# A MULTI-DIMENSIONAL ANALYSIS OF 'KUTTIMULLA' CULTIVATION IN ALAPUZHA DISTRICT

BY

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VELLAYANI
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*In the name of Allah,*
*the most benevolent and merciful*

## DECLARATION

I hereby declare that this thesis entitled **"A Multi-dimensional Analysis of `Kuttimulla' Cultivation in Alapuzha District"** is a bonafide record of research work done by me during the course of research and that this thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title of any other University or Society.

Vellayani

27-07-96

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## CERTIFICATE

Certified that this thesis entitled "**A Multi-dimensional Analysis of `Kuttimulla' Cultivation in Alapuzha District**" is a record of research work done independently by Sri.NIZAMUDEEN.A under my guidance and supervision and that it has not previously formed the basis for the award of any degree, fellowship or associateship to him.

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# INTRODUCTION

# CHAPTER 1



## INTRODUCTION

The progress of our country depends mainly on the progress of agricultural development. Agriculture was, is and will continue to be the back bone of our economy. In the present day, importance is much given to the horticultural crops which has contributed to the emergence of new trends. In this, floriculture has received much larger attention and is gradually becoming a major export - oriented enterprise.

It is indeed a paradox that flower cultivation, an ancient farm activity with great potential for generating remunerative self - employment among small and marginal farmers besides earning tha badly needed foreign exchange, has not received the attention it deserves all these years. There is, however, a new - found enthusiasm now to tap the unexplored potential of floriculture and it remains to be seen how it is going to be translated in to concrete action.

The world over, flowers have gained an important place in one's life, be it for religious purposes or for personal decoration. India is no exception. The wide range of agroclimatic conditions make it possible to grow most of the flower crops throughout the year in one part of the country or the other.

There have been different estimates of the area under floriculture.The Eighth Plan working group has based its exercise on an estimated area of 30,924 hectares, whereas the market survey by the Agricultural and Processed Food Products Exports Development Authority (APEDA) put the estimate at 34,000 hectares in 1988. Of this 24,000 hectares are under traditional flowers and 10,000 hectares under modern cut flowers and related products. The annual production of flowers is estimated to be of the value of Rs.150 crores comprising Rs.85 crores worth of traditional flowers and plants and Rs.65 crores worth of modern cut flowers and related items.At the retail level, according to the APEDA market survey,floriculture trade turn over is around Rs.205 crores per annum of which traditional flowers and plants anount for Rs.105 crores (Padmanabhan, 1991).

Despite its long history and favourable agroclinatic conditions in the country,the floriculture scenario is marked by poor agricultural practices and low quality of products. The total area under Jasmine is about 9,000 hectares and the annual production is worth Rs.10 crores (Singh,1994).

In Kerala, crores of rupees is paid to the neighbouring states for the import of Jasminum flowers. This can be heavily reduced by the promotion of `Kuttimulla' (Jasminum sambac)cultivation in our state as a small scale enterprise in the field of agriculture.The by -products such as Jasmine oil has high export accessability and can earn foriegn exchange to our state.

'Kuttimulla' was a crop introduced into the farming community through the scheduled caste farmers under the Special Component Plan 1991-92. It has been largely adopted by the farmers in the central parts of Kerala. It is a crop earning more profit with less investment, less time and less land. It has now been established as a income and employment generating enterprise in the field of agriculture.

Thus the study aims to identify the practices followed by the 'Kuttimulla' growers and to analyse the factors which has motivated them to start this enterprise. A rational analysis of the extension strategy adopted by the extension functionaries will act as a feedback for the enhancement of 'Kuttimulla' cultivation in our state.

**Objectives of the study.**

1) To study the socio - economic profile of the 'Kuttimulla' growers.
2) To study the extent of adoption of the cultivation practices.
3) To study the entrepreneurial behaviour of the 'Kuttimulla' growers.
4) To study the motivational pattern of the 'Kuttimulla' growers.
5) To identify the marketing channels prevailing in the area.
6) To study the constraints as percieved by the growers, and
7) To develop an extension model to popularise 'Kuttimulla' cultivation in Kerala.

**Need for the study**

'Kuttimulla' cultivation is a landmark in the field of floriculture in Kerala. It was a programme started by the farmers

themselves without any effective implementation from the higher-ups. This has now become an employment and income generative enterprise in the field of agriculture to a small section of the people. To what extent it motivated the people adopt the programme is not clearly understood. Research studies on the various aspects of this enterprise are yet to come by. Hence it becomes essential to know the entrepreneurial behaviour and the profile of the 'Kuttimulla' growers. An objective study in this direction will bring to limelight the positive and the negative features of the enterprise. The results of such a study will provide valuable information for promoting new programmes in the field of floriculture in the future also.

**Scope of the study**

The inferences derived out of this study would be of immense use to the planners and administrators in devising suitable strategy for the floriculture development in Kerala. The study will throw some light in preparing the microlevel development plans for the betterment of the farming community. This would ultimately lead to better development in the agricultural sector, especially floriculture. Moreover, standardisation of measurement devices to quantify the variables in the study would contribute to the body of research in Agricultural Extension. The study assures added significance in the view of the fact that this is going to be the first ever research effort in this area.

**Limitations of the study.**

The present study had the limitations of time and other resources as it was undertaken as part of the requirement for the

MSc (Ag) programme.Hence it restricts the exploration of the area in a greater depth and in a more comprehensive manner.The study was confined only to Alapuzha district and this has narrowed down the scope of generalising the results.Since the study was based on the expressed opinion of the respondents,it may or may not be free from their individual biases and prejudices.

In spite of these limitations,accomplishment of the objectives to the maximum extent possible has been earnestly tried for.

**Presentations of the study**

The presentations of the remaining chapters of the thesis is as follows;

In chapter II which follows this chapter,theoretical orientation,definition of concepts and hypotheses are furnished.

Chapter III deals with the methodology,in which the selection of the study area,sampling procedure,operationalisation and measurement of variables ,method of data collection and statistical tools used are explained.

The results of the study are given in detail in chapter IV and the interpretation of the findings and the discussions in chapter V.

Chapter VI deals with the summary of the research work emphasising the salient findings.

The references,appendices and the abstract of the thesis are given at the end.

# CHAPTER 11

# THEORETICAL ORIENTATION

For any research study, a probe into the past research studies is absolutely essential to have a vivid picture of the study undertaken. The review of literature helps in developing hypothesis, suggesting methods of research and provide comparable data useful in the interpretation of the results.

In this chapter an attempt is made to give an orientation to the concepts pertaining to the study and to link whatever research findings that exist in the area of study with the research problem. It also assists in evaluating one's own research efforts by comparing them with the related efforts of others. The literature that appeared relevant are presented under the following heads.

2.1 Concepts of motivation

2.2 Motivational pattern of `Kuttimulla' growers.

2.3 Dependent variables

2.4 Independent variables

2.5 Marketing channels

2.6 Constraints experienced by `Kuttimulla' growers.

2.7 Hypotheses developed for the study.

## 2.1 Concept of motivation

Maslow (1954), one of the pioneers in the field of motivation research argued that individuals are primarily 'wanting' creatures motivated by a desire to satisfy certain

specific types of needs, Most individuals, according to him, pursue a hierarchy of needs. namely physiological needs, safety, belongingness, esteem needs and self actualization needs, such that once a certain need or sets of needs are satisfied, it loses its potency as a motivating factor until activated again.

Atkinson (1964) referred to motivation as the arousal of tendency to act to produce one or more effects.

Coleman (1971) used the term motivation to include any inner condition of the organism that initiates or directs its behaviour towards a goal. Motivation also helps one to understand the directionality of behaviour and a ativation as energizing of behaviour.

Guilford (1971) defined motive as any particular internal factor or condition that tends to initiate and sustain activity.

Motivation is an internal force which impels a human being to an activity which has definite goals and which usually originates to fulfil some physiological needs of the body or psychological satisfaction. (Ghorpade, 1977).

Chauhan (1983) opined that a number of factors influence motivation namely physiological system of the individual, his emotional state, habits which instigate and regulate actions in a dynamic sense, the mental set, values and attitudes of the individual.

Motivation plays a vital role in the success of any enterprise in which achievement is not easy (Mali, 1984) and it

# THEORETICAL ORIENTATION

is an important dimension in any kind of programme initiated for the betterment of the people. (Krishnaswamy, 1986).

## 2.2 Motivational pattern of 'Kuttimulla' growers

Das and Sarkar (1970) reported that farmers show favourable attitude when the main objective of adoption of practices is only monetary gain and higher the economic motivation, more favourable will be the attitude towards improved farm practices.

Rao et al. (1971) in their study on the motivational pattern of farmers towards the adoption of high yielding varieties of wheat reported a heirarchy of motives with economic motive obtaining the first rank followed by national welfare, innovativeness, self-actualization, prestige, security, affiliation and dominance in the descending order.

In the study on the motives of the farmers influencing the cultivation of high yielding varieties of rice, Raghudharan et al. (1976) observed that the farmers gave family need motive the first place followed by affiliation, prestige, innovativeness, patriotism and freedom from debt as the last.

Venkiduswamy's (1976) study revealed that economic motives like freedom from debt, family need and security were important for motivating small farmers in the adoption of cotton other than motives like prestige and self-actualization.

Haque and Ray (1983) also found economic motive as an important variable in determining the adoption of composite fish culture. Mishra and Sinha (1983) observed that only personal

achievement motivation of farmers was important for their adoption of wheat technology and that too in isolation rather than in combination with other motivational variables. They also found a low motivational status among small and medium farmers.

Sanjeev (1987) obtained the motivational pattern of farmers trained in Krishi Vigyan Kendras as chiefly economic motive followed by innovationess, prestige motive, affiliation motive, self-actualization and finally achievement motivation.

Anilkumar (1988) reported economic motive as the most important motive influencing the farmers in the participtionin Agro-forestry programme. Affiliation motive, self-esteem, recognition, safety and self actualization were the other motives in the descending order of importance.

Latha (1990) in her study on the motivational pattern of the users towards the adoption of biogas technology observed safety, as the most important motive and prestige the least important.

Reddy and Ramaiah (1993) concluded that the incentives of status, power, good physical conditions, opportunities of participation and good social conditions helped in inculcating motivation in the V.E.O's.

**2.3 Dependent Variables**

**2.3.1 Extent of adoption.**

Wilkening (1952) postulated the adoption of an innovation as a process composed of learning, deciding and acting over a period of time. The adoption or a decision to act has a series of action and thought decisions.

According to Ramsey et al. (1959) adoption behaviour involved two components: behavioural which involves the actual use of the practice and cognitive, which includes obtaining knowledge and critical evaluation of the practice in terms of individual situation.

Rogers and Shoemaker (1971) defined adoption as a decision to make use of the innovation. They considered adoption as a decision to continue full use of an innovation as the best course of action.

Palaniswamy (1978) stated that malli and mullai growers were not significantly different in their extent of adoption and most of the malli and mullai growers had adopted all the practices.

Alagarraja (1982) found that majority of the jasmine growers and rose growers belonged to the medium category in respect of their adoption of recommended practices.

Rogers (1983) defined adoption as a decision to make full use of an innovation as the best course of action available, or reject it.

Chauhan et al. (1987) considered adoption as the action to make use of the technology which has already been taken and not only initiated.

Adoption of improved farm technology depends not only on the effectiveness of various agencies involved in the transfer of technology but also on the personal characteristics of the farmers as well ( Parshad, 1987).

### 2.3.2 Entrepreneurial behaviour.

Singh (1970) reported that the successful agricultural entrepreneurs had positive rating of their economic progress, liking for their present occupation, preference for agriculture as profession for their sons if they so desired , a positive attitude towards modernisation and individual farming for the growth of agriculture in this country, thus clearly indicating the role played by entrepreneurship in development activities of farming.

Joshi and Kapur (1973) described farm entrepreneur as the person who thinks, organises and operates the business and is responsible for the results, that is, losses and gains from the business. He is a pioneer in organising and developing the farm.

Devi and Reddy (1984) revealed that farm women of low economic category were found to participate more in farm operations whereas farm women of high and medium category found to participate in allied farm operations.

According to Ganguly (1990) agro-based industries provided an excellent nexus in providing integrated development of agriculture and industry and in transfering a stagnant rural economy into a dynamic and buoyant economy. Thus it provided local entrepreneurship, generated employment and also checked concenteration of economic power through diffusion of ownership of means of production.

Himachalam (1990) expressed that there should be suitable organisational arrangements for disseminating information about appropriate technology to the perspective entrepreneurs and the entrepreneurs should be given proper training in the technology to be adopted.

Hamilton (1990) opined that entrepreneurs were risk takers, not wild age gamblers, but rational individuals who considered their knowledge and skills as dramatic risk reduction elements. Their efforts augment their money resources with mind and muscle, their primary resources. Further he described entrepreneurship as a state of mind.

Muthayya and Loganathan (1990) reported that joint family take a self employment than those in single family probably because of inbuilt security provided in the joint family in the event of failure.

Muthukrishnan (1993) expressed that entrepreneurial requisition are to be achieved and workable planning to know how in the area engaged and, of course, the strength to mobilise finance needed to sustain the growth.

**2.4 Independent variables.**

**2.4.1 Farming experience**

| Author | Year | Relation-ship | Dependent variables |
|---|---|---|---|
| Reddy | 1971 | P | Adoption |
| Anbalagan | 1974 | P | Adoption |
| Bute et al. | 1981 | P | Adoption |

| | | | |
|---|---|---|---|
| Nidagundi | 1981 | NS | Adoption |
| Balasubramanian & Kaul | 1982 | NS | Adoption |
| Raghavacharyulu | 1983 | P | Entrepreneurship |
| Kumbar | 1983 | P | Adoption |
| Jayakrishnan | 1984 | P | Adoption |
| Jayapalan | 1985 | P | Adoption |
| Perumal et al. | 1990 | NS | Entrepreneurship |
| Adhiguru | 1991 | NS | Adoption |
| Porchezhian | 1991 | P | Entrepreneurship |
| Suthe et al. | 1991 | NS | Adoption |
| Rajkumar | 1992 | NS | Adoption |

### 2.4.2 Socio-economic status

| Author | Year | Relation-ship | Dependent variable |
|---|---|---|---|
| Gaikwad & Tirupathi | 1970 | P | Entrepreneurship |
| Prakash | 1980 | P | Adoption |
| Naik | 1980 | P | Adoption |
| Mathew | 1980 | NS | Adoption |
| Cherian | 1984 | P | Adoption |
| Sangle | 1984 | P | Adoption |
| Godhandapani | 1985 | NS | Adoption |
| Lakshmanan | 1987 | P | Adoption |
| Ramegowda & Siddaramaiah | 1987 | P | Adoption |
| Olowu et al. | 1988 | NS | Adoption |
| Anithakumari | 1989 | P | Adoption |
| Kumar & Wasunik | 1990 | P | Adoption |

| | | | |
|---|---|---|---|
| Bhoite & Girase | 1991 | P | Adoption |
| Chandargi et al | 1991 | NS | Adoption |
| Grewal & Sohal | 1991 | P | Adoption |

### 2.4.3 Economic motivation

| Author | Year | Relation-ship | Dependent variable |
|---|---|---|---|
| Nair | 1969 | P | Adoption |
| Gaikwad & Tirupathi | 1970 | P | Entrepreneurship |
| Singh & Singh | 1970 | P | Adoption |
| Sukla | 1980 | P | Adoption |
| Ramasamy | 1987 | NS | Adoption |
| Krishnamoorthy | 1988 | NS | Adoption |
| Pillai | 1989 | P | Adoption |
| Sajeevchandran | 1989 | P | Adoption |
| Perumal et al. | 1990 | P | Entrepreneurship |
| Suthe et al. | 1991 | P | Adoption |
| Porchezhian | 1991 | P | Entrepreneurship |
| Rajkumar | 1992 | NS | Adoption |
| Jnanadevan | 1993 | N | Adoption |
| Gangadharan | 1993 | P | Adoption |
| Meera | 1995 | P | Adoption |

### 2.4.4 Social participation

| Author | Year | Relation-ship | Dependent Variables |
|---|---|---|---|
| Supe & Salode | 1975 | NS | Adoption |
| Palaniswamy | 1978 | P | Adoption |

| | | | |
|---|---|---|---|
| Manivannan | 1980 | NS | Adoption |
| Ranganathan | 1981 | NS | Adoption |
| Mishra & Sinha | 1981 | P | Entrepreneurship |
| Nandapurkar | 1982 | P | Entrepreneurship |
| Alagarraja | 1982 | NS | Adoption |
| Sanoria & Sharma | 1983 | P | Adoption |
| Raghavacharyulu | 1983 | P | Entrepreneurship |
| Bhaskaran & Thampi | 1986 | NS | Adoption |
| Victor | 1987 | NS | Adoption |
| Himantharaju | 1988 | NS | Adoption |
| Perumal et al. | 1990 | NS | Entrepreneurship |
| Porchezhian | 1991 | P | Entrepreneurship |
| Gangadharan | 1993 | P | Adoption |
| Sarmah & Singh | 1994 | P | Adoption |

**2.4.5 Mass media exposure**

| Author | Year | Relation-ship | Dependent Variables |
|---|---|---|---|
| Balasubramanian | 1980 | P | Adoption |
| Kanthraj | 1980 | NS | Adoption |
| Haraprasad | 1982 | P | Adoption |
| Raghavacharyulu | 1983 | P | Entrepreneurship |
| Lakshminarayan | 1984 | P | Adoption |
| Tyagi & Sohal | 1984 | NS | Adoption |
| Mishra & Jha | 1985 | P | Adoption |
| Swaminathan | 1986 | NS | Adoption |
| Syamala | 1988 | NS | Adoption |
| Nandakumar | 1988 | NS | Adoption |

| | | | |
|---|---|---|---|
| Jaiswal & Sharma | 1990 | P | Adoption |
| Perumal *et al.* | 1990 | NS | Entrepreneurship |
| Porchezhian | 1991 | NS | Entrepreneurship |
| Umale *et al.* | 1991 | P | Adoption |

### 2.4.6 Information seeking behaviour.

| Author | Year | Relation-ship | Dependent Variable |
|---|---|---|---|
| Supe | 1971 | P | Adoption |
| Osuji | 1980 | P | Adoption |
| Tyagi & Sohal | 1984 | NS | Adoption |
| Krishnamoorthy | 1984 | P | Adoption |
| Sinha & Ray | 1985 | P | Adoption |
| Prasannan | 1987 | P | Adoption |
| Dudhani *et al.* | 1987 | NS | Adoption |
| Anithakumari | 1989 | P | Adoption |

### 2.4.7 Cosmopoliteness.

| Author | Year | Relation-Ship | Dependent Variable |
|---|---|---|---|
| Tripathi | 1972 | P | Adoption |
| Karim & Mahboob | 1974 | P | Adoption |
| Kalamegom & Menon | 1977 | P | Adoption |
| Vijayaraghavan | 1977 | NS | Adoption |
| Thankaraju | 1977 | NS | Adoption |
| Kamarudeen | 1981 | P | Adoption |
| Ferraria *et al.* | 1983 | P | Adoption |
| Viju | 1985 | P | Adoption |

| | | | |
|---|---|---|---|
| Mahadevaiah | 1987 | P | Adoption |
| Olowu *et al.* | 1988 | P | Adoption |
| Syamala | 1988 | NS | Adoption |
| Jaleel | 1992 | P | Adoption |

### 2.4.8 Contact with extension agency

| Author | Year | Relation-ship | Dependent Variable |
|---|---|---|---|
| Saini | 1975 | P | Adoption |
| Paneerselvam | 1978 | P | Adoption |
| Sushama | 1979 | NS | Adoption |
| Kanthraj | 1980 | NS | Adoption |
| Dhanyakumar | 1982 | P | Adoption |
| Raghavacharyulu | 1983 | P | Entrepreneurship |
| Basker | 1984 | P | Adoption |
| Nandakumar | 1988 | NS | Adoption |
| Selvakumar | 1988 | P | Adoption |
| Krishnamoorthy | 1989 | P | Adoption |
| Vijayan | 1989 | P | Adoption |
| Porchezhian | 1991 | NS | Entrepreneurship |
| Govind | 1992 | P | Adoption |
| Jnanadevan | 1993 | NS | Adoption |

### 2.4.9 Market perception

| Author | Year | Relation-ship | Dependent Variable |
|---|---|---|---|
| Nair | 1969 | P | Adoption |

| | | | |
|---|---|---|---|
| Naidu | 1978 | NS | Adoption |
| Ravi | 1979 | P | Adoption |
| Sivaramakrishnan | 1981 | P | Adoption |
| Porchezhian | 1991 | NS | Entrepreneurship |

### 2.4.10 Credit orientation

| Author | Year | Relation-ship | Dependent Variable |
|---|---|---|---|
| Reddy | 1971 | P | Adoption |
| Singh *et al.* | 1972 | P | Adoption |
| Suryawanshi *et al.* | 1978 | P | Adoption |
| Manjunatha | 1980 | P | Adoption |
| Venkateswaralu & Bhalerao | 1980 | P | Adoption |
| Mishra & Sinha | 1981 | NS | Entrepreneurship |
| Reddy & Kumar | 1982 | P | Adoption |
| Nandakumar | 1988 | NS | Adoption |
| Porchezhian | 1991 | P | Entrepreneurship |
| Jaleel | 1992 | P | Adoption |

### 2.4.11 Management orientation.

| Author | Year | Relation-ship | Dependent Variable |
|---|---|---|---|
| Bhaskaran | 1979 | P | Adoption |
| Ansari | 1979 | N | Adoption |
| Thimmappa | 1981 | P | Adoption |
| Nidajundi | 1981 | N | Adoption |
| Kamarudeen | 1981 | P | Adoption |

| | | | |
|---|---|---|---|
| Renukaradhya | 1984 | P | Adoption |
| Sreekumar | 1985 | P | Adoption |
| Saed | 1989 | P | Adoption |
| Ramachandran | 1992 | P | Adoption |
| Meera | 1995 | P | Adoption |

**2.4.12 Attitude towards self employment.**

| Author | Year | Relation-ship | Dependent Variable |
|---|---|---|---|
| Singh | 1970 | P | Entrepreneurship |
| Pillai | 1978 | P | Adoption |
| Mohanadasan | 1979 | P | Adoption |
| Samad | 1979 | P | Adoption |
| Surendran | 1982 | P | Adoption |
| Sinha et al. | 1984 | NS | Adoption |
| Sinha & Ray | 1985 | P | Adoption |
| Anithakumari | 1989 | P | Adoption |

**2.4.13 Knowledge level.**

| Author | Year | Relation-ship | Dependent Variable |
|---|---|---|---|
| Pillai | 1978 | P | Adoption |
| Shukla | 1980 | P | Adoption |
| Sivaramkrishnan | 1981 | P | Adoption |
| Mishra & Sinha | 1981 | P | Entrepreneurship |
| Rahim & Sharma | 1983 | P | Adoption |
| Anantharaman et al. | 1985 | P | Adoption |
| Sinha & Ray | 1985 | P | Adoption |

| | | | |
|---|---|---|---|
| Haque | 1989 | P | Adoption |
| Singh | 1989 | P | Adoption |
| Aziz | 1988 | P | Adoption |
| Anithakumari | 1989 | P | Adoption |
| Bonny | 1991 | P | Adoption |

P - Positively significant NS - Non-significant

N - Negatively significant

## 2.5 Marketing channels

The following are the important marketing channels identified by the researchers.

| Author | Year | Crops | Marketing Channels |
|---|---|---|---|
| Singh & Mann | 1971 | Fruits | Producer-Wholesaler-Retailer-Consumer. |
| Govardhana | 1979 | Dry chillies | Producer-Trader. |
| Suryaprakash et al. | 1979 | Plantation Crops | No unique Marketing Channels. |
| Ramasamy | 1981 | Brinjal and Bhindi | Producer-Commission agent-Wholesaler-Retailer-Consumer. |
| John D'silva | 1982 | Coorg Mandarin orange | Producer-Preharvest contractor-Retailer-Consumer |
| Hugar et al. | 1983 | Brinjal | Producer-Seller-Commission agent-Retailer-Consumer. |
| Najaraj et al. | 1985 | Fruits and Vegetables | Producer-Commission agent-Retailer-Consumer. |
| Subrahmaniyan | 1988 | Vegetables | Producer-Commission agent-Consumer. |
| Gill et al. | 1989 | Vegetables | Producer-Wholesaler-Retailer-Consumer. |
| Sandhya | 1992 | Bittergourd Ashgourd | Producer-Commission agent-Wholesaler-Retailer-Consumer. |

2.6 Constraints.

| Author | Year | Respondents | Major constraints |
|---|---|---|---|
| Palaniswamy | 1978 | Flower grower | Lack of credit, marketing storage, transport facilities, non availability of labour, exploitation by middlemen, fluctuation in market price |
| Ravichandran | 1981 | Beneficiaries of LLP | Insufficient infrastructural facility, high cost of inputs, insufficient supply of seeds, fertilizers and technical guidance. |
| Alagarraja | 1982 | Flower growers | Scarcity of labour and incidence of pests and diseases. |
| Pillai & Prasad | 1983 | Muduvas | Non availability of good quality seeds and seedlings, lack of technical guidance on improved farming, low price of the produce. |
| Cherian | 1984 | Farmers in T&V system | Increasing cost fo cultivation, lack of timely availability of credit and other inputs |
| Pillaiar | 1985 | Paddy growers | Lack of intensive extension service, inadequate supply of inputs, lack of knowledge lack of credit facility |
| Ramanathan | 1987 | Cassava growers | Lack of marketing system, high cost of cultivation, non-availability of planting material in time, low price of tubers of HYV |
| Bose | 1988 | Jasmine growers | Fluctuation in market price, exploitation by middlemen, non-availability of credit, inadequate irrigation facilities, lack of storage facility |
| Prakash | 1989 | Paddy growers | Lack of cooperation among farmers, low adoption of HYV, lack of irrigation. |

| | | | |
|---|---|---|---|
| Sajeevchandran | 1989 | Pepper growers | Inadequate timely supply of inputs, large scale distribution of vines affected by quick and slow wilt diseases, high cost of plant protection equipments, high cost of fertilizers, lack of adequate financial assistance |
| Pillai et al. | 1989 | Irulas | Poor economic condition, exploitation by settlers and money lenders, inadequate technical assistance. |
| Anantharaman | 1991 | Cassava growers | Uncertainity in resource mobilisation, production and marketing, shortage of labour during peak periods, lack of timely and accurate information |
| John | 1991 | Pepper growers | Absence of government agency in organising the farmers and providing proper guidance, lack of knowledge and awareness. |
| J nanadevan | 1993 | Coconut growers | High labour cost, non availability of labourers in time, inadequate and timely supply of seedlings, lack of adequate financial assistance and subsidies. |

**2.7 Hypotheses developed for the study.**

1. There is no significant relationship of farming experience with adoption and entrepreneurial behaviour of 'Kuttimulla' growers.

2. There is no significant relationship of socio-economic status with adoption and entrepreneurial behaviour of 'Kuttimulla' growers

3. There is no significant relationship of economic motivation with adoption and entrepreneurial behaviour of 'Kuttimulla' growers.

4. There is no significant relationship of social participation with adoption and entrepreneurial behaviour of 'Kuttimulla' growers

5. There is no significant relationship of mass media exposure with adoption and entrepreneurial behaviour of 'Kuttimulla' growers.

6. There is no significant relationship of information seeking behaviour with adoption and entrepreneurial behaviour of 'Kuttimulla' growers.

7.There is no significant relationship of cosmopoliteness with adoption and entrepreneurial behaviour of 'Kuttimulla growers.

8. There is no significant relationship of contact with extension agency with adoption and entrepreneurial behaviour of 'Kuttimulla' growers.

9. There is no significant relationship of market perception with adoption and entrepreneurial behaviour of 'Kuttimulla' growers.

10. There is no significant relationship of credit orientation with adoption and entrepreneurial behaviour of 'Kuttimulla' growers.

11. There is no significant relationship of management orientation with adoption and entrepreneurial behaviour of 'Kuttimulla' growers.

12. There is no significant relationship of attitude towards self employment with adoption and entrepreneurial behaviour of 'Kuttimulla' growers.

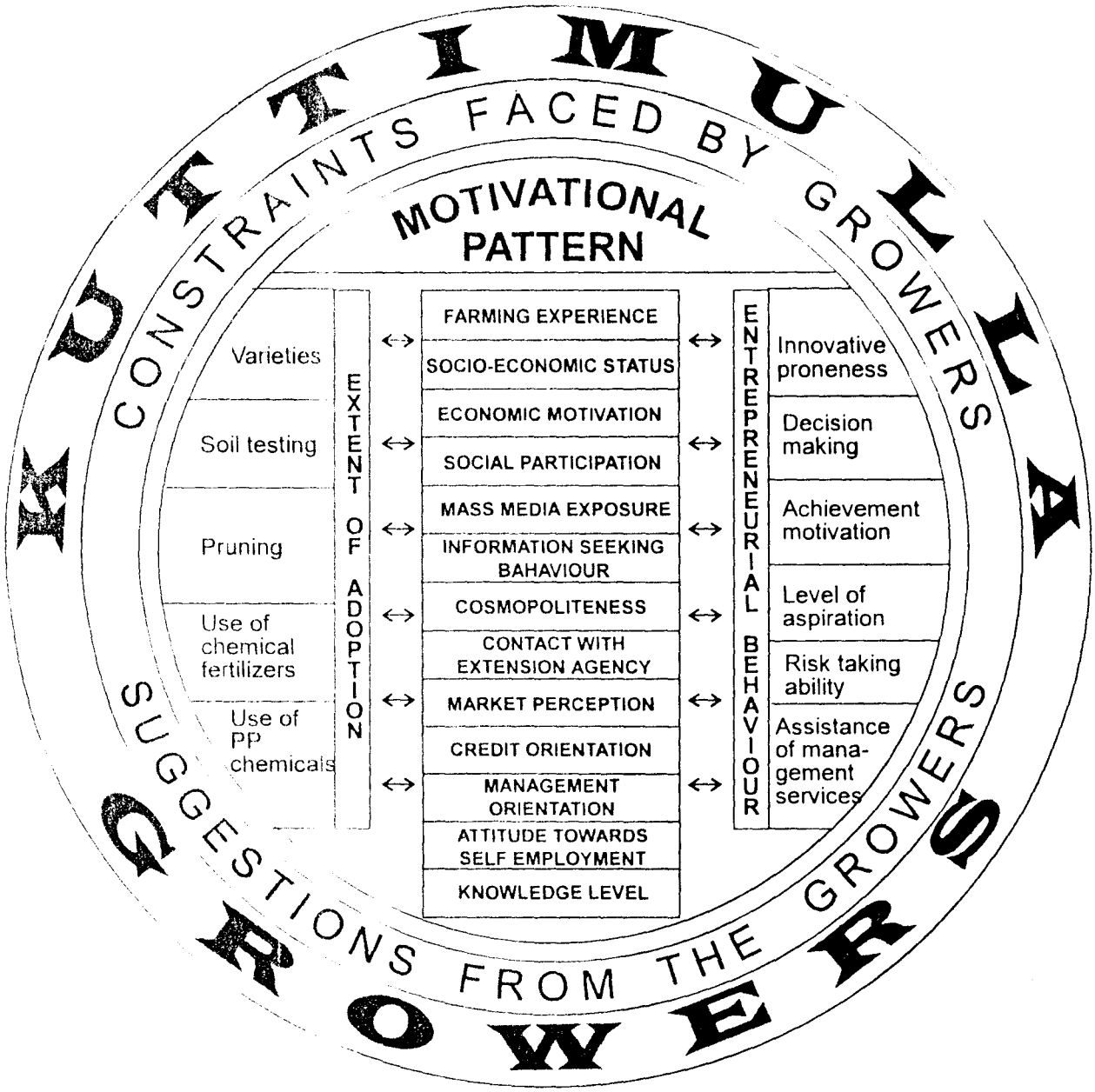



Fig. 2. Conceptual model of the study

13. There is no significant relationship between knowledge about Kuttimulla' cultivation with adoption and entrepreneurial behaviour of growers.

# METHODOLOGY

# CHAPTER III

# METHODOLOGY

This chapter deals with the location of the study, sampling procedure, operationalisation and measurement of variables, method of data collection and the statistical tools applied for analysis. These are presented under the following heads.

3.1 Locale of the study

3.2 Sampling procedure

3.3 Operationalisation and measurement of variables

3.4 Method of data collection

3.5 Statistical tools used.

## 3.1 Locale of the study.

The study was conducted in Alapuzha district of Kerala State. The district consists of 4 Agricultural subdivisions. From the four, Alapuzha Agricultural subdivision was purposively selected for the study since a large number of farmers have taken up 'Kuttimulla' cultivation as a small scale enterprise.

## 3.2 Sampling procedure

Three panchayats namely, Kanjikuzhy, Muhamma and Mararikulam North coming under the Alapuzha Agricultural subdivision was purposefully selected. From each selected panchayat, the list of 'Kuttimulla' growers was collected with the help of the extension functionaries from the concerned Krishibhavans. From the list, fifty number of growers was randomly selected as the respondents for study from each panchayat, thus the total number of respondents will be one hundred and fifty.

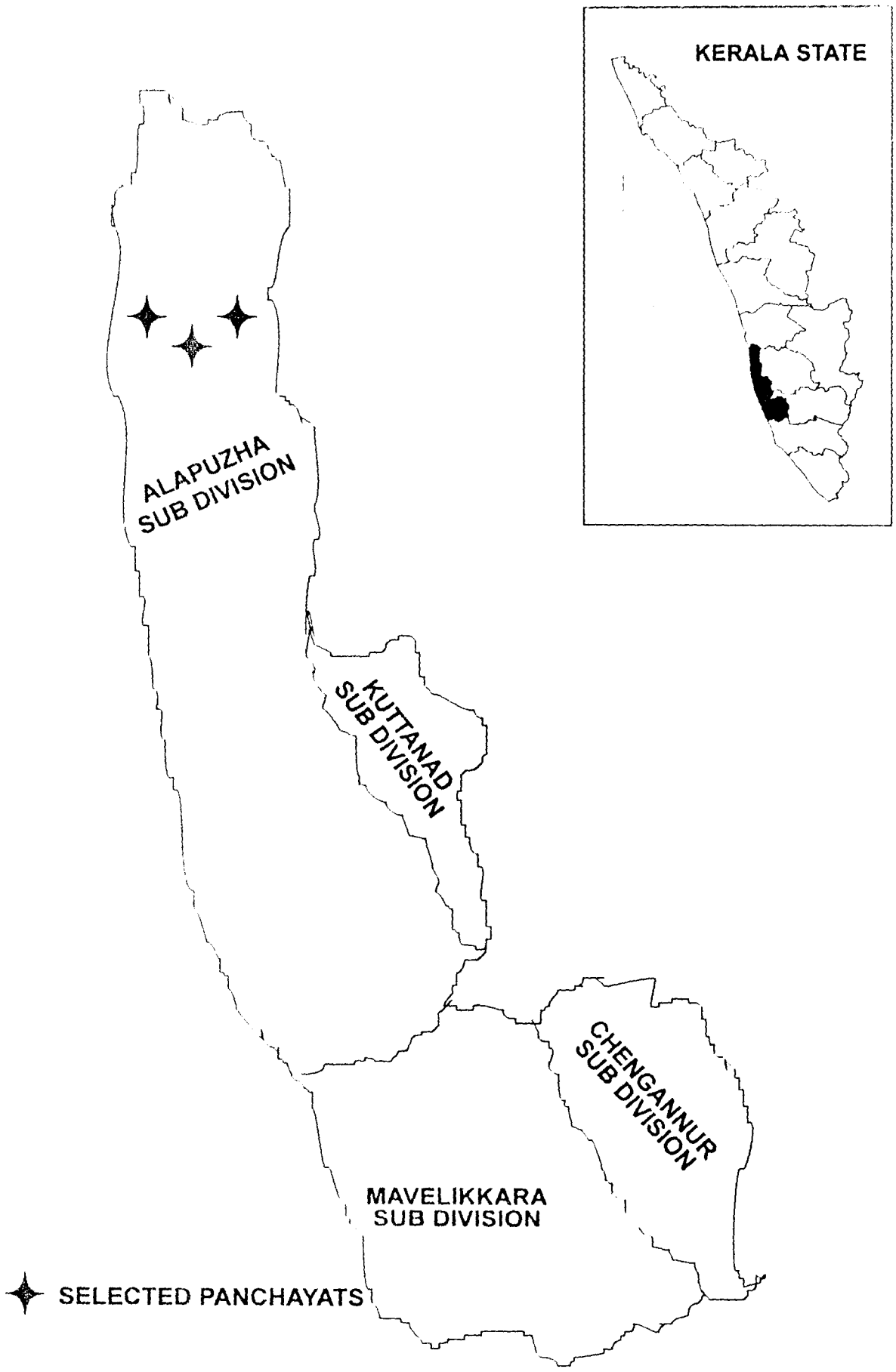



Fig. 1. Map showing the location of the study in Alapuzha District

## 3.3. Operationalisation and measurement of variables

### 3.3.1 Dependent variables

#### 3.3.1.1 Adoption of cultivation practices

Different researches have developed and used various methods to measure the adoption behaviour.

Wilkening (1952) developed an adoption index which was the percentage of new practices adopted by a farmer to the number of practices available to him.

Marsh and Coleman (1955) suggested an adoption ratio by taking into consideration area adopted and potential area.

Adoption Ratio =1/N area adopted/area potential x 100

Where N = number of practices.

Dasgupta (1963) developed an adoption quotient by adding a new element viz. time.

Chattopadhyay (1963) developed a comprehensive scale called 'adoption quotient' by taking into consideration the extent of adoption, potentiality applicability, time, consistency and differential nature of innovation.

Singh and Singh (1974) modified the scale developed by chattopadhayay (1963) by taking only the two dimensions viz extent and potentiality. According to this, the adoption quotient of each respondent was calculated by using the following formula

adoption quotient = $\frac{\Sigma_i e/p}{N} \times 100$ where

$\Sigma_i$ = The summation
e = extent of adoption of each practice
p = potentiality of adoption of each practice
N = total number of practices selected.

Sankaran (1987), Goswami (1988) and Anithakumari (1989) used the same procedure in their studies.

Ramachandran (1992) has modified the scale developed by Singh and Singh (1974). According to this method, a score of three was given for full adoption, two for incomplete or improper adoption and one for non-adoption. The same procedure is followed with slight modifications in this study.

In this method, the extent of adoption means the degree to which the respondent has actually adopted the selected practices. When the extent of adoption equals potentiality adoption, it is full and when it is nil, it is considedred as non-adoption.

Potentiality is the maximum degree to which the respondent can extend his adoption depending on the maximum utilization of the resources he commands or can command.

The extent of adoption of each individual practice was calculated as follows.

| | Score |
|---|---|
| 1. Use of high yielding varieties | |
| 1. Recommended variety | 3 |
| 2. Any other high yielding varity | 2 |
| 3. Local variety | 1 |
| 2. Soil testing | |
| 1. Proper soil testing | 3 |
| 2. Incomplete / improper soil testing | 2 |
| 3. No soil testing | 1 |

| | | |
|---|---|---|
| 3. Pruning | | |
| 1. Proper pruning | | 3 |
| 2. Incomplete / improper pruning | | 2 |
| 3. No pruning | | 1 |
| 4. Use of chemical fertilizers | | |
| 1. use of chemical fertilizers on the basis of soil test results | | 3 |
| 2. use of chemical fertilizers not on the basis of soil test results | | 2 |
| 3. No use of chemical fertilizers | | 1 |
| 5. Use of plant protection chemical | | |
| 1. Correct / proper use of plant protection chemicals | | 3 |
| 2. Incorrect / improper use of plant protection chemicals. | | 2 |
| 3. No use of plant protection chemicals even when it was necessary | | 1 |

The adoption score of the respondents was obtained by summing up the scores with respect to the five practices.

### 3.3.1.2 Entrepreneurial behaviour of 'Kuttimulla' growers.

In the present study the entrepreneurial behaviour was operationally defined as a set of characteristics associated with persons who possess the drive and capabilities to initiate production, takes decision, bears risks, and manage the variety of inputs necessary to successfully undertake the venture.

**Developing Entrepreneurial behaviour index**

Suppose xij is the score for ith individual (i=1,2,...,n) for the jth component (j=1,2,....,k) of entrepreneurial behaviour, where n is the number of respondents and k, the number of components, than the index value(I) of individual is determined as

$$I = w_1 x_1 + w_2 x_2 + \ldots\ldots + w_k x_k$$

where $w_i = 1/\sigma_i^2$, $\sigma_i^2$ being the variance for the ith component character and $w_i$ the corresponding weight attached to this

component character.

The Entrepreneurial behaviour index of the Kuttimulla growers were measured in terms of characters like innovative proneness, decision making, achievement motivation, level of aspiration, risk taking ability and assistance of nangement services.

**Measurement of sub-components of Entrepreneurial behaviour.**

The methods used to measure each of the six components in the scale to measure the entrepreneurial behaviour of Kuttimulla growers are given below.

3.3.1.2.1 **Innovative proneness**

Moulik (1965) defined innovation proneness as the degree of an individual's interest and desire to seek changes in farming technique and to introduce each change into his own operations as and when found practicable and feasible.

It was operationally defined as the respondent's readiness to accept any new information or practice and to introduce the change in his own operations when compared to other members of social system.

In the present study this component was measured in the following way using the innovative proneness scale of the aforementioned author. The scale consists of three sets of statements, each set containing three seperate statements with weights 3,2 and 1 indicating high, medium, and low degree of innovative proneness respectively. After obtaining the most to least choice for each of the three sets of statements, the score was done by summing up the ratios of the weights of the most like

statements to the weights of the least like statements.

**3.3.1.2.2 Decision making**

It is the degree to which an individual judiciously chooses the course of action from the available alternatives for achieving maximum economic profits.

This component was measured using decision making scale developed by Nandapurkar (1982).

Ten items relating to the management of farm operations and resources were used to measure the decision making of the respondent. Response categories for each item were 'not considered', 'considered after consultation with others' and 'decision taken independently' for which scores given were 0,1 and 2 respectively. By summing up the scores, the decision making score for a respondent was obtained.

**3.3.1.2.3 Achievement motivation.**

It was operationally defined as the desire or excellence in order for a 'Kuttimulla' grower to attain a sense of personal accomplishment.

Achievement motivation scale developed by Singh (1970) was used for the study.

There were a total of six statements. The responses were collected in a 5-point continuum and the scores are given as follows:

| Response | | score |
|---|---|---|
| Strongly agree | - | 5 |
| Agree | - | 4 |
| Undecided | - | 3 |
| Disagree | - | 2 |
| Strongly disagree | - | 1 |

The sum of all the items formed the achievement motivation score of the respondent.

**3.3.1.2.4 Level of aspiration**

It is defined as the future level of achievment a grower is expecting based on the knowledge about the level of past performance.

In this study the level of aspiration was measured using the 'self-anchoring striving scale' developed by Cantril (1965). A figure of ladder with 9 steps as given in the scale is represented below

| | |
|---|---|
| 9 | Top (Best Possible life) |
| 8 | |
| 7 | |
| 6 | |
| 5 | Middle (Neutral) |
| 4 | |
| 3 | |
| 2 | |
| 1 | Bottom (Worst Possible life |

The respondents were asked to indicate the step in the ladder which they felt as standing at present (at the time of study), where they were 5 years ago and where they would stand 5 years from now (from the period of study).

The score assigned was identical to the step mentioned by the respondent for the three time periods, and all these scores were summed up. The scores thus worked out was taken as the

level of aspiration score of the individual.



**3.3.1.2.5 Risk taking ability.**

It is the degree to which the farmer is oriented towards risks and uncertainity and has a courage to face the problem in farming and allied activities.

A modified form of choice dilemma procedure, as adopted by Mishra (1979) was used for measuring the risk taking ability. A two dimensional meausre was developed to account for risk taking ability of the respondents. They were the various levels of probability of success and the action preferred in the situation by the respondents.

The amount of risk involved in a particular course of action described in the story was predetermined arbitrarily to make it consistent for everybody rather than allowing it to vary as per their subjective estimates. The scoring was given as shown in the table.

Scoring Procedure.

| Alternative course of action | Extent of risk involved | Extent of preferred action by the respondents. | | | |
|---|---|---|---|---|---|
| | | 0.00-0.25 | 0.25-0.50 | 0.50-0.75 | 0.75-1.0 |
| 1 | 0.00-0.25 | 1 | 2 | 3 | 4 |
| 2 | 0.25-0.50 | 2 | 4 | 6 | 8 |
| 3 | 0.50-0.75 | 3 | 6 | 9 | 12 |
| 4 | 0.75-1.00 | 4 | 8 | 12 | 16 |

For example, in the given situation the farmer may like to cultivate a crop in all his 10 acres of land, if the market price

is assured not to go down at all (no risk); but when the probability of market function is 25 per cent, he may prefer to cultivate the crop only in 7.5 acres of his holdings. When the market fluctuations further increases 50 per cent and even 75 percent and more, he may cultivate the crop only in 5 acres and 2.5 acres respectively. Thus his response stimulus are like this.

| Probability risk | Likely action |
|---|---|
| Nil | 10.0 |
| 0.25 or 25 per cent | 7.5 |
| 0.50 or 50 per cent | 5.0 |
| 0.75 or 75 per cent | 2.5 |

Now, as per the scores indicated in the above table, the farmer will get a cell score of 4 + 6 + 6 + 4 making a total of 20/4 = 5, which is the measure of his risk taking ability. The risk taking ability score varies from 2.5 - 10.0.

In the final story, the scoring procedure was slightly modified since there are 5 levels of probability of risk as shown below

| Probability of risk | Score |
|---|---|
| No risk | 1 |
| 20 per cent | 2 |
| 50 per cent | 3 |
| 80 per cent | 4 |
| 100 per cent | 5 |

The summation of the three scores was taken as the risk taking ability score of the respondent.

**3.3.1.2.6 Assistance of management services.**

It is referred to the degree to which the individual farmer

This component was measured using the scale developed by Nandapurkar (1982) and used by Porchezhian (1991). The scale consists of five questions rated on a three point continum viz., always, sometimes and never and scored as 2, 1 and 0 respectively. By summing up the scores, the score of assistance of management services for a respondent was obtained.

### 3.3.2 Motivational pattern of farmers in the adoption of 'Kuttimulla'.

Ghorpade (1980) has defined motivation as an internal state of organism as human being that impels it to some activity which has some specific goal and which usually originates in some physical need of the body and some psychological need.

The motivational pattern of farmers in the adoption of 'Kuttimulla' in the present study was operationally defined as the pattern of influence of the different motives of the farmers in deciding the adoption of 'Kuttimulla'.

In the present study, motivational pattern of the farmers were assessed using the paired comparison technique developed by Thurstone (1927). Based on the review of literature and discussions with officials of the Department of Agriculture, five important motives which could influence the adoption of Kuttimulla were identified. These were self-actualization, need recognition, economic security, affiliative and innovative. Five statements reflecting these motives were constructed and

paired in all possible ways [n(n+1)/2] to give 10 statements. These pairs were then presented to all the respondents who were asked to select from each pair that statement to which he agrees more compared to the other.

After obtaining the responses, a two-way frequency table was prepared (F Matrix) such that each cell entry corresponded to the frequency with which one statement was judged more favourable to the other for all the respondents. The proportion (P) of these frequencies were worked out, added down the column and the stimuli were rearranged in the rank order of the column sums in ascending order. The normal deviates (zij) corresponding to the P values were obtained, summated down the column and mean for each column were worked out. These gave the scale values of the statements. All the values were made positive by adding the absolute scale value of the stimulus with largest negative deviation to the scale deviations.

**3.3.3 Independent Variables.**

**3.3.3.1 Farming experience**

It was operationally defined as the number of years since the grower is actively involved in `Kuttimulla' cultivation.

Padmanabhan (1981), Senthil (1983), Rajababu (1984), Rajagopal (1986), Seema (1986) and Jaleel (1992) measured experience in farming in terms of total number of years, the farmer had been engaged in farming.

Chandrasekharan (1981) and Sabapathi (1988) followed the scoring procedure given below

| Sl.No. | Years of experience | Score |
|---|---|---|
| 1 | upto 5 years | 1 |
| 2 | 5.01 to 10 years | 2 |
| 3 | Above 10 years | 3 |

Chandran (1988) adopted the following scoring system.

| Sl.No. | Years of experience | Degree of experience | Score |
|---|---|---|---|
| 1 | Upto 10 years | low | 1 |
| 2 | 11 to 20 years | medium | 2 |
| 3 | Above 20 years | high | 3 |

In the present study, farming experience of the 'Kuttimulla' grower expressed in complete years was taken as such for the measurement of this variable.

### 3.3.3.2 Socio-economic status

This refers to the position or status of the 'Kuttimulla' grower in the society in terms of his occupation, land holding, education, socio-political participation, possessions, house, household and annual income.

The socio-economic status of the 'Kuttimulla' growers was measured by using the scale developed by Venkataramaiah (1983) after modifying it to suit the conditions prevailing in the study area.

The scale consists of eight items namely occupation, land holding, education, socio-political participation, possessions, house, household and annual income.

The assignment of scores for the various items was as follows.

| | Scores |
|---|---|
| 1. Occupation | |
| No occupation | 0 |
| Unskilled | 1 |
| Semiskilled | 2 |
| Skilled | 3 |
| Farming | 4 |
| Professional | 5 |
| 2. Land holding | |
| No land | 0 |
| Less than one acre | 1 |
| 1 - 5 acre | 2 |
| > 5 acre | 3 |
| 3. Education | |
| No schooling / Illiterate | 0 |
| Functionally literate | 1 |
| Primary School | 2 |
| Middle School | 3 |
| High School | 4 |
| College | 5 |
| 4. Socio-political participation | |
| Without any offical position in socio-political organisation | 0 |
| Official position in one or more organisation | 1 |
| Functional contribution or raising fund for common work | 2 |
| Active office bearer | 3 |
| Involvement in community work | 4 |
| 5. Possessions | |
| None | 0 |
| One farm animal (bullock, buffalo, cow) cycle/Furniture | 1 |
| Two farm animals/bullock cart/radio | 2 |
| Three to four farm animals/improved farm implement/newspaper/electricity | 3 |
| Five to ten animals/gobar gas plant/pumpset/ mobile | 4 |
| More than ten farm animals/tractor/automobile | 5 |

6. House

| | |
|---|---|
| Shed thatched | 1 |
| Mudwall and tiled | 2 |
| Brick wall and tiled | 3 |
| Concrete house | 4 |
| Concrete and double storied | 5 |

7. House hold

| | |
|---|---|
| Small | 1 |
| Medium | 2 |
| Large | 3 |
| Very large | 4 |
| Special features | 5 |

8. Annual income

| | |
|---|---|
| Rs. 1200 - 1800 | 1 |
| 1801 - 2400 | 2 |
| 2401 - 3500 | 3 |
| 3501 - 4800 | 4 |
| 4801 and above | 5 |

**3.3.3.3.Economic motivation**

It was operationalised in terms of profit maximisation and the relative value placed by a respondent on economic ends.

Moulik (1965) developed an economic motivation scale. Supe (1969) developed another scale for measuring the economic motivation. In the present study, the economic motivation was measured by using an arbitrary scale developed for the purpose. The scale consists of 6 statements of which 3 were positive and 3 were negative. A dichotomous pattern of response (Agree, Disagree) was followed in this study. A score of 1 was assigned to for the Agree response and 0 for the Disagree response in the case of positive statements. The scoring procedure was reversed in the case of negitive statements. The scores obtained on each statement were cumulated to obtain the total score of a respondent on this variable.

### 3.3.3.4 Social participation

It refers to the degree of involvement of 'Kuttimulla' growers in social organisations as a member or as an office bearer and the regularity in attending the activities of these organisations.

The procedure developed by Lokhande (1974) was used for the purpose of measurement of social participation.

| Item | Score |
|---|---|
| No Membership | 0 |
| Membership in one organisation | 1 |
| Membership in more than one organisation | 2 |
| Office bearer in one organisation | 3 |
| Office bearer in more than one organisation | 4 |
| Distinctive features (MLA,MP,etc) | 5 |

Score of 3,2 and 1 were assigned for attending the meeting regularly, occassionally and never. To obtain the final score of a respondent, the scores secured as a member or office bearer were multiplied with the score secured for attendance and these scores were summed up for all the social organisations in which participation was reported.

This procedure was later adopted by Anantharaman (1991).

### 3.3.3.5 Mass media exposure.

This refers to the extent to which a respondent is exposed to different mass media communications such as radio, television, print media, etc.

The procedure used by Fathimabi (1993) was adopted in the

present study for the quantification of this variable. The scoring was done as follows.



| Medium | Frequency | Score |
|---|---|---|
| Radio | Daily | 5 |
| | 2-6 times a week | 4 |
| | once a week | 3 |
| | once a fortnight | 2 |
| | rarely | 1 |
| | never | 0 |
| Newspaper | Daily | 5 |
| | 2-6 times a week | 4 |
| | once a week | 3 |
| | once a fortnight | 2 |
| | rarely | 1 |
| | never | 0 |
| Television | Daily | 5 |
| | 2-6 times a week | 4 |
| | once a week | 3 |
| | once a fortnight | 2 |
| | rarely | 1 |
| | never | 0 |
| Magazines, leaflets and bulletins | Regularly | 2 |
| | Occassionally | 1 |
| | Never | 0 |
| Films (seen during last year ) | >6 | 3 |
| | 4-6 | 2 |
| | 1-3 | 1 |
| | None | 0 |
| Field days/ agricultural functions (attended during last year) | >6 | 3 |
| | 4-6 | 2 |
| | 1-3 | 1 |
| | None | 0 |

The total score of each respondent was computed and was taken as his score for mass media exposure.

### 3.3.3.6 Information seeking behaviour

It was operationally defined as the extent to which the respondent seeks information regarding kuttimulla cultivation

from different communication sources.

Information seeking behaviour in the present study was measured using the scale developed for the purpose. Here the respondents were asked to indicate the frequency with which they have contacted the various sources for seeking information regarding 'Kuttimulla' cultivation and the following scoring pattern was adopted

| | |
|---|---|
| Always | 2 |
| Sometimes | 1 |
| Never | 0 |

The sum of the scores obtained on various information sources gives the total information seeking behaviour score of the respondent.

**3.3.3.7. Cosmopoliteness**

It refers to the respondents extent of contact with the outside village such as visiting the nearest town, the purpose of visit and membership in organisation outside the village.

Desai (1981) developed a scoring procedure for measuring cosmopoliteness. Fathimabi (1993) modified the procedure developed and used by Desai (1981). According to this, the scoring procedure was as follows.

| a. Frequency of visit to the nearest town | Score |
|---|---|
| Two times or more a week | 5 |
| Once in a week | 4 |
| Once in a fortnight | 3 |
| Once in a month | 2 |
| Seldom | 1 |
| Never | 0 |

b. Purpose of visit

| | |
|---|---|
| All relating to agriculture | 5 |
| Some relating to agriculture | 4 |
| Personal or domestic | 3 |
| Entertainment | 2 |
| Others | 1 |
| No response | 0 |

c. Membership in organisations outside the village

| | |
|---|---|
| Member | 1 |
| Non member | 0 |

---

The summation of the scores obtained by an individual was taken as his cosmopoliteness score.

**3.3.3.8 Contact with extension agency**

It was operationally defined as the degree to which the respondent contacts the extension agency to get information on agricultural or non-agricultural aspects.

This was measured in terms of frequency of visit and the purpose of meeting the extension agents by the respondents. The scoring procedure followed by Sirajudeen (1980) was used here.

| a. Awareness | Score |
|---|---|
| Aware of extension agencies | 1 |
| Not aware of extension agencies | 0 |

b. Frequency of visit

| | |
|---|---|
| Beyond 3 months/once in a while | 1 |
| Once in 3 months | 2 |
| Once in a month | 3 |
| Once in 15 days | 4 |
| Once in a week or more | 5 |

c. Purpose of visit

| | |
|---|---|
| Non-agriculture | 1 |
| To avail input assistance | 2 |
| To avail subsidies and agricultural implements | 3 |
| To get technical guidance | 4 |
| To get financial help | 5 |
| To get employment opportunities | 6 |

To score obtained for a, b, and c were added upto obtain the total score for this variable. The same procedure was later adopted by Kunchu (1989), Nelson (1992) and Fathimabi (1993). The same procedure was followed here also.

**3.3.3.9. Market perception.**

It refers to the capacity of the respondent to identify the market trend to sell the produce for greater returns.

It was measured by adopting the procedure developed by Nair (1969). The method consisted of scoring the responses obtained to selective questions presented to the respondents to elicit their perception of market for the produce. The questions and scoring procedure adopted were as follows.

---

1) Do you think a farmer will be able to sell the produce if he increases the production by adopting the recommended practices ?

Yes 1 No 0

2) Do you think that produce of crop cultivated according to the recommended practices will fetch good prices compared to those raised under traditional practices ?

Low price 0 Same price 1 High price 2

3) How difficult it will be to dispose off the produce of the crop cultivated following the recommended practices ?

Very difficult 0 Difficult 1 Easy 2 Very easy 3

---

The score obtained by the farmer in each of the item questions were added up to form his market perception score.

**3.3.3.10 Credit orientation**

It refers to the favaourable and positive attitude of the

respondent towards obtaining credit from institutions and other sources.

For the purpose of measuring credit orientation, the scale adopted by Beal and Sibley (1967) was used after modifying it suit the conditions of the 'Kuttimulla' growers.

The procedure consists of a set of questions and the scoring procedure is as follows.

| | Questions/Statements | Response | Score |
|---|---|---|---|
| a. | Do you think a farmer like you should borrow for 'Kuttimulla' cultivation ? | No | 0 |
| | | Yes | 1 |
| b. | In your opinion how difficult is to secure credit for 'Kuttimulla' cultivation | Very difficult | 0 |
| | | Difficult | 1 |
| | | Easy | 2 |
| | | Very easy | 3 |
| c. | How a grower is treated when he goes to secure credit ? | Very badly | 0 |
| | | Badly | 1 |
| | | Fairly | 2 |
| | | Very fairly | 3 |
| d. | There is nothing wrong in taking credit from institutional sources for investing in 'Kuttimulla' cultivation | Strongly disagree | 0 |
| | | Disagree | 1 |
| | | Agree | 2 |
| | | Strongly agree | 3 |
| e. | Have you used credit for 'Kuttimulla' cultivation | No | 0 |
| | | Yes | 1 |

**3.3.3.11. Management orientation**

It was operationally defined as the degree to which the grower is oriented towards the scientific management of an enterprise in agriculture comprising, planning, production and marketing of an enterprise.

In this study, management orientation was measured using the scale developed by Samantha (1977). The scale consisted of 18

statements, six each for planning, production and marketing orientation. The respondents were asked to state their agreement or disagreement to each of the statements and score of one and zero were assigned respectively considering whether the statements were positive or negative,. The summation of scores for all the 18 statements gives the management orientation score for the respondent.

The same procedure was later adopted by Ramachandran (1992) and Menon (1995).

**3.3.3.12 Attitude towards self-employment.**

Attitude was measured by an attitude score. An attitude score is one which assess the degree of affect that individuals may associate with some psychological object.

In the present study, attitude towards self-employment is the mental disposition of the 'Kuttimulla' growers towards self employment avenues in agriculture.

Based on the review of literature and discussions with experts 65 statements regarding the attitude of 'Kuttimulla' growers towards self employment in agriculture were selected so as to reflect the attitude of the farmers through their response. The statements were edited based on the criteria for selection of attitude statement as given by Edwards (1957) and finally 52 statements were retained.

The method of equal appearing interval as described by Thurstone and Chave (1929) was adopted to determine the score

value of attitude statements. These statements were then sent to a group of judges, comprising the experts in the Department of Agricultural Extension, Kerala Agricultural University and Department of Agriculture. Each subject is asked to judge the degree of favourableness or unfavourableness of feeling expressed by each statement in terms of the five-point continuum.

The scale value was computed by using the formula

$$S = l + \frac{(0.50 - \leq pb)}{pw} i$$

where S = the median or scale value of statement.
l = lower limit of the interval in which the median falls
$\leq pb$ = The sum of the proportion below the interval in which the median falls.
pw = the proportion with in the interval in which the median falls.
i = width of the interval and is assumed to be equal to one.

The interquartile range or 'Q' value was also worked out by finding the 25th and 75th centiles.

$$C_{25} = l + (0.25 - \leq pb/pw) i$$

$$C_{75} = l + (0.75 - \leq pb/pw) i$$

$$Q = C_{75} - C_{25}$$

On the basis of 'S' and 'Q' values attitude statements were selected. Thus six statements were finally selected to measure the attitude of 'Kuttimulla' growers towards self employment in agriculture.

**Reliability of the score**

A score is said to be reliable when it produces result with high degree of consistency when administered to the same respondents.

In this study the reliability of the scale was determined by test-retest method. The scale was administered to 30 non-sample respondents of the study area at 15 days interval. The two sets of score obtained were correlated. The coefficient of correlation (r) between the two scores was found to be (0.8865) highly significant. Hence it was concluded that the scale was reliable.

**Validity of scale**

The validity of the scale means the capacity of the scale to measure what it intends to measure. The developed scale was tested for content validity and construct validity.

**Content validity.**

The main criterion for content validity is how well the content of the scale represents the subject matter under study. This was well considered during the preperation of the scale itself taking atmost care to include all the items to represent the universe of content.

**Construct validity.**

The construct validity was tested by estimating the correlation coefficient between the socio-economic status and attitude scores of the `Kuttimulla' growers. The socio-economic status and attitude scores of 30 `Kuttimulla' growers were measured and the correlation coefficient between these two sets of scores was found to be (0.7070) which was significant. Hence it was concluded that the scale had the construct validity.

**Administration of the scale.**

The attitude scale thus developed was incorporated in the interview schedule and administered to 150 respondents in the study area and their responses were collected on a 5 - point continuum viz. Strongly agree, Agree, Neutral, Disagree and Strongly disagree. The scoring was in the order of 5, 4, 3, 2, and 1 for Strongly agree, Agree, Neutral, Disagree and Strongly disagree respectively in the case of positive statements and the reverse for negative statements. The individual scores for each of the respondents were obtained by summing up the responses for all items.

### 3.3.3.12. Knowledge about 'Kuttimulla' cultivation

In the present study, the knowledge of 'Kuttimulla' growers about the various cultivation practices in 'Kuttimulla' cultivation was being measured.

Lindquist (1951) described the procedure for developing the scale for measuring knowledge.

Shankariah and Singh (1987) measured knowledge based on the teacher made test.

Padmanabhan (1981) and Hussain (1993) developed teacher made test including simple question items and constant alternative items.

In this study also, a teacher made test was used. For that the researcher had collected details of cultivation practices in 'Kuttimulla' cultivation. Based on this 30 questions were

formulated. After discussions with experts, 8 questions which had been found to be the most relevant to the situation were selected.

The teacher made test used in this study consisted of 8 questions, each question carrying four alternative answers. A score of '1' was given to a correct answer and '0' to a wrong answer. Finally the scores were added up to get the knowledge score for the respondent.

### 3.3.4. Marketing channels

In the present study, marketing channel was operationally defined as the route through which the 'Kuttimulla' flowers travels from the producer to the ultimate consumer.

Based on the review of literature and discussions with the 'Kuttimulla' growers and the extension functionaries, marketing channels which are found to be most prevalant in that area are listed. The respondents were asked to list the channel through which their produce was marketed. The frequencies of the respondents listing each marketing channel is obtained, and the marketing channel with higher frequency was considerred as the most common marketing channel of 'Kuttimulla' flowers in that area followed by others in the order of decreasing frequencies.

### 3.3.5. Constraints experienced by 'Kuttimulla' growers.

In the present study, constraint was operationalised as those items of difficulties or problems faced by 'Kuttimulla' growers with regard to production, technology and marketing.

After discussions with a cross section of Kuttimulla growers and the extension staff and also drawing from the experience and observations of the researcher twenty constraints (9 production constraints,5 technological constraints and 6 marketing constraints) which assumed to affect the 'Kuttimulla' cultivation was listed. The respondents were asked to rank these items (1 to 9 for production constraints, 1 to 5 for technological constraints and 1 to 6 for marketing constraints) making an overall comparison with regard to the intensity of the constraints. A score of 9,8.7,,6,5,4,3,2, and 1 were given to the 1st, 2nd,3rd,4th,6th 7th,8th and 9th ranks of the production constraints, a score of 5,4,3,2 and 1 for the 1st,2nd, 3rd, 4th, and 5th rank of technological constraints and a score of 6, 5, 4, 3, 2 and 1 for 1st, 2nd, 3rd, 4th, 5th and 6th rank of marketing constraints respectively. The frequencies of the respondents ranking each constraint in each rank in each category were found out and multiplied with the corresponding score values to obtain the total score value. The constraint with higher score value in each category was considered as the most serious constraint in that category followed by others in the order of decreasing score value.

### 3.3.6. Suggestions from 'Kuttimulla' growers in respect to Research, Extension and Marketing activites.

In this study, suggestion was operationalised as the proposals for improvement of 'Kuttimulla' cultivation in respect to the research, extension and marketing activities.

Based on the discussions with the 'Kuttimulla' growers and officials in the Department of Agriculture, eighteen suggestions (4 related to research 8 related to extension and 6 related to marketing) were listed. The respondents were asked to rank these suggestions in the order of their preferance. The score values are given in the reverse order of the ranks ie for example. in research the score of 4,3,2 and 1 are given for the 1st, 2nd, 3rd and 4th rank and similiar procedure was followed for extension and marketing. The frequences of the respondents ranking each suggestion in each rank in each category were found out and multiplied with the corresponding score values, to obtain the total score value. The suggestions with higher score value in each category was considered as the most important suggestion in that category followed by others in the order of decreasing score value.

### 3.4. Method of data collection

The data was collected with the help of a pre-tested interview schedule. The schedule was prepared in English version. Data was collected from the 'Kuttimulla' growers by personal interview by the researcher. Personal care has been taken by the researcher in order to eliminate biased and incorrect information from the respondents.

### Categorisation of respondents.

The respondents were categorised into low and high group based on the scores obtained for the variables under study. The respondents with scores below the sample mean for a

particular variable were categorised as low group and those with scores above the sample mean for that variable were categorised as high group.

### 3.5. Statistical tools used

#### 3.5.1. Percentage analysis

Percentage distribution of respondents on all variables were worked out by dividing the frequency in each category with the total number of respondents and multiplying by 100. It was done to make simple comparisons wherever necessary.

#### 3.5.2. Simple correlation analysis

The simple correlation coefficient was computed to find out the degree of relationships of adoption and entrepreneurial behaviour with the selected profile characteristics of the 'Kuttimulla' growers.

# RESULTS

# CHAPTER IV

# RESULTS

The results of the study are presented under the following heads.

4.1 Characteristic profile of 'Kuttimulla' growers

4.2 Motivational pattern of 'Kuttimulla' growers

4.3 Extent of adoption of selected cultivation practices

4.4 Entrepreneurial behaviour of 'Kuttimulla' growers

4.5 Interrelationship of the various characteristics of 'Kuttimulla' growers.

4.6 Relationship between adoption and the selected profile characteristics

4.7 Relationship between entrepreneurial behaviour and the selected profile characteristics

4.8 Marketing channels of 'Kuttimulla' prevailing in the study area

4.9 Constraints experienced by the 'Kuttimulla' growers regarding production, technology and marketing

4.10 Suggestions from the 'Kuttimulla' growers in respect to research, extension and marketing activities.

## 4.1 Characteristic profile of 'Kuttimulla' growers.

The typical profile of the 'Kuttimulla' growers is presented in Table. 1

Majority of the 'Kuttimulla' growers (58.67 per cent) were having only less farming experience and the remaining (41.33 per cent) had high farming experience.

Table 1. Distribution of `Kuttimulla' growers based on their selected profile characteristics

(n=150)

| Characteristics | Category | Score | Frequency | Percentage |
|---|---|---|---|---|
| Farming experience | Low | ≤ 2.54 | 88 | 58.67 |
| | High | > 2.54 | 62 | 41.33 |
| Socio-economic status | Low | ≤ 20.55 | 73 | 48.67 |
| | High | > 20.55 | 77 | 51.33 |
| Economic motivation | Low | ≤ 4.98 | 29 | 19.33 |
| | High | > 4.98 | 121 | 80.67 |
| Social participation | Low | ≤ 4.71 | 88 | 58.67 |
| | High | > 4.71 | 62 | 41.33 |
| Mass media exposure | Low | ≤ 16.54 | 58 | 38.67 |
| | High | > 16.54 | 92 | 61.33 |
| Information seeking behaviour | Low | ≤ 13.10 | 86 | 57.33 |
| | High | > 13.10 | 64 | 42.67 |
| Cosmopoliteness | Low | ≤ 8.31 | 75 | 50 |
| | High | > 8.31 | 75 | 50 |
| Contact with extension agency | Low | ≤ 8.79 | 43 | 28.67 |
| | High | > 8.79 | 107 | 71.33 |
| Market perception | Low | ≤ 5.12 | 104 | 69.33 |
| | High | > 5.12 | 46 | 30.67 |
| Credit orientation | Low | ≤ 6.76 | 54 | 36 |
| | High | > 6.76 | 96 | 64 |
| Management orientation | Low | ≤ 15.75 | 53 | 35.33 |
| | High | > 15.75 | 97 | 64.67 |
| Attitude towards self employment | Low | ≤ 22.53 | 67 | 44.67 |
| | High | > 22.53 | 83 | 55.33 |
| Knowledge about Kuttimulla cultivation | Low | ≤ 4.76 | 58 | 38.67 |
| | High | > 4.76 | 92 | 61.33 |

It is understood that more than half ( 51.33 per cent) of the respondents had a high level of socio-economic status.

Regarding economic motivation more than three fourth of the 'Kuttimulla' growers (80.67 per cent) had high economic motivation

More than half of the respondents (58.67 per cent) had only a low level of social participation.

From the results, it was clear that majority of the respondents (61.33 per cent) belong to the high group with respect to the mass media exposure.

Majority of the respondents (57.33 per cent ) had only a low level of information seeking behaviour.

It was clear that the respondents were evenly distributed in low and high group (50 per cent in each category) with respect to the cosmopoliteness.

Nearly three fourth of the 'Kuttimulla' growers were found to have high contact with the extension agency.

It was evident from the data that more than two-third of the respondents (69.33 per cent) were having only a low level of market perception.

As credit orientation was considered, a majority of the respondents (64 per cent) had high credit orientation and the remaining (36 per cent) had low credit orientation.

Majority of the 'Kuttimulla' growers (64.67 per cent) were found to have a high level of management orientation.

Table 2. `Z' matrix of paired comparison test showing motivational pattern of the respondent in the adoption of `Kuttimulla'

| Motive | Self actulization | Need recognition | Innovative | Affiliative | Economy security |
|---|---|---|---|---|---|
| Self actulization | 0.000 | 0.050 | 0.440 | 0.468 | 0.613 |
| Need recognition | 0.050 | 0.000 | 0.332 | 0.553 | 0.440 |
| Innovative | -0.440 | -0.332 | 0.000 | 0.496 | 0.524 |
| Affiliative | -0.468 | -0.553 | -0.496 | 0.000 | 0.583 |
| Economic security | -0.613 | -0.0440 | -0.524 | -0.583 | 0.000 |
| Total | -1.571 | -1.275 | -0.248 | 0.934 | 2.160 |
| Mean | -0.314 | -0.255 | -0.049 | 0.187 | 0.432 |
| Mean + 0.314 | 0.000 | 0.059 | 0.265 | 0.501 | 0.746 |
| Rank | 5 | 4 | 3 | 2 | 1 |

More than half of the respondents (53.33 per cent) belong to the high group with respect to the attitude towards self-employment.

Nearly two third of the respondents (61.33 per cent) were found to have high knowledge level regarding the cultivation practices in 'Kuttimulla'.

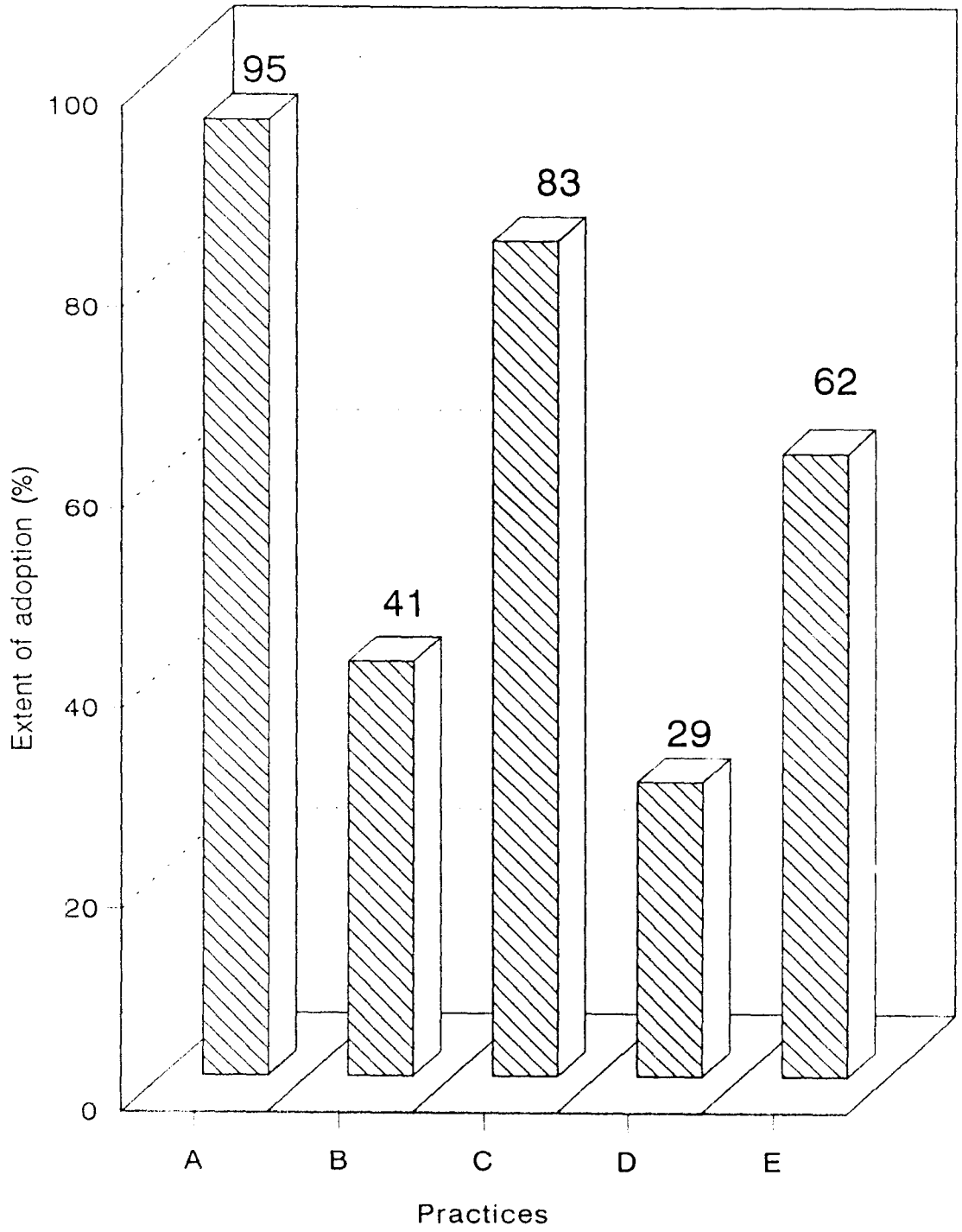
## 4.2 Motivational pattern of growers in the adopotion of 'Kuttimulla'

The motivational pattern of the respondents in the adoption of 'Kuttimulla' based on the scale values obtained through paired comparison test is presented in Table. 2.

A glance at the table reveals that, of the five motives studied namely affiliation, economic security need recognition, self-actualization and innovative, economic security was found to possess the highest score value of 0.746 which indicated that the most important motive governing the adoption of 'Kuttimulla' was the economy of its cultivation. The other motives in the order of importance were affiliation, innovative, need recognition and self-actualization.

## 4.3 Extent of adoption of selected cultivation practices.

The distribution of 'Kuttimulla' growers based on their adoption of cultivation practices as low and high groups based on the mean score is provided in Table. 3.




A - Variety B - Soil testing C - Pruning

D - Use of chemical fertilizers E - Use of plant protection chemicals

**Fig. 3. Diagram showing practice wise extent of adoption of `Kuttimulla' cultivation**

Table.3. Distribution of the respondents based on the extent of adoption of cultivation practices.

| Category | Score | Frequency | Percentage |
|---|---|---|---|
| Low | ≤ 9.61 | 55 | 36.67 |
| High | > 9.61 | 95 | 63.33 |

The mean adoption score was 9.61. The data presented in Table . 3 reveals that nearly two-third of the 'Kuttimulla' growers (63.33 per cent) belonged to the high group while the remaining (36.67 per cent ) fell under the low group.

Hence it could be inferred that nearly two third of the respondents had high level of adoption of cultivation practices.

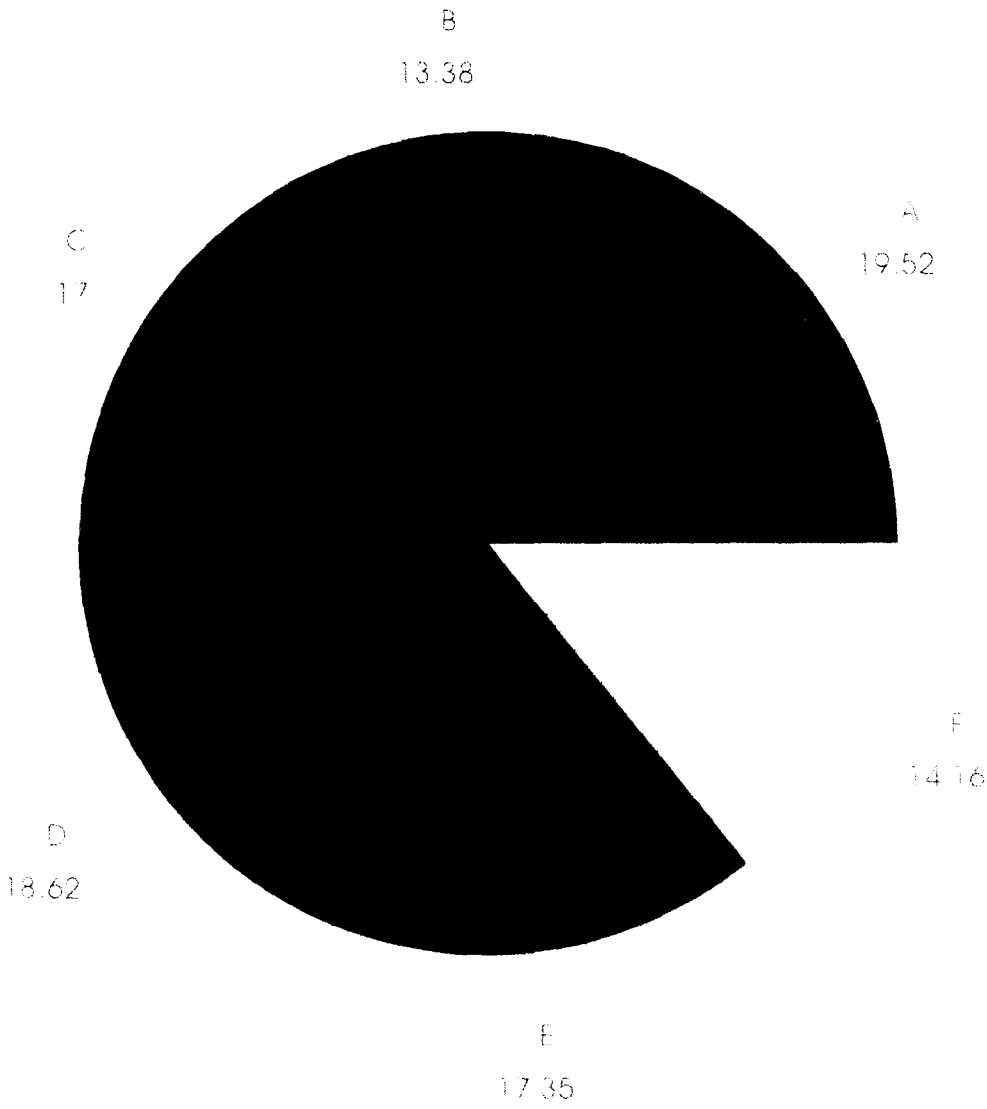
### 4.3.1 Distribution of 'Kuttimulla' growers with respect to the adoption of each selected cultivation practice.

To have a wide and better understanding about the adoption behaviour of 'Kuttimulla' growers, the practice wise adoption was enquired and the results are furnished in Table 4 and figure 2.

Table. 4. Adoption of selected cultivation practices by the respondents

| Sl. No. | Cultivation practice | Mean score |
|---|---|---|
| 1 | Varieties | 2.85 |
| 2 | Soil testing | 1.24 |
| 3 | Pruning | 2.48 |
| 4 | Use of chemical fertilizers | 1.18 |
| 5 | Use of plant protection chemicals | 1.86 |

Table. 4 reveals that majority of the growers have adopted




A - Innovation proneness B - Decision making C - Achievement motivation
D - Level of aspiration E - Risk taking ability F - Assistance of management services

**Fig. 4. Relative contribution of different subcomponent of entrepreneurial behaviour**

high yielding varieties for cultivation followed by the pruning practice. Only a few farmers have adopted the use of chemical fertilizers.

### 4.4. Entreprenurial behaviour of 'Kuttimulla' growers.

The distribution of 'Kuttimulla' growers based on their entrepreneurial behaviour index as low and high groups is furnished in Table. 5.

Table. 5. Distribution of respondents based on their entrepreneurial behaviour index.

| Category | Score | Frequency | Percentage |
|---|---|---|---|
| Low | ≤ 57.63 | 70 | 46.67 |
| High | > 57.63 | 80 | 53.33 |

A cursory glance at Table .5 shows that majority of the respondents (53.33 per cent) had high entrepreneurial behaviour.

#### 4.4.1 Relative contribution and importance of different subcomponents of entreprenurial behaviour.

The percentage conrtibution was worked out to know the relative importance of the different sub components of entreprenurial behaviour and the results are summarised in Table. 6 and Figure. 4.

Table.6. Relative importance of the subcomponents and their ranks

| Sl. No. | Sub components | Percentage | Rank |
|---|---|---|---|
| 1. | Innovative Proneness | 19.52 | I |
| 2. | Level of aspiration | 18.62 | II |
| 3. | Risk taking ability | 17.35 | III |
| 4. | Achievement motivation | 17.00 | IV |
| 5. | Assistance of management service | 14.16 | V |
| 6. | Decision making | 13.33 | VI |

Table.6. reveals that the most contributing (19.52 percent) sub component to the entreprenurial behaviour of the 'Kuttimulla' growers was the innovative proneness followed by level of aspiration, risk taking ability, achievement motivation, assistance of management services and decision making.

Hence it could be inferred that innovation proneness was the most important factor in determining the entrepreneurial behaviour of the 'Kuttimulla' growers.

## 4.5 Inter relationship of the various characteristics of the 'Kuttimulla' growers.

The intercorrelation matrix of the independent variables is presented in Table. 7 Based on the matrix, the relative importance of each independent variable in relation to the other variables was noted which is given in Table. 8

Table. 8. gives an overall picture of the interrelationship that exists among the various characteristics

Table 7. Intercorrelation matrix of independent variables

| | X1 | X2 | X3 | X4 | X5 | X6 | X7 | X8 | X9 | X10 | X11 | X12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X2 | -0.0145 | | | | | | | | | | | |
| X3 | -0.0400 | -0.0700 | | | | | | | | | | |
| X4 | 0.1800** | 0.1054 | 0.2484* | | | | | | | | | |
| X5 | 0.0451 | 0.2572* | 0.0807 | 0.1622** | | | | | | | | |
| X6 | 0.3912* | 0.0513 | 0.3212* | 0.3977* | 0.2074** | | | | | | | |
| X7 | 0.2533* | 0.1382 | 0.1329 | 0.3019* | 0.1970** | 0.4884* | | | | | | |
| X8 | 0.0076 | 0.1003 | 0.2054** | 0.0536 | 0.0496 | 0.0874 | 0.0781 | | | | | |
| X9 | 0.0422 | -0.0367 | -0.0759 | -0.1055 | -0.1958** | 0.0322 | 0.1352 | 0.1220 | | | | |
| X10 | -0.0759 | 0.0175 | 0.0744 | -0.1120 | -0.0038 | 0.1060 | 0.0777 | 0.1677** | 0.2534* | | | |
| X11 | -0.2071** | 0.0171 | 0.1588 | 0.1435 | -0.0027 | 0.0277 | 0.0538 | -0.0122 | 0.0962 | 0.2534* | | |
| X12 | 0.0073 | -0.0886 | 0.1958** | 0.0357 | 0.0005 | 0.1543 | 0.1247 | 0.1584 | 0.1017 | 0.3384* | 0.0842 | |
| X13 | 0.4909* | 0.0292 | 0.0877 | 0.2283* | 0.0633 | 0.4179* | 0.4245* | 0.1615 | 0.0212 | -0.0237 | 0.1898** | 0.0446 |

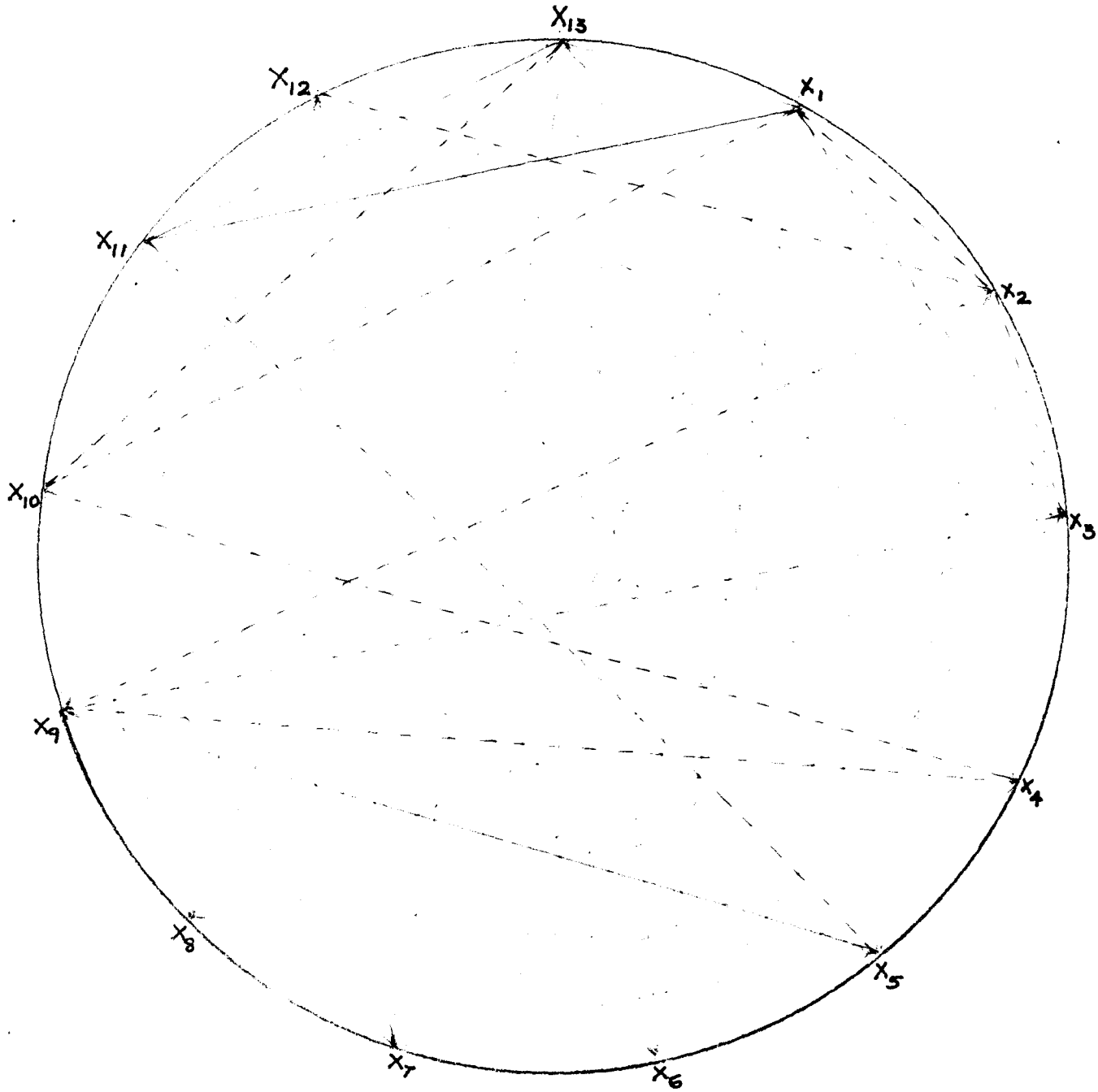
* - Significant at 5% level ** - Significant at 1% level

Table 8. Relative importance of independent variables in relation to other independent variables

(n=150)

| Variables | Number of variables with which significant related | | | Rank |
|---|---|---|---|---|
| | At 1% | At 5% | Total | |
| Farming experience | 3 | 2 | 5 | II |
| Socio economic status | 1 | - | 1 | VI |
| Economic motivation | 2 | 2 | 4 | III |
| Social participation | 4 | 2 | 6 | I |
| Mass media exposure | 1 | 4 | 5 | II |
| Information seeking behaviour | 5 | 1 | 6 | I |
| Cosmopoliteness | 4 | 1 | 5 | II |
| Contact with extension agency | - | 2 | 2 | V |
| Market perception | 1 | 1 | 2 | V |
| Credit orientation | 3 | 1 | 4 | III |
| Management orientation | 1 | 2 | 3 | IV |
| Attitude towards self employment | 1 | 1 | 2 | V |
| Knowledge about `Kuttimulla' cultivation | 4 | 1 | 5 | II |

Fig.5. Diagram showing the interrelationship of the selected profile characteristics




Positively significant

Positively non-significant

Negatively significant

Negatively non-significant

of the 'Kuttimulla' growers under study. It could be read form the table that among the variables studied, information seeking behaviour and social participation had significant relationship with maximum number of other variables (six), immediately followed by farming experience, mass media exposure, cosmopoliteness and knowledge level(five). Economic motivation and credit orientation were in the third place and management orientation in the fourth place. The remaining characteristics except the socioeconomic status had significant correlation with two variables. Socio-economic status was found to be significantly related to only one variable, viz. mass media exposure. The diagram showing the interrelationship of the independent variables in given in Figure. 5.

## 4.6 Relationship between adoption and the selected profile characteristics.

To find out the strength of association between the profile characteristics of 'Kuttimulla' growers and their adoption behaviour, simple correlation coefficients were worked out and the results are presented in Table. 9.

Table 9. reveals that the extent of adoption was found to be positively correlated with six variables viz., farming experience, economic motivation, information seeking behaviour, cosmopoliteness, credit orientation and knowledge level. The rest of the variables exhibited non significant relation with adoption. Of the variables correlated economic motivation and credit orientation had a significant relation at five per cent of profitability.

Table 9. Correlation between adoption and the selected profile characters

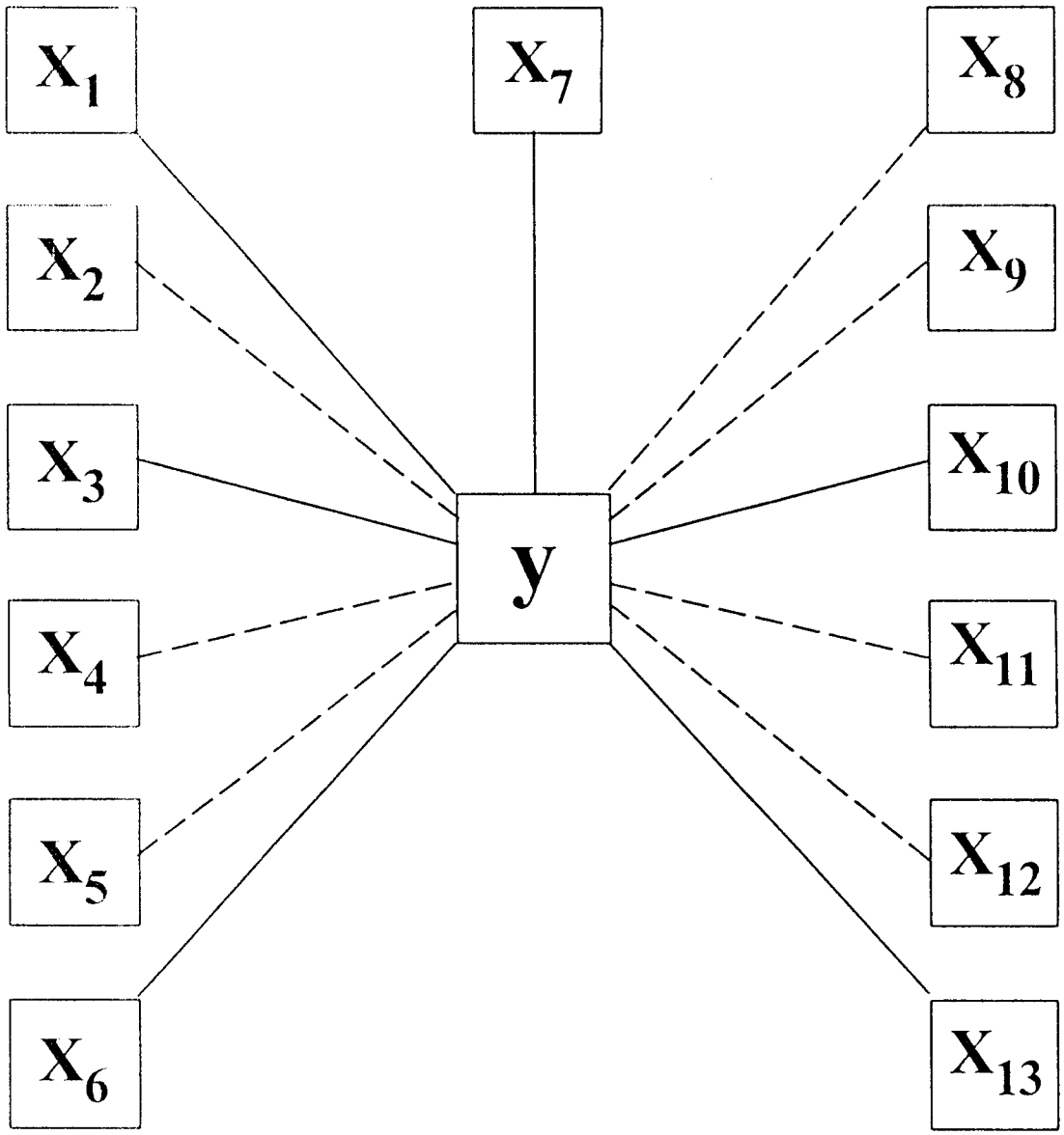
(n=150)

| Variables | r |
|---|---|
| Farming experience | 0.2480** |
| Socio economic status | 0.0917ns |
| Economic motivation | 0.1701* |
| Social participation | 0.1318ns |
| Mass media exposure | 0.0187ns |
| Information seeking behaviour | 0.4040** |
| Cosmopoliteness | 0.3096** |
| Contact with extension agency | 0.0977ns |
| Market perception | 0.0869ns |
| Credit orientation | 0.1884* |
| Management orientation | 0.0277ns |
| Attitude towards self employment | 0.1360ns |
| Knowledge about 'Kuttimulla' cultivation | 0.5021** |

** - significant at 0.01 level

* - significant at 0.05 level

ns - non significant




$X_1$ - Farming experience
$X_2$ - Socio-economic status
$X_3$ - Economic motivation
$X_4$ - Social participation
$X_5$ - Mass media exposure
$X_6$ - Information seeking behaviour
$X_7$ - Cosmopoliteness
$X_8$ - Contact with extension agency
$X_9$ - Market perception
$X_{10}$ - Credit orientation
$X_{11}$ - Management orientation
$X_{12}$ - Attitude towards self employment
$X_{13}$ - Knowledge about Kuttimulla cultivation
y - Extent of adoption

—— Positively significant
— — — Positively non-significant

**Fig. 6. Paradigm showing the relationship of selected variables with extent of adoption of 'Kuttimulla' cultivation**

Accepting and rejecting the null hypothesis for the variables not significantly correlated and significantly correlated respectively, it is inferred that adoption of cultivation practices is a function of farming experience, economic motivation, information seeking behaviour, cosmopoliteness, credit orientation and knowledge level. It there by means that 'Kuttimulla' growers with high farming experience, economic motivation, information seeking behaviour, cosmopolitness, credit orientation and knowledge level would be higher in their adoption.

The paradigm showing the relationship of selected variables with extent of adoption is shown in Figure. 6

**4.7 Relationship between entrepreneurial behaviour and the selected profile characteristics.**

To find out the relationship between the entrepreneurial behaviour and the profile characteristics of the 'Kuttimulla' growers, simple correlation coefficients were found out and the results are furnished in Table. 10

Economic motivation, information seeking behaviour and knowledge level were positively and significantly correlated with the entrepreneurial behaviour of the 'Kuttimulla' growers. The rest of the variables exhibited a non-significant relationship with the entrepreneurial behaviour of the respondents. The market perception is found to have a negative and non-significant relationship.

Of the variables correlated knowledge level had a significant correlation at five per cent level of profitability and economic motivation and information seeking behaviour at one

Table 10. Correlation between entreprennial behavoiur and the selected profile characteristics

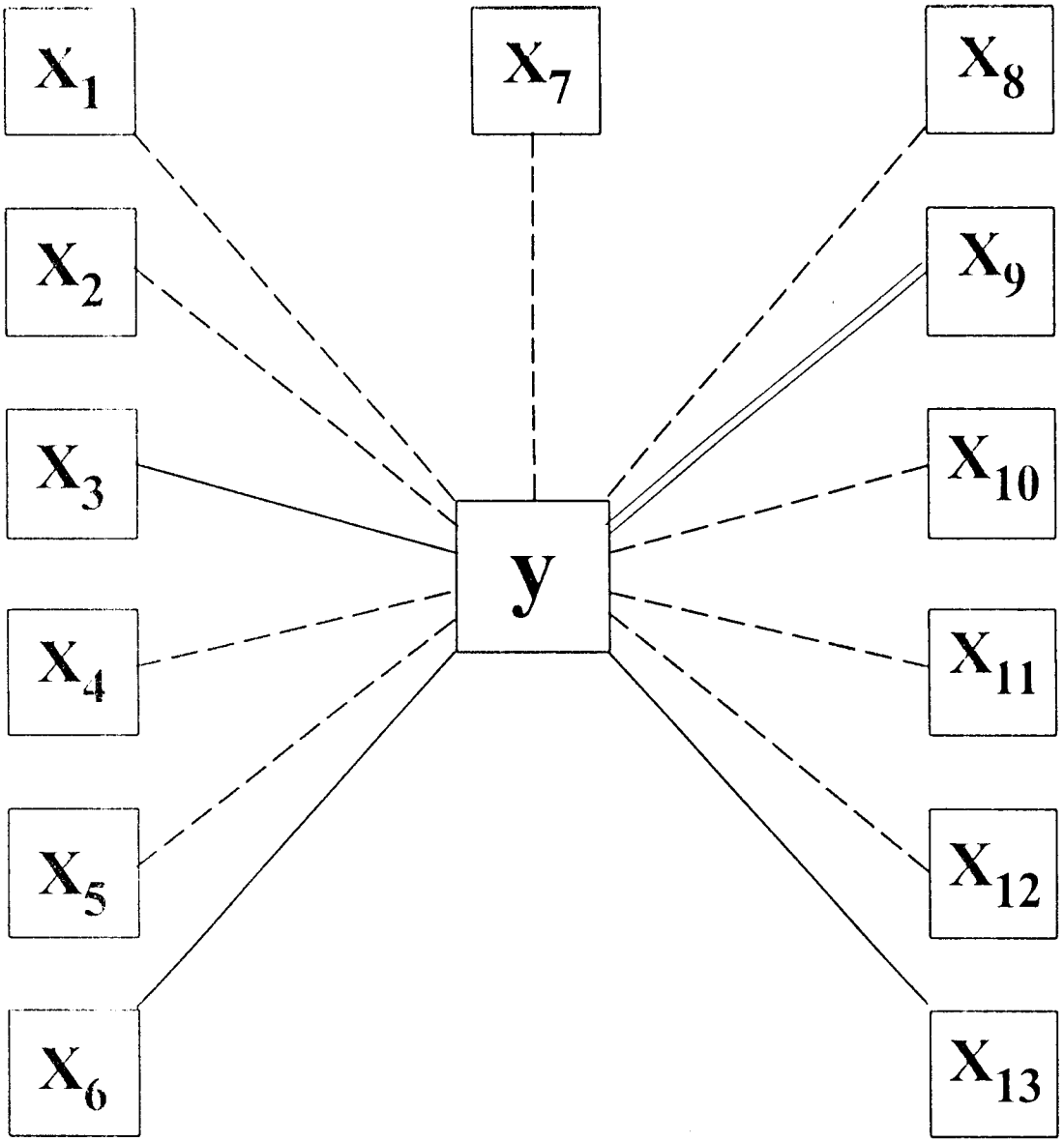
(n = 150)

| Variables | r |
|---|---|
| Farming experience | 0.7540$^{ns}$ |
| Socio economic status | 0.1518$^{ns}$ |
| Economic motivation | 0.2603$^{**}$ |
| Social participation | 0.1248$^{ns}$ |
| Mass media exposure | 0.0157$^{ns}$ |
| Information seeking behaviour | 0.2423$^{**}$ |
| Cosmopoliteness | 0.1398$^{ns}$ |
| Contact with extension agency | 0.0018$^{ns}$ |
| Market perception | -0.0686$^{ns}$ |
| Credit orientation | 0.0793$^{ns}$ |
| Management orientation | 0.1085$^{ns}$ |
| Attitude towards self employment | 0.0522$^{ns}$ |
| Knowledge about `Kuttimulla' cultivation | 0.1934$^{*}$ |

** - Significant at 0.01 level

* - significant at 0.5 level

ns - non significant




$X_1$ - Farming experience
$X_2$ - Socio-economic status
$X_3$ - Economic motivation
$X_4$ - Social participation
$X_5$ - Mass media exposure
$X_6$ - Information seeking behaviour
$X_7$ - Cosmopoliteness
$X_8$ - Contact with extension agency
$X_9$ - Market perception
$X_{10}$ - Credit orientation
$X_{11}$ - Management orientation
$X_{12}$ - Attitude towards self employment
$X_{13}$ - Knowledge about Kuttimulla cultivation
y - Entrepreneurial behaviour

—— Positively significant
— — — Positively non-significant
═══ Negatively non-significant

**Fig. 7. Paradigm showing the relationship of selected variables with entrepreneurial behaviour of 'Kuttimulla' cultivation**

percent level.



Accepting and rejecting the null hypothesis for the variables not significantly correlated and significantly correlated respectively, it is inferred that entrepreneurial behaviour of the 'Kuttimulla' growers is the function of economic motivation, information seeking behaviour and knowledge level. Hence it means that the 'Kuttimulla' growers with economic motivation, information seeking behaviour and knowledge level had higher entrepreneurial behaviour.

The paradigm showing the relationship of selected variables with entrepreneurial behaviour is shown in Figure 7.

**4.8. Marketing channels of 'Kuttimulla' prevailing in the study area.**

The marketing channels of the 'Kuttimulla' existing in the study area was investigated and the results are presented in Table. 11

Table . 11. Marketing channels of 'Kuttimulla' prevailing in the area.

| Sl. No. | Marketing Channel | Frequency | Percentage |
|---|---|---|---|
| 1. | Producer - Consumer | 38 | 25.33 |
| 2. | Producer - Florishops - Consumer | 36 | 24 |
| 3. | Producer - Collection centre- Florishops -Consumer | 26 | 17.33 |
| 4. | Producer _ Collection agent - Collection centre - Florishops - Consumer | 50 | 33.33 |

One-third of the respondents (33.33 per cent) sell their produce through the marketing channel, Producer - Collection agent - Collection centre - Florishops - Consumer, followed by

Producer - Consumer (25.33 per cent), Producer - Florishops - Consumer (24 per cent) and Producer - Collection centre - Florishops - Consumer (17.33 per cent).

Hence, it may be inferred that the major marketing channel of 'Kuttimulla' prevailing in the study area was Producer - Collection agent - Collection centre - Florishops - Consumer.

## 4.9 Constraints experienced by the 'Kuttimulla' growers regarding production, technology and marketing.

The constraints experienced by the 'Kuttimulla' growers in the cultivation of 'Kuttimulla' was asessed under three heads namely, production, technology and marketing, and the results are furnished below.

### 4.9.1 Production constraints.

Table 12 Constraints experienced by 'Kuttimulla' growers with regard to production

| Sl. No. | Constraints | score value | Rank |
|---|---|---|---|
| 1. | Difficulty in availing inputs | 1245 | I |
| 2. | Inadequate irrigation facilities | 968 | II |
| 3. | High incidence of pests & diseases | 911 | III |
| 4. | High cost plant protection chemicals | 828 | IV |
| 5. | Difficulty in identification of pests and diseases | 825 | V |
| 6. | Scarcity of labour during peak season | 590 | VI |
| 7. | Non-availabilty of quality planting | 478 | VII |
| 8. | High price of planting materials | 474 | VIII |
| 9. | Only out-dated varieties are available for growing | 411 | IX |

It is seen from Table. 12 that difficulty in availing

inputs' and 'inadequate irrigation facilities' are the two major production constraints experienced by the 'Kuttimulla' growers.

### 4.9.2 Technological constraints.

Table.13 Constraints experienced by 'Kuttimulla' growers with regard to technology.

| Sl. No. | Constraints | Score Value | Rank |
|---|---|---|---|
| 1. | Non-availability of credit | 683 | I |
| 2. | Absence of practical training | 476 | II |
| 3. | Lack of technical expertise | 468 | III |
| 4. | No standardised practices to follow | 381 | IV |
| 5. | Lack of research for developing new varities. | 240 | V |

Table 13 reveals that the major technological constraint experienced by the 'Kuttimulla' growers was the 'non-availability of credit' followed by 'absence of practical training', 'lack of technical expertise', 'no standardised practices to follow' and 'the lack of research for developing new varieties'.

### 4.9.3 Marketing constraints.

Table 14 Constraints experienced by 'Kuttimulla' growers with regard to marketing.

| Sl. No. | Constraints | Score Value | Rank |
|---|---|---|---|
| 1. | Inability of small growers to find market | 810 | I |
| 2. | Unorganised marketing channel | 711 | II |
| 3. | Fluctuations in market price | 582 | III |
| 4. | Unhealthy competition among growers | 556 | IV |
| 5. | Lack of coordination among florists | 313 | V |
| 6. | Lack of storage facilities | 178 | VI |

It was clear from Table 14 that the major marketing

constraints experienced by the 'Kuttimulla' growers are the 'inability of small growers to find market',followed by the 'unorganised marketing channel' and 'fluctuations in market price'. The other constraints are 'unhealthy competition among growers' 'lack of coordination among florists' and 'lack of storage facilities'.

## 4.10 Suggestions from 'Kuttimulla' growers in respect to Research, Extension and Marketing activities.

The suggestions from 'Kuttimulla' growers for the improvement of 'Kuttimulla' cultivation was collected under three categories, viz. suggestions related to research, extension and marketing and the results obtained are given below.

### 4.10.1 Suggestions related to Research.

Regarding research, suggestions and methods are given based on the overall opinion of 'Kuttimulla' growers in order to increase the yield of jasmine and net income of the growers.

Table. 15. Suggestions from 'Kuttimulla' growers in respect of Research.

| Sl. No. | Suggestions | Score Value | Rank |
|---|---|---|---|
| 1. | Evolving high yielding varieties | 577 | I |
| 2. | Finding out hormones which induce more flowering and quality flowers | 491 | II |
| 3. | Formulating compatible fertilizers, pesticides and weedicides. | 268 | III |
| 4. | Identifying trap crop of moderate susceptability to pest and diseases | 244 | IV |

Table 15. reveals that the first rank was given by the

respondents for 'evolving high yielding varieties' in order to get maximum yield. ' Finding out hormones which induce more flowering and quality flowers' , 'formulating compatible fertilizers, pesticides and weedicides.' and 'identifying trap crop of moderate susceptibility to pest and diseases' were the second, third and fourth suggestions by the 'Kuttimulla' growers.

**4.10.2 Suggestions related to Extension.**

There are many methods and media employed by the extension system to educate the farmers. Farmers on their part also seek different sources, channels and media for information. Though extension workers used many methods and ways, all of them may not be equally effective in convincing the farmers. Hence the respondents were asked to rank the suggestions according to their need.

Table. 16 indicates that the major suggestion from the 'Kuttimulla' growers with respect to extension is the 'establishment of seperate floricultural scheme' followed by 'focussing special interest on 'Kuttimulla' growers by giving subsidy as loan under horticultural development scheme' and 'training in 'Kuttimulla' cultivation on par with other crops to give technical advice'.

Table. 16. Suggestions from 'Kuttimulla' growers in respect of Extension.

| Sl. No. | Suggestions | Score Value | Rank |
|---|---|---|---|
| 1. | Establishing seperate floriculture scheme | 1054 | I |
| 2. | Focussing special interest on 'Kuttimulla' growers by giving subsidy as loan under horticultural development scheme | 963 | II |
| 3. | Training in Kuttimulla cultivation on par with other crops to give technical advice | 884 | III |
| 4. | Booklets, leaflets.etc about latest method of 'Kuttimulla' cultivation should be made available. | 663 | IV |
| 5. | Organising village seminar, news reals atleast once in a season about the latest method of 'Kuttimulla' cultivation | 572 | V |
| 6. | Establishment of community nursery | 538 | VI |
| 7. | Including 'Kuttimulla' in AIR | 503 | VII |
| 8. | Laying out demonstration of improved pruning and manuring technique. | 259 | VIII |

### 4.10.3 Suggestions related to Marketing.

Regarding marketing of flowers, florishops play an important role in fixing the sale price and the cultivators are at the mercy of commission agents. If the growers organise themselves and take up marketing of flowers in a cooperative way, it is possible for them to get better price.

Table. 17. Suggestions from 'Kuttimulla growers in respect of Marketing.

| Sl. No. | Suggestions | Score Value | Rank |
|---|---|---|---|
| 1. | Installation of flower based industry | 834 | I |
| 2. | Fixing support price by Government | 742 | II |
| 3. | Establishing co-operative societies | 618 | III |
| 4. | Publishing latest price on newspapers and through broadcast. | 412 | IV |
| 5. | Cooperative transport facility for quick disposal | 331 | V |
| 6. | Providing storage facility to avoid uneconomical and forced price. | 214 | VI |

With respect to marketing , it is revealed that the most important suggestion made by the 'Kuttimulla' growers is 'installation of flower based industry' followed by fixing support price by Government' and 'establishing cooperative societies'. The other suggestions include 'publishing latest price on newspapers and through broadcast', 'cooperative transport facility for quick disposal' and 'providing storage facility to avoid uneconomical and forced prices.'

# DISCUSSION

# CHAPTER V



# DISCUSSION

The results obtained in the present study are discussed and interpreted in this chapter under the following heads.

5.1 Characteristic profile of 'Kuttimulla' growers.

5.2 Motivational pattern of 'Kuttimulla' growers.

5.3 Extent of adoption of selected cultivation practices.

5.4 Entrepreneurial behaviour of 'Kuttimulla' growers.

5.5 Interrelationship of the various characteristics of 'Kuttimulla' growers.

5.6 Relationship between adoption and the selected profile characteristics.

5.7 Relationship between entrepreneurial behaviour and the selected profile characteristics.

5.8 Marketing channels of 'Kuttimulla' prevailing in the study area.

5.9 Constraints experienced by the 'Kuttimulla' growers regarding production, technology and marketing.

5.10 Suggestions from the 'Kuttimulla' growers in respect to research, extension and marketing activities.

## 5.1. Characteristic profile of 'Kuttimulla' growers

It was found that most of the 'Kuttimulla' growers had low farming experience because of the reason that the farmers had recently adopted 'Kuttimulla' cultivation as an enterprise of income generation. More over it is a matter of common sense that, the recent the introduction, the lesser would be the farming experience .

It was noted that more than half of the respondents had high socio-economic status which might be due to the significant contribution of the components of the socioeconomic status scale like occupation, education, material possession, income, etc.

It was observed that more than three fourth of the 'Kuttimulla' growers had high economic motivation. The failure of the coconut cultivation due to the root-wilt disease coupled with the seasonal and specific skilled work might have made them to be more economically oriented so as to have a secured life in the society.

Most of the 'Kuttimulla' growers had low social participation because of the reason that majority of them are having less farming experience. Hence the necessisty for participating in social organisation might not be felt to the maximum extent by the respondents. The lack of opportunities might have also negatively influenced the social participation of the 'Kuttimulla' growers.

The mass media exposure of the 'Kuttimulla' growers was very high, which might be due to the fact that farmers with high educational status made them read the newspaper articles and other publications. Exposure to television, radio and films and participation in agricultural functions have enabled them to secure high level of mass media exposure.

It was observed that the information seeking behaviour of the 'Kuttimulla' growers was low due to the less farming experience and low social participation. As it was a new

enterprise in the field of agriculture, the farmers were not aware of the sources from where they can get information regarding the cultivation of 'Kuttimulla'. Moreover, the frequent contact of the extension staff restrict them from going for other information sources.

It was interesting to note that equal percentage of the respondents had high and low cosmopoliteness. The development of transport and communication facilities might have helped the 'Kuttimulla' growers to go regularly to the nearest town to meet their personal and domestic need. But at the same time something prevents them from going to the nearest town. This might be due to the old age and low social participation, thus being more confined to their houses.

It was found that nearly three fourth of the respondents had high contact with the extension agency. The reason might be due to the decentralization of powers, the Krishibhavans and the extension staff had a major role to play in the development activities. Moreover, since the crop is highly remunerative, it is natural that farmers would contact the extension personnel for knowing about the latest technologies.

It was observed that more than two third of the 'Kuttimulla' growers had low market perception because of the reason that majority of the growers had low farming experience and low social participation. The fluctuations in the market price and unorganised marketing channel might also had contributed to the low market perception of the respondents.

The 'Kuttimulla' growers had more credit orientation due to the reason that the high level of extension agency contact and high risk orientation might have prompted them to have more credit orientation for practising innovative practices in agriculture. But the majority of the 'Kuttimulla' growers had not availed credit from the institutional sources due to the complicated procedure to obtain the credit.

It was observed that majority of the respondents had high level of management orientation. The reason might be due to the high contact with extension agency and high mass media exposure, which would have made the farmers more oriented towards the planning, production and marketing, which are the major management aspects.

More than half of the respondents had a favourable attitude towards self employment in agriculture. This might be due to the fact that most of the respondents were from farm families and their involvement in agriculture with newer and proven innovations convinced them to have favourable attitude. More over, the respondents might have felt that starting self employment in agriculture needs only less investment and the returns are higher and immediate.

It was found that more than half of the respondents had high knowledge level about the various cultivation practices. This might be due to the reason that the growers had more exposure to the mass media and high contact with the extension agency. This might have prompted them to acquire more knowledge on the cultivation practices of 'Kuttimulla'.

Thus the 'Kuttimulla' growers had high socio-economic status, economic motivation, mass media exposure contact with extension agency, credit orientation, management orientation, attitude towards self employment and knowledge about 'Kuttimulla' cultivation.

## 5.2 Motivational pattern of 'Kuttimulla' growers.

Maslow (1954) postulated that the lowest level of unmet need is ordinarily the one that is prepotent - the one that commands the individual's attention and efforts.

It was observed that the most important motive behind the adoption of 'Kuttimulla' by the respondents was the economic security, the crop provided. Unlike, the orchids and anthuriums, which are more popular now-a-days, 'Kuttimulla' requires only less land, less time and less investment. Compared to cutflowers, it can give the economic returns within a short time. Moreover , due to the frequent contact with the extension agencies the farmers might be convinced about the profit it can yield.

The second most important motive behind the adoption of 'Kuttimulla' was the affiliation, ie, as his neighbour or friend had adopted the 'Kuttimulla' and they had the experience of good yield and profit, it might have motivated the respondents to adopt 'Kuttimulla'.

The innovative motive was the next contributing motive for the adoption. As the farmers have high socio-economic status and high contact with extension agency, this might have prompted

the farmers to test the superiority of 'Kuttimulla

The other two motives governing the adoption of 'Kuttimulla' are the need recognistion and self actualization. It reveals that some had adopted the 'Kuttimulla' cultivation so as to get the recognition as a best farmer and the rest, because they had enough resources.

## 5.3. Extent of adoption of cultivation practices.

It was observed that nearly two - third of the respondents had high level of adoption of cultivation practices.

The high level of adoption of cultivation practices in 'Kuttimulla' by majority of the respondents is a clear indication of change form the traditional system of cultivation to a new system. The use of mass media and other information sources might have contributed to increase the knowledge level of farmers and had a favourable attitude change, which might have led to the adoption of cultivation practices. The contact with extension agencies and other farmers also might have broadened their knowledge about the cultivation practices, leading to adoption. The extension and development programes like farmer's training , field day, etc implemented in the area to popularise the 'Kuttimulla' cultivation might have also motivated the farmers to adopt the cultivation practices.

### 5.3.1. Distribution of 'Kuttimulla' growers with respect to the adoption of each selected cultivation practice

It was clear from the results presented in the Table 4 that the majority of the respondents have adopted high yielding

varieties for the cultivation. This may be due to the reason that the varieties produced very perceptible results and it had all the five characteristics of an innovation viz. relative advantage, observability, compatibility, trialability and less of complexity.

The extent of adoption of soil testing is low as the farmers are unaware of the advantages of the practice. The technical know - how regarding the collection of soil sample was not properly followed even in the case of farmers who have adopted the practice.

Regarding pruning, majority of the farmers had adopted the practice because it is an important practice in 'Kuttimulla' cultivation. Farmers know well about pruning which will produce more branches and more flowers. Hence they practice pruning during the rainy season so that they get maximum flowers in the festival season following .

Application of chemical fertilizers is only to a limited extent. Majority of the farmers had adopted farm yard manure as it is locally available in their farms and most of the farmers would have realised the importance of organic manure to their soil to maintain fertility. More over, the high cost of chemical fertilizers and poor soil condition might have led to the non-adoption of chemical fertilizers.

There was moderate adoption in the case of use of plant protection chemicals. As the crop was suggested to incidence of

pest and disease, the 'Kuttimulla' growers were very careful to control these pest and diseases. Hence there was the adoption of this practice. But small growers had a restricted use of plant protection chemicals.

## 5.4. Entrepreneurial behaviour of 'Kuttimulla' growers.

The perusal of Table 5 exhibits that majority of the respondents had high entrepreneurial behaviour. Entrepreneurs tend to present themselves as persons striving towards goals that involve action. The high exposure to mass media and cosmopoliteness had created confidence in their abilities and resources and they are themselves initiative takers rather than as conformists. The farmers tend to see themselves as effective persons with high entrepreneurial qualities. These actions and reasons cited above might have given a fillip to forge ahead as a healthy entrepreneur, thereby exhibiting high degree of entreprenurial behaviour.

The low entrepreneurial behaviour of the remaining respondents may be due to the fact that they are reluctant to take more risks and put up strides further. Another reason might be, that the respondent would have been inflicted by social and personal problems which have impeded his entrepreneurial progress. More over, the impecunious nature of the respondents due to improper planning and management might also be a main reason for reducing the entrepreneurial behaviour.

### 5.4.1. Relative contribution and importance of different sub components of entrepreneurial behaviour.

A cursory glance at the results presented in Table 6 shows that of all the subcomponents of the entrepreneurial behaviour the higheat contribution was of the subcomponent viz. innovative proneness. The prompt desire and eagerness to thurst upon acquiring new and improved agricultural technologies from different sources of information is the reflection of this innovative proneness which ultimately have increased the entrepreneurial spirit among the respondent. More over, this contribution may be due to the dissatisfaction with the traditional kind, they were praticising.

The second contribution to the entrepreneurial behaviour of the respondents was their level of aspiration. The other subcomponents in the decreasing order of contribution are risk taking ability, achievement motivation, assistance of management services and decision making. The low rank of decision making may be due to the fact that as this is a new enterprise, the farmers consults with other persons before taking decisions.

This research result derived support from the findings of Raghavacharyulu (1983) and Porchezhian (1991) who also identified the first three variables as the crucial variables.

## 5.5 Interrelationship of the various characteristics of the `Kuttimulla' growers.

An overall view of the data presented in Table.8 and Figure 5 revealed that some of the variables were found to have

significant relationship between them. At the same time, many variables keep aloof from each other showing no significant relationship between them. It is evident from the table that information seeking behaviour and social participation had maximum number of significant relationships as they are influenced by most of the socio - psychological variables. More than that some personal factors also influence these variables. The knowledge level is one of the major variables studied and this is significantly correlated to five other variables such as farming experiance, social participation, information seeking behaviour, cosmopoliteness and management orientation. It shows that the farmers having high farming experience, social participation, information seeking behaviour, cosmopoliteness and management orientation are having high knowledge level. By having more experience in farming, he would come across various aspects which would help him in acquiring more knowledge about the cultivation. Similarly the respondents who are having high social participation, information seeking behaviour and cosmopoliteness have much exposure to the outside world and frequent contact with the information sources and social institutions, would help him in attaining a deeper knowledge in the various cultivation aspects. Among the variables studied, socio-economic status had least number of significant relationship. It was found to be significantly and postively correlated with mass media exposure which reveals that the farmers having high socioeconomic status are having high exposure to the mass media. It is quite natural that as the socioeconomic

status of the farmers increases, they have a greater access to the mass media so as to have the day-to-day informations.

## 5.6 Relationship between adoption and the selected profile characteristics.

Of the variable selected for the study, the extent of adoption was found to be significantly and positively correlated with six variables viz. farming experience, economic motivation, information seeking behaviour, cosmopoliteness, credit orientation and knowledge level. The other variables were found to have a positive and non-significant relationship with the extent of adoption.

As per the results of this study, the variable viz. farming experience was found to have a positive and significant correlation with adoption, which means higher the farming experience, more would be the adoption of cultivation practices. This might be due to the fact that the farmers with high experiences would like to adopt more of the practices, so as to have maximum profit, where as the less experienced farmers would go for more information, which might make them to delay their adoption. More over, the benefits derived from adopting the cultivation practices might made the respondents to adopt the practice without discontinuance. The result was in agreement with the findings of Reddy (1971), Anbalagan (1974), Bute et al. (1981) and Kumbar (1983) .

It was found that a positive and non-significant relation existed between the socio-economic status and the adoption of

cultivation practices. The high social and economic status enables the farmer to take more risks in adopting the cultivation practices. But the growers with high socio-economic status need not feel the adoption of cultivation practices as essential to them which might be the reason for the non-significant correlation between these two variables. This is in line with the findings of Mathew (1980), Olowu et al. and Chandargi et al. (1991).

Economic motivation was found to have a positive and significant relationship with the adoption of cultivation practices. The significant relationship might be due to the fact that a farmer who invests more money in farming is likely to percieve the increase in yield when he adopts the cultivation practices. Economic motive is one of the important motive which moulds the behaviour of the individuals and hence it is quite possible that farmers high in this value aspect exhibit a desired behavioural pattern. The result is in conformity with the findings of Nair (1969), Singh and Singh (1970), Sajeev chandran (1989) and Sutha et al. (1991).

Social participation denoted involvement of the farmers in various activities of different organisations, which provide them with enough exposure to new developments in different fields which in turn serve as a sufficient condition for adoption of cultivation practices indicating a positive correlation with social participation and adoption. It was seen that majority of the 'Kuttimulla' growers are having only low social participation and hence the relation would be non - significant.

The present finding was supported by the findings of Supe and Salode (1975), Bhaskaran and Thampi (1986) and Himantharaju (1988).

The positive correlation between the mass media exposure and adoption means more the mass media exposure more would be the adoption due to the reason that the farmers who actively participate in farm meeting, farm days, etc have a favourable attitude and that would have tempted them to adopt the cultivation practices. The information seeking behaviour and cosmopoliteness might have tempted them to adopt the practice at an early date and hence the correlation is non-significant. The results of the study is in agreement with the findings of Kantharaj (1980), Swaminathan (1986) and Nandakumar (1988).

The positive and significant correlation exhibited by the information seeking behaviour with adoption depicted that more the information seeking behaviour, more would be the adoption of cultivation practices. This might be due the reason that exposure to different innovations/success stories/motivational features would have influenced and persuaded the farmers, to adopt the cultivation practices. More over, the frequency of the information seeking behaviour and the credibility of the information source had led to the adoption.

Cosmopoliteness was found to have a positive and significant relationship with the adoption. This indicates that more the cosmopoliteness, more would be the adopotion of practices, which would be better explained that due to wide contact with farmers,

visualisation of development is possible, visit to different fields would motivate them to adopt the practices at an early date. This was in accordance with the results established by Tripathi (1972), Kalamegam and Menon (1977), Kamarudeen (1981), Ferraria et al. (1983) and Prasannan (1987).

Contact with extension agency provides the farmers with functional and purposive information on scientific farming. This serve as a favourable condition resulting in the adoption of cultivation practices as indicated by the positive relation between the contact with extension agency and the adoption. The contact with extension agency takes into account, the frequency and purpose of visit and as the frequency of visit in low for majority of the respondents, it would have contributed for a non-significant relationship. The result of this study was supported by the findings of Sushama (1979), Kantharaj (1980) Nandakumar (1988) and Jnanadevan (1993).

Market perception was found to have a positive but non-significant correlation with the adoption of cultivation practices, which revealed that market perception had no influence on adoption behaviour due to the fact that market perception is only a kind of perception about the marketing facilities. But in reality, it was very difficult to market the produce as the small farmers are inable to find the market, which might delay the adoption of practices. This was supported by Naidu (1978).

The results of the study revealed that credit orientation was positively and significantly correlated with adoption. This

revealed that higher the credit oreintation, more would be the adoption, which might be due to the fact that credit orientation behaviour of the' Kuttimulla' growers had prompted them towards the succesful adoption of the cultivation practices. This study also revealed that the 'Kuttimulla' growers had high credit orientation and high adoption. The result was in accordance to the results established by Suryawanshi et al. (1978), Venkateswaralu and Bhalerao (1980) and Reddy and Kumar (1982).

A higher level of management orientation implies a better involvement in activities related to planning, production and marketing aspects of the enterprise. Adoption of cultivation practices relates only to the production aspects. Planning and marketing aspects were also considered in measuring management orientation. Hence the observed non significant positive relation between the adoption and the management orientation.

The attitude of 'Kuttimulla' growers towards self employment in agriculture and the extent of adoption are positively correlated. The favourable attitude might have created an interest in the respondents to adopt the cultivation, to earn more profit in the enterprise. But attitude alone cannot motivate the farmers to adopt the cultivation practices and hence the relation is non significant.

The knowledge level was found to have a significant and positive correlation with the adoption of cultivation practices. Knowledge is a predisposing factor for adoption. Modern technology involves more details. So if a farmer has proper

knowledge, he can evaluate the practice move logically and adopt it. It was clear from the study that majority of the respondents had high knowledge and high adoption. This was supported by Pillai (1978), Shukla ((1980), Rahim and Sharma (1983), Sinha and Ray (1985) and Anithakumari (1989).

## 5.7 Relationship between entrepreneurial behaviour and the selected profile characteristics.

It was clear from the result that the farming experience is positively related with the entrepreneurial behaviour of 'Kuttimulla' growers. This suggests the propensity to assume that the entrepreneurial role becomes maximum with good farming experience. The result of the study reveals that majority of the farmers had only low farming experience,leading to a non-siginificant relationship. The result was supported by Perumal et al. (1990).

Socio-economic status was found to have positive and non-significant relationship with the entrepreneurial behaviour of the growers, revealing the fact that the socio-economic status alone cannot inculcate the entrepreneural behaviour.

Economic motivation established a positive and significant relationship with the entrepreneurial behaviour of farmers. As it is inferred from the Table, majority of the growers had high level of economic motivation, which brings to light the fact that respondents prime motive is profit maximisation. The wishes and hopes for the respondents is to maximise their profits from diversified activities. This reason generally indicate the

concern of the respondents about their income from diversified occupation and hence this could be the thought for the above said relationship. This is in line with the findings of Porchezhian (1991).

Social participation helps the growers to come in contact with the number of support systen which in turn help them to become more entreprenenurial. The results in this study reveals that majority of the respondents had low level of social participation and this might be the reason for the non-significant relationship. The result is in concurrence with that of Perumal et al. (1990).

Mass media exposure was found to have positive and non-significant relationship with the entrepreneurial behaviour of the growers. This result was in line with the finding of Porchezhian (1991). The same reason attributed under the relationship of mass media exposure and adoption can be substantiated here also.

A positive relationship was found to exist between the information seeking behaviour and the entrepreneurial behaviour. This revealed that higher the information seeking behaviour, more would be the entrepreneurial behaviour. But from the results of the study it was clear that majority of the growers had low information seeking behaviour. This would be the reason for a significant relationship. The finding was in line with the study conducted by Supe (1971).

Cosmopoliteness was found to have a positive non-significant relationship with entrepreneurial behaviour. Cosmopoliteness

helped the growers to collect information about what is happening outside the social system. Farmers with cosmopoliteness will be more innovative, risk taking and will have a competitive spirit which in turn improve their decision making. The result is in concurrence with the findings of Jayalekshmi (1996).

There exists a positive and non-significant relationship between contact with extension agency and the entrepreneurial behaviour. By the contact with the extension agencies, the farmer gain informations and forms favourable attitude towards the new technologies. The lack of proper assistance by these agencies could be the reason for the above said relationship. The result was in line with the findings of Porchezhian (1991).

Market perception was found to have a negative relationship with the entrepreneurial behaviour. The major problem in this enterprise is the marketing of the produce. The perception of this constraint would be the reason for the negative and non-significantt relationship with the entrepreneurial behaviour.

Credit orientation had a positive relationship with entrepreneurial behaviour which reveals that more the credit orientation more would be the entrepreneurial behaviour. The majority of the respondents has not availed credit for 'Kuttimulla' cultivation due to the difficulty in obtaining credit. This would be the reason for the non-significant relationship. The findings was in concurrence with the findings of Mishra and Sinha (1981).

A positive relationship exists between the management orientation and the entrepreneurial behaviour. The reason for the management orientation influencing the entrepreneurial behaviour might be due to the fact that more management orientation makes one more progressive, helps to participate in more media and gain latest knowledge which in turn motivate them to be entrepreneurial. The low level of social participation and the information seeking behaviour would be the reason for the non-significant relationship.

There exists a positive and non significant relationship between the attitude towards self-employment and entrepreneurial behaviour. The same reason attributed under contact with extension agency can also be attributed here.

A positive and significant relationship was observed between knowledge level and the entrepreneurial behaviour. The high level of mass media exposure might have increased the knowledge about the cultivation practices. Contact with extension agency helps in imparting knowledge required for the profitable running of the enterprise. The findings of the study was in line with the finding of Nandapurkar (1982) and Sethy (1982).

## 5.8 Marketing channels of `Kuttimulla' prevailing in the study area.

It is clear from the data presented in Table 11 that the major marketing channel of `Kuttimulla' prevailing in the study area was Producer - Collection agent - Collection centre-

Florishops - Consumer. There are two cooperative societies functioning in one of the panchayats namely Kanjikuzhy. The farmers in that panchayat as well as the nearby panchayat, Mararikulam North, sell majority of their produce to the cooperative society which act as the collection centre. A collection agent will collect the flowers from individual farmers and gave it to the cooperative society. They sell the produce to the florishops functioning at Alapuzha and Chertalai. From the florishops, the flowers as well as the garlands, bouquette and wreaths are sold to the consumers. Thus the marketing channels consists of five channels namely producer, collection agent, collection centre, florishops and finally the consumer.

The second major channel was the Producer - Consumer. About one fourth of the respondents sell their produce through this channel. This is practised mainly in the case of small farmers who are having less number of plants. As they find it difficult to find the local market and also the cooperative society, they directly sell the produce to the neighbouring houses. Here they are forced to sell the flowers at low price.

The next major channel was the Producer - Florishops - Consumer. The medium as well as the large farmers who had access with the town sells their produce directly to the florishops. Hence the growers get a little higher price than through the first channel. The major problem in this channel is that, the florishops doesn't buy the flowers from the small farmers who had less produce, and also there is delay in the cash

Another channel prevailing in the study area was the Producer - Collection centre - Florishops - Consumer. This is a shortened form of the first channel. The farmers near the societies sell their produce to the societies or the collection centre. The societies had agreement with the florishops so that they sell the produce to the florishops regularly and for reasonable price. A major advantage in this channel was that the societies collect very little amount of flowers also.

Thus, it is clear from the results, that the price of the flowers is usually decided by the florishops, and they had a upper hand in the marketing of the flower. But by introducing a cooperative marketing system and selling the produce to the external market, the growers can have more profit out of this enterprise.

## 5.9 Constraints experienced by the 'Kuttimulla' growers regarding production, technology and marketing.

### 5.9.1 Production Constraints.

The first important problem faced by 'Kuttimulla' growers in relation to production was the "difficulty in availing inputs". Since, retail shops dealing with inputs are lesser, they could not meet out the required inputs. More over at the time of unprecedented and sudden outbreak of pests, suitable chemicals would not be available locally. In this process growers would have experienced difficulties and so they

expressed it as a major problem. This in line with Alagarraja (1982) and Ravi (1985).

"Inadequate irrigation facilities" was another problem expressed by the growers. There is no projects or irrigation channels and so they depend only on well irrigation. Due to the failure of seasonal rains, it results in drought conditions in some areas which consequently affect the adoption of practices. This finding recieves support from Ravi (1985) and Bose (1988).

"High incidence of pests and diseases" was the severe problem among 'Kuttimulla' growers. Because of the intensive cultivation and indiscriminate use of pesticides and fertilizers, pest problem assumes greater improtance now-a-days in farming. Especially 'Kuttimulla' having more of vegetative growth, there might be severe pest attack. This finding is in line with the findings of Sajeevchandran (1989).

"High cost of plant protection chemicals" was yet another problem faced by 'Kuttimulla' growers. Because of the low economic status the farmers were not able to purchase and adopt the plant protection measures. "Difficulty in identification of pests and diseases" was also a problem faced by the respondents. As it is a crop newly introduced, the pests and diseases affecting the crop was not known to the farmers.

The other production constraints, in the order of importance were, "Scarcity of labour during peak season," "Non-availability of quality planting materials," "high price of planting materials" and "only outdated varieties are available for growing". However, these were assigned only lower ranks by

the growers.

### 5.9.2 Technological constraints.

The major technological constraint as experienced by the 'Kuttimulla' growers was the "non - availability of credit". No credit is given for flower cultivation by institutionalised credit agencies. More over, the non - availability or less effective functioning of cooperatives, mounting overdues due to defaulting, monopoly of cooperatives by big landlords and procedural difficulties in getting credits from commerical banks might have been the reason for the respondents to report this as a major constraint. This finding is in conformity with the findings of Cherian (1984) and Jnanadevan (1993).

"Absence of practical training" was also one of the important problems encountered by growers. This may be due to the low information seeking behaviour. Hence the growers were not able to get practical training and adequate technical help. As there was no seperate staff for doing extension work in this flower cultivation, these respondents could have given this as one of the problem. This is in line with Bose (1988) and John (1991).

"Lack of technical expertise" was yet another problem faced by the growers. The reason attributed to the above constraint may be substantiated here also. This finding is in conformity with Pillai and Prasad (1983) and Pillai et al. (1989).

The other, technological constraints experienced by the 'Kuttimulla' growers are "no standardised practices to follow"

and "lack of research for developing new varieties". But these were given only lower ranks by the respondents.

### 5.9.3 Marketing constraints.

The major problem faced by the respondents in relation to marketing was "inability of small growers to find market". Majority of the small growers experienced this as a major constraint as their produce was not taken by the florishops. Moreover, they are forced to sell the flowers to the neighbours for a low price and hence this is percieved as a major constraint.

"Unorganised marketing channel' was another problem expressed by the growers. The price of `Kuttimulla' is subjected to wide fluctuations in the market. The florishops to whom the growers give the produce fix the price of the flowers. Sometimes the florishops join together, thereby depriving the farmers a reasonable price. Because of the existing situations the farmers could have given this as one of the problems. This is in line with Ramanathan et al. (1987) and Anantharaman (1991).

"Unhealthy competition among growers" was yet another problem. As a part of selling the flowers, the growers will sell the produce at a low price than the market price so as to get his produce disposed. This creates a disinterest in the other farmers and they again reduce the price. This lack of cooperation among the farmers would have led to this as a major problem. This finding recieves support from Prakash (1989).

The other marketing constraints experienced by the growers were " lack of coordination among florist", " lack of storage facilities" and " marketing of planting materials through false publications". However, these were assigned only lower ranks by the respondents.

## 5.10 Suggestions from 'Kuttimulla' growers in respect to research, extension and marketing activities.

The floriculture sector needs more attention and careful study. It is because the growth of floriculture reflects in the economic development. In this view, based on the experience of the respondents, the suggestions were collected for the development of this sector.

### 5.10.1 Suggestions related to Research.

The first rank was given by the respondents for "evolving high yielding varieties". It is nature of human beings that when one need is satisfied he is motivated to achieve something higher. This may be the reason for this suggestion of evolving high yielding varieties inorder to earn more profit.

"Finding out hormones which induce more flowering and quality flowers" was ranked second. The reason attributed to the above suggestion would be substantiated here also.

"Formulating compatible fertilizers, pesticides and weedicides" was ranked next. The application of these three seperately would cause a high cost and wastage of time for the

farmer. So if a compatible fertilizer, weedicide and pesticide combination is worked out, it would enable the farmers to minimise the cost of cultivation.

"Identify trap crop of moderate susceptibility to pests and diseases" was given the next rank. As the crop has been intensively cultivated, the attack of pests and diseases also emerged. And also, the cost of plant protection chemicals is boosting up day by day. So this suggestion should also catch the attention of researchers in this field.

### 5.10.2 Suggestions related to Extension.

Lack of proper extension work has been attributed to the failure of many development programmes in the field of agriculture. Thus the suggestions from the respondents relating to extension has an added significance.

"Establishing seperate floriculture scheme" was ranked first by majority of the respondents . In the absence of a seperate floriculture scheme, it feels to be difficult for farmers to get financial assistance and services from the Government. More over, without a separate scheme it becomes difficult for the popularisation of this enterprise.

The second suggestion was "focussing special interest on Kuttimulla cultivation by giving subsidy as loan under horticultural development scheme". This reflects in the high credit orientation of the farmers to take up this enterprise.

"Training in 'Kuttimulla' cultivation on par with other crops to give technical advice" was ranked the next. Lack of knowledge may be a reason for the non-adoption in other parts of the state. So by giving training along with other crops will help the farmers to get proper knowledge about this and thus helps in the large scale adoption of this enterprise.

The fourth and fifth suggestions are "Booklets leaflets etc about the latest method of 'Kuttimulla' cultivation should be made available" and "Organising village seminars newsreals atleast once in a season about the latest method of 'Kuttimulla' cultivation" respectively. Through seminars, booklets, leaflets and newsreals latest technoligies about 'Kuttimulla' cultivation could be made available to the growers so that they could get first hand information which might induce, arouse and motivate the farmers to know, decide and act upon it.

Another suggestion was the "establishment of community nursery". Supplying rooted cuttings to farmers from community nursery would enable them to reduce expenditure on nursery management. Besides, it would enable to get better cuttings in time. "Including 'Kuttimulla' in AIR" was ranked next. This would help the farmers in getting frequent technical advice at various stages of the crop.

"Laying out demonstration of improved pruning and manuring technique" was the next suggestion. By adopting proper pruning techniques flower yield would be increased and application of NPK by proper techniques also increasee yield. Through such demonstrations, the farmers can be convinced about these practices and thereby get motivated to adopt them.

### 5.10.3 Suggestions related to Marketing.

The success of any crop depends mainly on the marketing of the produce.

The first suggestion given by the respondents was the "installation of flower based industry". Establishing a processing unit to extract essence and to utilize the late arrivals which usually fetch low price will help the growers to get better price for the produce.

"Fixing of support price "was the second suggestion regarding the marketing. The fluctuation of market price usually takes place. If the Government fixes a support price for the produce it will prevent the huge loss to the growers and offer remunerative price for the produce.

"Establishing cooperative societies" was also an important suggestion. This would help the farmers to get inputs and sell their produce at reasonable price without the interference of the middle men. Publishing latest price in newspapers and through broadcast will also be useful to the grower to sell his produce in a profitable way.

"Establishing cooperative transport facility" will enable the growers to get the required inputs and arranging transport facilities in a cooperative way as to facilitate the quick disposal of flowers. Providing cold storage facilities would prevent the growers from the forced sale of their produce at a lower price.

By taking into consideration these suggestions, the 'Kuttimulla' cultivation can be popularised in the state.

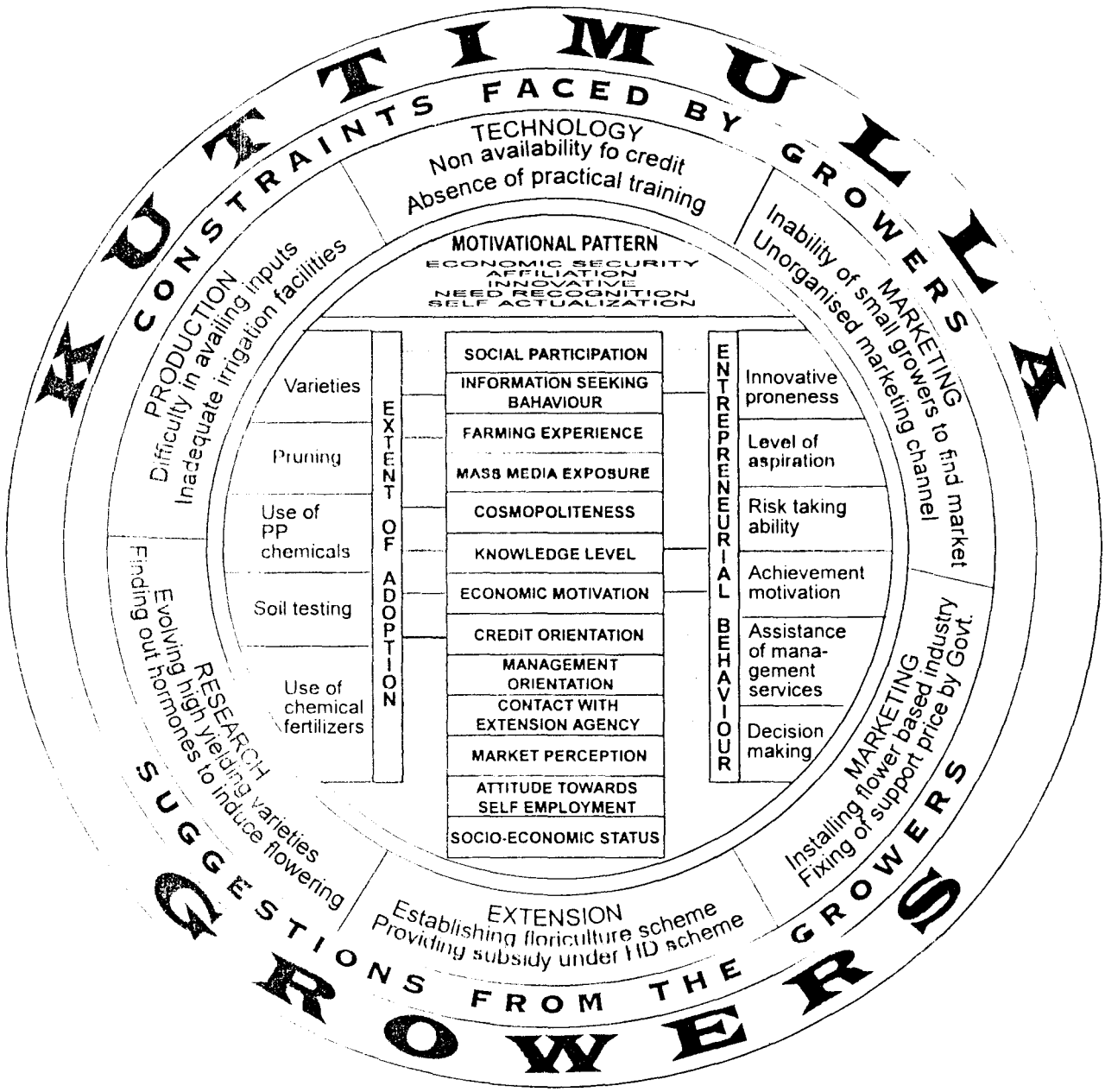



Fig. 8. Empirical model of the study

# SUMMARY

# CHAPTER VI

## SUMMARY

'Kuttimulla' cultivation, as a small scale self employment enterprise in the field of agriculture is flourishing in the central parts of Kerala. It was adopted by the farmers themselves without any proper implementation by the authorities. In the present day of severe unemployment and shortage of flower in the state, this could be encouraged as a self employment avenue. In this context, it would be useful to study the entrepreneurial behaviour and motivational pattern of the farmers in the adoption of this enterprise and to explain the cognitive, affective and connative components of behaviour with a set of variables. The major constraints experienced by the growers along with their suggestions have also to be studied to suggest an extension model to popularise 'Kuttimulla' cultivation in the state. Considering the above facts, the present research study was taken up with the following specific objectives.

1. To study the socio-economic profile of the 'Kuttimulla' growers.
2. To study the extent of adoption of cultivation practices.
3. To study the entrepreneurial behaviour of the 'Kuttimulla growers.
4. To study the motivational pattern of 'Kuttimulla' growers
5. To identify the marketing channels prevailing in the area.
6. To study the constraints as percieved by the growers, and
7. To develop an extension model to popularise 'Kuttimulla' cultivation in Kerala.

The study was carried out in Alapuzha district of Kerala state. Three panchayats were purposively selected and fifty growers form each panchayat was selected randomly. Thus a total of one hundred and fifty growers formed the respondents of the study.

A detailed review of literature was done and experts were consulted. Based on this, the dependent variables, extent of adoption and entrepreneurial behaviour were selected for the study.

Profile characteristics included in the study viz. farming experience, socio-economic status, economic motivation, social participation, mass media exposure, information seeking behaviour, cosmopoliteness, contact with extension agency, market perception, credit orientation, management orientation, attitude towards self-employment and knowledge about 'Kuttimulla' cultivation were taken as independent variables.

Adoption was measured by using the modified scale which was already devveloped by Singh and Singh (1974).

Entrepreneurial behaviour was measured with the help of the dimensions like innovative proneness, decision making, achievement motivation, level of aspiration, risk taking ability and assistance of management services.

The motivational pattern of the growers was identified with the help of paired comparison technique, developed by Thurstone (1927), taking five motives after review of literature and discussions with experts.

Farming experience was measured using the procedure followed by Padmanabhan (1981). Socio-economic status was measured by the scoring procedure developed by Venkataramaiah (1983). The scale developed for the purpose of the study was used for measuring economic motivation.

Social participation was measured by the scoring procedure developed by Lokhande (1974). The procedure used by Fathimabi (1993) was used here to assess the mass media exposure. The scoring procedure developed for this study was used to measure the information seeking behaviour.

Cosmopoliteness was measured by using a modified procedure developed by Fathimabi (1993). The procedure followed by Sirajudeen (1980) was used to measure contact with extension agency. The procedure developed by Nair (1969) was followed to assess market perception.

Credit orientation was measured by using the scale developed by Beal and Sibley (1967) with slight modifications. The scale developed by Samantha (1977) was used to measure management orientation.

Attitude towards self employment in agriculture was measured using the scale developed for the purpose of study using the method of equal appearing interval as described by Thurstone and Chave (1929). The scale consists of 6 statements. The knowledge level of the growers was measured by using a teacher-made test developed for this study.

Based on the discussions with 'Kuttimulla" growers, discussions with extension functionaries and through review of literature, constraints experienced by the growers and their suggestions for the improvement of this entreprise were collected and included in the interview schedule to rank them.

The data were collected from the 'Kuttimulla' growers with the help of a well structured and pretested interview schedule. The data so collected were analysed with the help of statistical techniques viz.frequency and percentage analysis,mean and correlation analysis to derive the results.The salient findings of the study were as follows.

**Salient findings.**

1. Majority of the respondents had high level of adoption of cultivation practices.
2. The practice wise adoption revealed that almost all respondents adopt high yielding varities.
3. More than half of the respondents had high entrepreneurial behaviour.
4. The major subcomponent contributing to the enterpreneurial behaviour was innovative proneness.
5. Majority of the respondents are having low farming experience.
6. More than half of the respondents had high socio - economic status.
7. More than three-fourth of the respondents had high economic motivation.
8. More than half of the respondents are having low social participation.

9. Majority of the respondents are having high mass media exposure.

10. More than half of the respondents had only low information seeking behaviour.

11. Respondents were equally distributed in low and high group with respect to cosmopoliteness.

12. Nearly three-fourth of the respondents were found to have high contact with extension agency.

13. More than two-third of the respondents had low level of market perception.

14. Majority of the respondents had high credit orientation.

15. Nearly two-third of the respondents had high level of management orientation.

16. Majority of the respondents had a favourable attitude towards self employment in agriculture.

17. More than half of the respondents had high knowledge level regarding cultivation practices in 'Kutttimulla'.

18. Positive and significant relationship was obtained between adoption and their characteristics like farming experience, economic motivation,information seeking behaviour,cosmopoliteness credit orientation and knowledge level .

19. Characteristics like economic motivation,information seeking behaviour and knowledge level were found to have positive and significant correlation with entrepreneurial behaviour while others have no significant correlation.

20. The most important motive governing the adoption of 'Kuttimulla' cultivation was economic security followed by

affiliation and innovativeness.

21. The major marketing channel prevailing in the area was Producer-Collection agent-Collection centre-Florishops-Consumer.

22. Most important constraint expressed by the 'Kutttimulla growers with respect to production was the 'non availability of inputs' followed by 'inadequate irrigation facilities' and 'high incidence of pests and diseases.'

23. Regarding technological constraints 'non-availability of credit' was ranked first followed by 'absence of practical training' and 'lack of technical expertise'.

24. The major marketing constraint was 'inability of small growers to find market' followed by 'unorganized marketing channel' and unhealthy competition among growers.

25. The major suggestion in relation to research was 'evolving high yielding varieties' followed by 'finding out hormones which induce more flowering and quality flowers' and 'formulating compatible fertilizers, pesticides and weedicides.

26. The important suggestions in relation to extension are 'establishing floriculture scheme' followed by 'focussing special interest on 'Kutttimulla' growers by giving subsidy as loan under horticultural development scheme'.

27. The suggetions for improving marketing are 'installation of flower based industry' followed by 'fixing of support price' by Government' and 'establishing cooperative societies'.

**Implications of the findings of the study**

The 'Kuttimulla' growers are having high entrepreneurial behaviour. The most important motive behind the adoption of

Kuttimulla cultivation was the economic security.The growers had only low social participation, information seeking behaviour, cosmopolitenose and market perception.Adequate steps should be taken to improve their socio economic condititon and due consideration should be given to their contribution in the field of agriculture.

The farmers were found to have low information seeking behaviour.It was seen from the correlation analysis that this variable had positive and significant influence in determining the extent of adoption.It also influences the entrepreneurial behaviour.So efforts are to be taken to enhance the information seeking behaviour of the growers.

The constraints experienced by the growers and their suggestions should be given due consideration and necessary actions are to be taken.

**Extension model for the popularisation of "Kuttimulla" cultivation**

The effective popularisation of 'Kuttimulla' as an employment and income generative enterprise is contemplated to be achieved through the coordination and linkage among the multiple agencies engaged in agricultural research and its transfer to the farming community. They are operating at Research System Level (RSL) Extention System Level (ESL), Input System Level (ISL) and Farmer System Level (FSL).

**Research System Level**

The research system should be geared up to develop high yielding varieties and the varieties resistant to pests and diseases.Considering the importance of ecologically sustainable agriculture under present context,the research system should give more emphasis in physical and cultural method of plant protection.A suitable blending of the indigenous cultivation practices followed by farmers and the new methods generated by the research system is also warranted.

Research system should involve in public awareness programmes contributing to publications,news paper columns,leaf lets,and also information support through TV,Radio and film shows enhancing the involvement of extension workers,input dealers,farmers and the related,in farm trails ,campaigns, demonstrations,seminars,training and should form interdisciplinary committees for effective implementation of this enterprise.

**Extension System level**

Strong extension system is necessary for popularising 'Kuttimulla' cultivation in the state.It is known that a wide gap exists between the knowledge production and its utilisation by the farmers in the actual fields.Extension system should organise various extension programmes with the help of research system like exhibitions, demonstrations,campaigns,farmers days, seminars,training etc.. for popularising this enterprise.Special efforts as suited to the farmers profile characteristics may be

taken up through mass media and group methods so as to reach the unfamiliar clients for effective dissemination of information about this enterprise.

Extension system should organise special training programmes and make available the publications in the reach of farmers. Special emphasis should be given to establish a seperate floriculture scheme.Extension system should act as a feed back of field experience to research system.

**Input System Level**

Input agencies should provide timely information support, supply of good quality planting materials and supply of fertilizers and plant protection chemicals so that the non - availability of inputs may not become a serious constraint.The credit facilities must also be made available to the farmers with the least procedural difficulties. Input system should organise farmer contact programmes,farm trials, training to farmers and extension workers,demonstrations,film shows and also act as a feed back of field experiences and problems to research system.

**Farmer System Level**

Farmers are the ultimate users of the enterprise. Successful implementation of the enterprise depends largely on motivating the farmers in adopting this enterprise.Farmers are inclined to adopt simple and low cost technologies since such innovations can be put into practice with low outlay of capital.Farmers must be prepared to have regular visit to Krishibhavans and utilise the

service of extention and input systems.They should be motivated to participate in the various extension programmes viz. farm trials, exhibitions,farmers days,seminars,trainings and help in feed back.

The prospect of this enterprise depends on the marketing of the produce.The farmers are to be assured of remunerative prices for their produce.For the same,establishment of 'APCOS' model of marketing system becomes necessary.ie the flowers are collected in a cooperative society in the concerned areas and these are brought to a collection centre and from their it is marketed to the consumers through wholesale or retail florishops.This should be arranged by the extension system.

The coordination and communication among all the four system is essential so as to bring a joint action programme for the implementation and popularisation of 'Kuttimulla' cultivation in the state.

Considering the importance of popularising 'Kuttimulla' cultivation among the farmers in Kerala, an attempt is made to integrate the salient findings of the present study,with those of the researcher's observations,experience and on the basis of discussions with the panel of experts,in the form of a strategic extension model.The suggested model for the popularisation of 'Kuttimulla' cultivation is furnished in Figure.9

**Suggestion for future research**

1. Similar studies are to be conducted in other districts of the state.

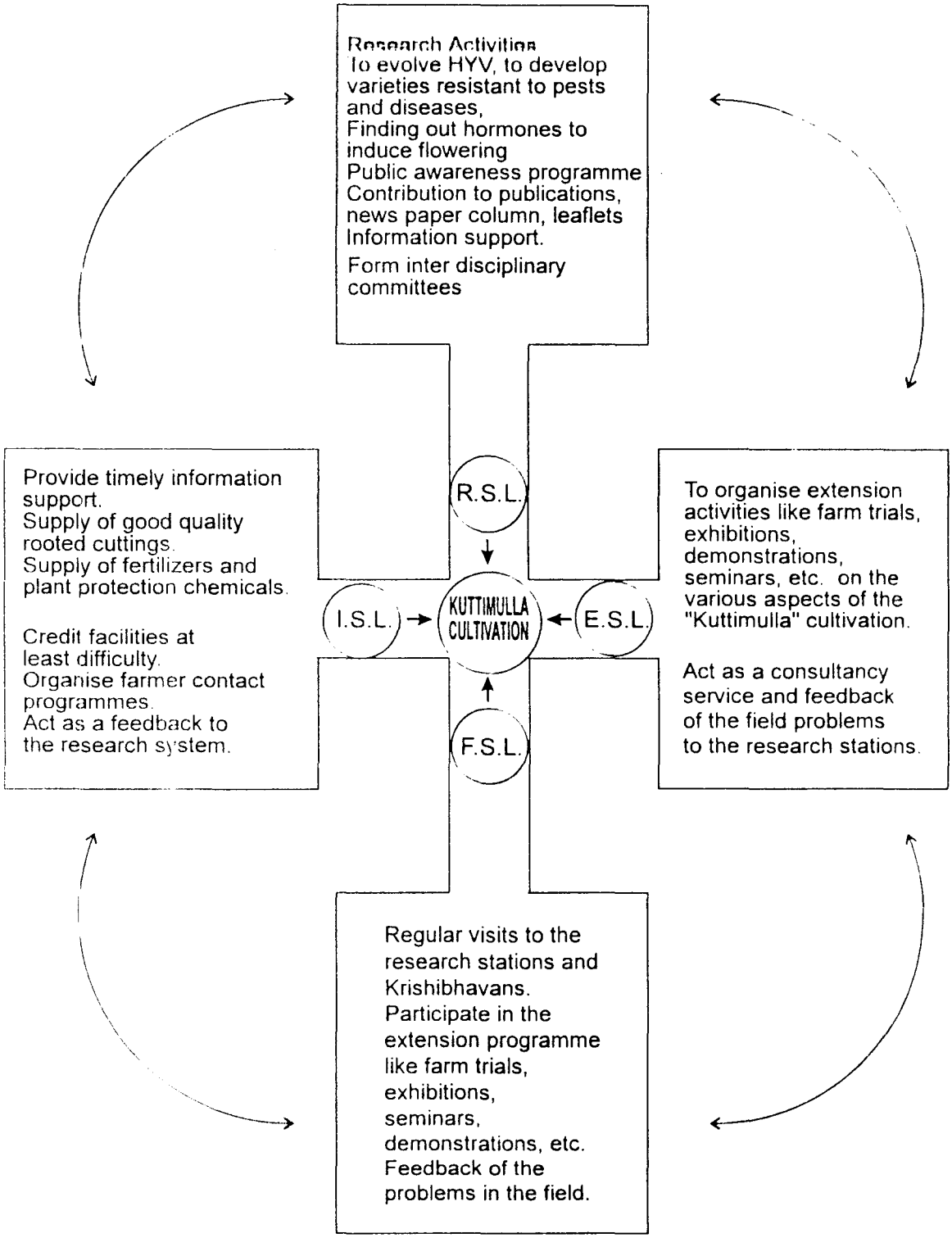



**Fig. 9. Suggested extension model for the popularisation of "Kuttimulla" cultivation**

2. Comparitive study of 'Kuttimulla' cultivation with cutflower cultivation should be under taken to evaluate the merits and demerits.

3. An evaluative research on the role of the different implementing agencies in the popularisation of this enterprise could be taken up to study the extent of extension efforts to popularise this enterprise.

4. More number of independent variables can be included.

# REFERENCES

# REFERENCES


Adhiguru, P.1991. Integrated programme for rice development in Pondicherry Union Territory - An analysis. Unpub. MSc. (Ag.) Thesis, T.N.A.U, Coimbatore.

Alagarraja, A. 1982. Factors influencing flower cultivation in Madurai District. Unpub. MSc. (Ag.) Thesis A.C and R.I. T.N.A.U, Madurai.

Anantharaman, M. 1991. Managerial efficiency of cassava farmers. Unpub Ph.D Thesis, College of Agriculture, Vellayani.

Anantharaman, M., Ramanathan.S., Gadewar, A.U. and Lakshmi, K.R. 1985. Impact of lab to lab programme on technology transfer and economic conditions of farm families. Annual Report 1985. Central Tuber crops Research Institute, Trivandrum. pp.125-126.

Anbalagan, S. 1974. A study of factors influencing adoption off package of practices for high yielding varieties of paddy. Unpub. M.Sc (Ag.) Thesis, A.C and R.I, Coimbatore.

Anithakumari, P. 1989. Transfer of Technology on pulses and oilseeds in the Onattukara tract of Kerala. Unpub M.Sc (Ag.) Thesis, K.A.U., College of Agriculture, Vellayani.

Anilkumar, A. 1988. Involvement of farmers in Agro-forestry programme in Kerala - A critical analysis. Unpub. M.Sc (Ag.) Thesis, College of Horticulture, Vellanikkara.

Ansari,s.1979. A comparative study on adoption behaviour of Varalaxmi cotton growers in two command areas of Karnataka state. Unpub. M.Sc (Ag.) Thesis. G.K.V.K., Bangalore.

Atkinson, J.W. 1964. An Introduction to Motivation. D. Van Nostrand Company Inc. Princeton, New Jersey, New York.

Aziz,A.E 1988. Adoption of drought management practices by farmers-A critical analysis. Unpub. M.Sc. (Ag.) Thesis, College of Horticulture, Vellanikkara.

Balasubramanian, R. 1980. Adoption of dairy innovations-A critical analysis. M.Sc (Ag.) Thesis. Centre for Agricultural and Rural Development Studies, Coimbatore.

Balasubramanian,S and Kaul,P.N.1982. Adoption of improved fish curing practices. Ind. J. Extn. Edn. 18 (3&4): 45

Baskar, T.S. 1984. Information seeking and adoption behaviour of small farmers growing major and minor crops in Chengalpattu district. Unpub. M.Sc (Ag.) Thesis., A.C and R.I, T.N.A.U, Madurai.

*Beal, G.M and Sibley, D.N.1967. Adoption of Agricultural technology by the Indians of Guatemale. Rural Sociology Report 62 : IOWA State University Ames, IOWA.

Bhaskaran, C. 1979. A critical analysis of the interpersonal communication behaviour of small and other farmers in a less progressive and more progressive village in Kanyakumari District of Tamilnadu. Unpub. Ph.D Thesis. College of Agriculture, Dharwad.

Bhoite, H.S and Girase, K. A. 1991. Relationship between farmer's socio-personal traits and adoption of improved dryland technology. Maha. J. Extn. Edn. 10 (1) : 115 - 118.

Bhaskaran, S and Thampi, A.M. 1986. Progressiveness of farmers and their socioeconomic characteristics in adopting HYV of paddy. Agric. Res. J. Kerala 24 (1) : 47

Bonny, B.P. 1991. Adoption of improved agricultural practices by commercial vegetable growers of Olukkara block in Trichur district. Unpub. M.Sc. (Ag.) Thesis, College of Horticulture, Vellanikkara.

Bose,M.1988. Factors influencing Jasmine cultivation-an analytical study.Unpub. M.Sc.(Ag.) Thesis TNAU,Madurai.

Bute,D.N., Sinha, R.R and Ganorkar, P.L. 1981. Farmers attitude and adoption of H4 cotton Rural India 44 (1): 16-19.

Cantril, H.1965. The Pattern of Human concerns. Rudgers University press. New Brunswick.

Chandargi, D.M., Manjunath, L. and Hanchinal, S.N. 1991. Temporal behaviour of jowar farmers. Maha. J. Extn. Edn. 10 (1): 9 - 12.

Chandran, S.A. 1989. Impact of development programmes of promoting pepper production in Kerala. Unpub. M.Sc. (Ag.) Thesis. College of Agriculture Vellayani.

Chandrasekharan, K. 1981. A study on Farm practices attributes and socio - personal factors of Farmers in relation to adoption of Agricultural practices in Tanjore. Unpub. M.Sc (Ag.) Thesis. A.C and R.I., Coimbatore.

Chattopadhyay, S.N. 1963. A study of some psychological correlates of adoption of innovations in farming. Unpub. Ph.D Thesis, I.A.R.I New Delhi.

Chauhan, M.K., Nataraj, G.N., Nagaraja, G.N. and Lovely, P.G. 1987. factors influencing participation of tribal women in farming. IAASI Quarterly 6 (3) : 137 - 141.

Chauhan, S.S. 1983. Advanced Educational Psychology. Vani Educational Books, New Delhi, P 185 - 213.

Cherian,. B.K. 1984. Awareness and attitude of Farmers, Agricultural Extension workers and officials towards T & V system. Unpub. M.Sc (Ag.) Thesis. K.A.U., College of Agriculture, Vellayani.

Coleman, J.C. 1971. Psychology and Effective Behaviour. D.B. Taraporewala Sons and Co. Pvt. Ltd., Bombay, P. 142 - 178.

Das, K.K and Sarkar, D.R. 1970. Economic motivation and adoption of farming practices. Ind. J. Extn. Edn. 6 (1&2) : 103 - 107)

*Dasgupta, S. 1963. The Innovations Research Bulletion No.5. Department of Agriculture, co. Bengal.

Desai, G.R. 1981. A critical analysis of the contribution of educational and extension guidance to economic performance of cotton farmers of Karnataka State. Unpub. Ph.D Thesis. U.A.S. Bangalore.

Devi, L and Reddy,V. 1984. Role expection and role performance of rural women in farm activities. Ind. J. Extn. Edn. 20 (3&4) : 27-34.

Dhanyakumar, K.N. 1982. A study of the impact of village adoption programme on socio - economic development - A case study. Unpub. M.Sc. (Ag.) Thesis, U.A.S, Bangalore.

Dudhani, C.M., Sethurao , M.K. and Badachikar, S.V. 1987. Impact of Drought Prone Area Programme on the demonstrator farmers. J. Rur. Dev. 6 (1) : 128-138

Edwards, A.L. 1957. Techniques of attitude scale construction. Appleton century crafts, Inc. New York.

Fathimabi, P.K. 1993. Welfare schemes for agricultural labourers. a multi-dimensional analysis. Unpub. M.Sc. (Ag.) Thesis. College of agriculture, Vellayani.

*Ferraria, J. G., Machoda, F.F., Francis, D.G. and Fortes, N.T. 1983. Adoption of maize production technology at Lavras, Minas Gerais 30 (167) : 63-80

*Gaikwad, V.R and Tirupathi, R.N. 1970. Sociopsychological factors influencing industrial entrepreneurship in rural areas - A case study in Tanuku region of west Godavari, A.P. Nat: Inst. Comm. Devpt. Hyderabad.

Gangadharan, K.K. 1993. Adoption of improved agricultural practices by pepper growers of Idukki district. Unpub. M.Sc. (Ag.) Thesis, College of Agriculture, Vellayani.

Ganguly, N 1990. Rural Industrialisation - Need and relevance of agro based industries, Kurukshetra 38 (7) : 19.

Ghorpade, M.B. 1977. Essentials of Psychology, Himalayan Publishing Home, Bombay. 215 - 256

Gill, K.S., Chahal, S.S and Singh, B.(1989). Price spreads in Vegetables in Punjab. Journal of research. Punjab Agricultural universrity, Ludhiana, 26(1): 125-134

Godhandapani, G. 1985. Knowledge level and adoption of nutrient recommendations of irrigated groundnut. Unpub. M.Sc. (Ag.) Thesis. A.C and R. I, Coimbatore.

Goswami, W.G. 1988. Benefits flowing from central sector scheme of minikit programme of wheat including propagation of new technology in Uttarpradesh - an evaluattion., Agricultural Economic Research centre, University of Allahabad. Rur. Devp. Abs. 12 (1) : 310

Govardhana, H.L (1979). Changes in the structure of marketing dry chilli in Karnataka. A study of selected regulated market. Mysore J. Agric. Sci., 13 (2): 223

Govind, S. 1992. integrated Pest Management in rice - Achievement and opportunities. Unpub. M.Sc. (Ag.) Thesis. T.N.A.U. Coimbatore.

Grewal, N.S and Sohal, I.S. 1991.Comparative role of two social systems in the speed of adoption of some farm practices. Ind. J. Extn. Edn. 7 (1&2): 1-5

Guilford, J.P. 1971. General Psychology. and. ed. Van Nostrand Reinhold co., New York. P. 91

Hamilton, W. 1990. Entrepreneurship education western style - An award winning program. The Agric. Edue. Magazine. 63 (6) : 14 - 15.

Haque, M.A. 1989. Adoption of recommended species of fish in composite fish culture. In Ray, G.L. (Ed.) Studies in Agricultural extention and Management. Mittal publications, Delhi. pp.99 - 130

Haque, M. A and Ray, G.L. 1983. Factors related to the adoption of recommended species of fish in composite fish culture. Ind. J. Extn. Edn. 19 (1&2) : 74 - 83.

Haraprasad, D. 1982. Study on the impact of the agricultural programmes implemented by the Samu Farmers Development Agency among farmers of Trivandrum district. Unpub. M.Sc. (Ag.) Thesis. College of Agriculture, Vellayani.

Himachalam, D. 1990. Entrepreneurial development in small scale

sector, Yojana 34 (3) : 16 - 18

Himantharaju. 1988. A study of extent of extension guidance recieved by the contact farmers in adoption of selected practices of summer paddy cultivation in Mandya district, Karnataka State. The Mysore Journal of Agricultural science. 22 (1) : 248

Hugar, L.B., Surya Prakash, S and Lokamanya, D.S (1983). A study of costs and margins in marketing of Brinjal in Belgaumcity. Agricultural Marketing 26(1) :23-26

Hussain, S.A. 1993. Profile analysis of cocunut climbers in Thiruvananthapuram district. Unpub. M.Sc. (Ag.) Thesis, College of Agriculture, Vellayani.

Jaiswal, B.K and Sharma, P.N. 1990 Constraints in adoption of improved technology of rice. Maha. J. Extn. Edn. 9 (1) : 341-342.

Jaleel, M.M. 1992. Factors influencing the development of Agriculture among the 'Kanikkar' tribe of Kerala.Unpub.M.Sc. (Ag.) Thesis, College of Agriculture, Vellayani.

Jayakrishnan, S. 1984. Adoption of low cost technology among Paddy growers. Unpub. M.Sc (Ag) Thesis, T.N.A.U., Coimbatore.

Jayalekshmi, G (1996). Entrepreneurial behaviour of rural women in Thiruvananthapuram district. Unpub.M.Sc. (Ag) Thesis. College of Agriculture Vellayani.

Jayapalan, R. 1985. Constraints evolved in certified rice seed production-An analysis. Unpub. M.Sc. (Ag) Thesis T.N.A.U, Coimbatore.

Jnanadevan, R. 1993. An analysis of selectted development programmes for promoting cocorut production in Kerala. Unpub. M.Sc. (Ag.) Thesis. College of Agriculture, Vellayani.

John D'Silva (1982). An analysis of marketing of Coorg mandarin Oranges in Mysore, Karnataka state. Mysore J. Agric. Sci., 16(1):381-383

John, T.D.1991. Feasibility analysis of group approach in the transfer of pepper production technology. Unpub. M.Sc. (Ag.) Thesis. College of Horticulture, Vellayani.

Joshi, S.S and Kapur, T.R. 1973. Fundementals of farmbusiness management. Kalyani Publishers, Newdelhi.

Kalamegom.E.V. and Menon.R.K. 1977. Communication behaviour of small farmers in a progressive and less progressive village. Ind. J. Extn. Edn. 13(1&2):37-41

Kamarudeen.M. 1981. A study on the impact of National Demonstration Programme on Paddy cultivation in Thrissur district. Unpub. M.Sc (Ag.) Thesis. College of Agriculture, Vellayani.

Kamble.M. 1973. Higher education for the scheduled castes and tribes Economic and Political Weekly 13(20): 415.

Kanthraj.J. 1980. A study of knowledge, extent of adoption and appropriateness of sunflower technology among growers. Unpub. M.Sc. (Ag.) Thesis, U.A.S. Banglore.

Karim.Z.A.S.M and Mahboob.S.G. 1974. Relationship of selected characteristics of transplanted Amam rice growers with their adoption of fertilizers in a rural area in Bangladesh. Ind. J. Extn. Edn. 10(1&2):16-22

Krishnamoorthy.V. 1989. Whole farm analysis on information management and adoption of technological units of low cost seed treatment practices by small and marginal farmers. Unpub. M.Sc. (Ag.) Thesis. T.N.A.U. Coimnatore.

Krishnaswamy.O.R. 1986. Strategy for IRDP. Kurukshetra 33(11):4-5

Kumar.R. and Wasunik.S.M. 1990. A study of adoption of crop production technologies in progressive and less progressive villages of Uttar Pradesh. Indian Cooperative Review 27(2):135-159.

Kumbar.S.V. 1983. A study on the adoption behaviour and consultancy pattern of grape growers of Bijapur district in Karnataka state. Unpub. M.Sc. (Ag.) Thesis. U.A.S., Bangalore.

Kunchu.V. 1989. Constraints in the utilization of developmental schemes by the cardamom growers of Kerala. Unpub. M.Sc. (Ag.) Thesis. College of Horticulture, Vellanikkara.

Lakshmanan.K. 1987. Constraints in irrigated groundnut. An analyttical study of yield and technological gaps. Unpub. Ph.D Thesis. A.C and R.I, Coimbatore.

Lakshminarayanan, S.R. 1984. Spread and acceptance of wheat technology Unpub. M.Sc. (Ag.) Thesis. A.C. and R. I, Coimbatore.

Latha, A. 1990. Utilization of biogas technology by the farmers of Palakkad. Unpub. M.Sc. (Ag.) Thesis. College of Horticulture, Vellanikkara.

*Lindquist, E.F. 1951. Educational Measurement, Council Education, Ames. Washington.

Lokhande, M.R. 1974. Socio-psychological factors associated with farm credit behaviour of Delhi farmers, Unpub. Ph.D Thesis, I.A.R.I., NewDelhi.

Mahadevaiah, D. 1987. Study on Adoption of Sugarcane cultivation practices and the sources of information consulted by the farmers of K.M. Doddi Sugar factory area in Mandya district. Unpub. M.Sc. (Ag.) Thesis, G.K.V.K., Bangalore.

Manjunatha, G. 1980. A study on the impact of village adoption programme operated by an input agency in Mandya district. Unpub. M.Sc. (Ag.) Thesis. U.A.S. Bangalore.

* Mali, M.G. 1984. Factors affecting retention of literacy among adult neo-literates, Ceylon. 23.

Manivannan, M, 1980. A study on knowledge and content of adoption of sunflower growers. Unpub. M.Sc. (Ag.) Thesis. A.C. and R.I., Coimbatore.

Marsh, C.D and Coleman, A.C. 1955. The relation of farmer's characteristics to the adoption of recommended farm practices. Rural sociology 20 ; 286 - 296.

Maslow, A. 1954. Motivation and Personality. Harper and Bros. Newyork. p. 80-106.

Mathew, Joy. 1980. A study on the role of rural youth in the agricultural development of rural areas. Unpub. M.Sc. (Ag.) Thesis. College of Agriculture, Vellayani.

Meera, B. 1995. Differential adoption of plant protection technology by farmers of Kerala - A critical analysis. Unpub. Ph.D Thesis, College of Agriculture, Vellayani.

Menon, S.J. 1995. Taxonomical analysis of agricultural modernity of farmers. Unpub. M.Sc. (Ag.) Thesis, College of Agriculture, Vellayani.

Mishra, R.N and Jha, P.N. 1985. Impact of Lab to Land programme in increasing adoption, productivity and income of farmers in North Bihar. Ind. J. Extn. Edn. 21 (1 & 2) : 77 - 79

Mishra, S.P. 1979. A study of farm entrepreneurship in a backward district of Bihar. Unpub. M.Sc. (Ag.) Thesis, IARI, New Delhi.

Mishra, S.P and Sinha, B.P. 1981. An analysis of motivational dispositions of farm entrepreneurs. Ind. J. Extn. Edn. 19 (1&2) : 46 - 50

Mohanadasan, T.C. 1979. A study on information need perception and adoption behaviour of big and small farmerrs growing Potato. Unpub. M.Sc. (Ag.) Thesis. T.N.A.U, Coimbatore.

Moulik, T.K. 1965. A study of the predictive values of some factors of adoption of nitrogenous fertilizers and the influence of sources of information on adoption behaviour. unpub. Ph.D Thesis, IARI, NewDelhi.

Muthayya, B.C and Loganathan. 1990 Psyco-social factors influencing entrepreneurship in rural areas. Journal of Rural Development 1 (1) : 237-281.

Muthukrishnan, R. 1993. Entrepreneur culture. Kisan world 20 (8) : 36-37

Nagaraj. N., Chandrakanth, M.G and Ramanna, R. (1985). Market appraisal for a few fruits and vegetables. Indian J. Marketing, 16 (4): 13-20

Naidu, S.K. 1978. To investigate the extent of adoption of the package of practices recommended by Central Tobacco Research Institute, Rajamundry by Tabacco growers in East Godawari district of Andhra Pradesh. Unpub. M.Sc. (Ag.) Thesis, College of Agriculture, Vellayani.

Naik, B.K. 1980. Awareness and Attitude of farmers and extension workers towards Intensive Agricultural Extension System (T&V) in Andhra Predesh. Unpub. M.Sc. (Ag.) Thesis, S.V. Agricultural College, Thirupathi.

Nair, G.T. 1969. A Multivariable study on adoption of high yielding varieties by the farmers of Kerala State. Unpub. Ph.d Thesis IARI, NewDelhi.

Nandakumar, P.P. 1988. Impact of I.T.D.P on Yerava tribal community in Virajpet Taluk of Kodagu district, Karnataka. Unpub. M.Sc. (Ag.) Thesis, U.A.S. Bangalore.

Nandapurkar, G.G. 1982. Small farmers- A study on their entrepreneurial behaviour. Metropolitan Book co. Pvt. Ltd., NewDelhi.

Nelson, S. 1992. Role of Krishibhavans in agricultural development in Thiruvananthapuram district. Unpub. M.Sc. (Ag.) Thesis, College of Agriculture, Vellayani.

Nidagundi, F.R. 1981. A study on knowledge and adoption behaviour of trained farmers in Ghataprabha command area. Karnataka State. Unpub. M.Sc. (Ag.) Thesis. College of Agriculture, Dharwad.

Olowu, T.A., Iloka, A.I. And Ekpere, J.A. 1988. Farmers' characteristics and adoption of improved cassava varieties Ind. J. Extn. Edn. 24 (1&2) :22-25

* Osuji, O.L. 1980. Infrastructural facilities affecting the adoption of new farm practices among farmers in the IMO state Nigeria - a research note. Oxford agrarian studies 9 : 169 - 172.

Padmanabhan,B.S.1991. Floriculture-unlimited export potencialThe Hindu Survey of Indian Agriculture: 197 - 199.

Padmanabhan, V.B. 1981. A study on the influence of labour effeciency on the adoption of improved agricultural practices by farmers and factors related with it. Unpub. M.Sc. (Ag.) Thesis, College of Agriculture, Vellayani.

Palaniswamy, A. 1978. Adoption behaviour of Mullai flower growing farmers. Unpub. M.Sc. (Ag.) Thesis. A.C and R.I., T.N.A.U, Coimbatore

Paneerselvam, T.S. 1978. A study of awareness, credibility and utilisation of information sources by the farmers of progressive and nonprogressive village. Unpub. M.Sc. (Ag.) Thesis, A.C and R.I, Coimbatore.

Parshad, R. 1987. Farmers' knowledge of sodic soil reclamation technology and the extent of adoption of amendments, Ind. J. Extn. Edn. 23(3&4): 38 - 42.

Pathak, S., Pal, M.K and Guha Roy, M.K. 1979. Impact of National demonstration on knowledge, Attitude and Adoption level of farmers in West bengal. Ind. J. Extn. Edn. 15 (1&2) : 49-52.

*Perumal, G., Vijaraghavan, R and Theodore, R.K. 1990. Entrepreneurial Characteristics of succesful women entrepreneurs -A case analysis approach, Dept. Sub project. Department of Agric. Extension and Rural Sociology, TNAU, Coimbatore.

Pillai, G.B. 1978. A study on adoption of soil conservation measures by farmers in scheme areas of TVM district. Unpub. M.Sc. (Ag.) Thesis College of Agriculture, Vellayani.

Pillai, G.B and Prasad, R.M. 1983. Agriculture among the Hill Tribe : A case study of Muduvas of Parambikulam. Directorate of Extension, KAU, mannuthy.

Pillai, G.B., Prasad, R.M. and Sreekumar, C.P. 1989. Tribes of Attappady : A socio-economic profile Centre for conservation of Humanity, Trivandrum. pp. 19-26.

Pillaiar, S. 1985. Impact of Socio-cultural and production oriented programme implemented among weaker sections. Unpub. M.Sc. (Ag.) Thesis, A.C and R.I. T.N.A.U., Madurai.

Porchezhian, M.R. 1991. An analysis of entrepreneurial behaviour of farmers. Unpub M.Sc (Ag.) Thesis T.N.A.U. Coimbatore.

Prakash. R. 1980. A study on the Impact of Agricultural Development programme among the tribals of Kerala. Unpub. M.Sc. (Ag.) Thesis, K.A.U, College of Agriculture, Vellayani.

Prakash, R. 1989. Sequential analysis of constraints in increasing prodction of rice and cocunut in Kerala. Unpub. Ph.D Thesis, College of Agriculture, Vellayani.

Raghudharan, V., Menon, K.R. and Annamalai, R. 1976. Motivation patterns of farmers in progressive and non-progressive blocks. Ind. J Extn.Edn. 12 (3&4) : 46-49.

Rahim. K.M.B and Sharma, V.K. 1983. Factors affecting adoption and non-adoption of improved terracing in Ramganga catchment in U.P. Hills. Agricultural Situations in India 39 (9) : 631-633

Rajababu, M.1984. Evaluation of the training programme under T and V system in Kerala. Unpub. M.Sc (Ag.) Thesis. College of Agriculture, Vellayani.

Rajagopal, V.K. 1986. Study on the training needs of hybrid cotton seed growers. Unpub. M.Sc. (Ag.) Thesis, T.N.A.U. Coimbatore.

Rajkumar ,K.1992. Agricultural Modernisation and Technology Adoption An analysis. Unpub. M.Sc. (Ag.) Thesis., T.N.A.U. Coimbatore.

Ramachandran,C. 1992. Impact of rice minikit trials on the adoption behaviour of farmers. Unpub. M.Sc (Ag.) Thesis, College of Agriculture, Vellayani.

Ramanathan,S., Anantharaman,M and Lakshmi,K.R. 1987. Constraints in adoption of high yielding cassava varieties. Ind. J. Extn. Edn. 23(3&4): 55-59.

*Ramasamy,C. (1981). Problems in production and marketing of major vegetables in Coimbatore District. (i) Brinjal and (ii) Bhindi. Res. Rpt.:19, Department of Agricultural Economics, Centre for Agricultural and Rural Development studies, T.N.A.U. Coimbatore.

Ramasamy,N.K. 1987. Factors responsible for the spread of Turmeric in Coimbatore district. Unpub. M.Sc. (Ag.) Thesis. T.N.A.U., Coimbatore.

Ramegowda,B.L. and Siddaramaiah. 1987. Rate of diffussion and Innovativeness of Farmer in Adopting MR-301 Paddy variety. Ind. J. Extn. Edn. 23(3&4):46-48.

Rameshbabu, R.1987. A study on Adoption behaviour and economic performance of grape growers of Bangalore and Kolar districts. Unpub. M.Sc. (Ag.) Thesis, G.K.V.K., Bangalore.

Ramsey,C.H., Polson, R.A., and Spencer, G.H. 1959. Values and adoption of practices. Rural Sociology 24: 304-309

Rao,D.G., Singh,K.N and Pal,K.1971. A study on the motivational pattern of farmers towards the high yielding varieties of wheat. J. Behavioural Sciences and Community Development. 5(3):64-71

Ravi,K.C.1985. Information seeking and adoption behaviour of tapioca growing farmers. Unpub. M.Sc(Ag.) Thesis T.N.A.U, Coimbatore.

Ravichandran,V.1981. Study on attitude, extent of adoption and problems encounted by registered Sugarcane growers. Unpub. M.Sc.(Ag.) Thesis, A.C and R.I, Coimbatore.

Reddy,B.N.N.1971. A study on differential characteristics of adopters and non-adopters of fertilizers to rainfed ragi in Bangalore North Taluk. Unpub M.Sc. (Ag)Thesis,U.A.S, Bangalore.

Reddy,C.R and Kumar.S.B.V.1982. Impact of Reserve Bank of India's credit on farm economy. RuralIndia 45(22):17-24.

Reddy,T.R and Ramaiah, K.M.J.1993. Determinants of V.E.O's productivity. Ind. J. Extn. Edn. 29(142):85-88.

Renukaradhya, B.N. 1984. A critical study on farmers training programme in selected command area of Karnataka State. Unpub, M.Sc(Ag) Thesis.G.K.V.K., Bangalore.

Rogers, E.M.1962. Diffusion of Innovations. The Free Press, New York.PP.124-126.

Rogers,E.M. 1983. Diffussion of Innovations, Free Press, NewYork.

Rogers,E.M and Shoemaker, F.F. 1971 Communication of Innovations:A cross cultural approach. The Free Press ,New York.pp.26-188

Sabapathi,K.K.1988. Training needs in agriculture of Irulas of Attappady. Unpub. M.Sc (Ag.) Thesis. College of Agriculture, Vellayani.

*Saed, A.M. 1989. Socio-economic models of adoption of agricultural innovations in Sudan and their implications for agricultural development programmes. Cornell University. Diss. Abstt. Intl. 50(3):754

Saini,K. 1975. A study of factors affecting adoption of selected recommended dairy practices. Unpub. M.Sc. (Ag.) Thesis. U.A.S, Bangalore.

Sajeevchandran. 1989. Impact of Development programmes in promoting pepper production in Kerala. Unpub. M.Sc. (Ag.) Thesis, K.A.U., College of Agriculture, Vellayani.

Samad,K.A. 1979. Response of special package programme for agricultural development in Kerala. Unpub. M.Sc. (Ag.) Thesis, College of Agriculture, Vellayani.

*Samanatha,R.k. 1977. A sttudy of some agro-economic socio-psychological and communication behaviour of agricultural credit users of Nationalised Banks. Unpub. Ph.D Thesis, B.C.K.M.V, Naida, West Bengal.

Sandhya,V.1992. Economics of production and marketing of Vegetables in Ollukkara Block. Unpub. M.Sc. (Ag) Thesis, Vellanikkara.

Sangle,G.K. 1984. Technological Growtth and Rural Change. Metropolitan inters, New Delhi.

Sanjeev, K.V. 1987. Training programme of KAU Krishi Vigyan Kendras-an analysis. College of Horticulture, Vellanikkara.

Sankaran,R. 1987. Impact of minikit programme on knowledge and adoption of groundnut technology. Unpub. M.Sc. (Ag.) Thesis, centre for Agricultural and Rural Development studies, Coimbatore.

Sanoria,Y.C and Sharma,D.K. 1983. Comparative of beneficiaries of farm development programmes-A research note. Ind. J. Extn. Edn. 11(1&2):84-86

Sarmah,R.C and Singh,A.K. 1994. Determinants of entrepreneurship in agriculture. Productivity. 35(11): 536-539

Satheesh,D. 1980. A study on knowledge and adoption of Chawki rearing practices by silkworm rearers of Kanakapura taluk. Unpub. M.Sc. (Ag.) Thesis. G.K.V.K. Bangalore.

Seema,B. 1986. Role of farm women in the decision making process of a farming community in Trivandrum district, Unpub. M.Sc. (Ag.) Thesis, College of Agriculture, Vellayani.

Selvakumar,B. 1988. Information support utilisation for awareness, conviction and adoption of cotton white fly control measures by contact and non-contact farmers. Unpub. M.Sc. (Ag.) Thesis. T.N.A.U. Coimbatore.

Senthil,D. 1983. A critical analysis of hybrid cotton seed growers. Unpub. M.Sc. (Ag.) Thesis. T.N.A.U., Coimbatore.

Sethy,B. 1982. A study of the entrepreneurship characteristics of the farmers of an agriculturally advanced district of Orissa. Unpub. Ph.D Thesis. IARI, NewDelhi.

Shankariah, C.H and Singh, K.N. 1967. Predictive analysis of factors related with knowledge of improved practices of vegetable cultivation. Ind. J. Extn. Edn. 3(1&2): 67-73

Sheoran, V.K. and Kumar,R. 1988. Correlates of adoption of dairy innovations of IRDP beneficiaries Ind. J. Extn. Edn. 24(1&2): 71-73

Shukla,S.R. 1980. Adoption behaviour of small farmers. Ind. J. Extn. Edn. 26(1&2):55-58

Singh,A.K. 1989. Fertilizer promotion. In: Ray,G.L.(Ed.) Studies in agricultural extension and management Mittal Publications, Delhi. PP 25-59

Singh,J.P. 1994.Floriculture-Emerging export opportunities.The Hindu Survey of Indian Agriculture.:129 - 135

Singh,K and Mann,G.S. 1971. Determinants of marketing margins and their economic signifficance. Agricultural marketing. 14(2):1-8

Singh,K.M.P and Singh,R.P. 1974. Impact of National Demonstration in the high yielding Varieties of Wheat. Ind. J. Extn. Edn. 10(1&2):65-67

Singh,K.N., Singh,S.N., Pal,K. and Singh,J. 1972. A scale for measurement of Agricultural Progressiveness of a Village. Ind. J. Extn. Edn. 8(3&4):25-31

Singh,R. 1970. Achievement motivation among agricultural and business entrepreneurs of Delhi. Journal of Social Psychology 81: 146-149

Singh,S.N and Singh,K.N. 1970. A multivariate analysis of adoption behaviour of farmers. Ind. J. Extn. Edn. 6(3&4):39-45

Sinha,A.K and Ray,G.L. 1985. Variables contributing to the level of fertilizer use of farmers. Ind. J. Extn. Edn. 21(3&4):1-10

Sinha, H.S.P, Sinha,A.K and Sinha,K. 1984. A study on attitude of farmers of Chottnagpur towards soil conervation programmes. Ind. J. Extn. Edn. 20(3&4):9-17

Sirajudeen,C.H. 1980. Credit and marketing behaviour of sugarcane growers. Unpub. M.Sc. (Ag.) Thesis, T.N.A.U. Coimbatore.

Sivaramakrishnan,S. 1981. A study on the diferential adoption of recommended agricultural practices of selected crops. Unpub. M.Sc. (Ag.) Thesis. College of Agriculture, Vellayani.

Sreekumar,N. 1985. Comparitive analysis of adoption behaviour, economic performance and managenent orientation of borrowers and non-borrowers of bank credit of Calicut district in Kerala state. Unpub. M.Sc. (Ag.) Thesis, G.K.V., Bangalore.

Subrahmaniyan, K.V. 1988. Marketing of Vegetables. An interstate comparison of practices and associated costs. Ind. J. Hort., 45(1):153-159.

Sukla,S.R. 1980. Adoption behaviour of small farmers. Ind. J. Extn. Edn. 16(1&2):55-58.

Supe, S.V. 1971. Farmers information source credibility in relation to their rational adoption behaviour, Ind. J. Extn. Edn. 7(1&2):29-33.

Supe,S.V and Salode,M.S. 1975. Impact of National demonstration on Knowledge and adoption level of farmer participants. Ind. J. Extn. Edn. 11(1&2):36-39

Surendran,K. 1982. Impact of Operational Research Project on agricultural production. Unpub. M.Sc. (Ag.) Thesis, College of Agriculture, Vellayani.

Suryaprakash,S.., Venkataram,J.V. and Ramanna,R. (1979). A comparative study of price spread of selected agricultural commodities in Karnataka. Ind. J. Agric. Econ. 34(4):142-149

Suryawanshi,S.D., Patil,R.G. and Kapase,P.M. 1978. Credit requirement, availability and its gap on the farms of the Gitna command area of Maharastra. Ind. J. Agric. Econ. 33(4):129.

Sushama,N.P.K. 1979. A study on the impact of selected development programmes among the tribals of Kerala. Unpub. M.Sc. (Ag.) Thesis, College of Agriculture, Vellayani.

Suthe,T., Muthiah,M. and Annamalai,R. 1991. Differential knowledge level and adoption behaviour of rubber growers. Tamilnadu. J. Extn. Edn. 2(4):340-343

Swaminathan,N. 1986. Impact of pulse Minikit Demonstration for small and marginal farmers in Chengalpattu. Unpub. M.Sc. (Ag.) Thesis A.C and R.I, Coimbatore.

Syamala,K.S. 1988. An analysis of the effectivenes of National Demonstrations conducted by the Kerala Agricultural University. Unpub. M.Sc. (Ag.) Thesis. College of Horticulture, Vellanikkara

Thimmappa,A. 1981. A study on the adoption behaviour and motivation pattern of coconut cultivators in Tumkur district in Karnataka state. Unpub. M.Sc. (Ag.) Thesis G.K.V.K., Bangalore

* Thurstone,L.L. 1927. A law of comparitive judgement. Psychol. Rev. 34: 273-286

Thurstone,L.L and Chave,E.J. 1929. The measurement of attitude. Chicago University press. Chicago. PP. 61-63, 78.

Tripathi,G. 1972. Tribal society in a flux. Social welfare. 19(9):13

Tyagi,K.C, and Sohal,T.S. 1984. Factors associated with adoption of dairy innovations. Ind. J. Extn. Edn. 20(3&4):1-8.

Umale,P.B., Bhople,R.S. and Sagame,M.A. 1991. Adoption of agroforestry by farmers. Maha. J. Extn. Edn. 10(1):145-148.

Venkataramaiah,P.M. 1983. Development of socioeconomic scale for farm families of North Karnataka. Unpub. Ph.D Thesis, U.A.S., Bangalore.

Venkateswaralu,U. and Bhalerao,M.M. 1980. Impact of cooperative finance on agriculture-An assessment in A.P. Indian Co-operative Review 18(1):29-38.

Venkiduswamy,G. 1976. Study of the motives of small farmers in project area(SFDA) and non-project blocks for the adoption of high yielding varieties of cotton. Unpub. M.Sc. (Ag.) Thesis, TNAU, Coimbatore.

Victor,B. 1987. Critical analysis of knowledge level and adoption behaviour of cashew farmers. Unpub. M.Sc. (Ag.) Thesis, T.N.A.U. Madurai.

Vijayan,A. 1989. Adoption of technology for cultivation of banana variety Nendran in Trichur district. Unpub. M.Sc. (Ag.) Thesis, College of Horticulture, Vellanikkara.

Vijayaraghavan, P. 1977. A study on the factors affecting knowledge and adoption of high yielding varieties of paddy by small and marginal farmers. Unpub. M.Sc. (Ag.) Thesis. T.N.A.U. Coimbatore.

Viju,A. 1989. Adoption behaviour of tribal farmers towards improved agricultural practices. Unpub. M.Sc. (Ag.) Thesis. College of Agriculture, Vellayani.

Wilkening,E.A. 1952. Informal leaders and innovation in farm practies. Rural sociology 17:272-275

# APPENDICES

**APPENDIX-I**

College of Agriculture,
Vellayani, Dt:10.1.96.

Dr.R. Prakash,
Associate Professor
Department of Agrl.Extension,
College of Agriculture,
Vellayani.

Dear Sir/Madam,

Mr.Nizamudeen. A., M.Sc. student in this department has taken up a research study on " A MULTI-DIMENSIONAL ANALYSIS OF KUTTIMULLA CULTIVATION IN ALAPUZHA DISTRICT" under my guidance. He is developing a scale on "ATTITUDE OF KUTTIMULLA GROWERS TOWARDS SELF EMPLOYMENT IN AGRICULTURE".

In this regard some statements expressing the attitude of Kuttimulla growers towards self employment in agriculture are listed. On the right hand side of each statement, there is a set of columns representing the degree of favourableness of the statements. You are requested to tick ( ) in the appropriate column to indicate your judgement about the statement as to its degree of favourableness on the five point continum viz. most unfavourable, unfavourable, neutral, favourable and most favourable. NOTE THAT THE RESPONSE INDICATES THE FAVOURABLENESS OF THE STATEMENTS IN THE REAL SENSE AND NOT OF YOURS AS A JUDGE. Please see that no statement is left out and kindly return the same at the earliest possible time.

Thanking in advance for your kind contribution in completing this portion of his research work.

Yours Sincerely,

Sd/-

(R. PRAKASH)

## SCALE VALUES OF THE ATTITUDE STATEMENTS

| Statement No. | | S value | Q value |
|---|---|---|---|
| 1. | Agriculture is a potential field for self-employment. | 4.20 | 1.53 |
| * 2. | Self-employment in agriculture helps one to become self-sufficient in life. | 4.10 | 1.07 |
| 3. | Since agriculture is risky, it is foolish to go in for self-employment in agriculture. | 2.20 | 2.51 |
| 4. | It is better to select self-employment in agriuculture since it needs only less investment. | 3.64 | 1.56 |
| 5. | Self employment in agriculture is desirable as it requires no official sanction. | 3.56 | 2.08 |
| 6. | Self-employment in agricuulture can be considereed as a leisure-time activity. | 2.50 | 2.45 |
| 7. | It is very difficult to select self employment in agriculture since agricultural technology is very complex. | 2.03 | 1.57 |
| 8. | Self employment in agriculture gives people less job satisfact-ion | 2.29 | 2.81 |
| 9. | Educated people prefer white collar job than self employment in agriculture. | 2.93 | 2.58 |
| 10. | A person without any scientific background can select self employment in agriculture. | 3.50 | 2.00 |
| * 11. | As agricultural produce are indispensible to the society, self-employment in agriculture is worthy. | 4.14 | 1.13 |
| 12. | Self employment in agriculture never lets down one who depends on it. | 4.64 | 1.32 |

| | | | |
|---|---|---|---|
| 13. | Since there are ample technologies available in agriculture, one can start self employment in agriculture easily. | 4.34 | 1.28 |
| 14. | Financial support from government is limited to start self-employment in agriculture. | 2.15 | 1.89 |
| 15. | Self employment in agriculture is not sustainable on long term basis. | 2.50 | 2.42 |
| 16. | One who have adequate land of their own can only start self employment in agriculture. | 2.18 | 2.04 |
| 17. | Selecting self employment in agriculture is gambling. | 2.27 | 2.41 |
| 18. | Only educated people can start self employment in agriculture. | 2.00 | 1.93 |
| 19. | There is no guarantee for regular income in agriculture so it is unwise to select self employment in agriculture. | 2.50 | 2.77 |
| 20. | Agriculture is a sure profession for facing the vagaries of life. | 3.61 | 2.44 |
| 21. | Agriculture is a basis for other industries so selecting self employment in agriculture is always worthy. | 3.93 | 1.66 |
| 22. | Self employment in agriculture needs more physical and mental efforts. | 3.35 | 2.28 |
| 23. | Self employment in agriculture is possible for those who have sound financial background. | 3.27 | 2.23 |
| 24. | Scientific agriculture is less risky, so it is better to select employment in agriculture. | 2.68 | 2.20 |
| 25. | Proper management of agriculture gives profit more than other avocation, so it is better to select self employment it. | 3.80 | 1.27 |
| 26. | Lack of agriculture oriented education is a barrier for | 2.85 | 2.11 |

| | | | |
|---|---|---|---|
| | selecting self employment in agriculture. | | |
| 27. | There is no necessity to go for self employment in agriculture as Govt. job are available. | 2.23 | 2.15 |
| 28. | Self employment in agriculture has no security in life. | 2.50 | 2.83 |
| 29. | It is always better to go for the Govt. job rather than starting self employment in agriculture. | 2.50 | 2.57 |
| * 30. | Self employment in agriculture provides employment for other family members. | 4.04 | 1.03 |
| * 31. | Selecting self employment in agriculture provides mental pleasure. | 4.07 | 0.98 |
| 32. | Those who start self employment in agriculture will be looked down by others. | 2.96 | 2.38 |
| 33. | For the country's prosperity all should select self employment in agriculture. | 3.31 | 1.40 |
| 34. | Sound family background in agriculture is a necessity for selecting self employment in agriculture. | 2.60 | 2.00 |
| 35. | There is no regular market for agriculture produce, so it is unwise to select self employment in agriculture. | 2.50 | 2.42 |
| 36. | Self employment in agriculture has no scope at all. | 2.80 | 3.23 |
| 37. | It is a waste of time to enagage in agricultural avocations in the present time. | 2.37 | 2.88 |
| 38. | Self employment in agriculture does not provide financial security | 3.58 | 2.32 |
| 39. | One cannot hope matching return for the efforts put in self employment avenues in agriculture. | 2.41 | 2.45 |

| | | | |
|---|---|---|---|
| 40. | Involving in industrial enterprise is better than self employment in agriculture. | 2.73 | 2.48 |
| 41. | It is difficult to pull in life with self employment in agriculture. | 3.09 | 2.94 |
| * 42. | Even if one gets a Govt. job, he will not leave the self employment avocation in agriculture. | 3.39 | 0.65 |
| 43. | Prosper in agriculture depends on several factors so it is unwise to start self employment in agriculture. | 2.13 | 1.85 |
| 44. | It is better to take up self employment in agriculture as a last resort. | 2.50 | 2.92 |
| 45. | Investment on self employment in agriculture is mere foolishness. | 2.07 | 3.15 |
| 46. | Regular income is not assured by starting self employment in agriculture. | 2.50 | 2.36 |
| 47. | One should be proud of being a member of a farm family. | 3.15 | 1.52 |
| 48. | Only people in lower economic strata can start self employment in agriculture. | 2.32 | 1.77 |
| 49. | Even if a handsome return is guaranteed, one should not take up self employment in agriculture. | 2.50 | 2.99 |
| 50. | Today's need is to start self employment in industry than in the field of agriculture. | 2.93 | 2.25 |
| 51. | Self employment in agriculture will not provide leisure time. | 2.41 | 1.81 |
| 52. | Only people who have self confidence can take up self employment in agriculture. | 3.50 | 2.05 |

* - The selected statements.

## APPENDIX - II

**KERALA AGRICULTURAL UNIVERSITY**
**COLLEGE OF AGRICULTURE, VELLAYANI - 695 522**
**DEPARTMENT OF AGRICULTURAL EXTENSION**
**A MULTI-DIMENSIONAL ANALYSIS OF KUTTIMULLA CULTIVATION IN ALAPUZHA DISTRICT**

### INTERVIEW SCHEDULE

1. Name of the reespondent :
2. Address :
3. Ward :
4. Panchayath :
5. Total area owned _____ Cents
6. Farming experiance _____ Years
7. Socio economic status

a) Occupation : No occupation/Unskilled/Semi skilled/Skilled/ Farming/Professional

b) Land holding : No land/Less than one acre/One to five acres/ More than five acres

c) Caste : Scheduled/Backward//Forward

d) Education : No schooling illiterate/Functionally literate/Primary school/Middle school/High school/College

e) Socio political participation : Without any official position in socio - political organisation /Official position in one or more organisation/Functional contribution or raising fund for common work/ active office bearer/involvement in community work.

f) Possession : None

- One farm animal (bullock, buffallo, cow) cycle/ furniture
- Two farm animals/bullock cart/radio
- Three to four farm animals/improved farm implement/news paper/electricity.
- Five to ten animals/gobar gas/pump set/mobile
- More than ten animals/tractor/automobile

g) House : Shed thatched/mud wall/and tiled/brick wall and tiled / concrete house/concrete and double storied.

h) House - hold : Small/medium/large/very large/special features

i) Annual income :

8. Economic motivation

Indicate whether you agree or disagree with the following statements (Agree/Disagree)

1) A kuttimulla grower should work hard for economic profit.
2) Money is necessary for a good living, but anything in the life cannot be defined in economic terms.
3) All I want from my crop is to make just a reasonable living for the family.
4) I would work hard without rest in order to earn maximum money to run my family.
5) In addition to my Kuttimulla cultivation, I like to take up some other enterprise to earn more money.
6) In addition to make a reasonable amount of profit, the Kuttimulla cultivation is also important to me.

9. Social participation

| Institution | Membership | | Attendance | | |
|---|---|---|---|---|---|
| | Member | Office bearer | Regularly | Occassionally | Never |
| Panchayath | | | | | |
| Co-operative | | | | | |
| Youth club | | | | | |
| Farmers Forum | | | | | |
| M L A / MP | | | | | |
| Others (Specify) | | | | | |

10. Mass media exposure

| Medium | Frequency |
|---|---|
| a) Radio | : Daily/ 2-6 days a week/ once a week/ Once a fortnight/Rarely/Never |
| b) Television | : Daily/ 2-6 days a week/ once a week/ Once a fortnight/Rarely/Never |
| c) News paper | : Daily/ 2-6 days a week/ once a week/ Once a fortnight/Rarely/Never |
| d) Magazines, leaflets & Bulletins | : Regularly/ Occassionally/Never |
| e) Films(seen during last year) | : >6/ 4-6/ 1-3/ None |
| f) Field days/agrl functions (attendance during last year) | : >6/ 4-6/ 1-3/ None |

11. Information seeking behaviour

To what extent do you make use of the following information sources regarding advice for Kuttimulla growing.

| Source | Always | Sometimes | Never |
|---|---|---|---|
| a) By director/Principal Agrl.officer | | | |
| b) Agrl.Officer | | | |
| c) Agrl.Assistant | | | |
| d) Agrl.Scientist | | | |
| e) Fertilizer agents | | | |
| f) Relatives | | | |
| g) News paper | | | |
| h) Radio | | | |
| i) Television | | | |
| j) Agrl.publication | | | |
| k) Fellow growers | | | |
| l) Others (specify) | | | |

12. Cosmopoliteness

a) How many times do you visit the nearby town? Two or more times a week/once a week/once in a fortnight/once in a month/ Seldom/Never.

b) Purpose of visit

All relating to Agriculture/Some relating to Agriculture/Personal or domestic/Entertainment/Others/No response

c) Membership in organisation outside the village

Non member/ Member

13. Contact with extension agency

a) Awareness

Are you aware of any extension agency operating in your area? Yes/No

If yes, name the extension agency

b) How frequently you make contact with extension agencies - once in a while or beyond 3 months/Once in 3 months/Once in a month/Once in a fortnight/Once in a week.

c) Purpose of contact-Non Agriculture/To avail input subsidies/ To avail subsidies and agricultural implements/To get technical guidance/ To get financial help/To get employment opportunities

14. Market perception :

Please record your response based on your perception with regard to marketing your produce.

a) Do you think a farmer will be able to sell his produce if he increases the production by adopting the recommended practices? Yes/ No

b) Do you think that produce of the crop cultivated according to the recommended practices will fetch good price compared to those raised under traditional practices (Low/Same/High)

c) How difficult will it be to dispose off the produce of the crop cultivated following their recommended practice? Very difficult/Difficult/Easy/Very easy.

6) It is possible to increase the yield through farm production plan

B) Production orientation

1) Timely planting of a crop ensure good yield

2) One should use as much fertilizer as he likes

3) Determining fertilizer dose by soil testing saves money

4) For timely weed control one should even use suitable heribicide

5) Seedrate should be given as recommended by specialists.

6) With low water rates one should use as much irrigation water as available

C) Marketing orientation

1) Market news is not so useful to a farmer

2) A farmer can get good price by grading his produce

3) Warehouse can help the farmer to get better price for his produce

4) One should sell his produce to the nearest market irrespective of price

5) One should purchase his inputs from the shop where his relatives purchase

6) One should grow these crops which have more market demand

17. Attitude towards self - employment

Please indicate your response to the following statements in the appropriate column.

(SA - strongly agree A - Agree UD - Undecided DA - Disagree SDA - Strongly Disagree).

| Sl. No. | Statements | SA | A | UD | DA | SDA |
|---|---|---|---|---|---|---|
| 1. | Self-employement in agriculture helps to become self-sufficient in life | | | | | |
| 2. | As agriculture produce are indispensible to the society, self employement in agriculture is worthy. | | | | | |
| 3. | Self-employement in agriculture never lets down one who depends on it. | | | | | |
| 4. | Self-employement in agriculture provides employement for other family members. | | | | | |
| 5. | Self-employement in agriculture provides mental pleasure. | | | | | |
| 6. | Even if one gets a Govt. job he will not leave the self employment avocation in agriculture | | | | | |

18. Knowledge about Kuttimulla cultivation

1) The recommended Jasmine variety to your area:

(a) Gundu malli (b)Phelenopsis (c)Vanda (d)None of these

2) The best season for planting Jasmine is :

a) March to June b) June to November c) December to March

d) Through-out the year

3) The number of cuttings required for one acre of land

a) 1000 b) 1500 c) 2000 d) 2500

4) The quantity of F Y M required per pit is :

a) 25kg b) 20kg c)15kg d) 10kg

5) As per the recommended pruning practice, the bushes are cut.....cm from the ground level

a) 25cm b) 50cm c) 75cm d) 100cm

6) The chemical used to treat the pruned portion is :

a) Bordeaux mixture b) Bordeaux paste c) Bordeaux mixture + B H C d) Bordeaux paste + B H C

7) The chemical used to control bud worm

a) Monocrotophos b) Carbofuran c) Mancozeb d) PCNB

8) The chemical used to control root rot is :

a) Thiram b) Sulphur c) Blitox d) Hinosan

19. Extent of adoption

A) Variety

1) Have you cultivated high yielding variety. Yes/No

If yes, name the variety

(1)

(2)

2) Area under coverage

B) Soil testing

Did you test your soil Yes/No

If yes,

1) Qty of soil collected

2) Place of collection of soil

3) Time (season) of collection

C) Pruning

Did you adopt pruning Yes/No

If yes,

1) How often you does pruning

2) To what length shoots are cut

D) Use of chemical fertilizers

Did you apply fertilizers - Yes/No

If yes,

i) Based on soil test data

| | Basal | Top dressing | Total (kg) |
|---|---|---|---|
| Nitrogen | | | |
| Phosphorous | | | |
| Potassium | | | |

ii) Not based on soil test data

| | Basal | Top dressing | Total (kg) |
|---|---|---|---|
| Nitrogen | | | |
| Phosphorous | | | |
| Potassium | | | |

E) Use of plant protection chemicals

Was there any pest/disease attack in your crop - Yes/No

If yes,

| Name of the pest | Chemical used | Dosage |
|---|---|---|
| (1) | | |
| (2) | | |

| Name of the disease | Chemical used | Dosage |
|---|---|---|
| (1) | | |
| (2) | | |

20) Entrepreneurial behaviour

A) Innovative Proneness

Indicate one statement out of three that is most like you and another statement out of the same that is least like you.

Sl No: Statements

a) 1) I try to keep my-self upto date with information on new farm practices, but that does not mean that I try all new methods in my farm.

2) I feel restless, till I try out a new farm practice, I have heard about.

3) They talk of many new farm practices these days but who knows if they are better than the old ones.

b) 1) From time to time I have heard of several new farm practices and I have tried out most of them in the last few years.

2) I usually wait to see what results my neighbours obtain before I try out the new farm practices

3) Some how I believe that the traditional ways of farming are the best.

C) 1) I am cautious about trying a new practice

2) After all our fore fathers were wise in their farming practices and I do not see any reason for changing those old methods.

3) Often new practices are not successful,however if they are promising, I would surely like to adopt them.

B) Decision making

Indicate whether you have taken decision for each of the following. If yes, is the decision taken on your own or in consultation with others.

| Decision criteria | Not considered | Considered after consultation with Others | Considered independently |
|---|---|---|---|
| To try new varieties | : | | |
| To get loans | : | | |
| To try new practices | : | | |
| To change cropping pattern | : | | |
| To meet extension workers | : | | |
| To subscribe for farm magazines | : | | |
| To choose kind of fertilizers | : | | |
| To choose kind of pesticides | : | | |
| To buy farm equipments | : | | |
| To hire labourers | : | | |

C) Achievement motivation

Please indicate your degree of agreement with the following statements (SA/A/UD/DA/SDA)

a) One should enjoy work as much as play

b) One should work like a slave at every thing one undertakes unless he is satisfied with a result

c) One should succeed in his occupation even if one has been neglected of his family.

d) One should have determination and during ambition to achieve certain things in life even of these qualities make one un popular.

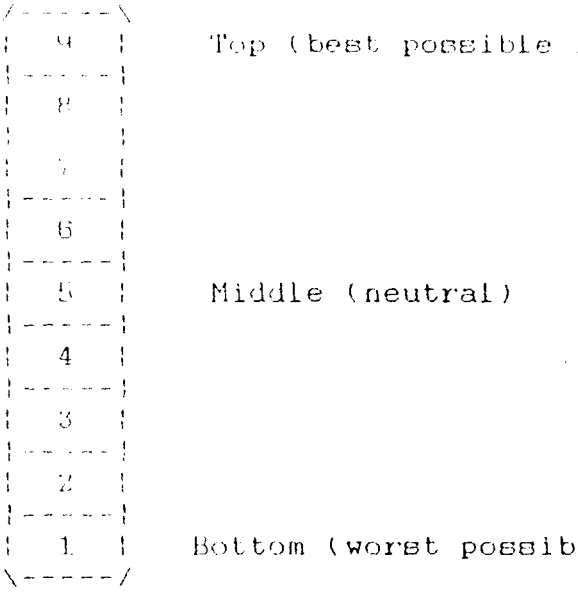
e) Work should come first even if one cannot get rest.

f) Even when one's interests are in danger, he should concentrate on his job and forget his obligation to others.

g) One should set difficult goals for one self and try to reach them.

D) Level of aspiration

Here is a picture of a ladder. The top of the ladder represents the best possible life for you, the bottom the worst possible life for you and the middle neutral. After reading the following questions carefully, please select a number from the ladder.




1) Where on the ladder do you feel you personally stand at present.

( )

2) Where on the ladder would you say you were five years ago

( )

3) Where on the ladder you think you would be five years from now ( )

E) Risk taking ability

1) A farmer cultivated a crop in 4 acres of land. The market price of turmeric was very high. So, he could get large profit from this cultivation. But, if the market price goes down, the farmer will not be able to get even the cost of inputs.

If the following are the chances of market price going down next year, in how many acres land he should cultivate turmeric?

a) If there is no chance of price going down, the crop should be cultivated in _____ acres.

b) If there is a 25% chance of price going down, the crop should be cultivated in _____ acres.

c) There is a 50% chance of price going down, the crop should be cultivated in _____ acres.

d) Even if there is a chance of more than 50% of the price going down the crop should be cultivated in _____acres.

2. Hari is a small farmer. This year, he reaped a very good crop of chillies.As they don't have adequate facilities to store the produce in their houses,some of Hari's fellow farmers are selling their produce at cheaper prices.But if the produce is stored in Government godowns for 3 - 4 months, a farmer may get good price for his produce.

Hari is having 25 tons of dry chillies and he wants to keep them in Government godown for which he has to pay rent.After 3 - 4 months if the price of chillies goes up, he gets huge profit and if the market price goes down, he gets huge loss besides payment of rent.

How many tonnes of chillies you advice Hari to keep in godown considering the following chances of market price shooting up.

a) If there is a 100% chance of market price going-up _____ tons of chillies should be stored.

b) If there is a 25% chance of market price going-up _____ tons of chillies should be stored.

c) If there is a 50% chance of market price going up _____ tons of chillies should be stored.

d) If there is more than 50% chance of market price going up _____ tons of chillies should be kept in godowns.

3. Government is supplying irrigation pumps to farmers on loans which can be repaid in easy instalments. It is observed that some of the pumps supplied by the Government are bad. If the supplied pump is good, a farmer gets even after repaying the loan. But if the supplied pump is bad, he will have to pay from his own pocket, in which case he gets huge loss.

Already 10 pumps have been supplied in your village.

a) Do you want to take a pump if you find all the 10 pumps supplied to be alright. Yes/No

b) Do you want to take one if you find 8 of the 10 pumps to be in good condition. Yes/No

c) Do you want to take one if you find 5 pumps to be alright. Yes/No

d) Do you want to take one if you find 2 pumps to be alright. Yes/No

e) Do you want to take one if you find not even 1 out of 10 pumps to be alright. Yes/No

F) Assistance of management services.

Please give your response to the following questions.

| Statements | Always | Sometimes | Never |
|---|---|---|---|
| 1) How often you meet officials for getting new information regarding agricultural practices? | | | |
| 2) Do you meet any officer to estimate your input requirement | | | |
| 3) Do anybody help you in getting financial assistance | | | |
| 4) Do any credit supervisor discussed with you about credit requirement? | | | |
| 5) Do you seek the help of any officer in applying for training courses. | | | |

21. Motivational pattern

I have adopted Kuttimulla cultivation because,

1) I want a happy and secured life/I want recognition as the best farmer.
2) I want a happy and secured life/ I have enough resources.
3) I want a happy and secured life/ My friend said that it gives high yield.
4) I want a happy and secured life/I want to test the superiority of Kuttimulla.
5) I want recognition as the best farmer/I have enough resources.
6) I want recognition as the best farmer/My friend said that it gives high yield.
7) I want recognition as the best farmer/I want to test the superiority of Kuttimulla.

8) I have enough resources/ My friend said that it gives high yield.

9) I have enough resources/ I want to test the superiority of Kuttimulla.

10) My friend said that it gives high yield/I want to test the superiority of Kuttimulla.

22 Marketing channel

Please indicate how your flowers are marketed

| No | Marketing Channel | Quantum of flowers marketed | | | |
|---|---|---|---|---|---|
| | | upto 25% | 26-50% | 51-75% | >75% |
| 1) | Producer - Consumer | | | | |
| 2) | Producer-Florishops-consumer | | | | |
| 3) | Producer-Collection centre - consumer | | | | |
| 4) | Producer-Collection centre - florishops-Consumer | | | | |
| 5) | Producer-Commission agent - florishipe - Consumer | | | | |
| 6) | Producer -Collection agent - Collection centre - Florishops - Consumer | | | | |
| 7) | Producer - Collection centre-Commission agent- Florishops-Consumer | | | | |

23. Constraint

1) Production constraint(please rank from 1 - 9)

1) Non - availability of quality planting materials.

2) High price of planting materials.

3) Only out dated varieties are available for growing.

4) High incidence of pests and diseases.

5) High cost of plant protection chemicals.

6) Difficulty in identification of pests and diseases.

7) Difficulty in availing inputs.

8) Inadequate irrigation facilities.

9) Scarcity of labour during peak season.

II) Technological constraints(please rank from 1 - 5)

1) Absence of practical training.

2) Non availability of credit.

3) No standardised practices to follow .

4) Lack of research for developing new varieties.

5) Lack of technical expertise.

III) Marketing constraints(please rank from 1 - 6)

1) Lack of co-ordination among florists

2) Unhealthy competition among growers

3) Lack of storage facilities

4) Marketing of planting materials through false publicities

5) Unorganised marketing channel

6) Inability of small growers to find market.

Others : Specify

24. Suggestions from Kuttimulla growers in respect to research, extension and marketing activities

A) Research (Please rank 1- 4)

1) Identifying trap crop of moderate susceptability to pest and diseases

2) Evolving high yielding varieties

3) Formulating compatible fertilizer pesticides and weedicides

4) Finding out hormones which induce more flowering and quality flowers

B) Extension

1) Establishing seperate floriculture scheme

2) Training in Kuttimulla cultivation on par with other crops in T & V system to give technical advice

3) Establishment of community nursery

4) Laying out demonstration of improved pruning and manuring technique

5) Including Kuttimulla in AIR programme

6) Focussing special interest on Kuttimulla growers by giving subsidy on loan under horticultural development scheme

7) Booklets, Leaflets etc... about latest method of Kuttimulla cultivation should be made available

8) Organising village seminar news reels atleast once in a season about latest method of Kuttimulla cultivation

Marketing

1) Installation of flower based industry

2) Establishing co - operative societies

3) Co - operative transport facility for quick disposal

4) Publishing latest price in news papers and through broadcast

5) Providing storage facility to avoid un economical and forced prices

6) Fixing of support price by the Government

Others : Specify

## APPENDIX III(a)

F - MATRIX of the paired comparison test

| Motives | Economic security | Need recog-nition | Self actuali-zation | Affili-ation | Innova-tive |
|---|---|---|---|---|---|
| Economic security | 75 | 49 | 40 | 42 | 45 |
| Need recognition | 101 | 75 | 72 | 106 | 94 |
| Self actualization | 110 | 78 | 75 | 102 | 101 |
| Affiliation | 108 | 44 | 48 | 75 | 47 |
| Innovative | 105 | 56 | 49 | 103 | 75 |

## III (b)

REARRANGED P-MATRIX of paired comparison test

| Motives | Self actuali-zation | Need recog-nition | Innova-tive | Affili-ation | Economic security |
|---|---|---|---|---|---|
| Self actualization | 0.50 | 0.52 | 0.67 | 0.68 | 0.73 |
| Need recognition | 0.48 | 0.50 | 0.63 | 0.71 | 0.67 |
| Innovative | 0.33 | 0.37 | 0.50 | 0.69 | 0.70 |
| Affiliation | 0.32 | 0.29 | 0.31 | 0.50 | 0.72 |
| Economic security | 0.27 | 0.33 | 0.30 | 0.28 | 0.50 |
| TOTAL | 1.90 | 1.98 | 2.41 | 2.86 | 3.32 |

## APPENDIX IV
## ENTREPRENEURIAL BEHAVIOUR INDEX OF THE RESPONDENTS

| Sl.No. | E B I | Sl.No. | E B I | Sl.No. | E B I |
|---|---|---|---|---|---|
| 1 | 60.06 | 51 | 56.74 | 101 | 58.33 |
| 2 | 56.47 | 52 | 56.94 | 102 | 55.23 |
| 3 | 58.83 | 53 | 55.53 | 103 | 57.57 |
| 4 | 59.21 | 54 | 56.41 | 104 | 53.35 |
| 5 | 48.25 | 55 | 54.52 | 105 | 52.20 |
| 6 | 60.88 | 56 | 55.88 | 106 | 55.97 |
| 7 | 58.45 | 57 | 59.28 | 107 | 58.12 |
| 8 | 59.02 | 58 | 57.80 | 108 | 62.30 |
| 9 | 50.71 | 59 | 53.70 | 109 | 59.01 |
| 10 | 59.85 | 60 | 52.70 | 110 | 53.69 |
| 11 | 57.74 | 61 | 60.55 | 111 | 57.16 |
| 12 | 56.24 | 62 | 57.98 | 112 | 51.69 |
| 13 | 54.99 | 63 | 56.91 | 113 | 57.25 |
| 14 | 59.48 | 64 | 54.58 | 114 | 56.47 |
| 15 | 61.80 | 65 | 56.09 | 115 | 56.50 |
| 16 | 59.48 | 66 | 55.11 | 116 | 53.29 |
| 17 | 48.50 | 67 | 58.85 | 117 | 60.25 |
| 18 | 62.99 | 68 | 54.40 | 118 | 58.80 |
| 19 | 62.30 | 69 | 54.13 | 119 | 56.75 |
| 20 | 58.03 | 70 | 53.33 | 120 | 56.65 |
| 21 | 57.68 | 71 | 51.82 | 121 | 66.73 |
| 22 | 62.20 | 72 | 63.90 | 122 | 57.21 |
| 23 | 61.40 | 73 | 55.07 | 123 | 56.96 |
| 24 | 62.74 | 74 | 59.37 | 124 | 62.48 |
| 25 | 58.46 | 75 | 54.54 | 125 | 61.93 |
| 26 | 61.63 | 76 | 56.29 | 126 | 62.11 |
| 27 | 56.83 | 77 | 54.84 | 127 | 54.29 |
| 28 | 59.75 | 78 | 57.59 | 128 | 56.96 |
| 29 | 55.18 | 79 | 53.48 | 129 | 54.50 |
| 30 | 62.74 | 80 | 60.15 | 130 | 57.63 |
| 31 | 57.30 | 81 | 51.64 | 131 | 57.97 |
| 32 | 57.37 | 82 | 51.64 | 132 | 53.59 |
| 33 | 55.67 | 83 | 58.82 | 133 | 50.95 |
| 34 | 58.36 | 84 | 58.05 | 134 | 60.69 |
| 35 | 58.36 | 85 | 59.19 | 135 | 58.76 |
| 36 | 60.72 | 86 | 55.64 | 136 | 56.96 |
| 37 | 60.65 | 87 | 56.65 | 137 | 55.83 |
| 38 | 60.33 | 88 | 60.31 | 138 | 62.12 |
| 39 | 59.85 | 89 | 57.24 | 139 | 54.00 |
| 40 | 57.87 | 90 | 60.79 | 140 | 57.40 |
| 41 | 62.45 | 91 | 60.15 | 141 | 57.94 |
| 42 | 46.30 | 92 | 58.50 | 142 | 55.85 |
| 43 | 63.94 | 93 | 60.25 | 143 | 59.36 |
| 44 | 60.64 | 94 | 58.37 | 144 | 60.28 |
| 45 | 62.69 | 95 | 61.98 | 145 | 57.95 |
| 46 | 60.72 | 96 | 59.53 | 146 | 56.19 |
| 47 | 54.96 | 97 | 60.72 | 147 | 54.27 |
| 48 | 57.04 | 98 | 59.11 | 148 | 59.05 |
| 49 | 58.73 | 99 | 58.61 | 149 | 58.01 |
| 50 | 56.59 | 100 | 57.91 | 150 | 61.94 |

# A MULTI-DIMENSIONAL ANALYSIS OF 'KUTTIMULLA' CULTIVATION IN ALAPUZHA DISTRICT

BY

**NIZAMUDEEN A.**

ABSTRACT OF THE THESIS
SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT
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ABSTRACT

The study 'A Multi-dimensional Analysis of 'Kuttimulla' Cultivation in Alapuzha District' was carried out with the following objectives.

1. To study the socio-economic profile of the 'Kuttimulla' growers.
2. To study the extent of adoption of the cultivation practices.
3. To study the entrepreneurial behaviour of the 'Kuttimulla' growers.
4. To study the motivational pattern of "Kuttimulla" growers".
5. To identify the marketing channels prevailing in the area.
6. To study the constraints as perceived by the growers.
7. To develop an extension model to popularise 'Kuttimulla' cultivation in Kerala.

The study was conducted in three purposively selected panchayats of Alapuzha district. A sample of 150 growers,ie. 50 selected randomly from each panchayat, formed the respondents of the study. Personal interview was conducted with the help of a well structured and pre-tested interview schedule. The data so collected was analysed with the help of suitable statistical techniques.

The extent of adoption and the entrepreneurial behaviour formed the dependent variables of the study. The selected profile characteristics of 'Kutttimulla' growers were taken as independent variables which included farming experience, socio-economic status, economic motivation, social participation, mass

media exposure, information seeking behaviour, cosmopoliteness,contact with extension agency, market perception, credit orientation, management orientation, attitude towards self employment and knowledge about 'Kuttimulla' cultivation.The motivational pattern influencing the adoption was also studied.

Majority of the 'Kuttimulla' growers were found to have low farming experience, high socio-economic status, high economic motivation, low social participation, high mass media exposure, low information seeking behaviour, high cosmopoliteness,high contact with extension agency, low market perception, high credit orientation, high management orientation, favourable attitude towards self employment and high knowledge level.

Majority of the 'Kuttimulla' growers have high level of adoption and high entrepreneurial behaviour.

The most governing motive behind the adoption of'Kuttimulla' was the economic security.

Of the 13 variables studied, information seeking behaviour, economic motivation and knowledge level were found to have a positive and significant correlation with the two dependent variables. Farming experience, cosmopoliteness, and credit orientation were found to have a positive and significant correlation only with adoption. All the other variables are having a non-significant correlation with the two dependent variables.

The most important marketing channel of 'Kuttimulla' prevailing in the study area was Producer - Collection agent - Collection centre - Florishops - Consumer.

The important constraints experienced by the 'Kuttimulla' growers were 'difficulty in availing inputs'(production),'non-availability of credit'(technological) and 'inability of small growers to find market' (marketing). The major suggestions given by the respondents were evolving high yielding varieties'(research), 'establishing separate floricultural scheme'(extension) and 'installation of flower based industry'(marketing).