1. Technology not known
2. No seperate place is available for raising nursery
3. High cost of cultivation
4. Nursery preparation involves extra cultivation cost
5. Others specify

4. Do you transplant seedling from the nursery Yes/No

If "Yes" what is the seed rate & spacing given

Name of the variety	Seed rate/ Het.	Spacing given	Regularity	
			Regular	Not regular

- 1) Medium duration
- 2) Short duration
- 3) Improved variety

If 'no' what is the reason for non adoption

- 1) Technology not known
- 2) It is a time consuming process
- 3) High labour cost involved
- 4) Others specify

5. Are you ever tested your soil? Yes/No

If 'Yes' please give the details

Testing the soil before cultivating each crop	Testing the soil once in an year	Regularity	
		Regular	Not regular

If 'no' what is the reason for non adoption

- 1) Technology not known
- 2) Soil collection procedure is much complicated
- 3) Facilities not available
- 4) Others specify

6. Do you apply lime in your field? Yes/No

If 'Yes' what is the quantity of lime applied

Name of the liming materials used	Quantity used/ Hectare	When applied chemical fertilizer after using lime	Regularity in application	
			Regular	Not regular

If 'No' what is the reason for non adoption

- 1) Technology not known
- 2) Materials not available
- 3) Unyielding operation
- 4) Others specify

7. Do you apply organic manure in your field? Yes/No

If 'Yes' what is the quantity applied

Name of the material	Quantity applied/ hectare	Regularity in application	
		Regular	Not regular

If 'no' what is the reason for non adoption

- 1) Technology not known
- 2) High cost of the materials
- 3) Materials not available
- 4) Others specify

8. Do you apply chemical fertilizers in your field? Yes/No

If 'Yes' How much quantity of fertilizer applied, and state method of application (whether applied in split doses)

Area in Hectare	Variety	Method of application	Name of fertilizer	Quantity NPK	Regularity Regular/ Not regular
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If 'no' what is the reason for non adoption

- 1) Technology not known
- 2) High cost involved
- 3) Materials not available
- 4) Others specify

9. Do you dust/spray your crop against pest/diseases Yes/No

If 'Yes' give details of the pesticides used

Area	Name of pesticides used	Dosage	Against pest/disease	Regularity Regular - Not regular
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If 'no' what is the reason for non adoption

- 1) Technology not known
- 2) High cost involved
- 3) Materials not available
- 4) It has hazardous effect
- 5) Others specify

COCONUT (Management practices)

1. Do you sow green manure seed in your coconut garden Yes/No
If 'yes' what are the variety grown

Variety grown	Month in which it is grown	Quantity of seed sown/hect.	Month in which it is incorporate with soil	Regularity Regular - Not regular
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If no what is the reason for non adoption

- 1) Technology not known
- 2) Non availability of seed
- 3) High cost involved
- 4) Non availability of labour
- 5) Others specify

2. Do you practice inter culture in your coconut garden Yes/No
If yes give details of interculture

Month	Details of cultural operation	Regularity	
		Regular	Not regular

If 'no' what is the reason for non adoption

- 1) Technology not known
- 2) Non availability of Labour
- 3) High labour cost involved
- 4) Others specify

3. Do you apply organic manure in your coconut garden Yes/No
If 'yes' what types of organic manure used

Name of organic manure used	Quantity used from adult palm	Month in which it is applied	Regularity Regular - Not regular
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If 'no' what is the reason for non adoption

- 1) Technology not known
- 2) High cost of the material
- 3) Not available in time
- 4) Others specify

4. Do you apply liming material for your coconut palm Yes/No
If 'Yes' give details of application

Name of material	Total number of trees applied	Quantity applied per plant	Month in which it is applied	Regularity Regular/Not regular
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If 'no' what is the reason for non adoption

- 1) Technology not known
- 2) Materials not available
- 3) High labour involvement
- 4) It is an unyielding operation
- 5) Others specify

5. Do you apply chemical fertilizer in your palm Yes/No

If 'yes' what is the quantity of fertilizer applied
whether applied in one dose or split dose

Method of application	Dose split/Hec.	N	P	K	Regularity Regular/Not Regular
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Good Management

Average Management

If 'no' what is the reason for non adoption

- 1) Technology not known
- 2) High cost of the material
- 3) Non availability of fertilizer during the season
- 4) Others specify

6. Do you irrigate your palm Yes/No

If 'yes' give details of irrigation

Age of the palm	Method of irrigation	Interval of irrigation	Regularity Regular/Not Regular
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If no what is the reason for non adoption

- 1) Technology not known
- 2) High cost involvement
- 3) Non availability of water
- 4) Others specify

7. Do you apply pesticides against pest/disease Yes/No

If 'Yes' give details of control measures taken

Name of pests/ disease	Control measures taken if chemical used give details	Dosage	Regularity Regular/Not regular
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If 'no' what is the reason for non adoption

- 1) Technology not known
- 2) Non availability of plant protection equipment
- 3) Non availability of chemicals
- 4) High labour cost involvement
- 5) Others specify

APPENDIX I B

Messages Identified on Improved Agricultural Practices on
Paddy and Coconut cultivation in Trivandrum District

Messages on Paddy

1. Selection of High yielding varieties

Select high yielding varieties like Aswathy, Jaya, Bharathy, Jyothi suited to the season and region

2. Seed treatment

Treat the seed with Emisan 0.5 gram/litre water for 1 kg seed

3. Nursery techniques, select fertile soil, with enough water supply sun light and 1/10 th to the total area

Transplanting

4. Transplant the short duration varieties at a spacing of 15x10 cm and medium duration 20x15 cm and improved varieties 25x15 cm

5. Soil testing

Test your soil every year and apply the fertilizers as per the soil testing report

6. Lime application

Apply lime @ 350 kg/hectare at the first plough if the

pH is below 5.5 in the field, chemical fertilizer should apply 7 days after liming

7. Organic manure application

Apply farm yard manure/compost @ 5 MT/hectare at second and third ploughing in the main field

8. Chemical fertilizer application

For short duration variety apply chemical fertilizer @ 70:35:35 and for medium duration variety @ 90:45:45 and for improved variety like Mashoori 50:25:25 and Ptb varieties 40:20:20. This should be applied in two split doses full dose of P and $\frac{1}{2}$ dose of N and K as basal dressing and remaining half of N and K as top dressing

9. Plant protection measures

Spray metacid 1 ml/1 litre water against rice bug

Spray Diamocron 1 ml/1 litre water against stem borer

Spray Carbaryl 50% 4 gm/1 litre water against leaf roller

Spray Hinosan 1 ml/1 litre water or Bavastin 1 gm/1 litre of water against blast

Spray Hinosan 1 ml/1 litre water against sheath rot

Messages on coconut

1. Green manure cultivation

Sow sunhemp seed for green manure purpose @ 100 gram per tree in the basin

2. Inter culture practices

Basin should be taken 1.8 metres from the stem and at the depth of 2.5 cm during May-June Basin should be closed during the month of November-December

3. Organic manure application

Farm yard manure @ 25 to 50 kg/palm should be applied in the month of June-July

4. Lime application

Apply lime @ 1 kg/palm 2 weeks before or after the application chemical fertilizers

5. Chemical fertilizer

Apply chemical fertilizer

	N	P	K
1. Average management	340	170	680 gram/tree
2. Good management	500	320	1200 gram/tree

6. Irrigation

Irrigate the coconut trees in summer at an interval of 5 to 6 days

7. Plant Protection measures

For control of Rhinoceros Beetle, apply BHC 10% and sand in the proportion 1:2 in the top most leaf axil around the spindle.

For red palm weevil - inject 20 gram Carbaryl in one litre water, after closing hole in the bottom side. For Bud rot remove the affected parts and apply Bordeaux paste and cover it with polythene cover or mud pot.

EXTENT OF ADOPTION OF MESSAGES BY CONTACT FARMERS IN T & V SYSTEM

By
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ABSTRACT OF A THESIS
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1987

ABSTRACT

A research study was conducted in Neyyatinkara Nedumangadu and Attingal Sub division of Trivandrum district of Kerala to study the following

1. To identify the messages on improved agricultural Practices on major crops communicated to the Contact farmers by the T&V System
2. To assess the extent of adoption of the messages communicated during the season
3. To study the relationship of the personal, psychological and economic characters of contact farmers with their extent of adoption
4. To delineate the constraints experienced by the contact farmers in the adoption of the messages

One hundred contact farmers were selected for the study using multistage random sampling procedure. The study illumined that 16 important messages on improved agricultural practices on paddy and coconut, which were frequently communicated to contact farmers under T&V System.

The study conducted on the extent of adoption of T&V messages on paddy and coconut revealed that majority of the contact farmers have adopted most of the messages in their

farms, but none of them have adopted all the sixteen messages. Majority of the contact farmers have adopted the messages related to chemical fertilizer application, plant protection measures, organic manure application in their paddy field. A few contact farmers adopted the messages on seed treatment. With regard to adoption of messages on coconut cultivation majority of them adopted the messages related to organic manure application, interculture operations, fertilizer application and cultivation of greenmanure crops. It is also noted that more than half of the study group of farmers never adopted the messages related to Irrigation, Lime application and Plant Protection measures on coconut cultivation.

'Farm size,' 'Educational Status' and 'Social Participation' of Contact farmers were found to be highly significant in terms of relationship with their Extent of adoption of improved agricultural Practices on paddy and coconut. 'Age,' 'Extent of cosmopolitaness' were found to be negatively related with their extent of adoption. All other variables viz. 'Risk orientation,' 'Economic motivation,' 'Information Source utilization,' 'Scientific orientation' and 'Management orientation' were positively related but not significant.

The main constraints experienced by contact farmers in adopting the cultivation of high yielding varieties of paddy were low straw yield, high cost of cultivation, nonavailability

of seed in time; Non availability of chemical for seed treatment is another constraint in seed treatment. Extra labour involvement for nursery preparation and transplanting operation were other constraints. Unaware of the effect of lime application and soil testing facilities were yet another constraints. The nonavailability of materials and high cost were the main limiting factors with regard to organic manure application in their paddy field.

The constraints experienced by contact farmers in adopting messages on coconut cultivation were nonavailability of labour during the season, nonavailability of green manure seeds, high cost of manures and fertilizers. High cost involvement for installation of pumpset and nonavailability of plant protection equipment and high labour cost involvement for spraying were perceived as important limiting factors on adopting messages on coconut cultivation by contact farmers.