A STUDY ON THE ROLE OF LEADERSHIP IN AGRICULTURAL DEVELOPMENT IN RURAL AREAS IN KERALA

BY

P. MUTHIAH MANOHARAN

THESIS
submitted in partial fulfilment of the
requirement for the degree
MASTER OF SCIENCE IN AGRICULTURE
(Agricultural Extension)

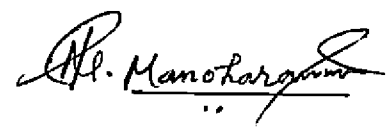
Faculty of Agriculture
Kerala Agricultural University

Department of Agricultural Extension
COLLEGE OF AGRICULTURE
Vellayani - Trivandrum

1979

DECLARATION

I hereby declare that this thesis entitled "Study on the Role of Leadership in Agricultural Development in Rural areas in Kerala" 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 University or Society.



(P. MUTHIAH MANOHARAN)

College of Agriculture,
Vellayani,
7th November, 1979.

CERTIFICATE

Certified that this thesis, entitled "Study on the Role of Leadership in Agricultural Development in Rural areas in Kerala" is a record of research work done independently by Shri. P. MUTHIAH MANOHARAN, 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.

Dr. G. THIAGARAJAN NAIR
Chairman,
Advisory Committee
Associate Professor of Agricultural Extension.

College of Agriculture,
Vellayani,
15 November, 1979.

Approved by:

Chairman:

Dr. G. Thiagarajan Nair

Members:

1. Shri. E.J. Thomas

2. Dr. A.M. Thampi

3. Shri. U. Mohammed Kunju

ACKNOWLEDGEMENTS

It is my proud privilege to express my deepest sense of reverence, gratitude and indebtedness to Dr.G. Thiagarajan Nair, Chairman of the Advisory Committee, for his encouraging attitude, abundant interest and expert advice during the course of my research programme.

I shall fail in my duties if I do not express my sincere thanks to Shri. E.J. Thomas (Professor of Agricultural Statistics), Dr. A.M. Thampi (Associate Professor of Agricultural Extension), Shri. U. Mohammed Kunju (Associate Professor of Agronomy) members of the advisory committee, not only for going through the outline of this study and offering encouraging appreciation and expert comments during various steps of my research programme.

I am highly grateful and indebted to Professor A.G.G. Menon, Head of the Department of Agricultural Extension for his constant encouragement throughout my Post-Graduate Programme.

I express my sincere gratitude to Shri.M.P. Abdhul Rashak, Assistant Professor of Statistics, for the assistance rendered by him during the course of analysis of data.

I also place here my heart-felt thanks to Shri.P.Gopalakrishnan Nair (Junior Agricultural Officer, Arayoor I.P.D.Unit),

Shri. Thankappan Nadar, for their helps rendered during the collection of data.

I am grateful to my beloved parents, brothers and sisters for their moral support which enabled me to complete this project successfully.

I am indeed indebted to my relatives for their inspiring encouragement, without which I might not have succeeded in completing this study.

Thanks are also due to all the members in the Department of Extension, College of Agriculture, Vellayani. Thanks are also due to Kumari. Lalitha Kumari for typing the manuscript with due care.

Last but not the least I am thankful to Kerala Agricultural University for awarding Students Fellowship during the course of research.

P. MUTHIAH MANOHARAN.

7th November, 1979.

C O N T E N T S

LIST OF TABLES

LIST OF ILLUSTRATIONS

LIST OF ABBREVIATIONS

Ag	:	Agricultural leaders
Po	:	Political leaders
Co	:	Co-operative leaders
Ec	:	Ela committee leaders
Pa	:	Panchayat leaders
I.P.D.Unit	:	Intensive Paddy Development Unit
H.Y.Vs	:	High Yielding Varieties.

INTRODUCTION

INTRODUCTION

The progress of a nation depends upon the type of leadership it gets in economic, social, religious and political fields. This is true in all democratic countries, particularly in those nations where more emphasis is laid on local self-government. Extension workers and others who are responsible for the development are vitally concerned with local leadership. The problem of leadership has assumed a new significance and a new dimension in our nation in the recent decades as a consequence of several and drastic changes that have taken place in our society. Accurate identification and effective utilisation of leadership provide the key to the smooth and speedy implementation of the developmental plans for increasing agricultural production-which we are passing now-has increased the demands of extension services.

The lay leaders are a part of the social system in the rural areas. The extension worker will find it difficult to convince the rural people about the usefulness of the new practices, however much of these may be useful for this community unless these local leaders take decisions. Co-operation of rural people can be secured only after convincing the leaders whom they respect, regard and follow.

For agricultural development local leaders are essential. Srivastava (1965) stressed the importance of rural leadership as below:

"One of the important requisites for planned social change is the emergence of certain quality and type of leadership not only at the top of bureaucracy but also at local level. This is quite significant in moulding and changing a particular community". Nirmal Kantisha (1973) found that a person who is received as leader in one field also exerts his influence in various spheres. The participation of responsive and responsible leaders of different fields is expected to result in intensive mobilisation of local agricultural resources and basing of the agricultural development programme on actual needs. Knowledge of their roles in agricultural development will be a major factor deciding the extent of participation. The leader's perception of their roles thus becomes a crucial factor in development.

As a change agent every agricultural extension officer has to understand how leaders perceive their roles before he is trying to get their participation in development programmes. Identification of different types of leader, study of their role perception, role performance and the factors associated with the effective role performance will provide a basic understanding of leadership activities in

agricultural development in rural areas. If the local leaders in the community could be provided with a clear idea of their roles, it might be possible to increase the tempo of developmental activities with less efforts.

Need for the study

Most of the earlier studies in rural leadership threw-light on the pattern and process of leadership, role of caste in leadership pattern etc. No attention has been given to understand the role perception and role performance of various categories of leaders in agricultural development. The rationale for the study lies in the fact that introduction of change in agriculture and its acceptance by the majority of the farmers in the community is controlled to a greater extent by the perception and performance of different roles by different categories of leaders. Different categories of leaders may perceive roles differently which may either retard or promote the agricultural development in rural areas. Empirical study on this aspect is essential. It is essential for understanding of the available leadership quality and also to serve as basic material for evolving leadership development programme. It is with this objective this study has been formulated.

Objectives

The following specific objectives have been framed to understand the role of leadership in agricultural development.

1. To identify the local leaders and to study their role perception in agricultural development.
2. To study the role performance of identified leaders.
3. To identify the factors associated with the effective role performance of leaders in agricultural development.

Scope and limitations

The present study had the attendant limitations of time, personnel and finance. A study of this nature in detail would require considerable amount of time, men and material. For a single study to explore this area in a greater depth and in a comprehensive manner will be far from easy accomplishment. These limitations have been taken into consideration in deciding the variables and size of the sample. The study was conducted in Trivandrum District and these findings may not suit to other parts of Kerala. It is visualised that the findings of this study like other studies, would provide an insight into the problem. This study attempted to depict clearly the role of leadership in agricultural development only.

THEORETICAL ORIENTATION

THEORETICAL ORIENTATION

The objective of this chapter is to discuss in broad outlines the conceptual frame which will provide a theoretical base for this investigation. The discussions will be used to link the problem with the available findings and to select relevant variables and to develop appropriate hypothesis for the study.

Leadership which is defined by Haiman (1951) as the ability to achieve in a specific area that has importance for a given group has beendefined differently by various other authors. For example Rogers and Olmsted (1957) defined Leadership as 'an activity in which effort is made to influence people to co-operate in achieving a goal viewed by the group as desirable.' Hepple (1959) defined 'Leadership as the role and status of one or more individuals in the structure and functioning of group organisations which enable these groups to meet a need or purpose, that can be achieved only through the co-operation of the members of the group.' All the authors accepted the importance of leadership in the effective functioning of groups. In this study leader is viewed as an individual who can influence the thoughts, ideas or behaviour related with agriculture of a large number of members of the social system to which he belongs.

Type of leaders:

Different authors have classified the leaders in different ways.

Barlett(1921) has classified the leaders into three groups, viz., institutional, dominant and persuasive. Emory Bogardus (1934) classified the leaders into three categories namely social leaders, mental leaders and the executive leaders. White (1951) has classified them into four categories of leaders, viz., operational leaders, popularity leaders, assumed representative type and prominent talent etc. Dhillon (1955) classified leaders as primary, secondary and tertiary depending upon the relative importance of individual in the village affairs. Rao (1966) concluded that four types of leaders were existing in all the villages. They were institutional, special interest, voluntary and professional leaders. Out of these four types institutional leaders were considered as the village-wide leaders by the villagers. Reddy (1966) identified four types of leaders namely traditional leaders, caste leaders, political leaders and functional leaders.

In this study the leaders are classified as

1. Agricultural leader
2. Political leader
3. Co-operative leader

4. Ela committee leader and

5. Panchayat leader based on the results of a pilot study.

Leadership role

The change of a group in the desired direction will be related to the effectiveness of the group leadership. As stated by Mayer (1957) in the selection and implementation of projects for rural development village leadership is the vital point on which the success of the programme depends. Belsare (1958) suggested that, village leaders should be enlisted as an active supporters of an extension programme, as they are the multipliers of the efforts of the extension agencies. Lionberger (1960) stated that persons refered to as local influentials, adoption leaders, opinion leaders or sometime as innovators act as source of farm information in rural community.

For any leader of a society there is a set of socially defined expectations concerning what is his appropriate behaviour. Gotu (1957) has defined role as "a socially prescribed way of behaving in particular situations for any person occupying a given social position. The role represents what a person is supposed to do in a given situation by virtue of the social position he holds". Role expectations represent the 'ought to do' part. These expectations are not always clearly defined. There can be two types of expectations (a) self expectations and (b) expectation by others. The

first refers the leaders definition of appropriate behaviour for the position which he occupies. These roles seems situationally appropriate to him in terms of the demand and expectations of his group. The second type refers to the expectations by other persons regarding the leaders roles, expectations which may or may not coincide with one another or with those of the occupant. The role of a leader will also depend upon the particular situation.

Hepple (1959) has pointed out that there are three principal steps involved in the study of leadership profiles. The first step is the role analysis which is the analysis of specific type of group leadership to determine the roles and functions performed and the traits and attitudes associated with each group leadership position. The second step is to analyse the amount of time leaders devote to each role. The third step is to evaluate how well persons play certain leadership roles. He also pointed out that job analysis of leadership positions should include an examination of the traits and attitudes of leaders who are successful in playing their roles, as well as of those who are not successful.

Group factors will also have influence on leadership efficiency.

So the study of role of leadership should include the following aspects to be a complete study.

1. Role expectations → Self-expectations
   → Expectation by others
2. Role performance → Self rating
   → Others rating
3. Time analysis-Time devoted for performance of different leadership roles.
4. Relationship of leadership roles and traits.
5. Group factors in leadership roles.

In this study only the leaders self expectations of their roles in agricultural development are considered. Time and resources did not permit to include the time use study and the group factors influencing leadership roles.

Leadership characteristics

There is a myriad of reports which describe the characteristics (qualities) of leaders. Several research studies reported the relationship between leader characteristics and leader efficiency, role performance etc. A review of studies which reported the association between different characteristics and efficiency of leaders are presented in Table (1) in a tabular form.

Table 1. Review of leadership efficiency factors.

No.	Variables	Researcher who established relationship	Relationship
1.	Age	Brar (1966)	No relationship
		Thorat (1968)	Negative relationship
		Somasundaram (1971)	No relationship
		Lalit Sen (1972)	No relationship
		Reddy and Sahay (1973)	Positive relationship
		Lakshmanan and Chandrakandan (1975)	Positive relationship
		Rajaram et al. (1975)	Positive relationship
2.	Attitude towards high yielding varieties	Reddy and Sahay (1973)	Positive relationship
3.	Attitude towards multiple cropping	Reddy and Sahay (1973)	Positive Relationship
4.	Attitude towards credit	Reddy and Sahay (1973)	Positive relationship
5.	Attitude towards marketing	Reddy and Sahay (1973)	Positive relationship
6.	Authoritarianism-Non-authoritarianism	Reddy and Sahay (1973)	Positive relationship

Table 1 (Contd.)

No.	Variables	Researcher who established relationship	Relationship
7.	Caste	Brar (1966)	No relationship
		Thorat (1968)	Positive relationship
		Lalit Sen (1972)	Positive relationship
		Reddy and Sahay (1973)	No relationship
		Rajaram et al. (1975)	No relationship
8.	Credit risk orientation	Lalit Sen (1972)	Positive relationship
9.	Contact with extension agency	Lalit Sen (1972)	Positive relationship
		Reddy and Sahay (1973)	Positive relationship
10.	Cosmopolite-localiteness	Reddy and Sahay (1973)	Positive relationship
11.	Conservatism-liberalism	Reddy and Sahay (1973)	Positive relationship
12.	Change agent linkage	Singh (1973)	Positive relationship
13.	Communication skill	Singh (1973)	Positive relationship
14.	Change proneness	Singh (1973)	Positive relationship

Table 1 (contd.)

No.	Variables	Researcher who established relationship	Relationship
15.	Deferred gratification	Reddy and Sahay (1973)	No relationship
16.	Education	Brar (1966)	Positive relationship
		Somasundaram (1971)	No relationship
		Lalit Sen (1972)	No relationship
		Reddy and Sahay (1973)	Positive relationship
		Rajaram et al(1975)	No relationship
17.	Educational aspiration	Lalit Sen (1972)	Positive relationship
18.	Economic motivation	Reddy and Sahay (1973)	Positive relationship
19.	Empathy	Lalit Sen (1972)	Positive relationship
20.	Election participation	Reddy and Sahay (1973)	Positive relationship
21.	Fatalism	Singh (1973)	Netative relationship
22.	Familism	Singh (1973)	Positive relationship
23.	Farm size	Brar (1966)	Slight relationship
		Thorat (1968)	Positive relationship

Table 1 (contd.)

No.	Variables	Researcher who established relationship	Relationship
		Mohinder Paul Kaushal (1970)	Positive relationship
		Reddy and Sahay (1973)	Positive relationship
		Lakshmanan and Chandrakandan (1975)	No relationship
24.	Farm power	Reddy and Sahay (1973)	Positive relationship
25.	Group orientation	Misra, Kar and Sahoo (1970)	Positive relationship
26.	Gregariousness	Reddy and Sahay (1973)	Positive relationship
27.	Income	Lakshmanan and Chandrakandan (1975)	No relationship
28.	Innovativeness	Reddy and Sahay (1973)	Positive relationship
29.	Ideal role incumbency	Singh (1973)	Positive relationship
30.	Knowledge of high yielding varieties of paddy	Reddy and Sahay (1973)	Positive relationship
31.	Knowledge of marketing	Reddy and Sahay (1973)	Positive relationship
32.	Knowledge of credit	Reddy and Sahay (1973)	Positive relationship

Table 1 (contd.)

No.	Variables	Researcher who established relationship	Relationship
33.	Knowledge of multiple cropping	Reddy and Sahay (1973)	Positive relationship
34.	Level of living	Lalit Sen (1972)	Positive relationship
35.	Land oriented conservatism	Lalit Sen (1972)	No relationship
36.	Mode of election	Brar (1966)	Good relationship
		Rajaram et al (1975)	No relationship
37.	Material possession	Reddy and Sahay (1973)	Positive relationship
38.	Mass media exposure	Khurana (1971)	Positive relationship
		Reddy and Sahay (1973)	Positive relationship
39.	Number of houses owned	Reddy and Sahay (1973)	Positive relationship
40.	Opinion of extension programme	Lalit Sen (1972)	Positive relationship
41.	Occupation	Reddy and Sahay (1973)	Positive relationship
42.	Opinion leadership	Singh (1973)	Positive relationship
43.	Progressiveness	Lakshmanan and Chandrakandan(1975)	No relationship

Table 1 (contd.)

No.	Variables	Researcher who established relationship	Relationship
44.	Prestige	Singh (1973)	Positive relationship
45.	Political affiliation	Reddy and Sahay (1973)	No relationship
46.	Popularity status	Singh (1973)	Positive relationship
47.	Risk orientation	Reddy and Sahay (1973)	Positive relationship
48.	Social participation	Brar (1966)	Positive relationship
		Thorat (1965)	No relationship
		Somasundaram (1971)	No relationship
		Reddy and Sahay (1973)	Positive relationship
		Lakshmanan and Chandrakandan (1975)	No relationship
		Rajaram et al. (1975)	No relationship
49.	Size of the family	Reddy and Sahay (1973)	Positive relationship
50.	Secular orientation	Lalit Sen (1971)	Positive relationship
51.	Socio economic status	Somasundaram (1971)	No relationship
		Deb and Agarwal (1974)	Positive relationship
		Radhakrishna Menon and Mohamed Javeed Basha (1975)	No relationship
		Rajaram et al. (1975)	No relationship

Table 1 (contd.)

No.	Variables	Researcher who established relationship	Relationship
52.	Type of houses owned	Reddy and Sahay (1973)	Positive relationship
53.	Urban contant	Lalit Sen (1972)	Positive relationship
		Reddy and Sahay (1973)	Positive relationship
54.	Urban pull	Lalit Sen (1972)	No relationship
55.	Value orientation	Singh (1973)	Positive relationship
56.	Venturesomeness	Singh (1973)	Positive relationship

It is evident from the above review that one researcher cannot consider all the above characteristics in one study within a short period of time. So from among the many characteristics that can have a relationship with leadership a manageable system of important variables which are adapted to empirical measurements have been selected on the basis of an exploratory study. The selected characteristics are the following:-

1. Age
2. Caste
3. Education

4. Farm size
5. Income
6. Value orientation
7. Achievement motivation
8. Communication skill
9. Attitude towards agriculture
10. Attitude towards high yielding varieties of paddy
11. Attitude towards fertilizers
12. Attitude towards plant protection
13. Knowledge of the programme and improved agricultural practices
14. Mass media exposure
15. Contact with extension agency
16. Adoption behaviour.

A detailed review of studies, which reported relationship of the above factors with role performance or efficiency of leaders are presented below.

Age

Reddy and Sahay (1973) who studied leadership pattern in non-progressive village found that age was correlated significantly with farm leadership. Similarly Lakshmanan and Chandrakandan (1975) observed that age was significantly correlated with the leadership roles.

Rajaram et al. (1975) found that age was related to the different levels of participation of panchayat presidents in village agricultural production programme.

Thorat (1968) has found that there was a negative relationship between age of a panchayat president and the extent of adoption at village level. The relationship was not significant, but was in the expected direction suggesting that older leaders exerted a conservative influence.

Brar (1966) has found no relationship of age of panchayat leaders with their contribution in planning. Younger and elder presidents had a very slightly higher contribution score than middle aged group, but their difference was very minute and that the three groups were almost similar.

Sumathi Mulay et al. (1966) pointed out that age had no relationship with leadership position in the village when coming to the question of activities related with panchayat, co-operative and agriculture.

Somasundaram (1971) found that age did not significantly influence the performance of role of rural leaders.

Khurana (1971) found that age was not correlated with the role performance of key communicators.

Many of the above studies reviewed could not establish significant relationship. But the preliminary observation made by the researcher was in line with the findings of

Reddy and Sahay (1973), Lakshmanan and Chandrakandan (1975) and Thorat (1968).

Hence it was postulated for this study that there would be an association between age and role performance of leaders.

Caste

Caste has been a major factor of leadership. Thorat (1968) found that there was statistically significant relationship between caste of a president and the level of adoption of agricultural innovations.

Fliegel (1968) and Lalit Sen (1972) found that higher the caste of leaders, greater was the village level adoption of agricultural innovations.

But Brar (1966) found that there was no association of caste of panchayat president with their contribution.

Reddy and Sahay (1973) observed that caste was not correlated significantly with farm leadership of progressive and non-progressive villages.

Rajaram et al. (1975) opined that caste was not related to the different levels of participation of panchayat presidents in village agricultural production programme.

For this study it was assumed that there would be a relationship between caste and role performance of leaders.

Education

Education helps a leader to know the world better and he is prone to seek for information which will increase his knowledge. As pointed out by Chakravarthy (1965) the level of education of presidents influence the effectiveness of village panchayat.

Brar (1966) also found that formal education of presidents and their contribution was positively related.

Reddy and Sahay (1973) observed that education was significantly correlated with farm leadership in non progressive village.

But Panchanadikar and Panchanadikar (1967) have found that education was not a pre-requisite for activities of panchayat president.

Somasundaram (1971) also did not find significant influence of education on the performance of any roles of rural leaders.

Khurana (1971) has also confirmed that education did not correlate with the role performance of key communicators.

Rajaram et al. (1975) opined that education was not related to the different levels of participation by presidents in village agricultural production programme.

As the preliminary exploratory observation of the researcher also confirmed the findings of Chakravarthy,

Brar, Reddy and Sahay it was hypothesised that there would be an association between education level of leaders and their role performance.

Farm size

One partial indicator of excellence in farming is farm size whether measured in land units or in labour unit. This variable has consistently been shown to be highly and positively related with role performance.

Rahim (1961) and Rogers (1962) found farm influentials operated larger farms.

Reddy (1965) reported that traditional and political leadership operated larger farms.

Brar (1966) opined that there was slight relationship between land owned by panchayat presidents and their contribution in planning.

Thorat (1968) indicated that there was statistically association between size of holding of a president and the level of adoption of agricultural innovations in the village.

Mohinder Paul Kaushal (1970) found that farm size had definite influence on leadership effectiveness.

Reddy and Sahay (1973) observed that farm size was positively related with farm leadership in both progressive and non progressive villages.

Singh (1973) concluded that key communicators were significantly different from non communicators in relation to the size of their holdings and a high proportion of the leaders belonged to comparatively larger sized holding background.

But Khurana (1971) observed that there was no association between land holding and role performance of key communicators.

Lakshmanan and Chandrakandan (1975) also observed that there was no relationship between farm size of the leader with his role.

Majority of the above findings reiterates the assumption that there would be an association between farm size role performance of leaders.

Income.

Financial status of leader can be an important component which influence role performance.

Deb and Agarwal (1974) found that most of the leaders were from higher economic status of the society.

Somasundaram (1971) found that economic status did not significantly influence the performance of roles by rural leaders.

Khurana (1971) opined that economic status was not correlated with the role performance of key communicators.

Rajaram et al (1975) observed that economic status was not related to the different levels of participation by panchayat presidents in village agricultural production programme.

Lakshmanan and Chandrakandan (1975) found that there was no relationship between income and leadership roles.

For this study it was assumed that greater the income of leaders, greater would be their role performance.

Value orientation

Very broadly a value orientation may be explained as a generalised and ordered principle, concerning basic human problems which directly or indirectly influence human behaviour.

Kluckhohn (1953) studied the value orientations of rural people and found that the majority of them had the future time-orientation, doing-orientation and mastery over nature in the project block.

Reddy (1965) who studied value orientation of leaders found that leaders were liberal, scientifically oriented and authoritative.

Singh (1973) studied the value orientation of leaders and opined that both in agriculturally developed and under developed villages, the key communicators differed significantly from non-communicators with respect to conservatism, scienticism and cosmopoliteness.

Muttayya (1971) revealed that the value orientation of panchayat leaders, informal leaders and non leaders did not differ much except in their orientation to national commitment. The panchayat leaders were more committed to the nation than other two categories of respondents.

The researcher has not come across any other study which studied value orientation of leaders. Since value orientation has important influence in leaders, it was assumed that greater the value orientation, maximum would be the role performance.

Achievement motivation

Broadly speaking achievement motivation is conceived as a personality orientation which impels the individual to strive for success for its own sake rather than in anticipation of concrete rewards. One can perhaps capture the essence of achievement motivation by the English proverb that "Success is its own reward".

The pioneer in achievement motivation research McClelland (1970) indicated, that higher the level of achievement motivation the more likely is the executive to seize position of greater power and responsibility. Similarly Rogers and Neill (1966) found a relationship between achievement motivation and farming excellence among columbian peasants.

There was no study of achievement motivation of leaders. A leader with strong achievement motivation may perform his roles more intensively than other leaders. It was hypothesised that greater the achievement motivation of a leader greater would be his role performance.

Communication skill

Singh (1973) reported that key communicators differed significantly from non-communicators with respect to their communication skill.

Though almost all authors mentioned communication skill as an important characteristics of leaders, which will have direct relationship with the efficiency of leaders, no other studies except the one reviewed above has been reported on this aspect.

For this study it was hypothesised that greater the communication skill of a leader greater would be his role performance.

Attitude

Man possesses attitude toward a wide range of phenomenon. Attitude, the positive or negative affect of an individual towards an object, idea or individual, are tendencies or pre-dispositions to act in a certain way when the individual receives certain stimuli. A person's involvement in a programme will result in the creation of a favourable or unfavourable

attitude towards the programme. When the attitude of a person is known, then it is possible to indicate his probable reactions to certain stimuli. In this study attitude towards agriculture, attitude towards high yielding varieties of paddy, attitude towards fertilizers and attitude towards plant protection are considered important variables which will have influence on the role performance.

High yielding varieties of paddy is the important agricultural development activity carried out in I.P.D. units. The attitude of leaders towards these varieties can have direct bearing on the performance of leader's role related with this programme.

Kherde and Sahay (1972) observed no significant relationship between attitude towards high yielding varieties and role performance of village level workers.

Reddy and Sahay (1973) found that there was a positive relationship between attitude towards high yielding varieties and farm leadership in progressive and non progressive villages.

Gangarde (1978) observed that a positive approach was seen among leaders with respect to attitude towards high yielding variety seeds and attitude towards fertilizers.

There is no study which studied the leader's attitude towards plant protection.

Since attitude has been shown as an important aspect which influence behaviour, it was hypothesised for this study that greater the degree of attitude towards agriculture, towards high yielding varieties of paddy, towards fertilizers and towards plant protection greater would be the role performance of leaders.

Knowledge of the programme and improved agricultural practices

Knowledge is one of the most important components of behaviour and as such plays an important part in the behaviour of an individual. Once knowledge is acquired it produces change in the thinking process of an individual and would lead to a higher role performance. No study has been reported which studied leader's knowledge about the different aspect of development programme and technical subject matter related with agriculture. But studies on village level workers have shown the importance of knowledge on efficiency.

Kherde and Sahay (1972) found that knowledge of village level workers on multiple cropping was significantly related with their role performance.

Chakrawarthy and Singh (1974) concluded that level of technical knowledge of village level workers was one of the most important indicators of their role performance.

For this study it was postulated that there would be a relationship between leader's knowledge about the agricultural

development programmes and technical subject matter related with agriculture and role performance.

Mass media exposure

In Kerala where the percentage of literacy is more, mass-media can play an important role in communicating informations. A leader who is exposed to mass media more may get more ideas and hence may function more effectively. This was pointed out by Rogers (1962) who generalised that opinion leaders had greater exposure to mass media than the followers. But Khurana (1971) opined that there was no relationship between mass media exposure and role performance.

The hypothesis that greater the mass media exposure greater would be the role performance of leaders was set based on the result of pilot study.

Contact with extension agency

Extension worker is the professional who can influence innovation decision in a desired direction. They are the main sources of information and the important agency available at the village level. Frequent contact with extension workers by leaders may result in more involvement in agricultural development activities.

Sandhu (1967) observed that extension contacts were consistently greater in key communicators than others.

Khurana (1971) found that there was a relationship between extension contacts and role performance of key communicators.

Lalit Sen (1972) found that leaders contact with extension agency was the most influential variable in village level adoption.

So it was postulated that there would be a relationship between contact with extension agency and role performance of leaders.

Adoption behaviour

Adoption can be considered as an overt behaviour. It is the result of a mental process through which an individual passes from first knowledge of innovation to a decision to adopt or reject.

Wilkening (1952) found little difference in adoption rates between informal leaders and average farmers. He argued that since the informal leaders reflected the conservative values of the community, they were unlikely to support a new idea, unless it was compatible with the existing socio-cultural system or met with group approval.

Khan (1967) found that both in tribal and non tribal communities the local leaders adopted significantly higher number of improved practices than their followers.

A leader who feels the importance of improved agricultural practices in increasing agricultural production may adopt more practices than the others in the social system.

It was hypothesised that there would be an association between adoption behaviour and role performance.

A diagramatic presentation of the conceptual scheme of the study discussed above is presented in Fig. (1.)

Definitions of concepts

Role perception

Role perception was defined as the personal value towards leader's own activities regarding agricultural development.

Role performance

It was defined as the actual function performed by leaders in relation to their position in agricultural development.

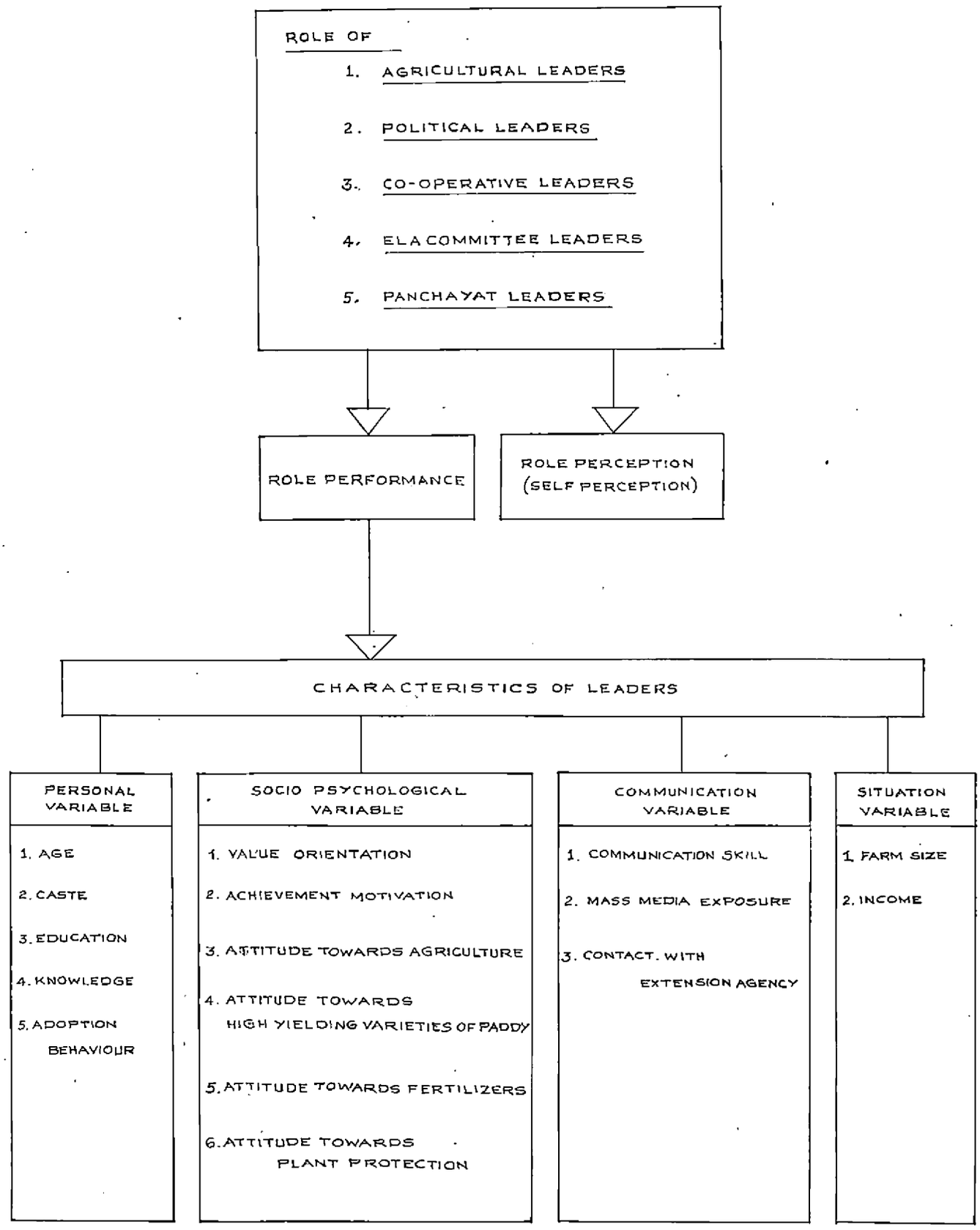
Farm size

It was defined as the area of land owned and cultivated by a leader.

Income

Income was defined as the annual income in rupees of the respondents, which was self reported.

FIG. 1. CONCEPTUAL SCHEME OF STUDY OF LEADERSHIP ROLE FOLLOWED IN THE PRESENT STUDY



Value orientation

It was defined as those aspects of the actor orientation which commit him to the observance of certain norms, standards, criteria for selection, whenever he is in a contingent situation which allows him to make a choice.

Achievement motivation

It was defined as a spontaneously expressed desire to do something well for its own sake rather than to gain power or love, recognition and profit.

Communication skill

It was defined as the ability of leader in receiving and transmitting messages.

Attitude towards agriculture

It was defined as the degree of positive or negative affect associated with the agriculture towards which leaders differ in varying degrees.

Attitude towards high yielding varieties of paddy

It was defined as the degree of positive or negative affect associated with the high yielding varieties of paddy towards which leaders differ in varying degrees.

Attitude towards fertilizers

It was defined as the degree of positive or negative affect associated with the fertilizer towards which leaders differ in varying degrees.

Attitude towards plant protection

It was defined as the degree of positive or negative affect associated with the plant protection towards which leaders differ in varying degrees.

Knowledge

It was defined as the body of understood information possessed by a leader in respect of agricultural programmes and improved agricultural practices of paddy, coconut, banana and tapioca.

Mass media exposure

It was defined as the number of mass media information sources used or contacted by the leader.

Contact with extension agency

It was defined as the frequency in contacting the extension agents like Junior Agricultural Officers, Village Extension Officers and Demonstrators.

Adoption behaviour

It was defined as the continued use of an innovation in the actual cultivation.

Hypothesis

The following specific hypothesis were set for the study.

Hypothesis 1. There will be significant positive association between age and role performance of leaders.

Hypothesis 2. There will be significant positive relationship between caste and role performance of leaders.

Hypothesis 3. There will be significant positive association between education and role performance of leaders.

Hypothesis 4. There will be significant positive association between farm size and of the role performance of leaders.

Hypothesis 5. Income will have significant positive relationship with the effective role performance of leaders.

Hypothesis 6. The value orientation of leaders will have significant positive influence with the role performance of leaders.

Hypothesis 7. There will be significant positive association between achievement motivation of leaders and the role performance.

Hypothesis 8. There will be significant positive association between communication skill of leaders and their role performance.

Hypothesis 9. The attitude towards agriculture will have significant positive influence with the role performance of leaders.

Hypothesis 10. There will be significant positive relationship between attitude towards high yielding varieties of paddy and role performance of leaders.

Hypothesis 11. The attitude towards fertilizers of a leader will have significant positive association with the role performance of leaders.

Hypothesis 12. There will be significant positive association between attitude towards plant protection of leaders with of their role performance.

Hypothesis 13. There will be significant positive relationship between knowledge and role performance of leaders.

Hypothesis 14. Mass media exposure will have significant positive relationship with the role performance of leaders.

Hypothesis 15. There will be significant positive association between contact with extension agency with role performance of leaders.

Hypothesis 16. There will be significant positive association between role performance and adoption behaviour of leaders.

METHODOLOGY

METHODOLOGY

In this chapter the procedures followed for the selection of the area, sample and the empirical measures of the variables included in the study are described. The procedure followed for collecting the data and statistical measures used in the analysis of the same are also presented in this chapter.

A. Selection of area

The study was confined to Trivandrum District. From the list of Intensive Paddy Development Units in Trivandrum District which are the lowest units of agricultural development administration in the state, one unit was selected by simple random sampling process. The unit thus selected was Arayoor in Neyyattinkara Taluk.

1) Description of the area

The Arayoor Intensive Paddy Development area lies about 35 kilometres away from Trivandrum, on the southern side of the Trivandrum-Nagercoil Main Road. This area is in the Chenkal Panchayat. This Panchayat consists of the following eight wards, namely, (i) Kizhkolla (ii) Nochiyoor (iii) Chenkal (iv) Kilamagam (v) Melamagam (vi) Poranur (vii) Arayoor and (viii) Udiankulankara.

Three service co-operative societies, namely, (i) Chenkal (ii) Arayoor and (iii) Kulathoor are functioning in this area.

B. Selection of sample

i) Identification of leaders

Chapparrow (1955) and Havens (1962) used key informant method to identify leaders. According to this method the informants in the social system were selected subjectively as persons who knew the influentials. They were asked to identify the influentials in the community. Singh (1965) made use of sociometric technique in identifying the opinion leaders in a village of Delhi territory. Singh and Arya (1968) used sociometric test for identifying leaders of the two villages by collecting data only from the heads of the families. Chikate (1970) made a departure from the general approach in his study. First the institutional, political, traditional and caste leaders were selected and each of them was asked to name three followers who were interviewed to know the acceptance or rejection between the followers and leaders. Rogers and Shoemaker (1971) made use of three main methods: sociometric, informants-rating and self-designating techniques. The informants-rating method involved selection of judges or key informants who had knowledge about the pattern of influence on the level system and were asked to

identify opinion leaders for a given topic or topics. The self-designating techniques involved using questions such as 'Do you think people come to you for information and advice more often than to others' and assessing the tendency of others to regard them as influentials. Somasundaram (1971) utilized the key informant method which is usually cost and time saving when compared to the conventional sociometric methods. Dubey and Dwivedi (1972) attempted to identify the opinion leaders adopting sociometric techniques in Karagpur District. Gaikwad et al (1973) as well as Gaikwad and Tripathi (1974) followed sociometric technique in identifying local leaders by considering their roles in helping and getting advice on (i) Agriculture (ii) Marketing (iii) Credit (iv) Health (v) Democratic affairs and (vi) work in Government Offices.

This study required five categories of leaders, namely, (i) Agricultural leaders (ii) Political leaders (iii) Co-operative leaders (iv) Ela committee leaders and (v) Panchayat leaders. The procedures used to select the above categories of leaders are described below:

a) Selection of Agricultural leaders

A list containing the name and addresses of all the cultivators for each ward of the selected Panchayat has been prepared with the help from the Intensive Paddy

Development Office. From the list ten per cent of the cultivators were selected at random. A Questionnaire consisting of three sociometric questions (Appendix I) was used to get the responses from the selected farmers. After tabulation the first two individuals who obtained the maximum first choices were selected. (The tabulated choices are presented in Appendix II). Thus sixteen Agricultural leaders were identified from the eight wards and included in the main sample.

b) Selection of Political leaders

The names of the Political leaders belonging to various political parties, who occupy the leadership positions of the party at local level were identified with the help of local officials. In total thirty six Political leaders were identified in the eight wards who belonged to the different political parties.

c) Selection of Co-operative leaders

The office bearers of co-operative societies were considered as Co-operative leaders for this study. There were three co-operative societies in the Intensive Paddy Development area, with twenty six Co-operative leaders. They were selected for this study.

d) Selection of Ela committee leaders

All the thirteen Ela committee members of the selected Intensive Paddy Development Unit were selected for this study.

e) Selection of Panchayat leaders

The elected representative of each ward of Panchayat was taken as Panchayat leaders. There were only eight wards and hence only eight leaders. Since this sample of Panchayat leaders was found to be so small, the members from the adjacent Panchayat were also selected to make the sample an optimum size. Thus sixteen Panchayat leaders have been selected and included in this study.

Thus the study had the following respondents.

No.	Category of leaders	Nos.
A	Agricultural leaders	16
B	Political leaders	36
C	Co-operative leaders	26
D	Ela committee leaders	13
E	Panchayat leaders	16
	Total	107

C. Empirical measures

The variables selected for this study together with their theoretical definitions have been discussed in the Chapter on Theoretical orientation.

The detailed procedures followed for developing the empirical measurements are given below:

1. Role perception

Singh and Arya (1968) studied the perception of leadership behaviour with the help of two instruments namely paired-comparison method and rating scales. Waghmare and Patel (1974) developed a scale to measure the perception of administrative organisation principles. For that four principles concerning administrative organisation were selected. Under each principle seven statements were selected which represented different situations for a principle. The method of paired-comparison was used for determining the scale value of each statement of a principle.

In this study role perception was measured by the "Role perception schedule" developed by the researcher. For this the first procedure was to identify the prescribed roles. For this the officers of the Co-operative Department, Agricultural Department and Panchayat Department were consulted to get details of the roles of co-operatives, panchayats, etc., prescribed by the Government in agricultural development. A comprehensive list of such roles was prepared. After editing to avoid duplication, etc., fifteen roles were finally selected. The respondents were

asked to indicate whether they perceived the identified roles as their roles. The responses were obtained in a three point continuum. The following scoring pattern was used. The response 'Always' was given a score of 2, 'Sometimes' a score of 1, and 'Never' a score of 0. The role perception score of an individual was obtained by adding the score of the corresponding response for all the listed roles. The perception of the importance of the role was obtained by calculating the rank for each role. The total frequency obtained for each statement in each point in the continuum was multiplied by the corresponding weight and added up to get a total weight, which indicated the rank.

2. Role performance

Flanagans (1954) has developed 'Critical incident technique' to measure the role performance of leaders which has been used by Singh (1973) to measure the role performance of key communicators. Singh and Singh (1967) measured job performance on the basis of superior's rating, self rating, and rating by village leaders. Sharma (1971) developed a 'Role performance schedule' to measure the role performance of Multipurpose Co-operative Society leaders. Rajendra (1974) measured the role performance of village panchayats through the 'Performance Quotient'. Chakravarthy and Singh (1974) used eleven indicators of

performance. Of these two were of self rating type and one was superior official rating while the remaining eight indicators included the villager's responses to different aspects of village level worker's performance.

In the present study the performance of the identified fifteen roles were measured by asking the respondents to indicate how frequently they performed the roles. The responses were obtained in a three point continuum ranging from 'Always to Never'. The scoring of the different response categories were as follows:

Always	- 2
Sometimes	- 1
Never	- 0

The total score of the respondents were obtained by adding up the score corresponding to the response pattern of the fifteen roles. The performance of the importance of the role was obtained by calculating the rank for each role. The total frequency obtained for each statement in each point in the continuum was multiplied by the corresponding weight, and added up to get a total weight which indicated the rank.

3. Age

In the present study age has measured as the number of years completed by the respondents at the time of interview.

4. Caste

The categorisation followed in the census report (1971) was followed in the present study. All the respondents in the sample were classified into the following three categories.

1. Forward : Nairs, Brahmins and Christians
2. Backward : Ezhavas, Muslims and Anglo Indian
3. Scheduled : Parayans, Pulayans and Vedans

5. Education

Score for different educational levels were given as per the scoring system followed in the socio-economic status scale of Trivedi (1963). The scoring was as follows:

Illiterate	-	0
Can read only	-	1
Can read and write	-	2
Primary school	-	3
Middle school	-	4
High School	-	5
Collegiate	-	6
Above	-	7

6. Farm size

In this study farm size was measured as the number of acres cultivated by an individual.

7. Income

In this study income was measured by computing the annual income obtained by the respondent through major and subsidiary occupations. The data for this were obtained through a direct question to the respondents.

8. Value orientation

Singh (1965) developed a value orientation scale to measure the degree of direction of value orientation of an individual. He studied value orientation of the respondents in three dimensions. (i) Conservatism - Liberalism (ii) Fatalism - Scienticism and (iii) Cosmopoliteness - Localiteness. Each scale consisted of six items arranged against a four point range from 'Strongly Agree' at one end to 'Strongly Dis Agree' at the other end.

Singh (1967) measured value orientation of the farmers in respect of two dimensions viz. Localite-Cosmopolite (Lo-Co) and External confirmity - Individualism (E-I). Quantitative measures for these two dimensions were prepared by him under Indian conditions.

Ranjit Singh and Sohal (1970) measured the following values viz. (i) Progressive out look (ii) Economic gain (iii) Dignity of labour (iv) Willingness to take risk and (v) Achievement of goals.

Hasan (1972) developed a scale to measure the value orientation in terms of Conservatism-Liberalism, Fatalism-Scienticism.

In this study the scale developed by Hasan has been used to measure the value orientation. There were twelve statements. The validity of these statements were tested and the results indicated the appropriateness of the statements to this study also. The responses to the statements were obtained in a five point continuum ranging from Strongly Agree to Strongly Dis Agree. The responses to the positive statements were scroed as follows:

Strongly Agree (SA)	-	5
Agree (A)	-	4
Un Decided (UD)	-	3
Dis Agree (DA)	-	2
Strongly Dis Agree (SDA)	-	1

Negative statements were scroed in the reverse manner. The score of the respondents were obtained by adding up the score corresponding to their response patterns.

9. Achievement motivation

Rogers and Neill (1966) developed a scale to measure the achievement motivation based on the following six items.

a) For a better life in my farm I need ....

b) My greatest ambition in my life is ....

c) Farmers in my country are ....

d) A good farmer should have ....

e) A true man is the one who ....

f) What are your future plans for the next five years ....

In the present study the achievement motivation was measured by using the scale developed by Singh (1974). The scale had six items. Each item in the scale had five alternative responses and the responses to each item in the scale were scored from 1 to 5 as followed in the measurement of value orientation. The score of the respondents were obtained by adding up the score corresponding to their response patterns.

10. Communication skill

Parshad and Sandhu (1974) measured the communication of village level workers by using rating scale comprising of (i) self assessed ability to communicate (ii) self assessed level of communication qualities (iii) training received by village level workers for conducting various activities and (iv) ability to treat a message about selected innovations.

Sinha (1976) measured the communication skill by asking the respondents to indicate whether they were possessing adequate skills to elicit favourable responses from the people.

Reddy (1976) measured communication skill of village level workers from their ability to communicate and their communication qualities.

In this study for measuring the communication skill of leaders the scale developed by Pareek and Singh (1966) was used which had seven statements. The respondents were asked to indicate their skill regarding the seven statements on the basis of the frequency of occurrence of that behaviour. The possible response patterns were Always, Often, Sometimes, Seldom and Never and the scoring was as follows:

Always	-	5
Often	-	4
Sometimes	-	3
Seldom	-	2
Never	-	1

The final communicator skill score of an individual was obtained by adding up the score assigned to the response pattern for the seven statements.

11. Attitude

The objective measurement of attitude requires a scale developed for the purpose. An attitude scale will contain statements (items) which can be selected by different methods. Items and their scale values are decided by panel of judges in equal appearing interval scales and successive interval scales. Item analysis is the basis of

selection of items in Likert scales. Scalogram analysis of Guttman can be followed in selecting items with unidimensionally. The following methods were used in measuring the different attitudes included in the study.

a) Attitude towards agriculture

As the researcher was not having enough time to undertake any of the procedures followed for selection of statements of measuring the respondent's general attitude towards agriculture an arbitrary scale was developed to measure this variable. The following procedure was followed in developing this scale.

A large number of statements which reflected various degrees of positive and negative attitude towards agriculture in general were identified through review and discussion. These items were edited according to the criteria suggested by Edwards 1969. These edited items were given to experts in Agricultural Extension to assess the appropriateness of these statements for an attitude scale. Based on the opinion of these experts the following five statements were finally selected.

1. If the Government should help to establish a farm in a hilly area would you move.
2. Do you like your son to be a farmer.

3. If there is discussion on modern agriculture would you attend.

4. Only people who are unable to go for any other work will take to agriculture.

5. Only better agriculture can bring prosperity to our nation.

The responses to these statements were obtained on a three point continuum ranging from Strongly Agree to Dis Agree. The scoring pattern was as follows:

Strongly Agree (SA)	-	3
Agree (A)	-	2
Dis Agree (DA)	-	1

Negative statements were scored in the reverse manner. The attitude score of the respondents were obtained by adding up the score corresponding to their response pattern.

b) Attitude towards high yielding varieties of paddy

Nair (1969) Murthy and Singh (1974) developed scales to measure the attitude of farmers towards high yielding varieties programme and I.R.8., paddy cultivation respectively.

Jalihal and Channegowda (1974) developed an attitude scale to measure farmer's attitude towards high yielding

varieties of paddy based on the technique of summated rating scale construction suggested by Likert (1932). The scale consisted twenty two statements and rated on a five point continuum.

Choukidar and George (1975) measured the attitude of consumers towards high yielding varieties of rice with the help of a five point rating scale and the preferences were judged by the paired comparison technique.

In this study the attitude towards high yielding varieties of paddy was measured by using a Likert scale developed by Nair (1969) for use in Kerala. This scale consists of ten statements (five positive and five negative). The responses were rated on a five point continuum ranging from Strongly Agree to Strongly Dis Agree. The scoring assigned were for Strongly Agree (5), Agree (4), Un Decided (3), Dis Agree (2) and Strongly Dis Agree (1). Negative statements were scored in the reverse manner. The attitude score of the respondents were obtained by adding up the score corresponding to their response patterns for each statement.

c) Attitude towards fertilizers

Singh and Singh (1968) developed a scale consisted of twelve statements according to the Likert method of summated rating and measured the attitude of farm people towards chemical fertilizers through five point continuum.

Choudhary and Prasad (1971) developed a fifteen item Likert type scale to measure attitude towards chemical fertilizers.

The above scales were tried in a limited scale to find out their validity in the study location. The results indicated that the scales as such were not suitable to the area. Hence a new scale consisting of items selected on arbitrary basis was used. The items were the following:

1. The food problem of our country can be solved by using chemical fertilizers to all crops.
2. If anybody asks for my advice for increasing production, I will definitely advice him to use chemical fertilizers.
3. If we use chemical fertilizers for some years the soil will become unsuitable for cultivation.
4. Produce of crops grown with chemical fertilizers is harmful for health.
5. Chemical fertilizers will not give returns in relation to the cost involved.

The above statements were ranked on a five point continuum ranging from Strongly Agree to Strongly Dis Agree. The score for the different points were as follows: Strongly Agree (5), Agree (4), Un Decided (3), Dis Agree (2) and Strongly Dis Agree (1). Negative statements were scored in the reverse manner. The score of the respondents were

obtained by adding up the score corresponding to their response patterns.

d) Attitude towards plant protection

This variable has also been measured with the help of a set of statements which were selected on arbitrary basis and were rated against the five point continuum ranging from Strongly Agree to Strongly Dis Agree. The statements were the following.

1. The use of chemicals for control of pests and diseases of crops is one of the important methods to increase agricultural production.
2. Eating of produces of crops sprayed with plant protection chemicals is not good for health.
3. Plant protection chemicals will spoil the soil.
4. All farmers should use plant protection chemicals to control pests and diseases.
5. There must be a law to force farmers to adopt chemical control of pests and diseases.
6. Even though there are bad effects of plant protection chemicals, the good effects justify their use of crops.

The scoring pattern was as follows: Strongly Agree (5), Agree (4), Un Decided (3), Dis Agree (2), Strongly Dis Agree (1). Negative statements were scored in the reverse

manner. The score of the respondents were obtained by adding up the score corresponding to their response pattern for each statement.

12. Knowledge of the programme and improved agricultural practices.

Sankariah and Singh (1967) measured knowledge of the respondents about improved methods of vegetable cultivation based on the teacher made test.

Sinha et al (1968) adopted the method of self appraisal to determine the level of knowledge of Agricultural Extension Officers.

Jaiswal and Dave (1972) calculated the knowledge score as follows:

$$\text{Knowledge score} = \frac{\text{Number of correct answer}}{\text{Total raw score}} \times 100$$

Singh and Prasad (1974) measured knowledge by the knowledge quotient calculated as follows:

$$\text{Knowledge quotient} = \frac{\text{Observed knowledge score}}{\text{Actual total score}} \times 100$$

In the present study a simple knowledge test was developed to measure the respondent's knowledge of improved agricultural practices. Paddy, Coconut, Banana and Tapioca were the important crops of the study area. Through discussion with the specialists and with the help of the package

of practices published by the Kerala Agricultural University a list of all important practices were identified. The respondent's responses were obtained to the selected items and recorded as Correct or Wrong. A score of one was given to each correct answer. Similarly through the discussions with the Agricultural Officers a list of all the agricultural development programmes and activities, that were under implementation in this study area at the time of the study, was prepared. The knowledge about these programmes and activities of the respondents were obtained. The correct knowledge was given a point of one. The points obtained by a respondent for all the correct answers were added up to obtain a knowledge score.

13. Mass media exposure

Wilkening et al. (1962) measured mass media exposure based on the frequency of exposure to the mass media sources. In this study also the degree to which the different mass media sources were utilized by the respondent was measured based on the frequency of exposure. Each respondent was asked to indicate as how often he obtained information regarding agricultural technology from the listed sources. The possible range of responses for each source and the scoring were as follows:

Most often	-	3
Often	-	2

Sometimes - 1

Never - 0

The score of the respondents were obtained by adding up the score obtained for each listed mass media.

14. Contact with extension agency

In the present study the technique used by Jaiswal and Singh (1971) was used to find out the degree of contact with extension agents. This was done on the basis of the frequency of meeting of the respondents with Junior Agricultural Officers, Village Extension Officers, Demonstrators etc., either in the office of these personnel or elsewhere in connection with agricultural activities. Respondents were asked to indicate the frequency of their meetings with Junior Agricultural Officers, Village Extension Officers and Demonstrators etc., in connection with agricultural activities. Score for the different frequencies were assigned as follows:

Visiting daily - 5

Once in a week - 4

Twice in a month - 3

Once in a month - 2

Rarely - 1

Never - 0

15. Adoption behaviour

Several methods have been used to quantify the adoption behaviour by various research workers. Notable among those who utilised a scale for measuring adoption in some form or other were Wilkening (1952), Marsh and Coleman (1955), Fliegel (1956), Beal and Rogers (1960) Chattopadhyay (1963) 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 practice he suggested differential weights in the adoption index.

Marsh and Coleman (1955) also used a practice adoption score computed as 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 '0' and adoption a score of '1'.

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

In this study adoption of improved agricultural practices of Paddy, Coconut, Tapioca and Banana were measured by the 'Adoption Quotient' as developed by Chattopadhyay (1963) and as used by Jaiswal and Dave (1972) with modification. The data regarding the extent of adoption of improved cultivation practices of the above crops recommended by Kerala Agricultural University were obtained. In calculating the Adoption Quotient, the following practices were considered (1) Area, (2) Seed rate, (3) Spacing, (4) Use of NPK fertilizers and (5) Plant protection chemicals.

The Adoption Quotient was worked out using the following formula

$$A.Q = \frac{e_1/p_1 + e_2/p_2 + e_3/p_3 + e_4/p_4 + e_5/p_5}{N} \times 100$$

Where

e_1 = Summation of the extent of adoption of high yielding variety.

p_1 = Summation of the potentiality for the adoption of high yielding variety.

e_2 = Summation of extent of adoption of seed rate.

p_2 = Summation of potentiality of adoption of seed rate.

e_3 = Summation of extent of adoption of spacing.

p_3 = Summation of potentiality of adoption of spacing.

e_4 = Summation of extent of adoption of chemical fertilizers.

p_4 = Summation of potentiality of adoption of chemical fertilizers.

e_5 = Summation of extent of adoption of plant protection chemicals.

p_5 = Summation of potentiality of adoption of plant protection chemicals.

N = Total number of practices.

Field procedure

A draft interview schedule was prepared which was administered to ten leaders who were not in the main sample. In the light of the results of the pre-testing suitable modifications were made and the schedule was finalized. The interview schedule is presented in (Appendix III).

The data were collected by interviewing the leaders by the researcher. Each question in the schedule was put to the respondents in Malayalam in the order in which it was given in the schedule and answers obtained from the respondents were entered in the schedule in the appropriate column. In obtaining the responses of Likert type of questions the respondents were asked to state whether he agreed or disagreed with the statement. If he agreed, then he was asked to indicate whether he simply disagreed or strongly disagreed. Thus for the each of the item the responses in the required ranges were obtained. The data were collected during May, 1979.

Statistical measures

The data collected were put to appropriate statistical tests. Correlation, Multiple Correlation, Rank Correlation, Chi-square, ANOVA and Percentage analysis were employed in this study.

ANOVA tests were used to find out the differences in role perception, role performance and all the selected variables of five categories of leaders. (The abstract of ANOVA tables are presented in Appendix IV). The Rank Correlation co-efficient was used to find out the relationship of role perception and role performance of different roles by different categories of leaders. Chisquare test was used to find out the association between role performance and caste of respective respondents as the data pertaining to this variable were not amenable to scoring. Correlation technique was applied to test the empirical hypothesis of this study. The inter-relationships among the significant variables were calculated by an Inter-correlation analysis.

The significance of correlation was tested at 0.05 level. Multiple Correlation method was also used to explain the variation in dependent variable attributable to the different independent variables. The analysis of the data was done by using Electronic Computor of the Department of Agricultural Statistics, College of Agriculture, Vellayani.

RESULTS

RESULTS

In this chapter, the results of the study are presented under the following headings.

I. Characteristics of different categories of leaders.

II. Extent of role perception and role performance in agricultural development of different categories of leaders.

III. Relationship between the role performance and the selected independent variables for different categories of leaders.

IV. Inter-relationship of different variables included in this study.

V. Predictive power of selected variables in explaining the role performance.

VI. Related findings.

I. Characteristics of different categories of leaders.

1. Age

The data regarding the age of different categories of leaders are presented in Table 2.

Table 2. Distribution of different categories of leaders according to their age (in percentage).

Age group	Ag	Po	Co	Ec	Pa
0 - 21	0	0	0	0	0
22 - 50	62.5	72.2	65.38	76.92	75
above 50	37.5	27.8	34.62	23.08	25

As seen in the Table 2 most of the five categories of leaders belonged to the age group of 22 to 50. 62.5 percent of the Agricultural leaders, 72.2 percent of Political leaders, 65.38 percent of Co-operative leaders, 76.92 percent of Ela committee leaders and 75 percent of Panchayat leaders were found to be in this age group. None of the leaders were in the age group of 0 to 21.

The mean age of five categories of leaders are shown in Table 3.

Table 3. Mean age of different categories of leaders.

No.	Leader category	Mean age
A	Agricultural leaders	47.81
B	Political leaders	43.03
C	Co-operative leaders	45.96
D	Ela committee leaders	43.38
E	Panchayat leaders	43.63

As the 'F' value was not significant it revealed that there was no significant difference among all categories of leaders regarding their age.

2. Caste

The data regarding the caste of different categories of leaders are presented in Table 4.

Table 4. Distribution of different categories of leaders according to their caste (in percentage).

Caste	Ag	Po	Co	Ec	Pa
Forward	37.5	30.56	46.15	30.77	25.0
Backward	50.0	55.56	42.31	53.58	62.5
Scheduled	12.5	13.88	11.54	15.38	12.5

The above Table 4 revealed that most of the Agricultural, Political, Ela committee and Panchayat leaders belonged to the Backward caste.

3. Education

The data regarding the education of different categories of leaders are presented in Table 5.

Table 5. Distribution of different categories of leaders according to their education level (in percentage).

Education	Ag	Po	Co	Ec	Pa
Illiterate	0	0	0	0	0
Can read only	0	0	0	0	0
Can read and write	0	2.78	7.69	0	0
Primary School	18.75	16.67	30.77	0	25
Middle School	50	38.89	38.46	61.54	18.75
High School	31.25	41.66	23.08	38.46	43.75
Collegiate	0	0	0	0	12.5
Above	0	0	0	0	0

The above Table 5 revealed that majority of respondents in all these categories had education in the middle school level or higher.

The mean education scores of five categories of leaders are presented in Table 6.

Table 6. Mean education level scores of the different categories of leaders.

No.	Leader category	Mean education scores
A	Agricultural leaders	4.13
B	Political leaders	4.19
C	Co-operative leaders	3.77
D	Ela committee leaders	4.38
E	Panchayat leaders	4.44

As the 'F' value was not significant it concluded that there was no significant difference among all categories of leaders regarding their educational level.

4. Farm size

The data regarding the farm size of the different categories of leaders are presented in Table 7.

Table 7. Distribution of different categories of leaders according their farm size (in percentage).

Farm size (acres)	Ag	Po	Co	Ec	Pa
0 - 0.50	0	50.00	30.77	0	18.75
0.51- 1.00	12.5	38.90	38.46	7.69	56.25
1.01- 1.50	43.75	5.55	11.54	76.93	12.5

Table 7. contd.

Farm size (acres)	Ag	Po	Co	Ec	Pa
1.51 - 2.00	31.25	5.55	3.85	7.69	6.25
2.01 - 2.50	6.25	0	7.69	7.69	6.25
Above 2.50	6.25	0	7.69	0	0

A look at the Table 7 clearly showed that most of the Agricultural leaders and Ela committee leaders had farm size between 1.01 to 2.50 acres. Most of the Political, Co-operative and Panchayat leaders had farm size between 0 to 1 acre.

The mean farm size of five categories of leaders are shown in Table 8.

Table 8. Mean farm size of different categories of leaders.

No.	Leader category	Mean farm size (in acres)
A	Agricultural leaders	1.48
B	Political leaders	0.58
C	Co-operative leaders	0.87
D	Ela committee leaders	1.14
E	Panchayat leaders	0.85

CD (.05) for comparing.

A Vs B = 0.30
B Vs C = 0.26
C Vs D = 0.34
D Vs E = 0.38
A Vs C = 0.32
B Vs E = 0.30
A Vs E = 0.36
B Vs D = 0.33
A Vs D = 0.38
C Vs E = 0.32

Inference:

Ag Ec Co Pa Po

The above Table 8 revealed that Agricultural and Ela committee leaders had higher farm size than other categories of leaders. There was no significant difference among Ela committee, Co-operative and Panchayat leaders. Panchayat and Political leaders were in the same level.

5. Income

The data regarding the annual income of different categories of leaders are presented in Table 9.

Table 9. Distribution of different categories of leaders according to their annual income (in percentage).

Income	Ag	Po	Co	Ec	Pa
0 - 1000	0	0	0	0	0
1001 - 2000	0	61.11	30.78	0	0
2001 - 3000	0	30.56	38.46	0	25.00
3001 - 4000	25.00	5.56	15.38	23.08	50.00

A Vs B = 0.30
B Vs C = 0.26
C Vs D = 0.34
D Vs E = 0.38
A Vs C = 0.32
B Vs E = 0.30
A Vs E = 0.36
B Vs D = 0.33
A Vs D = 0.38
C Vs E = 0.32

Inference:

Ag Ec Co Pa Po

The above Table 8 revealed that Agricultural and Ela committee leaders had higher farm size than other categories of leaders. There was no significant difference among Ela committee, Co-operative and Panchayat leaders. Panchayat and Political leaders were in the same level.

5. Income

The data regarding the annual income of different categories of leaders are presented in Table 9.

Table 9. Distribution of different categories of leaders according to their annual income (in percentage).

Income	Ag	Po	Co	Ec	Pa
0 - 1000	0	0	0	0	0
1001 - 2000	0	61.11	30.78	0	0
2001 - 3000	0	30.56	38.46	0	25.00
3001 - 4000	25.00	5.56	15.38	23.08	50.00

Table 9. contd.

Income	Ag	Po	Co	Ec	Pa
4001 - 5000	31.25	0	7.69	53.84	18.75
5001 - 6000	18.75	0	7.69	23.08	6.25
6001 - 7000	18.75	0	0	0	0
7001 - 8000	6.25	2.77	0	0	0
Above 8000	0	0	0	0	0

The Table 9 showed that majority of the Agricultural leaders and Ela committee leaders had annual income ranging from Rs.3001 to 6000. Most of the Political and Co-operative leaders had annual income between Rs.1001 to 3000, and for Panchayat leaders it was from Rs.2001 to 4000.

The mean annual income of five categories of leaders are shown in Table 10.

Table 10. Mean annual income of different categories of leaders.

No.	Leader category	Mean annual income (in Rupees)
A	Agricultural leaders	5312.50
B	Political leaders	2252.78
C	Co-operative leaders	2865.38
D	Ela committee leaders	4461.54
E	Panchayat leaders	3343.75

CD (.05) for comparing.

A Vs B = 807.08	B Vs E = 807.08
B Vs C = 691.32	A Vs E = 949.68
C Vs D = 912.43	B Vs D = 869.16
D Vs E = 1002.98	A Vs D = 1002.98
A Vs C = 853.50	C Vs E = 853.50

Inference:

Ag Ec Pa Co Po

The Table 10 indicated that Agricultural and Ela committee leaders had higher income than other categories of leaders. There was no significant difference between Panchayat and Co-operative leaders. Co-operative and Political leaders were in the same level.

6. Value orientation

The data regarding the value orientation of different categories of leaders are presented in Table 11.

Table 11. Distribution of different categories of leaders according to their value orientation scores (in percentage).

Score range	Ag	Po	Co	Ec	Pa
12 - 18	0	0	0	0	0
19 - 25	0	0	0	0	0
26 - 32	0	0	0	0	0

Table 11. contd.

Score range	Ag	Po	Co	Ec	Pa
33 - 39	0	2.78	3.85	0	6.25
40 - 46	0	19.44	19.23	69.23	12.5
47 - 53	43.75	47.22	65.38	23.08	56.25
Above 53	56.25	30.56	11.54	7.69	25

The data in Table 11 revealed that majority of the Agricultural leaders obtained very high value orientation scores. When compared to other categories the majority of Ela committee leaders had low scores.

The mean value orientation scores of the five categories of leaders are shown in Table 12.

Table 12. Mean value orientation scores of different categories of leaders.

No.	Leader category	Mean value orientation scores
A	Agricultural leaders	53.63
B	Political leaders	49.53
C	Co-operative leaders	52.31
D	Ela committee leaders	38.85
E	Panchayat leaders	52.85

CD (.05) for comparing

A Vs B = 2.82
B Vs C = 2.41
C Vs D = 3.91
D Vs E = 3.51
A Vs C = 2.98
B Vs E = 2.82
A Vs E = 3.32
B Vs D = 3.04
A Vs D = 3.51
C Vs E = 2.98

Inference:

Ag Pa Co Po Ec

The data in Table 12 showed that Agricultural, Panchayat and Co-operative leaders had high value orientation than Political and Ela committee leaders. Political and Ela committee leaders had low value orientation scores.

7. Achievement motivation

The data regarding the level of achievement motivation of different categories of leaders are presented in Table 13.

Table 13. Distribution of different categories of leaders according to their level of achievement motivation (in percentage).

Score range	Ag	Po	Co	Ec	Pa
6 - 10	0	0	0	0	0
11 - 15	0	0	0	0	0
16 - 20	6.25	27.78	3.85	15.39	6.25

Table 13. contd.

Score range	Ag	Po	Co	Ec	Pa
21 - 25	43.75	55.56	38.46	76.92	43.75
Above 25	50.00	16.66	57.69	7.69	50.00

The data of the above Table 13 showed that majority of the Agricultural, Co-operative and Panchayat leaders had high achievement motivation scores. Majority Political leaders and Ela committee leaders obtained score ranging from 21 to 25.

The mean achievement motivation scores of the five categories of leaders are presented in Table 14.

Table 14. Mean achievement motivation scores for different categories of leaders.

No.	Leader category	Mean achievement motivation scores
A	Agricultural leaders	25.19
B	Political leaders	22.69
C	Co-operative leaders	25.46
D	Ela committee leaders	22.92
E	Panchayat leaders	25.50

CD (.05) for comparing.

A Vs B = 1.48	B Vs E = 1.48
B Vs C = 1.27	A Vs E = 1.74
C Vs D = 1.67	B Vs D = 1.59
D Vs E = 1.84	A Vs D = 1.84
A Vs C = 1.59	C Vs E = 1.59

Inference:

Pa Co Ag Ec Po

The Table 14 indicated that Panchayat, Co-operative and Agricultural leaders had better achievement motivation than Ela committee and Political leaders. Ela committee and Political leaders were in the same level.

8. Communication skill

The data regarding the communication skill of different categories of leaders are presented in Table 15.

Table 15. Distribution of different categories of leaders according to their scores on communication skill (in percentage)

Score range	Ag	Po	Co	Ec	Pa
7 - 12	0	0	0	0	0
13 - 18	12.5	13.89	15.39	7.69	18.75
19 - 24	37.5	55.56	76.92	84.62	75.00
25 - 30	50.0	30.55	7.69	7.69	6.25
Above 30	0	0	0	0	0

The Table 15 revealed that majority of all the five categories of leaders obtained score above 19.

The mean communication skill scores for five categories of leaders are presented in Table 16.

Table 16. Mean communication skill scores of different categories of leaders.

No.	Leader category	Mean communication skill scores
A	Agricultural leaders	23.88
B	Political leaders	22.39
C	Co-operative leaders	21.62
D	Ela committee leaders	22.38
E	Panchayat leaders	22.81

As the 'F' value was not significant it indicated that there was no significant difference among all categories of leaders with respect to their communication skill.

9. Attitude towards agriculture

The data regarding the attitude towards agriculture of different categories of leaders are presented in Table 17.

Table 17. Distribution of different categories of leaders according to their scores on attitude towards agriculture (in percentage).

Score range	Ag	Po	Co	Ec	Pa
5 - 7	0	0	0	0	0
8 - 10	12.5	27.8	7.69	30.77	25.00
11 - 13	56.25	58.33	80.77	53.85	56.25
Above 13	31.25	13.89	11.54	15.38	18.75

The above Table 17 revealed that a proportionately higher percentage of the leaders had obtained score ranging from 11 to 13. And also, at the extremities of the score range the distribution of these leaders had been low.

The mean scores of attitude towards agriculture of five categories of leaders are shown in Table 18.

Table 18. Mean attitude towards agriculture scores of different categories of leaders.

No.	Leader category	Mean attitude towards agriculture scores
A	Agricultural leaders	12.50
B	Political leaders	11.64

Table 18. contd.

No.	Leader category	Mean attitude towards agriculture scores.
C	Co-operative leaders	11.65
D	Ela committee leaders	11.77
E	Panchayat leaders	11.13

As the 'F' value was not significant it revealed that there was no significant difference among all categories of leaders regarding attitude towards agriculture.

10. Attitude towards high yielding varieties of paddy.

The data regarding the attitude towards high yielding varieties of paddy of the different categories of leaders are presented in Table 19.

Table 19. Distribution of different categories of leaders according to their scores on attitude towards high yielding varieties of paddy.(in percentage).

Score range	Ag	Po	Co	Ec	Pa
10 - 15	0	0	0	0	0
16 - 21	0	0	0	0	0
22 - 27	0	2.78	3.84	0	0
28 - 33	0	2.78	11.54	0	0

Table 19. contd.

Score range	Ag	Po	Co	Ec	Pa
33 - 38	6.25	5.55	3.84	7.69	18.75
39 - 44	43.75	63.89	69.24	76.92	43.75
45 - 50	50.00	25.00	11.54	15.39	37.5

The above Table 19 revealed the majority of the Agricultural leaders obtained a score range of 45 to 50. Majority of leaders in all the other categories were in the score range of 39 to 44.

The mean scores of attitude towards high yielding varieties of paddy of the different categories of leaders are shown in Table 20.

Table 20. Mean scores of attitude towards high yielding varieties of paddy of different categories of leaders.

No.	Leader category	Mean attitude towards high yielding variety scores
A	Agricultural leaders	43.65
B	Political leaders	41.58
C	Co-operative leaders	43.08
D	Ela committee leaders	41.92
E	Panchayat leaders	44.81

CD (.05) for comparing

A Vs B = 2.08	B Vs E = 2.08
B Vs C = 1.78	A Vs E = 2.45
C Vs D = 2.35	B Vs D = 2.24
D Vs E = 2.58	A Vs D = 2.58
A Vs C = 2.20	C Vs E = 2.20

Inference:

Pa Ag Co Ec Po

A glance at the above Table 20 showed that Panchayat, Agricultural and Co-operative leaders had more favourable attitude towards high yielding varieties than other categories of leaders. There was no significant difference among Agricultural, Co-operative, Ela committee and Political leaders.

11. Attitude towards fertilizers

The data regarding the attitude towards fertilizers of the different categories of leaders are presented in Table 21.

Table 21. Distribution of different categories of leaders according to their score on attitude towards fertilizers (in percentage).

Score range	Ag	Po	Co	Ec	Pa
5 - 10	0	0	0	0	0
11 - 16	0	0	3.85	7.69	6.25

Table 21. contd.

Score range	Ag	Po	Co	Ec	Pa
17 - 22	25	44.44	34.61	76.92	37.5
Above 22	75	55.56	61.54	15.39	56.2

The analysis of the above Table 21 clearly indicated that majority of Agricultural, Political, Co-operative and Panchayat leaders obtained a score of above 22. Majority of the Ela committee leaders had a score ranging from 17 to 22.

The mean attitude scores towards fertilizers of the five categories of leaders are shown in Table 22.

Table 22. Mean attitude scores towards fertilizers of different categories of leaders.

No.	Leader category	Mean attitude towards fertilizers scores
A	Agricultural leaders	23.06
B	Political leaders	22.28
C	Co-operative leaders	24.50
D	Ela committee leaders	21.46
E	Panchayat leaders	23.06

CD (.05) for comparing.

A Vs B = 0.73	B Vs E = 0.73
B Vs C = 0.62	A Vs E = 0.86
C Vs D = 0.82	B Vs D = 0.79
D Vs E = 0.91	A Vs D = 0.91
A Vs C = 0.77	C Vs E = 0.77

Inference:

Co Ag Pa Po Ec

The Table 22 revealed that Co-operative leaders had more favourable attitude towards fertilizers than other categories of leaders. There was no significant difference between Agricultural and Panchayat leaders. Political and Ela committee leaders had low attitude towards fertilizers.

12. Attitude towards plant protection

The data regarding the attitude towards plant protection of different categories of leaders are presented in Table 23.

Table 23. Distribution of different categories of leaders according to their attitude scores towards plant protection (in percentage).

Score range	Ag	Po	Co	Ec	Pa
6 - 11	0	0	0	0	0
12 - 17	0	0	3.85	0	0
18 - 23	0	8.33	11.53	7.69	12.5
Above 24	100	91.64	84.62	92.31	87.5

It is quite interesting to observe from Table 23 that a towering percentage of all the five types of leaders had obtained above 24 scores with reference to attitude towards plant protection.

The data indicating the mean scores on attitude towards plant protection of five categories of leaders are presented in Table 24.

Table 24. Mean scores of attitude towards plant protection of different categories of leaders.

No.	Leader category	Mean attitude towards plant protection scores
A	Agricultural leaders	26.31
B	Political leaders	26.14
C	Co-operative leaders	24.15
D	Ela committee leaders	25.85
E	Panchayat leaders	26.81

CD (.05) for comparing

A Vs B = 1.08	B Vs E = 1.08
B Vs C = 0.93	A Vs E = 1.28
C Vs D = 1.23	B Vs D = 1.17
D Vs E = 0.91	A Vs D = 0.91
A Vs C = 1.15	C Vs E = 1.15

Inference:

Pa Ag Po Ec Co

The analysis of Table 24 revealed that Panchayat, Agricultural and Political leaders had more favourable attitude than other categories of leaders towards plant protection. There was no significant difference between Agricultural, Political and Ela committee leaders. Co-operative leaders had low favourable attitude towards plant protection.

13. Knowledge of the programme and improved agricultural practices.

The data regarding the knowledge of the programme and improved agricultural practices of different categories of leaders are presented in Table 25.

Table 25. Distribution of different categories of leaders according to their scores on knowledge of the programme and improved agricultural practices.(in percentage).

Score range	Ag	Po	Co	Ec	Pa
0 - 10	0	0	0	0	0
11 - 20	0	47.23	15.38	7.69	25
21 - 30	68.75	44.44	73.08	69.23	56.25
31 - 40	31.25	8.33	7.69	15.39	18.75

Table 25. contd.

Score range	Ag	Po	Co	Ec	Pa
41 - 50	0	0	3.85	7.69	0
51 - 60	0	0	0	0	0
61 - 70	0	0	0	0	0
Above 70	0	0	0	0	0

The data on the above Table 25 showed that majority of the Agricultural, Co-operative, Ela committee and Panchayat leaders had score of 21 to 30. Majority of Political leaders obtained knowledge score between 11 to 20. None of the categories of leaders had knowledge score above 50.

Mean knowledge scores about programme and improved agricultural practices of five categories of leaders are shown in Table 26.

Table 26. Mean knowledge scores about programme and improved agricultural practices of different categories of leaders.

No.	Leader category	Mean knowledge scores
A	Agricultural leaders	28.56
B	Political leaders	21.47

Table 26. contd.

No.	Leader category	Mean knowledge scores
C	Co-operative leaders	24.62
D	Ela committee leaders	25.92
E	Panchayat leaders	22.25

As the 'F' value was not significant it revealed that there was no significant difference among all categories of leaders regarding their knowledge of the programme and improved agricultural practices.

14. Mass media exposure

The data regarding the mass media exposure of different categories of leaders are presented in Table 27.

Table 27. Distribution of different categories of leaders according to their mass media exposure score (in percentage).

Score range	Ag	Po	Co	Ec	Pa
0 - 3	0	0	0	0	0
4 - 7	37.5	30.56	15.38	7.69	12.5
8 - 12	50	61.11	80.77	23.08	68.75
13 - 17	12.5	8.33	3.85	69.23	18.75
Above 17	0	0	0	0	0

The Table 27 revealed that majority of the Agricultural, Political, Co-operative and Panchayat leaders obtained mass media exposure score of 8 to 12, while the majority of the Ela committee leaders had the score range of 13 to 17.

The mean mass media exposure scores of five categories of leaders are shown in Table 28.

Table 28. Mean mass media exposure scores of different categories of leaders.

No.	Leader category	Mean mass media exposure scores
A	Agricultural leaders	8.94
B	Political leaders	8.72
C	Co-operative leaders	9.23
D	Ela committee leaders	11.69
E	Panchayat leaders	9.44

CD (.05) for comparing

A Vs B = 1.46	B Vs E = 1.46
B Vs C = 1.25	A Vs E = 1.72
C Vs D = 1.65	B Vs D = 1.57
D Vs E = 1.81	A Vs D = 1.81
A Vs C = 1.55	C Vs E = 1.55

Inference:

Ec, Pa Co Ag Po

A critical observation of Table 28 showed that Ela committee leaders had more exposure to mass media than other categories of leaders. There was no significant difference between Panchayat, Co-operative, Agricultural and Political leaders.

15. Contact with extension agency

The data regarding the frequency of contact with extension agency of the different categories of leaders are presented in Table 29.

Table 29. Distribution of different categories of leaders according to their extent of contact with extension agency (in percentage).

Frequency of contact	Ag	Po	Co	Ec	Pa
Visiting daily	6.25	0	0	7.69	0
Once in a week	25.00	8.33	7.69	23.08	18.75
Twice in a month	18.75	11.11	38.46	38.46	37.5
Once in month	31.25	30.56	34.62	23.08	25.0
Rarely	18.75	38.89	15.38	7.69	18.75
Never	0	11.11	3.85	0	0

The data in the above Table 29 showed that majority of the Agricultural, Ela committee and Panchayat leaders had more frequent contact with extension agencies.

The mean scores on contact with extension agency of five categories of leaders are shown in Table 30.

Table 30. Mean scores on contact with extension agency of different categories of leaders.

No.	Leader category	Mean contact with extension agency scores
A	Agricultural leaders	2.69
B	Political leaders	1.67
C	Co-operative leaders	2.31
D	Ela committee leaders	3.00
E	Panchayat leaders	2.56

CD (.05) for comparing

A Vs B = 0.48	B Vs E = 0.48
B Vs C = 0.41	A Vs E = 0.57
C Vs D = 0.54	B Vs D = 0.52
D Vs E = 0.59	A Vs D = 0.59
A Vs C = 0.51	C Vs E = 0.51

Inference:

Ec Ag Pa Co Po

The Table 30 revealed that Ela committee, Agricultural and Panchayat leaders had more frequent contact with extension agency than other categories of leaders. There was no significant difference between Agricultural, Panchayat and Co-operative leaders. Political leaders had low contact with extension agency.

16. Adoption behaviour

The data regarding the adoption behaviour of the different categories of leaders are presented in Table 31.

Table 31. Distribution of different categories of leaders according to their adoption scores (in percentage).

Score range	Ag	Po	Co	Ec	Pa
0 - 10	0	0	0	0	0
11 - 20	0	0	0	0	0
21 - 30	0	22.22	3.85	0	6.25
31 - 40	18.75	22.22	7.69	7.69	25.00
41 - 50	6.25	30.56	7.69	23.08	50.00
51 - 60	37.50	19.44	57.69	53.85	18.75
61 - 70	25.00	5.56	7.69	7.69	0
71 - 80	12.50	0	7.69	7.69	0
81 - 90	0	0	0	0	0
91 - 100	0	0	0	0	0

The data in Table 31.showed that majority of the Agricultural leaders had adoption score ranging from 41 to 80. For majority of Political leaders the score range was 21 to 50 and for the Co-operative leaders it was 51 to 80. Majority of Ela committee leaders and Panchayat leaders were in the score range of 31 to 60.

The mean adoption scores of five categories of leaders are shown in Table 32.

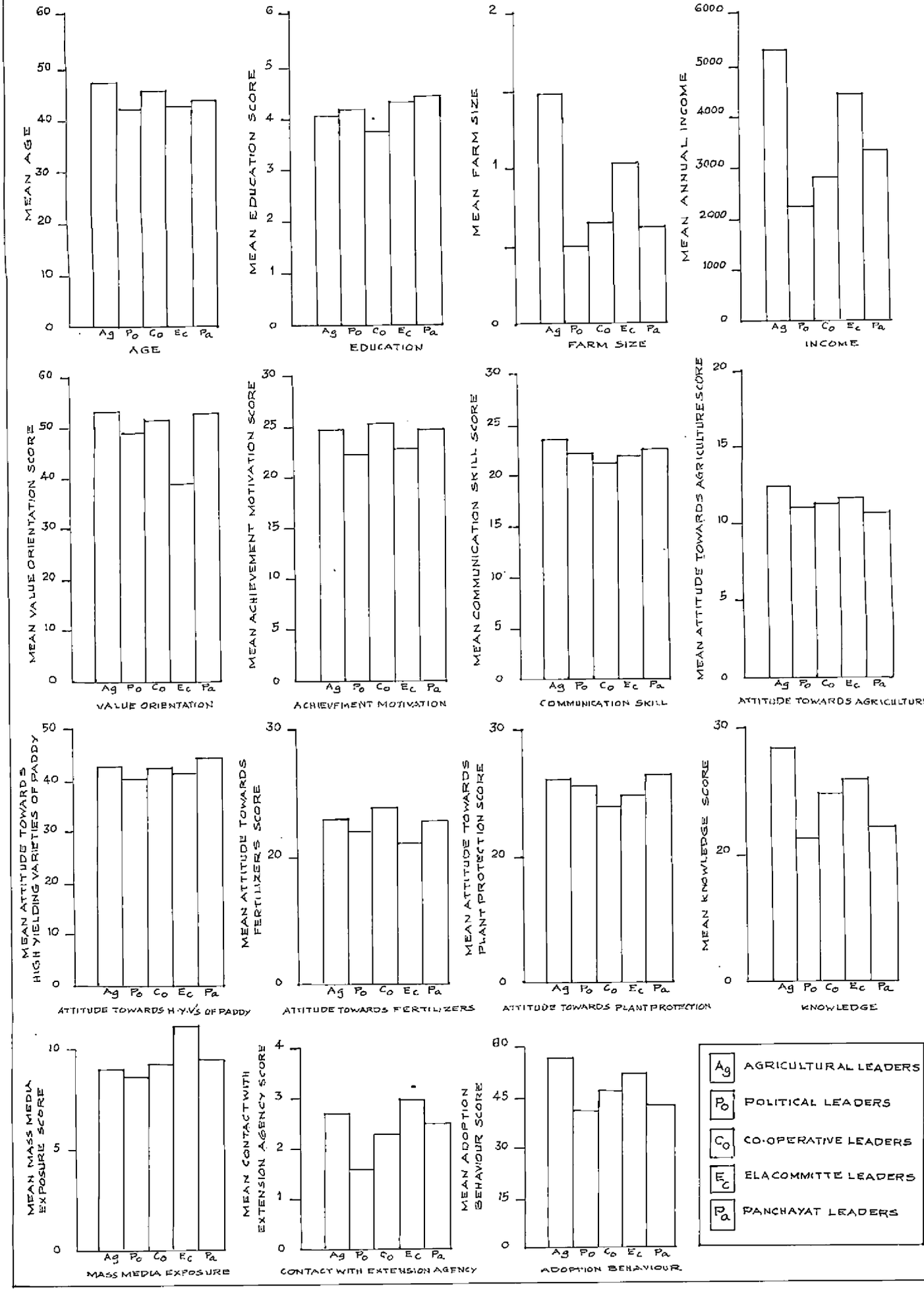
Table 32. Mean adoption scores of different categories of leaders.

No.	Leader category	Mean adoption scores
A	Agricultural leaders	57.56
B	Political leaders	41.86
C	Co-operative leaders	47.15
D	Ela committee leaders	52.77
E	Panchayat leaders	43.62

CD (.05) for comparing

A Vs B = 6.03	B Vs E = 6.03
B Vs C = 5.17	A Vs E = 7.10
C Vs D = 6.82	B Vs D = 6.50
D Vs E = 7.50	A Vs D = 7.50
A Vs C = 6.38	C Vs E = 6.38

FIG. 2. CHARACTERISTICS OF LEADERS



Inference:

Ag Ec Co Pa Po

The data of the Table 32 revealed that Agricultural and Ela committee leaders had more adoption behaviour than other categories of leaders. Ela committee and Co-operative leaders had better adoption behaviour than Panchayat and Political leaders. There was no significant difference between Co-operative and Panchayat leaders. Panchayat and Political leaders were in the same level.

The mean scores for all the studied characteristics of the different categories of leaders are presented in Fig. (2).

a) Comparison of the different types of leaders

In order to have a comparative study of the different types of leaders studied, they were grouped into three categories viz., Low, Medium and High with respect to each of the variable studied. The categorisation was done on the following basis.

0 to Combined Mean -1 SD	=	Low
Combined Mean ±1 SD	=	Medium
Above Combined Mean +1 SD	=	High

For this the mean and standard deviation of the pooled data with respect to all the categories of leaders for each variable were calculated. The results are presented in Table 33.

b) Leadership profile for different categories of leaders

For preparing a leadership profile the scores were standardised by converting the means into percentages. The means for all characteristics studied were divided by the respective pooled mean and multiplied by hundred to make it a standard score for comparison. The profile of the different categories of leaders with respect to the characteristics are presented in Fig.(3).

II. Extent of role perception and role performance in agricultural development of different categories of leaders.

A. Role perception

a) Perception of importance of roles:

The data regarding the perception of the importance of the different identified roles by the different categories of leaders are presented in Table 34.

FIG 3 LEADERSHIP PROFILE OF DIFFERENT CATEGORIES OF LEADERS FOR DIFFERENT CHARACTERISTICS.

Table 34. Perception of importance of identified roles in agricultural development by the different categories of leaders.

No.	Roles	Ranks					Pooled rank
		Ag	Po	Co	Ec	Pa	
1.	Help the development officers in collecting information related to agriculture.	7	6	4	11	5	5
2.	Help to identify the problems of agriculture.	12	8	14	9	9	13
3.	Help to decide what can be done to increase agricultural production.	11	13	11	15	6	14
4.	Participation in preparation of agricultural development plans.	13	12	10	12	15	9
5.	Give information to others about the agricultural development activities.	3	3	1	1	3	2
6.	Create local enthusiasm for agricultural development activities.	6	10	8	5	1	7
7.	Help the agricultural officers in arranging demonstrations to show the effect of improved agricultural practices.	14	5	9	13	11	10

Table 34. (contd.)

No.	Roles	Ranks					Pooled rank
		Ag	Po	Co	Ec	Pa	
8.	Help in organising trainings, discussions etc. to educate farmers.	15	11	13	10	7	8
9.	Help farmers to get credit from Co-operatives Banks etc.	5	2	2	3	12	4
10.	See that good seeds and fertilizer are much available to farmers.	8	9	12	6	13	12
11.	Inform other farmers about improved agricultural practices.	2	4	6	4	4	3
12.	Accept improved agricultural practices before others.	1	1	5	2	2	1
13.	Periodically review the progress in agricultural production of the area.	10	15	15	14	14	15
14.	Bring the problems faced by farmers to the attention of officers/Government.	4	14	7	7	8	11
15.	Provide help to farmers in getting good price for agricultural produces.	9	7	3	8	10	6

The data in Table 34 revealed that the role "Give information to others about the agricultural development activities" has been perceived as the most important roles by Co-operative and Ela committee leaders. The role "Accept improved agricultural practices before others" has been perceived as most important by Agricultural and Political leaders, whereas Panchayat leaders perceived the role "Create local enthusiasm for agricultural development activities as the most important.

The rank correlation coefficient of role perception of identified roles for different categories of leaders are presented in Table 35.

Table 35. Rank correlation coefficient of role perception of identified roles for different categories of leaders.

Leader category	Ag	Po	Co	Ec	Pa
Ag	1.000	0.503	0.671**	0.802**	0.737**
Po		1.000	0.697**	0.662**	0.341
Co			1.000	0.639*	0.404
Ec				1.000	0.475
Pa					1.000

** Significant at 0.01 level

* Significant at 0.05 level.

The Table 35 revealed that there was an agreement regarding the perception of importance of roles between Agricultural, Co-operative, Ela committee and Panchayat leaders. Similarly the perception of Political, Co-operative and Ela committee leaders were in agreement. Co-operative and Ela committee leaders also had similar perception.

b) Difference in perception of roles for agricultural development of five categories of leaders.

The mean scores for the perception of agricultural development roles of the five categories of leaders are presented in Table 36.

Table 36. Mean scores of perception of agricultural development roles of the five categories of leaders.

No.	Leader category	Mean perception scores
A	Agricultural leaders	24.69
B	Political leaders	22.00
C	Co-operative leaders	22.04
D	Ela committee leaders	23.15
E	Panchayat leaders	24.75

CD (.05) for comparing

A Vs B = 1.22	B Vs E = 1.22
B Vs C = 1.08	A Vs E = 1.43
C Vs D = 1.39	B Vs D = 1.35
D Vs E = 1.51	A Vs D = 1.51
A Vs C = 1.27	C Vs E = 1.21

Inference:

Pa Ag | Ec Co Po

The Table 36 clearly indicated that Panchayat and Agricultural leaders had more role perception than other categories of leaders. There was no significant difference among Ela committee, Co-operative and Political leaders regarding the role perception.

B. Role performance

a) Extent of performance of identified agricultural development roles:

The data regarding the extent of performance of agricultural development roles by the different categories of leaders are presented in Table 37.

The Table 37 showed that the role "Create local enthusiasm for agricultural development activities" has been performed more frequently by Agricultural leaders. The role "Help farmers to get credit from Co-operatives, Banks etc." was more frequently performed by Co-operative leaders, Panchayat leaders reported that the role "Inform other farmers about improved agricultural practices" was the most frequently performed one. Political and Ela committee leaders performed the role "Accept improved agricultural practices before others", more frequently than others.

The rank correlation coefficient for the level of performance of identified roles for different categories of leaders are presented in Table 38.

Table 38. Rank correlation coefficient of level of performance of identified roles for different categories of leaders.

Leader category	Ag	Po	Co	Ec	Pa
Ag	1.000	0.782**	0.722**	0.465	0.537*
Po		1.000	0.810**	0.617*	0.337
Co			1.000	0.736**	0.610*
Ec				1.000	0.142
Pa					1.000

** Significant at 0.01 level.
* Significant at 0.05 level.

The Table 38 revealed that the performance of identified roles by Agricultural leaders was in the same level as Political, Co-operative and Panchayat leaders. The extent of performance by Political leaders was the same as that of Co-operative and Ela committee leaders. Co-operative, Ela committee and Panchayat leaders performed the roles to the same level.

b) Difference in performance of agricultural development roles of five categories of leaders.

The data indicating the role performance in agricultural development of five categories of leaders are presented in Table 39.

Table 39. Mean scores of role performance for agricultural development of five categories of leaders.

No.	Leader category	Mean role performance scores
A	Agricultural leaders	16.31
B	Political leaders	8.94
C	Co-operative leaders	9.85
D	Ela committee leaders	14.08
E	Panchayat leaders	12.69

CD (.05) for comparing

A Vs B = 1.48	B Vs E = 1.48
B Vs C = 1.29	A Vs E = 1.74
C Vs D = 1.71	B Vs D = 1.65
D Vs E = 1.84	A Vs D = 1.84
A Vs C = 1.55	C Vs E = 1.55

Inference:

Ag Ec Pa Co Po

The Table 39 clearly showed that Agricultural leaders had more performance of agricultural development roles than other categories of leaders. Ela committee and Panchayat leaders had better role performance than Co-operative and Political leaders while Co-operative and Political leaders were in the same level.

C. Perception-Performance Congruity.

The mean scores of role perception and role performance of different categories of leaders are presented in a bar-diagram in Fig.(4) to have an idea about the perception- performance congruity. As evident from the bar-diagram there was some difference between perception and performance of roles in all the five categories of leaders.

A more detailed analysis made using the rank order obtained for perception and performance of fifteen roles for each category of leaders using rank correlation method. The results are presented in Table 40.

FIG. 4. EXTENT OF ROLE PERCEPTION AND ROLE PERFORMANCE OF DIFFERENT CATEGORIES OF LEADERS.

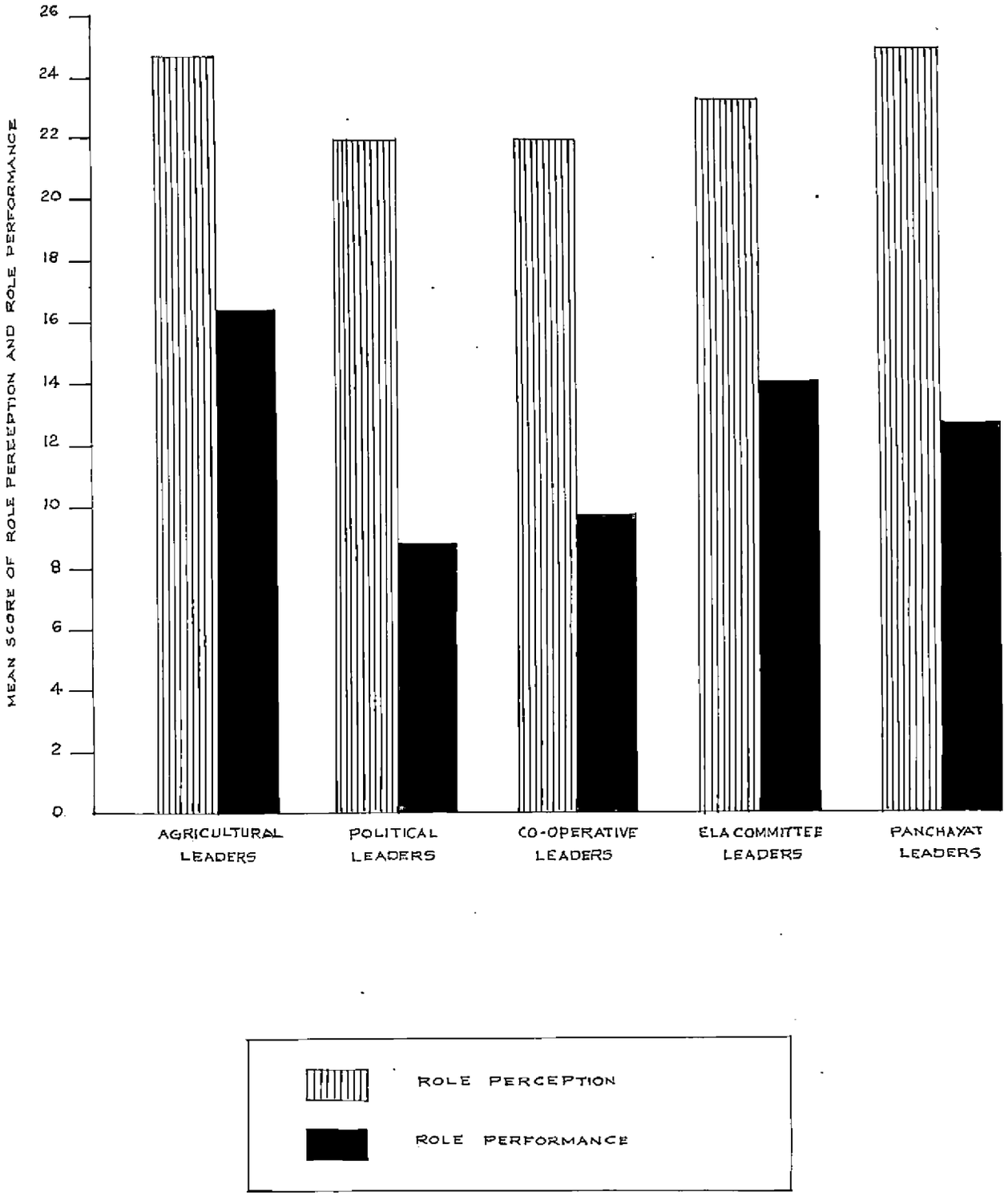


Table 40. Rank correlation coefficient for perception-performance of different categories of leaders.

No.	Leader category	Rank correlation coefficient for perception-performance
A	Agricultural leaders	0.650**
B	Political leaders	0.621*
C	Co-operative leaders	0.725**
D	Ela committee leaders	0.711**
E	Panchayat leaders	0.308

** Significant at 0.01 level

* Significant at 0.05 level.

The results in Table 40 revealed that there was an agreement between perception and performance of agricultural development roles regarding all categories except Panchayat leaders. The rank correlation value obtained for pooled rankings of perception and performance was 0.804**, which again indicated an agreement between perception and performance.

III. Relationship between the role performance and the selected independent variables for different categories of leaders.

Relationship of the selected independent variables except caste with role performance of five categories of leaders was examined by computing the coefficient of correlation.

Results obtained for all the categories of leaders are presented in Table 41.

Table 41. Coefficient of correlation between role performance and other variables.

No.	Independent variables	Leader category				
		Ag N=16	Po N=36	Co N=26	Ec N=13	Pa N=16
1.	Age	-0.064	0.067	0.275	0.007	0.218
2.	Education	-0.170	-0.107	-0.169	0.025	0.286
3.	Farm size	0.331	-0.073	0.273	0.046	0.282
4.	Income	0.163	0.041	0.201	0.152	0.415
5.	Value orientation	-0.423	0.116	0.264	0.435	0.157
6.	Achievement motivation	-0.056	-0.327	-0.156	-0.084	-0.126
7.	Communication skill	-0.472	0.210	-0.243	0.372	0.001
8.	Attitude towards agriculture	-0.383	0.061	0.124	0.176	0.477
9.	Attitude towards H.Y.Vs of paddy	0.221	-0.360*	0.019	0.189	-0.184
10.	Attitude towards fertilizers	-0.007	-0.371*	-0.060	0.013	-0.263
11.	Attitude towards plant protection	0.110	-0.223	0.051	-0.099	0.427
12.	Knowledge	0.557*	0.292	0.097	0.498	0.784**
13.	Mass media exposure	0.637**	-0.236	0.754**	0.786**	0.564*
14.	Contact with extension agency	0.614*	-0.050	0.377	0.793**	0.247
15.	Adoption behaviour	0.490	-0.107	0.176	-0.159	0.120

** Significant at 0.01 level
* Significant at 0.05 level.

The Table 41 revealed that out of fifteen variables studied the variables namely knowledge, mass media exposure and contact with extension agency were correlated significantly with the role performance of Agricultural leaders. Attitude towards high yielding varieties of paddy and attitude towards fertilizers were negatively and significantly correlated with the role performance in the case of Political leaders. Mass media exposure was correlated significantly with the role performance of Co-operative leaders. Mass media exposure and contact with extension agency were correlated significantly with the role performance in the case of Ela committee leaders. The variables namely knowledge and mass media exposure were correlated significantly with the role performance of Panchayat leaders.

a) Association of caste on role performance of leaders.

Association of caste on role performance of leaders was measured by the contingency coefficient defined as

$$\sqrt{\frac{\chi^2}{\chi^2+N}}$$

The results of the analysis of data regarding the association between the caste and role performance of the five categories of leaders are presented in Table 42.

Table 42. Association between caste and role performance of five categories of leaders.

No.	Leader category	Chi-square value	Coefficient of mean square contingency
A	Agricultural leaders	8.80**	0.596
B	Political leaders	43.77**	0.741
C	Co-operative leaders	30.68**	0.736
D	Ela committee leaders	12.97**	0.707
E	Panchayat leaders	22.55**	0.765

** Significant at 0.01 level

The Table 42 pointed out that in all categories the role performance was more in high caste leaders than in low caste leaders. The χ^2 value with respect to all the categories of leaders were significant.

b) Association between the role performance and independent variables for all leaders (combined).

Relationship of selected independent variables except caste with role performance of all leaders (combined) was also examined by computing the coefficient of correlation. The results obtained are presented in Table 43.

Table 43. Coefficient of correlation between role performance and the different independent variables for all leaders.

No.	Independent variables	Coefficient of correlation
1.	Age	0.114
2.	Education	0.040
3.	Farm size	0.444**
4.	Income	0.546**
5.	Value orientation	0.052
6.	Achievement motivation	0.014
7.	Communication skill	-0.029
8.	Attitude towards agriculture	0.169
9.	Attitude towards H.Y.Vs of paddy	0.030
10.	Attitude towards fertilizers	-0.181
11.	Attitude towards plant protection	0.090
12.	Knowledge	0.489**
13.	Mass media exposure	0.330**
14.	Contact with extension agency	0.491**
15.	Adoption behaviour	0.293**

** Significant at 0.01 level

An analysis of Table 43 revealed that the variables namely farm size, income, knowledge, mass media exposure, contact with extension agency and adoption behaviour were

correlated significantly with role performance when the score of all leaders were combined.

The hypothesis numbers 4, 5, 13, 14, 15, 16 formulated and included in chapter on Theoretical orientation which assumed a positive relationship between farm size, income, knowledge, mass media exposure, contact with extension agency, and adoption behaviour with role performance have been accepted and others were rejected.

IV. Inter-relationship of different variables included in the study.

The results of the analysis for finding out the inter-relationship of the different variables included in this study which were found to be significant in the correlation analysis are presented in Table 44.

Table 44. Inter correlation matrix for the different variables.

Variables	X_1	X_2	X_3	X_4	X_5	X_6
Farm size X_1	1.000	0.847**	0.385**	0.264**	0.201*	0.468**
Income X_2		1.000	0.468**	0.236*	0.226*	0.451**
Knowledge X_3			1.000	0.179	0.220*	0.314**

Table 44. (contd.)

Variables	X_1	X_2	X_3	X_4	X_5	X_6
Mass media exposure X_4				1.000	0.245*	0.161
Contact with extension agency X_5					1.000	0.166
Adoption behaviour X_6						1.000

** Significant at 0.01 level

* Significant at 0.05 level.

An analysis of Table 44 revealed that farm size had significant correlation with income, knowledge, mass media exposure, contact with extension agency and adoption behaviour. The income was significantly correlated with knowledge, mass media exposure, contact with extension agency and adoption behaviour knowledge was significantly correlated with contact with extensio agency and adoption behaviour. There was also a significant correlation between mass media exposure and contact with extensio agency.

V. Predictive power of selected variables in explaining the role performance.

It was hypothesised that different selected variables would have independent effect on the role performance. The role

performance is not solely influenced by these variables singly but all of them, through their reciprocal and interaction relationship jointly influence the role performance. In order to test these effects a multiple regression analysis was carried out.

The multiple correlation coefficient (R) represented the zero order correlation between the actual role performance scores and predicted role performance scores obtained from the independent variables under consideration. If the predicted role performance scores for each leader would correspond exactly to his actual role performance score obtained in the study the multiple correlation would be unity or 1.00.

The square of the multiple correlation coefficient (R^2) represented the proportion of the total variance explained by the independent variables in the regression equation taken together.

It was hypothesised that all the independent variables together will explain a significant amount of variation of the role performance of leaders. The results of the regression test are shown in Table 45.

Table 45. Anova table for regression test of role performance on farm size, income, knowledge, mass media exposure contact with extension agency and adoption behaviour.

Source	SS	df	MS	F
Total	1430.46	106		
Regression	721.50	6	120.25	16.96**
Error	708.96	100	7.08	

** Significant at 0.01 level.

Multiple correlation coefficient $R = 0.7102$

$R^2 = 0.5044$

The Table 45 indicated that the regression for role performance on the variables namely farm size (X_1), income (X_2), knowledge (X_3), mass media exposure (X_4), contact with extension agency (X_5) and adoption behaviour (X_6) was significant. In other words the data supported the original proposition that all the variables taken together will explain a significant portion of variation in role performance of leaders. The proportion of role performance explained by the variable was 50 percent.

When multiple correlation was statistically significant it was thought desirable to analyse the relative contribution

of each independent variable was most important. There are two methods. In the first method, the statistical significance of each partial coefficient (partial b's) were determined. The formula used for testing the significance was

$$t = \frac{bi}{se\ (bi)'}$$

where bi = Partial coefficient

se (bi)' = Standard error of the partial coefficient

The partial regression coefficients were, therefore obtained for the variables included in the regression equation. The partial bs' thus obtained were tested for significance with the help of 't' test. The partial b's and corresponding 't' values are presented in the Table 46.

Table 46. Partial regression coefficient and 't' values.

Variables	Partial regression	se (bi)'	't' value
X_1 - Farm size	-0.6011	0.8394	-0.7160
X_2 - Income	0.0008	0.0003	2.9470**
X_3 - Knowledge	0.1533	0.0526	2.9130**
X_4 - Mass media exposure	0.2269	0.1250	1.8140
X_5 - Contact with extension agency	1.2870	0.2885	4.4600**
X_6 - Adoption behaviour	0.0005	0.0206	2.4600

** Significant at 0.01 level.

Partial coefficients or 'bs' could not be considered as such as the relative abilities of the variables to predict changes in the dependent variable role performance, unless a correction was made. This correction had to be made because the measurement of independent variables, were in different scales. For example age was measured in years, attitude in scores, adoption in some type of scale etc. Therefore, comparison of a unit change in one variable with a unit change in another became meaningless without any correction. The correction was made by standardising each partial 'b' value which was done by utilising the standard deviation of each variable. A standard 'b' called the beta weight of the partial coefficient was computed by the following formula.

$$\text{Beta weight} = \frac{\text{S.D of independent variable}}{\text{S.D of dependent variable}} \times \text{Partial 'b'}$$

The calculated beta weights are presented in Table 47, the absolute value of which indicated relative importance of the variables. The beta weights are listed from the largest to the smallest.

Table 47. Standard partial regression coefficient.

Rank order	Variable No.	Name of variables	Beta weight
1	X_2	Income	0.38
2	X_5	Contact with extension agency	0.33
3	X_3	Knowledge	0.24

Table 47. (contd.)

Rank order	Variable No.	Name of variables	Beta weight
4	X_4	Mass media exposure	0.14
5	X_1	Farm size	-0.10
6	X_6	Adoption behaviour	0.001

The perusal of Table 47 clearly showed that the income (X_2) got first rank followed by variable numbers X_5, X_3, X_4, X_1 and X_6 respectively.

V. Related findings

Data pertaining to the suggestions given for increasing food production by all leaders are presented in Table 48.

Table 48. Distribution of respondents according to their suggestions given for increasing food production.

Sl.No.	Suggestions	Frequency (combined)	Percentage
1.	Providing irrigation facilities	19	19
2.	Increase the area under high yielding varieties	36	33
3.	Providing credit facilities	31	29
4.	Introduce farm mechanisation	9	8
5.	Introduce improved practices	12	11

A critical observation of Table 48 showed that 19 percent of leaders suggested for providing irrigation facilities, 33 percent for increasing the area under high yielding varieties 29 percent for providing credit facilities, 8 percent for introducing farm mechanisation and 11 percent for introducing improved practices to have better production of the country.

DISCUSSION

DISCUSSION

A detailed discussion of the results of this study is presented in this chapter.

I. Characteristics of different types of leaders.

This study examined sixteen characteristics of the leaders. It was found that the different types of leaders whose characteristics were studied did not differ with respect to age. The mean age of all these categories was around 45, which can be considered as 'middle age'. Reddy (1965), Venkaiah and Reddy (1966), Dubey and Dwivedi (1972) and Verma (1974) also found in their studies that most of the leaders were from the 'middle age' group. The traditional leaders in the rural areas were older people. They might have withdrawn from the rural scene consequent on the emergence of political parties and democratic institutions.

With respect to the caste, which was described as an important aspect of leadership in traditional societies, this study revealed that majority of leaders, except in the case of Co-operative leaders were from the Backward classes. The percentage of leaders from Scheduled castes was lower than that found from the Forward castes in all the categories. In Co-operative sector the Forward caste predominated. This study did not convincingly prove the findings of Fliegel,

Roy, Sen and Kivlin (1968) and Gangarde (1978) that caste status had influence in leadership. Generally persons with higher caste status are more consulted than persons belonging to other lower castes. But this was not true with respect to the area of this study. This difference might be due to the high percentage of literacy of the area of the study. Spread of education and the democratic elections might have changed the traditional social relations and leadership pattern.

It was found that most of the leaders had middle school and higher levels of education. These leaders could be considered as true representatives of the society, where majority were in the middle school level of education. There were neither any illiterate nore any degree holders in any of these categories of leaders. Gaikwad et al.(1972) have found similar trend with respect to opinion leaders. Highly educated people had only limited contact with others as they were employed and had little time to mingle with other people. This might be the reason why the degree holders were not seen as leaders. Gangarde (1978) based on an all India study also concluded that 80 percent of leaders were literate.

When the mean farm size of different categories of leaders were compared with the critical difference, it was found that Agricultural and Ela committee leaders differed significantly in farm size when compared to the other categories of leaders. There was no significant difference among Co-operative and

Panchayat leaders. The Panchayat and Political leaders were in the same line. From the finding it was clear that Political and Panchayat leaders were having only small farms. This was contrary to the findings of Reddy (1965) who reported that traditional and political leadership operated larger farms. But Agricultural and Ela committee leaders had larger farms. This proved that farmers consulted only large farm owners on matters regarding agriculture. This might be due to the reason that the farmers with large farm size had the means to follow scientific cultivation which might have increased the yield. Since the other cultivators could see the striking difference in yield they might have consulted these people and hence considered them as leaders. With respect to matters related with agriculture it can be conclusively said that the leaders will be from the group with large farm size. This was in agreement with the findings of Rahim (1961), Rogers (1962), Gaikwad et al.(1972), Verma (1972) and Sahay (1973), who reported that leaders who influenced decisions in agriculture operated larger farms.

It was seen that majority of Agricultural and Ela committee leaders were from higher income groups. Their average annual income was above Rs.4,460. As shown earlier leaders in these categories had larger farm size which might be the reason for the higher income of these groups. In all these categories the annual income was higher than that of

others in the social system, which was around only Rs.3,290. This finding of the study is in line with the finding of Deb and Agarwal (1974) who found that leadership was associated with higher economic status in the society.

When the two dimensions namely, conservatism-liberalism and fatalism-scienticism of value orientations were compared, it was seen that Agricultural, Panchayat and Co-operative leaders had high orientation towards these values than other categories of leaders. Political and Ela committee leaders had low value orientation score when compared to other categories. But it must be pointed out that all the categories of leaders had high value orientation. The mean score obtained by the different categories were in the upper half of the value orientation scale. The spread of education might be the reason for such high value orientation.

When the mean achievement motivation scores of five categories of leaders were examined, it was revealed that Panchayat, Co-operative and Agricultural leaders had better achievement motivation than Ela committee and Political leaders. There was no significant difference between Ela committee and Political leaders. However it must be pointed out that all these categories had mean achievement motivation score above 22, where the maximum score one could obtain was only 30. All these categories had above average level of achievement motivation.

It was found that there was no significant difference in communication skill among the different categories of leaders. The mean communication skill score ranged from 21.6 to 23.88 only, whereas the pooled mean was only 22.49. It was evident that all the categories of leaders studied had medium level of skill in communication. The ability to receive and send messages can be influenced by education. Various categories of leaders studied, had middle school and higher levels of education and this might be the reason why all categories had average level of communication skill.

As the 'F' value was found to be not significant, it was concluded that there was no significant difference among all categories of leaders regarding attitude towards agriculture. In this, only the general attitude towards agriculture as a whole was studied. Excepting the Political leaders all the other types of leaders studied had activities directly related with agriculture. The Co-operative, Ela committee and Panchayat leaders by virtue of the position they held had to involve themselves in matters directly related with agriculture. Even though Panchayat and Political leaders had small farm size when compared to the other categories they had above the average farm size of the area. The cultivation of crops by themselves in their own farm might have helped in creating a positive attitude towards agriculture.

When the mean score on attitude towards high yielding varieties of paddy of different categories of leaders were examined and compared with critical difference, it was found that Panchayat, Agricultural and Co-operative leaders had more favourable attitude than other categories of leaders. There was no significant difference among Agricultural, Co-operative, Ela committee and Political leaders. It was observed that a great majority of all categories of leaders had above average attitude score which proved that they had positive attitude towards high yielding varieties.

Another aspect which was studied was attitude towards fertilizers. It was found that Co-operative leaders had more positive attitude than other categories of leaders. This might be due to the reason that the Co-operative leaders were more directly involved in the distribution of chemical fertilizers and to them the fertilizers were easily available. There was no significant difference between Agricultural and Panchayat leaders. Political and Ela committee leaders had low attitude towards fertilizers. The Ela committee leaders had the lowest mean attitude score though it was positive. As they were directly involved in agriculture by virtue of their capacity as Ela committee members they should have had high positive attitude. The reasons for their comparative low attitude need to be further studied.

The attitude of Panchayat, Agricultural and Political leaders towards plant protection was more positive when compared to other categories of leaders. The analysis also indicated that there was no significant difference among Agricultural, Political and Ela committee leaders. Co-operative leaders had comparatively low attitude towards plant protection. Though it was less than other categories they also had strong positive attitude. Thus though there were differences among the different categories, all of them had highly favourable attitude towards plant protection.

When the different categories of leaders were compared with respect to their knowledge about the development programme and improved agricultural practices no significant difference could be observed. When both these aspects were considered together it was seen that all the categories had below average knowledge. Majority of all the categories had score range between 21 to 30 only where the maximum score one could obtain was 77. The Political and Panchayat leaders had the least knowledge while Agricultural leaders had the maximum knowledge. This might be due to the more direct involvement of Agricultural leaders in agricultural activities.

When the extent of use of mass media by the different categories of leaders were studied it was revealed that Ela committee leaders had the highest exposure than other categories of leaders. There was no significant difference among

Panchayat, Co-operative, Agricultural and Political leaders. Through the mass media like radio, news paper etc., a lot of agricultural informations are given to the public nowadays. A leader in order to keep up his leadership position might try to get latest information through mass media. The Political leaders used mass media as a source for agricultural information only in a very limited way. Since they were more interested in politics than agriculture they might have given attention to only political information from mass media.

Another finding of this study was that Ela committee, Agricultural and Panchayat leaders were having more frequent contact with extension agency. They were by virtue of their position would have had frequent contact with extension workers. Political leaders had low contact with extension agency. The low contact of Political leaders with agricultural extension workers was an important finding. They might not have considered the importance of agricultural extension workers in the development of the society or the extension workers might have avoided Political leaders for their smooth functioning in the villages. The extension workers might have considered that working with Political leaders might bring difficulties as there are different political parties which oppose each other in the rural areas.

The study of the extent of adoption of improved agricultural practices by the different categories of leaders

was an important aspect of this study. In finding out the adoption score only the applicable practices were considered. The analysis showed that Agricultural and Ela committee leaders had high adoption when compared to the other groups. Even with respect to these groups it was only just above average. The Political leaders had the lowest score. As shown earlier the Ela committee leaders had more frequent contact with extension workers which might be the reason for higher adoption. Agricultural leaders identified in this study, based on the opinion of other farmers, had high adoption rate. If they were not high adopters they would not have been mentioned as Agricultural leaders. But the important point brought out by the study was that even these leaders had only just above average rate of adoption of improved agricultural practices.

A comparative study of all the categories of leaders with respect to the fifteen characteristics studied is presented in Table 33. The study revealed that when the leaders were classified as 'Low', 'Medium' and 'High' on each variable, which was relative to the total range of score of the combined group of leaders, majority of all the categories of leaders fell in the "medium group", with respect to all the fifteen variables. That is, majority of all the categories of leaders had score within the range of combined mean plus or minus one SD of the combined score. This trend

is evident in the profile of leaders shown in Fig.(3). Almost all the values were clustering around the mean.

II. Extent of role perception and role performance in agricultural development of different categories of leaders.

1. Role perception

The result revealed that the role "Give information to others about the agricultural development activities" has been perceived as the most important role by Co-operative and Ela committee leaders. The Co-operative and Ela committee leaders by their virtue of the position they held, might have given more importance to this role. It was seen that the other categories of leaders also perceived this as important role. In the pooled ranking this role obtained the second rank. The role "Accept improved agricultural practices before others" has been perceived as most important by Agricultural and Political leaders. These leaders are influentials who are not directly responsible for agricultural development as like Ela committee and Co-operative leaders. In order to keep up their leadership position in the society they might have thought that they have to adopt practices earlier than others in the society. This might be the reason for the perception of this role as the most important. In the pooled ranking also this role obtained the first rank. It could also be seen that the Ela committee and Panchayat leaders gave

second rank to this role, while Co-operative leaders gave only fifth rank.

Panchayat leaders perceived the role "Create local enthusiasm for agricultural development activities" as the most important. These leaders are the representatives of the people charged with the responsibility of development of the Panchayat and hence they might have considered this role as more important. The role "Periodically review the progress in agricultural production of the area" and "Participation in preparation of agricultural development plans" were perceived as least important by all categories of leaders. This revealed that planning and evaluation have not been accepted as an important activity by the leaders.

2. Role performance

The results revealed that the role "Accept improved agricultural practices before others" was the role which received first ranking of two categories of leaders viz., Political and Co-operative leaders. In the pooled ranking also it received first rank. It was ranked second by Agricultural leaders, and third by Co-operative leaders. Surprisingly this was ranked as twelfth by Panchayat leaders. Even though the Political leaders mentioned this as the most frequently performed role it was not reflected in their actual adoption. They had the minimum adoption score.

But with respect to other categories this was reflected in their adoption behaviour. The other important role which were performed most frequently were "Create local enthusiasm for agricultural development activities", by Agricultural leaders, "Help farmers to get credit from Co-operatives, Banks etc.," by Co-operative leaders and "Inform other farmers about improved agricultural practices" by Panchayat leaders. The role "Inform other farmers about improved agricultural practices" received second ranking in the pooled ranking. It was given third rank by Agricultural leaders and second rank by Political leaders. Similarly the role "Help farmers to get credit from Co-operatives, Banks etc." and "Give information to others about the agricultural development activities" also got third and fourth rankings in the pooled analysis. The least performed roles were "Participation in preparation of agricultural development plans" and "Periodically review the progress in agricultural production of the area". Two important points emerged from the above findings. First, as seen in the case of role perception, the leaders gave least importance to planning and evaluation and second, the roles performed most frequently were different by the different categories of leaders.

3. Role consensus

The consensus of the different categories of leaders regarding their role in agricultural development has been determined through rank correlation coefficient. The results

revealed that there was no general consensus among the different categories of leaders. The success of development effort will to some extent be decided by the consensus of the role among the different categories of people working for development. Though there was no general consensus [illegible] there was agreement among different categories of leaders. The perception of Agricultural leaders were in agreement with Co-operative, Ela committee and Panchayat leaders. Similarly the perception of Political, Co-operative and Ela committee leaders were in agreement. Co-operative and Ela committee leaders also had similar perception.

4. Perception-Performance Congruity

It was observed that there was an agreement between perception and performance of agricultural development roles of all categories except Panchayat leaders. This showed that the leaders except the Panchayat members, most frequently performed those roles which they perceived as most important. The degree of importance attached with each role in perception had close relation with the frequency of its performance. But this was not true with respect to Panchayat leaders. The result revealed that they did not perform, those roles which they felt as important, most frequently. Their perception of importance had no relationship with their performance. But when the pooled rankings were considered there was significant congruity between perception and performance of agricultural development roles.

III. Relationship between the role performance and the selected independent variables for different categories of leaders.

Out of the sixteen variables studied knowledge, mass media exposure and contact with extension agency were found to be correlated significantly with the role performance of Agricultural leaders. Mass media exposure was significantly correlated with role performance of Co-operative leaders. Mass media exposure and contact with extension agency were correlated significantly with the role performance of Ela committee leaders. With respect to Panchayat leaders knowledge and mass media exposure were correlated significantly with the role performance. Contrary to the relationship obtained in all other categories of leaders a significant negative relationship was seen with respect to attitude towards high yielding varieties of paddy, fertilizers and role performance of Political leaders.

Caste was also found to be correlated significantly with role performance of all categories of leaders. Similar positive relationship of caste was reported by Thorat (1968), Fliegel (1968) and Lalit Sen (1972).

Mass media exposure was a factor which had significant positive relationship with role performance of all the categories of leaders except Political leaders. Not only there was no significant relationship of any variable studied

and role performance of Political leaders but also significant negative relationship with attitude towards high yielding varieties of paddy and fertilizers were obtained. The only argument that can be put forward for this is that Political leaders, irrespective of their attitude, work for the benefit of other people, because they have to please others for the benefit of their party.

The finding that mass media exposure was significantly and positively related with role performance might be due to the high rate of literacy of the state. The mass media play an important role in the leadership in Kerala.

When the correlations were worked out for the pooled data of all categories of leaders the factors income, farm size, knowledge, mass media exposure, contact with extension agency and adoption behaviour emerged as significant variables which had positive relationship with role performance of leaders.

The finding that farm size was positively and significantly related with role performance was in accordance with the findings of Brar (1966), Thorat (1968) and Mohinder Paul Kaushal (1970). As the income increases, the leaders perform their role effectively than others. The leaders with high income might devote more time to perform their roles in order to get more recognition and followers. However,

this finding was contrary to the findings reported by Somasundaram (1971), Khurana (1971), Rajaram et al.(1975), Lakshmanan and Chandrakandan (1975).

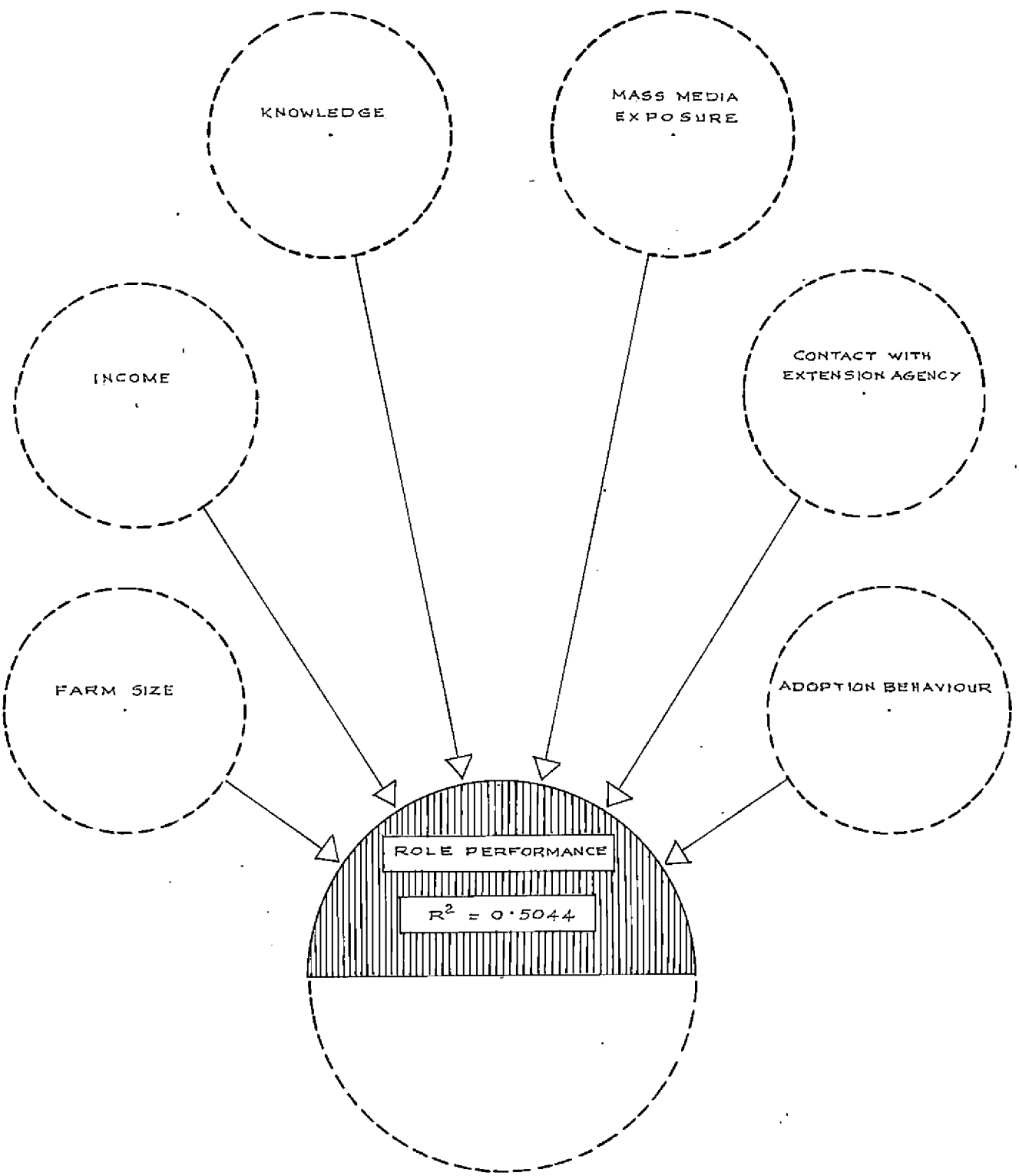
The result also proved that knowledge about a particular programme and improved agricultural practices is a pre-requisite for role performance. Unless a leader knows about the programme and improved agricultural practices he will not be able to perform his expected role in the agricultural development programmes.

It has also been proved that mass media exposure was positively related to role performance. Every exposure of an individual to mass media produces some change in knowledge, skills and other aspects. Exposure to varied mass media might help in the development of individual which again might induce his role performance. This finding was contrary to the findings of Khurana (1971) who opined that there was no correlation between mass media exposure and role performance of key communicators.

The finding that contact with extension agency had influence on the role performance of leaders was in conformity with the result reported by Khurana (1971). Similarly adoption behaviour had significant relationship with role performance.

In the inter-correlation analysis it was revealed that farm size had significant correlation with income, knowledge,

FIG.5. EXTENT OF ROLE PERFORMANCE EXPLAINED BY THE SIGNIFICANT FACTORS



mass media exposure, contact with extension agency and adoption behaviour. Income was significantly correlated with knowledge, mass media exposure, contact with extension agency and adoption behaviour. Knowledge was significantly correlated with contact with extension agency and adoption behaviour. It was also found that there was significant correlation between mass media exposure and contact with extension agency.

IV. Predictive power of variables.

The regression analysis indicated that variables viz., farm size (X_1), income (X_2), knowledge (X_3), mass media exposure (X_4), contact with extension agency (X_5) and adoption behaviour (X_6) were significantly contributing to the variation in role performance. The proportion of role performance explained by these variable was 50 percent (Fig.5). The remaining 50 percent variation in the role performance of leaders may be due to factors other than those included in the study. Computation of partial b's and standard partial b's (beta weights) revealed that among the variables "income" obtained the highest value for beta weight, followed by contact with extension agency, knowledge, mass media exposure, farm size and adoption behaviour.

The results indicated that income is an important pre-requisite for role performance of leaders. Those leaders who have more income are likely to perform their role in a effective manner.

SUMMARY

SUMMARY

This study was designed to investigate the perception and performance of rural leader's role in agricultural development and factors related with it. The study was conducted in Arayoor I.P.D. Unit in Neyyattinkara Taluk of Trivandrum District. The specific objectives designed for this study were:

1. To identify local leaders and to study their role perception in agricultural development.
2. To study the role performance of identified leaders.
3. To identify the factors associated with the effective role performance of leaders in agricultural development.

Five categories of leaders namely (i) Agricultural leaders, (ii) Political leaders, (iii) Co-operative leaders, (iv) Ela committee leaders and (v) Panchayat leaders were included in the study.

The Agricultural leaders were identified through socio-metric technique. The data for this were obtained from randomly selected farmers of each ward of the I.P.D. Unit. The Political leaders who occupied the leadership positions of the different parties at local level were

identified with the help of local officials. The office bearers of all the three Co-operative societies in the study area, the Ela committee members of the I.P.D. Unit and the Panchayat members of each ward were the other categories of leaders selected for the study.

The data were collected through personal interview. The interview schedule had a number of measurement techniques and scales to measure the role perception, role performance and the other sixteen variables included in the study. Standard statistical techniques like analysis of variance, rank correlation, simple and multiple correlation, chi-square etc., were used.

The results of this study are summarised as follows:

1. Majority of all categories of leaders had "middle age" in the range of 22 to 50.
2. There was no significant difference in age among the different categories of leaders.
3. Majority of leaders were from "Backward" caste except in the caste of Co-operative leaders. Majority of Co-operative leaders were from "Forward" caste.
4. All the leaders were literates and majority were having middle school level or higher education.

5. Agricultural and Ela committee leaders had the largest farm. Other categories of leaders differed significantly from these groups.

6. Agricultural leaders had the highest annual income followed by Ela committee leaders. Political leaders were from low income group.

7. Agricultural, Panchayat and Co-operative leaders had high value orientation than Political and Ela committee leaders. Political and Ela committee leaders had low value orientation score.

8. Panchayat, Co-operative and Agricultural leaders were having high achievement motivation than Ela committee and Political leaders. No significant difference could be observed between Ela committee and Political leaders.

9. There was no significant difference among all categories of leaders with respect to their communication skill.

10. There was no significant difference among all categories of leaders regarding their attitude towards agriculture.

11. Panchayat, Agricultural and Co-operative leaders had more favourable attitude towards high yielding varieties than other categories of leaders. There was no significant difference among Agricultural, Co-operative, Ela committee and Political leaders.

12. Co-operative leaders had more favourable attitude towards fertilizer than other categories of leaders. There was no significant difference between Agricultural and Panchayat leaders. Political and Ela committee leaders had low positive attitude towards fertilizers.

13. Panchayat, Agricultural and Political leaders had more favourable attitude than other categories of leaders towards plant protection. There was no significant difference between Agricultural, Political and Ela committee leaders. Co-operative leaders had low favourable attitude towards plant protection.

14. There was no significant difference among all categories of leaders regarding their knowledge of the programme and improved agricultural practices.

15. Ela committee leaders had more exposure to mass media than other categories of leaders. There was no significant difference between Panchayat, Co-operative, Agriculture and Political leaders.

16. Ela committee, Agricultural and Panchayat leaders had more contact with extension agency than other categories of leaders. There was no significant difference between Agriculture, Panchayat and Co-operative leaders. Political leaders had low contact with extension agency.

17. Agricultural and Ela committee leaders had adopted more practices than other categories of leaders. No significant difference could be observed between Ela committee and Co-operative leaders, between Co-operative and Panchayat leaders and between Panchayat and Political leaders.

18. The role "Give information to others about the agricultural development activities" has been perceived as the most important roles by Co-operative and Ela committee leaders. The role "Accept improved agricultural practices before others" has been perceived as most important by Agricultural and Political leaders, whereas the Panchayat leaders perceived the role "Create local enthusiasm for agricultural development activities as the most important. In the pooled rankings obtained the role "Accept improved agricultural practices before others" has been perceived as the most important. The role "Periodically review the progress in agricultural area" has been perceived as the least important one.

19. The role "Create local enthusiasm for agricultural development activities" was the role performed more frequently by Agricultural leaders. The role "Help farmers to get credit from Co-operatives, Banks etc." was more frequently performed by Co-operative leaders. Panchayat leaders reported that the role "Inform other farmers about improved agricultural practices" was the

most frequently performed one. Political and Ela committee leaders performed the role "Accept improved agricultural practices before others" more frequently than others. The role "Accept improved agricultural practices before others" has been performed as the most important whereas "Help to decide what can be done to increase agricultural production" has been performed as the least role when the pooled rankings were obtained.

20. There was an agreement regarding the perception of importance of roles between Agricultural, Co-operative, Ela committee and Panchayat leaders. Similarly the perception of Political, Co-operative and Ela committee leaders were in agreement. Co-operative and Ela committee leaders also had similar perception.

21. The performance of identified roles by Agricultural leaders was in the same level as that of Political, Co-operative and Panchayat leaders. The extent of performance by Political leaders was the same as that of Co-operative and Ela committee leaders. Co-operative, Ela committee and Panchayat leaders performed roles in the same level.

22. Panchayat and Agricultural leaders had better perception of agricultural development roles than other categories of leaders. There was no significant difference among Ela committee, Co-operative and Political leaders regarding their role perception.

23. Agricultural leaders had performed more agricultural development roles than other categories of leaders. No significant difference could be observed between Ela committee and Panchayat leaders and between Co-operative and Political leaders.

24. It was also observed that there was an agreement between perception and performance of agricultural development roles in Agricultural, Political, Co-operative and Ela committee leaders. There was no agreement between perception and performance of roles in Panchayat leaders. There was also an agreement of perception and performance of roles when the rank correlation coefficient was obtained for pooled rankings.

25. The variables knowledge, mass media exposure and contact with extension agency were correlated significantly with the role performance of Agricultural leaders. Attitude towards high yielding varieties of paddy and attitude towards fertilizers were negatively and significantly correlated with the role performance in the case of Political leaders. Mass media exposure was correlated significantly with the role performance of Co-operative leaders. Mass media exposure and contact with extension agency were correlated significantly with the role performance in the case of Ela committee leaders. The variables knowledge and mass media exposure were correlated significantly with the role performance

of Panchayat leaders. In all the categories of leaders caste was significantly associated with the role performance.

26. Coefficient of correlation for the combined categories of leaders indicated that farm size, income, knowledge, mass media exposure, contact with extension agency and adoption behaviour were correlated significantly with role performance.

27. Inter-correlation analysis indicated that farm size had significant correlation with income, knowledge, mass media exposure, contact with extension agency and adoption behaviour. Income was significantly correlated with knowledge, mass media exposure, contact with extension agency and adoption behaviour. Knowledge was significantly correlated with contact with extension agency and adoption behaviour. There was also a significant correlation between mass media exposure and contact with extension agency.

28. When the relative contribution of variables in explaining role performance were examined it was observed that income ranked first followed by the variables contact with extension agency, knowledge, mass media exposure, farm size and adoption behaviour. The proportion of role performance explained by the above variables was 50 percent.

29. The related findings revealed that 33 percent of the leaders suggested for 'increasing the area under high yielding varieties', 29 percent for 'providing credit facilities', 19 percent for 'providing irrigation facilities', 11 percent for 'introducing improved practices' and 8 percent for 'introducing farm mechanisation' to have better food production.

Implications

The findings of this study are both important and interesting. They are important from the point of view of academic value and interesting in relation to applied aspect. In this study both characteristics and roles of different categories of leaders have been studied. In previous studies, only one of these aspects (ie., characteristics) was studied, while other equally important aspect in the same context (ie., role) had been altogether neglected.

The study of the role of different categories of leaders is immensely important from the point of applied aspect. In order to use a leader as a catalyst to accelerate technological change in agriculture, it is worthwhile to know, what roles are perceived by a leader? What roles are performed by him? Which of the roles, if performed by an individual, raise his status as leader in his community?

The present study has provided the answers to these queries, which, it is hoped will be verified by the future

researchers and ultimately used for bringing about speedy technological change in agriculture.

This study also pin pointed the need for the following future studies.

1. A comparison of the difference in characteristics of the leaders with that of the others in the social system.
2. Study on the reasons for differential perception and performance of roles in agricultural development.

REFERENCES

REFERENCES

*Barlett, P. (1926). Journal of the National Institute of Industrial Psychology, 3 pp. 188-193.

Bogardus, Emery, S. (1934). Leaders and Leadership. Appleton Century Company, New York, p.3.

*Belsare, A.R. (1958). Agricultural Leadership through Rural Leadership, Ph.D Thesis (unpublished), I.A.R.I., New Delhi.

Beal, G.M., and Rogers, E.M. (1960). The Adoption of two Farm Practices in a Central Iowa Community. Spedial Report 26, Iowa State University of Science and Technology, Ames, Iowa.

*Brar, Baldev Singh. (1966). A Study on the Contribution of Sarpanches in Planning and Execution of Agricultural Development Programmes in Panjab. M.Sc.(Ag),Thesis, Ludhiana, Panjab Agricultural University.

Basha Mohamed Javeed, A.W., and Menon Radhakrishna, K. (1975). Development of Opinion Leadership Among Farmers as a Result of Adoptive Research. Madras. Agric. J. 62 (10-12): pp.750-753.

*Chaparrow, A. (1955). Role Expectation and Adoption of New Farm Practices. Ph.D Thesis (unpublished), University Park Stas. Univ., Pennsylvania.

Cotu, W. (1957). Role Playing Vs Role Taking - An Appeal for Clarification. American Sociological Review, 16 pp. 18.

*Chattopadhyay, S.N. (1963). A Study of Some Psychological Correlation of Adoption of Innovations in Farming. Ph.D Thesis, I.A.R.I., New Delhi.

*Chakravarthy, T.K. (1965). A Study of Goan Panchayats and their role in Agricultural Development. M.Sc(Ag) Thesis (unpublished), I.A.R.I., New Delhi.

Chikate, S.N. (1970). A Study of Emerging Pattern of Rural Leadership after Democratic Decentralization. Abstracts Agricultural Extension, College of Agriculture, Nagpur, Panjab Rao Krishi Vidyapeeth, pp. 97-98.

Choudhary, B.N., and Prasad, C. (1971). A Scale to Measure the Attitude of Farmers towards the Use of Chemical Fertilizers. Inter discipline. 8 (2): pp. 72-79.

Chakravarthy, T.K., and Singh, R.N. (1974). Measuring the Performance of Village Level Workers. Behavioural Sciences and Community Development, 8 (1): p.2

Choukidar, V.V., and George, P.S. (1975). Consumer's Responses to High Yielding Varieties of Rice. Indian Journal of Extension Education, 11 (1 & 2): p.44.

Dhillon, M.S. (1955). Leadership and Groups in South Indian Villages, P.E.O. Publication, No.9.

Dahama, O.P. (1968). Extension and Rural Welfare. Ram Prasad and Sons, Agra-3, pp.266-270.

Dubely, V.K., and Dwivedi, N.N. (1972). Identification of Opinion leaders and their Characteristics. Indian Journal of Extension Education, 8 (1 & 2): pp.76-83.

Deb, P.C., and Agarwal, P.K. (1974). Rural Leadership in Green Revolution. Research Co. publications, Delhi, p.96.

Edwards, A.L.(1969). Techniques of Attitude Scale Construction. Appleton - Century - Crofts, Inc., New York.

Flanagans, John C. (1954). The Critical Incident Technique, Psychological Bulletin, 4 pp.327-358.

Fliegel, F.C. (1956). A Multiple Correlation Analysis of Factors Associated with Adoption of Farm Practices. Rural Sociology, 21 pp. 205-214.

*Gaikwad, V.R., Tripathi, B.L., and Bhatnagar, G.S. (1972). Opinion Leaders and Communication in Indian Villages. Indian Institute of Management, Ahmedabad, pp.148-149.

*Gaikwad, V.R., Tripathi, B.L., and Haque, S.M.S. (1973). Rural Social Structure and Communication in Indian Village. Indian Institute of Management, Ahmedabad.

*Gaikwad, V.R., and Tripathi, B.L. (1974). Social Interaction and Communication of an Indian Village. Indian Institute of Management, Ahmedabad.

Gangamde, K.D. (1978). Leadership in Rural India - An Analysis of Some Trends in The Politics of Change and Leadership Development, Alfred De Souza. (ed); Manohar publication, p.175.

Haiman Franklyn, S. (1951). Group Leadership and Democratic Action . Boston, Houghton Mifflin Company, p.10.

Hepple, L.M. (1959). Group Organisation and Leadership in Rural Life. Lucas Bros., Columbia, Missouri.

*Havens, E.A. (1962). Some Psychological Conditions Affecting the Adoption of Farm Innovation. Ph.D Thesis (unpublished), Columbus. Stas. University, Ohio.

*Hasan, Q. (1972). A Study of relationship between dogmatism, social attitudes and certain Personality Characteristics. Ph.D Thesis in Psychology, Aligarh Muslim University.

Jaiswal, N.K., Singh, N.N., and Singh, B.N. (1971). A Study of Interactional Association of Selected Factors with Innovativeness in Farming. Indian Journal of Extension Education, 7 (3 & 4): pp. 110-116.

Jaiswal, N.K., and Dave, A.K. (1972). Measurement of Progressiveness in Farming in Studies in Extension Education. Sinha, P.R.R. (ed); N.I.C.D., Hyderabad, p.115.

Jalihal, K.A., Channegowda, M.B. (1974). A Scale to Measure Farmers Attitude Towards High Yielding Varieties of Paddy. Indian Journal Extension Education, 10 (3 & 4): p.48.

*Kluckhohn, F. (1953). Dominant and Variant Value Orientations in Personality in Nature, Society and Culture. Kluckhohn, Murray and Schnieder (eds); New York.

Khan, A.R. (1967). In Research in Extension Education. Singh,K.N., Rao, C.S.S., and Sahay, B.N. (1971), (eds); Caxton Press, New Delhi, p. 361.

Kivilin, Joseph, E. Roy; Prodipto, Fliegel; Frederik, C. and Sen, Lalit K. (1968). Agricultural Innovation in Indian Villages. N.I.C.D., Hyderabad.

Kaushal Mohinder Paul, (1970). Emerging Leadership Structure in a Village Community. Indian Journal of Extension Education, 4 (1 & 2): pp. 79-85.

Khurana, G.S. (1971). Role of Key Communicators in the diffusion of some improved Plant Protection Measures in Community Development in Summaries of Extension Research of Post Graduate Students, Aditya Shukla, N., Gupta, R.K. and Dhaliwal, A.S. (eds); Department of Extension Education, Panjab Agricultural University.

Kherde, R.L., and Sahay, B.N. (1972). Role Performance of the Village Level of Workers in the New Strategy of Agricultural Production. Indian Journal of Extension Education, 8 (1 & 2): pp.67-70.

*Likert, R. (1932). A Technique for the Measurement of Attitudes. Arch. Psychol., No.140.

Lionberger, H.F. (1960). Adoption of New Ideas and Practices. The Iowa Unv. press, America.

Lakshmanan, K., and Chandrakandan, K. (1975). Role of Farmer's Training Centre in Developing New Leaders in Coimbatore District. Madras Agric. J. 62 (10-12): pp.733-738.

Marsh, C.P., and Coleman, A.L. (1955). The Relationship of Farmer Characteristics to the Adoption of Recommended Farm Practices. Rural Sociology, 20 pp. 289-296.

Mayer, A.C. (1957). India Community Development Block revisited. Pacific affairs, p.30.

Muley Sumati, Moulik, T.K., and Lokhande, H.R. (1966). A Comprehensive Study of Traditional and Emerging Patterns of Leadership in a North Indian Villages. Indian Journal of Extension Education, 1 (4): pp.303-311.

*McClelland, D.C. (1970). The Achievement Motive in Motivation and Productivity, Gellerman, S.W. (ed); Taraporwala Sons & Co., Bombay, India.

Misra, L., Kar, L.N., and Sahoo, S. (1970). Efficiency of Lay Leaders in Influencing Farmers for Adoption of New Farm Practices. Indian Journal of Extension Education. 6 (1 & 2): pp. 119-121.

Murthy, A.S., and Singh S.N. (1974). Communication Behaviour of Farmers. New Heights, Delhi.

Muttayya, B.C. (1977). Personality and Value Orientations of Panchayat Leaders, Informal Leaders and Non-Leaders - A comparative study, Behavioural Sciences in Community Development, 11 (1): p. 28.

Nair, Thiagarajan, G. (1969). A Multivariable Study on Adoption of High Yielding Paddy Varieties by the Farmers of Kerala State. Ph.D Thesis, I.A.R.I., New Delhi.

Nirmal Kantisha. (1973). Opinion Leadership in Rural West Bengal, Kurukshetra, 21 (14). p. 32.

Pareek, Udai, and Singh, Y.P. (1966). A Scale for Rating Communication Skill of Farmers. Indian Journal of Applied Psychology. 3 (1): pp.10-14.

Panchanadikar, K.C., and Panchanadikar, J.M. (1967). A case study of Mindhola Village Panchayat in Readings in Panchayat Raj. George Jacob (ed.), N.I.C.D., Hyderabad, p. 166.

Parshad, R., and Sandhu, A.S. (1974). Communication Skills of Village Level Workers of the Panjab State. Indian Journal of Extension Education. 10 (3 & 4): pp. 72-73.

*Rogers, F.E., and Olmsted, A.G. (1957). Supervision in the Co-operative Extension Service. National Agricultural Extension Centre for Advanced Study (eds.), Madison, Wisconsin.

Rahim, S.A. (1961). Diffusion and Adoption of Agricultural Practices. A Study in a Village in East Pakistan, Comila.

Rogers, E.M. (1962). Diffusion of Innovations. The Free Press of Glencoe, New York.

*Reddy, S.K. (1965). A Study of Leadership Pattern and Roles in the Adoption of Improved Farm Practices. Ph.D. Thesis (unpublished), I.A.R.I., New Delhi.

*Rogers, E.M., and Neill, R.E. (1966). Achievement Motivation Among Columbian Peasants. Michigan, Michigan State University, Department of Communication.

*Rao, S.J. (1966). Study of the Types, Functions and Factors Affecting Rural Leadership in the Selected Villages of Rewa Block, M.Sc.(Ag) Thesis (unpublished), College of Agriculture, Rewa, Madhya Pradesh.

*Reddy, M.S.K. (1966). A study of Leadership Pattern and Roles in the Adoption of Improved Farm Practices, Ph.D Thesis (unpublished). Division of Agricultural Extension, I.A.R.I., New Delhi.

Ranjit Singh, and Sohal, T.S. (1970). Intensity of Farmer's Value Orientation. Indian Journal of Extension Education, 6 (3 & 4): pp. 26-28.

Rogers, Everett, M., and Shoemaker, Floyd, F. (1971). Communication of Innovations - A Cross Cultural Approach. The Free Press, New York.

Reddy, S.V., and Sahay, B.N. (1973). Differential Characteristics of Farm Leaders in Progressive and Non-Progressive Village. Indian Journal of Extension Education. 9 (3 & 4): pp. 87-91.

Rajendra, K. (1974). Role Performance of Village Panchayats Towards Agricultural Development - A Statistical Study. Indian Journal of Extension Education. 10 (1 & 2): p. 68.

Rajaram, J., Menon, Radhakrishna, K., and Subramanyan, V.S. (1975). Socio economic characteristics of Panchayat Presidents in Relation to their Participation in Planning and Execution of Agricultural Production Programmes. Madras Agric. J. 62 (10-12): pp. 746-749.

*Reddy, Byra, H.N. (1976). An Analysis of Patterns and Procedures in Communication of Farm Information by Village Level Workers and Factors Associated with their Communication Behaviour. Ph.D Thesis, I.A.R.I., New Delhi.

Srivastava, S.K. (1965). Directed Social Change and Rural Leadership in India in Emerging Patterns of Leadership in Southern Asia, Vidyarthi, L.P. (ed.) N.I.C.D., Hyderabad. p. 159.

Singh, Y.P. (1965). A Study of Communication Net Work in Sequential Adoption and Key Communicators. Ph.D Thesis, I.A.R.I., New Delhi.

Sankariah, Ch., and Singh, K.N. (1967). Predictive Analysis of Factors Associated with Knowledge of Improved Practices of Vegetable Cultivation. Indian Journal of Extension Education. 3 (1 & 2): pp. 67-73.

*Singh, S.N. (1967). Value Orientation and Adoption Behaviour of Indian Cultivators. Ph.D. Thesis (unpublished), Iowa St. University of Sci & Technology, Ames, Iowa.

Singh, B.N., and Singh, R.P. (1967). Job Performance of Village Level Workers. Indian Journal of Extension Education. 3 (3): pp. 116-121.

Sandhu, A.S. (1967). in Research in Extension Education. Singh, K.N., Rao, C.S.S., and Sahay, R.N. (1970), (eds.); Caxton Press, New Delhi, p. 361.

Sinha, B.P., Jaiswal, N.K., and Singh, B.N. (1968). Analysis of Pre-Service Training Programme of Agricultural Extension Officers. Indian Journal of Extension Education. 4 (3 & 4): pp. 17-27.

Singh, R.P., and Singh, K.N. (1968). Attitude of Farm People Toward Chemical Fertilizers. Indian Journal of Extension Education. 4 (1 & 2): p. 49.

Singh, S.N., and Arya, H.P.S. (1968). Perception of Leadership Behaviour of Leaders and Non Leaders. Indian Journal of Extension Education. 6 (3 & 4): pp. 66-70.

*Supe, S.V. (1969). Factors Related to Different Degrees of Rationality in Decision Making Among Farmers in Buldana District. Ph.D. Thesis, I.A.R.I., New Delhi.

Somasundaram, S. (1971). A Study of Agricultural Leaders and their Roles in Selected Agricultural Extension Programme in Thanjavur Panchayat Union Tamil Nadu. M.Sc. (Ag) Thesis, Tamil Nadu Agricultural University, Coimbatore.

Sharma, S.K. (1971). A Study of Role Expectation, Job-performance and systematic linkage of the Rural Institutions. Intensive Agricultural District Programme. Ph.D Thesis (unpublished), I.A.R.I., New Delhi.

Sen, Lalit, K., (1972). Leadership Characertistics and Communitywide Adoption of Agricultural Innovation in Studies in Extension Education, Sinha, P.R.R. (ed.); N.I.C.D., Hyderabad, India, p. 46.

Singh, Y.P. (1973). Key Communicators of Agricultural Innovations. Satis Book Enterprise, M.G.Road, Agra-2. pp. 116-118.

Singh, N.P. and Prasad, C. (1974). Communication Behaviour and Source Credibility Perception of Young Farmers. Indian Journal of Extension Education. 10 (1 & 2): pp. 53-58.

Singh, S.N. (1974). Achievement Motivation Scale in Hand Book of Psychological and Social Instruments. Pareek, U., and Venkateswara Rao, T., (eds.); Samasthi, Baroda, pp. 46.

Sinha, P.R.R., Kolte, N.V., and Arya, H.P.S. (1976). Communication in Developmental Administration - A Study of Inter-personal Communication in Three Indian States, N.I.C.D., Hyderabad.

*Trivedi, G. (1963). Measurement and Analysis of Socio-economic Status of Rural Families. Ph.D. Thesis, New Delhi, India.

Thorat, Sudhakar, S. (1968). Some salient Characteristics of Sarpanches and the success or failure of Agricultural Innovation in Indian Villages. Behavioural Sciences and Community Development. 2 (1): pp. 26-37.

Venkaiah, A., and Reddy Adivi, A. (1966). The Role of Local Leaders in the Decision making process in the Adoption of High Yielding Varieties of Paddy. Research Studies in Extension Education. A.P.A.U., Hyderabad. 55 (48): p. 184.

Verma, H.S. (1974). Profile of Rural Leaders and their Followers, Interdiscipline, 1 (1).

*White, W.R. (1951). Leadership. Boston, Meader.

*Wilkening, E.A. (1952). Acceptance of Improved Farm Practices. Agricultural Experiment Station Bullettin 92. North Carolina, U.S.A.

Wilkening, E.A., Tully, J., and Presser, H. (1962). Communication and Acceptance of Recommended Farm Practices - among Dairy Farmers of Northern Victoria. Rural Sociology. 27 pp. 116-197.

Waghmare, S.K., and Patel, A.U. (1974). A Scale to Measure Perception of Administrative Organisation Principles. Indian Journal of Extension Education, 10 (3 & 4): p. 61.

*Original not seen.

APPENDICES

Appendix I

Sociometric Questions.

1. Before purchasing new high yielding variety seeds of paddy to which farmer you will discuss?

2. If a disease is seen in your crop to which farmer you will consult for controlling the disease?

3. If you want to apply fertilizer dose for coconut to which farmer you will go for advice?

Appendix II

Kezhkolla Ward

Name of farmers	Frequencies obtained
1. V. Easwara Pillai.	11
2. P. Gopinathan Nair.	4
3. N. Neelakanta Panicker.	2
4. R.P. Natarajan.	4
5. N. Krishnan Nair.	6
6. M. Kunjukrishnan Nadar.	21
7. E. Nesamoney.	3
8. R. Sankara Panicker.	4
9. K. Muthuswamy Nadar.	3
10. L.P. David.	2
11. A. Achuthan.	3

Nochiyoor Ward

1. S. Dassayyan.	2
2. N. Thankayyan Nadar.	7
3. P. Sarasamma.	5
4. L. Ponnamma.	2
5. P.M. Kunjukrishnan.	2

Appendix II (contd.)

Chenkal Ward

Name of farmers	Frequencies obtained
1. K. Purushothaman Nair.	10
2. K. Krishna Pillai.	6
3. J. Thankayyan Nadar.	4
4. A. Yesudas.	3
5. N. Sundaran Nadar.	1

Kilamagam Ward

1. N. Krishnan Unnithan.	4
2. S. Sundaran Nadar.	14
3. P.R. Appukuttan Nair.	7
4. N. Krishnan Nair.	3
5. P. Velayudhan Pillai.	4
6. K. Sreedharan Nair.	1

Melamagam Ward

1. V. Appukuttan Nair.	6
2. J.B. Rose.	2
3. P. Gopinathan.	1

Appendix II (contd.)

Poranur Ward

Name of farmers	Frequencies obtained
1. P. Sankaran Nadar.	4
2. V. Kuttan Pillai.	9
3. K. Balan Nair.	3
4. G. Thankappan Nair.	2

Arayoor Ward

1. M. Somapanicker.	10
2. A. Velayudhan Nair.	17
3. D.S. Moni.	7
4. J. Rajeyyan.	7
5. N. Kesava Pillai.	4

Udiankulangara Ward

1. R. Parameswaran Pillai.	1
2. V. Krishnan Nair.	2
3. N. Vasudevan Pillai.	4

Appendix III

A Study on the role of leadership in agricultural development in rural areas in Kerala.

Department of Agricultural Extension,
College of Agriculture,
Vellayani, Trivandrum.

No.

Date.

1) Age (Completed years) :

2) Caste :

3) Education: Illiterate/can read only/can read and write/ Primary/Middle/High School/Graduate

4) Farm size:

5) Annual income:

6) Value orientation:

Below are given some statements. Kindly mention whether you agree or disagree to those statements. Please also mention the extent of your agreement or disagreement to each of the statement.

No.	Statements	Strongly agree	Agree	Un decided	Dis agree	Strongly dis agree
1.	The good old days were golden					
2.	With the help of scientific knowledge men will be able to solve all the mysteries of the world					

Appendix III (Contd.)

No.	Statements	SA	A	UD	DA	SDA
3.	Intercaste marriages are not desirable.					
4.	Equal status for men and women is not desirable.					
5.	Man proposes God disposes.					
6.	It is better to meet a doctor than a 'Sidha' for cure of illness.					
7.	Social customs, for which even if no proper explanation can be given should be adhered to.					
8.	Man's life is determined by his fate.					
9.	Change is essential for a society.					
10.	God can do miracles which science can never explain.					
11.	Science has benefited human society much more than the evil it has produced.					
12.	One should not hesitate to accept new things created by science.					

7) Achievement motivation:

Give your opinion about the following statements.

No.	Statements	Opinions				
1.	Success brings relief or further determination and not just pleasant feeling.	Strongly agree	Agree	Un decided	Dis agree	Strongly disagree

Appendix III (contd.)

2. How true it is to say that your efforts are directed towards avoiding failure?	Quite untrue	Not very true	Unsure	Fairly true	Quite true
3. How often do you seek opportunity to excell?	Hardly ever	Seldom	About half the time	Frequently	Nearly always
4. Would you hesitate to undertake something that might lead to your failing?	Hardly ever	Seldom	About half the time	Frequently	Nearly always
5. In how many spheres do you think you will succeed in doing as well as you can?	Most	Many	Some	Few	Very few
6. How many situations do you avoid in which you may be exposed to evaluation?	Most	Many	Some	Few	Very few

8) Communication skill:

Do you	Always	Often	Some times	Seldom	Never
1. Listens patiently to what other say					
2. Encourages others to raise questions.					
3. Initiates discussion.					
4. Illustrates a point by example and anecdote.					

Appendix III (contd.)

Do you	Always	Often	Some times	Seldom	Never
5. Summarises points made.					
6. Analyse and evaluates the problem.					
7. Talks in pervasive tone with moderate pitch and with proper gesture.					

9) Attitude:

A. Agriculture.

Give your opinion on the following:-

1. If the Government should help to establish a farm in a hill area would you move.	Strongly agree	Agree	Dis agree	
2. Do you like your son to be a farmer.	Strongly agree	Agree	Dis agree	
3. If there is discussion on modern agriculture would you attend.	Strongly agree	Agree	Dis agree	
4. Only people who are unable to go for any other work will take to agriculture.	Strongly agree	Agree	Dis agree	
5. Only better agriculture can bring presperity to our nation.	Strongly agree	Agree	Dis agree	

B. High yielding varieties of paddy:

A set of statements are presented below. Express your agreement or disagreement to each statement.

Appendix III (contd.)

No.	Statements	SA	A	UD	DA	SDA
1.	Cultivation of High yielding varieties of paddy will solve the food problems of our state.					
2.	Cultivation of High yielding varieties of paddy is very complex.					
3.	High doses of fertilizer recommended for high yielding varieties of paddy will reduce the fertility structure of soil.					
4.	It is very difficult to cultivate High yielding varieties of paddy.					
5.	High yielding varieties of paddy are not better than local varieties.					
6.	It is not profitable to cultivate High yielding varieties of paddy.					
7.	After the introduction of High yielding varieties of paddy there has been a significant improvement in the economic condition of our farmers.					
8.	If we want to produce enough rice best way is to cultivate High yielding varieties of paddy.					
9.	High yielding varieties of paddy should be intensively cultivated by all farmers.					
10.	All types of farmers will be equally benefited by High yielding varieties of paddy cultivation.					

Appendix III (contd.)

C. Fertilizers:

Please show your agreement or disagreement against the following statements.

No.	Statements	SA	A	UD	DA	SDA
1.	The food problem of our country can be solved by using chemical fertilizers to crops.					
2.	If anybody asks for my advice for increasing production, I will definitely advice him to use chemical fertilizers.					
3.	If we use chemical fertilizers for some years the soil will become unsuitable for cultivation.					
4.	Produce of crops grown with chemical fertilizers is harmful for health.					
5.	Chemical fertilizers will not give returns in relation to the cost involved.					

D. Plant protection:

Please indicate your agreement or disagreement against the following statements.

No.	Statements	SA	A	UD	DA	SDA
1.	The use of chemicals for control of pests and diseases of crops is one of the important methods to increase agricultural production.					

Appendix III (contd.)

No.	Statements	SA	A	UD	DA	SDA
2.	Eating of produces of crops sprayed with plant protection chemicals is not good for health.					
3.	Plant protection chemicals will spoil the soil.					
4.	All farmers should use plant protection chemicals to control pests and diseases.					
5.	There must be a law to force farmers to adopt chemical control of pests and diseases.					
6.	Even though there are bad effects of plant protection chemicals, the good effects justify their use for crops.					

10) Knowledge:

Are there any programme for agricultural development in your area? Yes/No

If yes, what are they?

1. Coconut package programme.
2. Intensive Paddy Development Programme.
3. Small Farmers Development Agency.
4. Fertilizer promotion programme.

What are the functions of the following programme?

1. Coconut package programme:
   a) It is to distribute the coconut seedlings at concessional rate.
   b) It promotes coconut cultivation.
   c) It distributes chemicals and fertilizers for coconut cultivation.

Appendix III (contd.)

2. Intensive Paddy Development Programme:

   a) It promotes the popularisation and spread of High yielding varieties of paddy.

   b) Ensures adequate supply of quality seeds, credit, fertilizers and agricultural machinery.

3. Small Farmers Development Agency:

   It provides short term and Medium term loans for small and marginal farmers.

4. Fertilizer promotion programme:

   a) It is to expand the use of fertilizers in the correct way in crop production.

   b) It is to promote balanced fertilizer use on scientific lines.

1. Varieties:

There are many new High yielding varieties of crops now available to the farmers. What are the High yielding varieties of the following crops:-

a)	Paddy :	I.R.8	Rohini	IR.5	Taichung (1)
		Jaya	Aswathi	Pankaj	PTB.29
		I.R.20	Bharathi	Jagenath	PTB.28
		Annapoorna	Jyothi	H.4	PTB.30
		Triveni		Mashuri	

b)	Coconut :	Tall	x	Dwarf
		Tall	x	Gangabondam
		Lacadive Ordinary	x	Gangabondam
		Andaman Ordinary	x	Gangabondam
		Yellow dwarf	x	Tall
		Dwarf	x	Tall

Appendix III (contd.)

c) Tapioca : H. 97, H.165, H.226, M.4.

d) Banana : Robusta, Grosmichel, Monsmarie, Dwarf cavendish.

2. Can you mention at what distance the following crops are to be grown?

Paddy

Coconut

Tapioca

Banana

3. Fertilizers:

What are the important nutrients required for plant growth?

N P K

From which fertilizers plants will get

N P K

What is the fertilizer dose for paddy/ha.

		N	P	K	
a)	High yielding medium duration varieties.	90	45	45	kg
b)	High yielding short duration varieties.	50	35	35	kg

What is the fertilizer dose for coconut/palm/annum.

		N	P	K	
a)	Average management	0.34	0.17	0.68	kg
b)	Hybrids and High yielding palms.	1.00	0.50	2.00	kg

Appendix III (contd.)

What is the fertilizer dose for tapioca/ha.

		N	P	K	
a)	H.97 & H.226	75	75	75	kg
b)	H.165	100	100	100	kg
c)	M.4 and Local	50	50	50	kg

What is the fertilizer dose for banana/plant/annum?

		N	P	K	
a)	Nendran (irrigated)	225	225	400	gms.
b)	Other varieties	160-200	160-200	320-400	grams

4. What seed treatment you will give for paddy?

Name of chemical

Dose

Method of treatment

5. What are the chemicals used for controlling the following?

1. Rice stem borer

Name of chemical	Dose	Method
a) Fenthion		
b) Malathion		
c) Phosphamidan (Dimecron)		
d) Monocrotophos (Nuvacron)		
e) Carbofuron (Furadan)		

Appendix III (contd.)

2. Rhinocerous beetle

a) Chlordane and sand mixture b) Carboryl

3. Bunchy top of banana

a) Aldrin b) Furadan

c) Thimet (Phorate) d) Solverex

11) Mass media exposure:

Please indicate from which of the following sources you obtain new information, regarding agriculture.

No.	Source	Most often	Often	Some-times	Never
1.	News paper				
2.	Radio				
3.	Film				
4.	Demonstration				
5.	Posters				
6.	Magazines				

12) Contact with extension agency:

Are you keeping contact with extension agents? If so how often you contact? Give your correct frequencies against the following?

Visiting daily/Once in a week/Twice in a month/Once in a month/Rarely/Never

Appendix III (contd.)

13) Adoption behaviour:

Name of crops grown	Area
1.	
2.	

A. Paddy:

1. In how much area you have cultivated high yielding varieties of paddy?

2. What is the seed rate you have used?

3. If you have transplanted your crop what spacing you adopted?

4. How much fertilizers did you apply to the main crop?

Area	Name of fertilizers	Quantity

5. Did you experience any pests/diseases in your crop? If so what remedial measures you have taken?

Name of chemical

Quantity

B. Coconut:

1. How much area you have cultivated High yielding varieties of coconut?

2. How many seedlings you have used/acre?

3. What spacing you adopted?

Appendix III (contd.)

4. How much fertilizer did you apply?

Area of the crop	Name of fertilizers	Quantity

5. Did you experience any pests/ diseases in your crops?

If yes what remedial measures you

have taken?

Name of chemical

Quantity

C. Tapioca:

1. How much area you have cultivated High yielding varieties of tapioca?

2. How many cuttings you have used/ac?

3. What spacing you have adopted?

4. How much fertilizers did you apply?

Area of crop	Name of fertilizers	Quantity

5. Did you experience any pests/diseases in your crop?

If yes what remedical measures you have taken?

Name of chemical

Quantity

Appendix III (contd.)

D. Banana:

1. In how much area you have cultivated High Yielding varieties of banana?

2. How many suckers you have used/ac?

3. What spacing you have adopted?

4. How much fertilizers did you apply?

Area of crop	Name of fertilizers	Quantity

5. Did you experience any pests/disease in your crop?

If yes what remedial measures you have taken?

Name of chemical

Quantity

14) Role perception:

Do you consider that it is your duty to help in the activities for the development of Agriculture in your area? Yes/No

If yes please mention to what extent you have to undertake the following activities.

No.	Activities (Role)	Always	Some-times	Never
1.	Help the Development Officer in collecting information related to agriculture.			

Appendix III (contd.)

No.	Activities (Role)	Always	Some-times	Never
2.	Help to identify the problems of agriculture.			
3.	Help to decide what can be done to increase agricultural production.			
4.	Participate in preparation of agricultural development plans.			
5.	Give information to others about the agricultural development programmes.			
6.	Create local enthusiasm for agricultural development activities.			
7.	Help the agricultural officers in arranging demonstration to show the effect of improved agricultural practices.			
8.	Help in organising trainings discussions etc. to educate farmers.			
9.	Must help farmers to get credit for co-operatives, banks etc.			
10.	Should see that good seeds and fertilizers are much available to farmers.			
11.	Must inform other farmers about improved agricultural practices.			
12.	Must accept improved agricultural practices before others.			
13.	Must periodically review the progress in agricultural production of the area.			
14.	Must bring the problems faced by farmers to the attention of officers/government.			

Appendix III (contd.)

No.	Activities (Role)	Always	Some-times	Never
15.	Must provide help to farmers in getting good price for agricultural produces.			

15. Role performance:

Are you participating in any of the above activities of agricultural development programmes: Yes/No

If 'yes' please mention to what extent you have participated in the following activities.

No.	Activities (Role)	Always	Some-times	Never
1.	Help the Development Officer in collecting information related to Agriculture.			
2.	Help to identify the problems of agriculture.			
3.	Help to decide what can be done to increase agricultural production.			
4.	Participate in preparation of agricultural development plans.			
5.	Give information to others about the agricultural development programmes.			
6.	Create local enthusiasm for agricultural development activities.			
7.	Help the agricultural officer in arranging demonstration to show the effect of improved agricultural practices.			
8.	Help in organising trainings discussions etc. to educate farmers.			

Appendix III (contd.)

No.	Activities (Role)	Always	Some-times	Never
9.	Must help farmers to get credit for co-operatives, banks etc.			
10.	Should see that good seeds and fertilizers are much available to farmers.			
11.	Must inform other farmers about improved agricultural practices.			
12.	Must accept improved agricultural practices before others.			
13.	Must periodically review the progress in agricultural production of the area.			
14.	Must bring the problems faced by farmers to the attention of officers/ government.			
15.	Must provide help to farmers in getting good price for agricultural produces.			

16) Please give your specific (if any) suggestions for increasing food production:

1.

2.

3.

4.

5.

Appendix IV

Abstract of Anova for all the variables studied.

	df	Mean squares							
		Age	Education	Farm size	Income	Value orientation	Achievement motivation	Communication skill	Attitude towards agriculture
Category of leaders	4	84.17	1.25	2.46**	31698617**	526.5**	46.7**	13.18	3.94
Error	102	74.48	0.696	0.267	1878198	23.01	6.34	11.25	1.94

Appendix IV (contd.)

	df	Mean squares								
		Attitude towards H.Y.Vs of paddy	Attitude towards fertilizers	Attitude towards plant protection	Knowledge	Mass media exposure	Contact with extension agency	Adoption behaviour	Role perception	Role performance
Category of leaders	4	35.98*	26.98**	23.73**	167.44	22.18*	6.06**	837.54**	38.69**	196.34**
Error	102	12.33	1.54	3.42	128.41	6.17	0.67	105.08	4.24	6.32

** Significant at 0.01 level
* Significant at 0.05 level.

A STUDY ON THE ROLE OF LEADERSHIP IN AGRICULTURAL DEVELOPMENT IN RURAL AREAS IN KERALA

BY

P. MUTHIAH MANOHARAN

ABSTRACT OF A THESIS
submitted in partial fulfilment of the
requirement for the degree
MASTER OF SCIENCE IN AGRICULTURE
(Agricultural Extension)

Faculty of Agriculture
Kerala Agricultural University

Department of Agricultural Extension
COLLEGE OF AGRICULTURE
Vellayani - Trivandrum

1979

ABSTRACT

This study on the role of leadership in agricultural development was designed to measure the role perception and role performance of different categories of leaders, as well as the factors associated with the role performance of leaders. This study was conducted in Arayoor I.P.D. Unit in Trivandrum District. This study covered five categories of leaders viz., Agricultural, Political, Co-operative, Ela committee and Panchayat leaders. The important findings were the following:

1. There was no significant difference among all categories of leaders regarding their age, educational level, communication skill, attitude towards agriculture and knowledge of the programme and improved agricultural practices.

2. Agricultural and Ela committee leaders had higher farm size, higher income and had adopted more practices when compared to other categories of leaders.

3. Agricultural, Panchayat and Co-operative leaders had high value orientation, high achievement motivation and had more favourable attitude towards high yielding varieties than other categories of leaders.

4. Co-operative leaders had more favourable attitude than other categories of leaders towards fertilizers. Panchayat, Agricultural and Political leaders had more favourable attitude than other categories of leaders towards plant protection.

5. Ela committee leaders had more mass media exposure than other categories of leaders. Ela committee, Agricultural and Panchayat leaders had more frequent contact with extension agency than other categories of leaders.

6. The results revealed that Panchayat and Agricultural leaders had more perception of agricultural development roles than other categories of leaders. Agricultural leaders performed more roles in agricultural development than other categories of leaders.

7. When the pooled ranks were worked out the role "Accept improved agricultural practices before others" emerged as the most important role perceived as well as performed by the leaders.

8. Mass media exposure was significantly correlated with the role performance except in Political leaders. Caste also had influence in role performance.

9. Six variables viz., farm size, income, knowledge, mass media exposure, contact with extension agency and adoption

behaviour were correlated with role performance significantly when the pooled data were considered.

10. Inter-correlation analysis lead to the conclusion that farm size had significant correlation with income, knowledge, mass media exposure, contact with extension agency and adoption behaviour. Income was significantly correlated with knowledge, mass media exposure, contact with extension agency and adoption behaviour. Knowledge was significantly correlated with contact with extension agency and adoption behaviour. There was also a significant correlation between mass media exposure and contact with extension agency.

11. It was also observed that the proportion of role performance explained by the variables viz., farm size, income, knowledge, mass media exposure, contact with extension agency and adoption behaviour was 50 percent.