COMPARITIVE ANALYSIS OF ADOPTION BEHAVIOUR, ECONOMIC PERFORMANCE AND MANAGEMENT ORIENTATION OF BORROWERS AND NON-BORROWERS OF BANK CREDIT OF CALICUT DISTRICT IN KERALA STATE

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Affectionately to Dedicated

My Beloved Parents,

Shri G. Narayanan Nair

and

Smt B. Leelavathi Amma

Department of Agricultural Extension
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CERTIFICATE

This is to certify that the thesis entitled "COMPARATIV ANALYSIS OF ADOPTION BEHAVIOUR ECONOMIC PERFORMANCE AND MANA MENT ORIENTATION OF BORROWERS AND NON-BORROWERS OF BANK CRED OF CALICUT DISTRICT IN KERALA STATE" submitted by Mr. S. SREEKUMAR, for the degree of MASTER OF SCIENCE (AGRICULTURE in AGRICULTURAL EXTENSION of the University of Agricultural Sciences, Bangalore, is a record of research work done by h during the period of his study in this University under my guidance and supervision and the thesis has not previously formed the basis of the award of any degree, diploma, assoc ship, fellowship or other similar titles.

BANGALORE,
August , 1985

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INTRODUCTION

I. INTRODUCTION

Indian economy like that of many other developing countries in Asia is still predominently agricultural and rural in character. In spite of the development of modern industry during the last 30 years through plans for economic development, 7% per cent of the manpower is engaged in agriculture. This percentage had remained unchanged for almost over fifty years from 1921.

In the present days, an agricultural oriented economy is considered to be developed or advanced depending upon the extent and degree of modernisation achieved by the agricultural sector. But such a dynamic agriculture involving a movement towards higher level of productivity and output facilitated by technological innovations calls for increase in the amounts of production and investment credit, among other things.

Credit is a basic infrastructure for any development programme. This is particularly true for rural development which has, as its goal, the improvement of the standard of living of the ruralities; as well as the increase in higher agricultural productivity. Until recently the rural people had to depend for their credit requirements, on professional and agricultural money lenders, who often charged exorbitant rates of interest. A study by the Reserve Bank of India, revealed that 50 per cent of rural debt was accounted for by the money lenders (Hindusten Times, 1970). However, the

proportion of institutional credit to the rural areas have risen from a meagre 4 per cent in 1951-52 to a proportion of 32-35 per cent in 1974-75.

There are more than 70 million farming families in India of which 70 per cent have holdings less than two hectares and 54 millions have holdings of less than one hectare. Prof. Raj Krishna estimated that only one-third of the total flow of rural credit provided by banks and cooperatives has gone to small farmer households, eventhough they constitute nearly two-third of all agricultural households.

Nationalisation of major commercial banks during 1969 brought about a sea change in the rural setting, both quantitatively and qualitatively. The number of schemes sanctioned by the National Bank on Agriculture and Rural Development (the erstwhile ARDC) for the development of agriculture in the country from 1970-71 to 1980-81 were 16, 574, involving a total financial outlay of Rs. 4629 crores. The commitment of the National Bank on Agriculture and Rural Development to this massive outlay was Rs. 3860 crores. Cumulatively this huge investment of the amount had brought visible changes in the agricultural scene with production moving up from 100 million tonnes to over 140 million tonnes and the irrigated area from 39 million hectares to over 55 million hectares or also a vast improvement in the quality of life of the rural masses during the past decade.

The commercial banks are now playing a vital role in restructuring the rural India. This is evident from the fact that the total number of branches in the country which stood at 8,262 before nationalisation has increased five fold to over 41,000 branches and lending to priority sector, from Rs. 327 crores prior to nationalisation has increased over 12 fold.

Schumpeter spoke of credit as a "Phenomenon of development" and regarded the banking system along with entrepreneurship as being the key agent in the process of development.

India is one of the leading producers of plantation crops like coconut, arecanut, tea, coffee and rubber. All these crops except arecanut are commodities of international trade and the employment generated by them on the farm and industrial sectors are substantial. The area and production of some of the plantation crops in India in 1979-80 are given below.

Crop	Area (million hectares)	Production
Coconut	1.01	5330 million nuts
Arecanut	0.18	0.18 million tons
Tea*	0.37	0.35 million tons
Coffee	0.20	0.15 million tons
Rubber	0.24	0.19 million tons

* during 1979.

The coconut palm, considered to be the most important and useful of tropical palms, has been in cultivation in India from time immemorial. The coconut palm is rightly eulogised in India with characteristic oriental imagination as "KALPAVRIKSHA", the celestial tree, or the tree that provides all the necessities of life, because it not only supplies substantial quantities of food, but also provides raw materials for a number of important industries.

Ninety per cent of the total beverage and production of coconut in the world, lies in the zone between 20°N and 20°S latitudes where the six primary coconut cultivation centres are situated, namely, the Philippines, Indonesia, India, Sri Lanka, South Sea Islands and Malycia. India has always been occupying a very important place in the world coconut map, both as a producer and consumer. Next to Philippines and Indonesia, India is the largest producer of coconuts accounting for 18.6 per cent of the world production and also the largest consumer of coconut. Approximately 55 per cent of the total production of nuts is used for edible purposes in the household sector in India (Thampan, 1976). The States of Kerala, Tamil Nadu and Karnataka have about 90 per cent of the total area of 10,45,600 ha under this crop in India.

Kerala the land of 'Kera' or coconut is the major coconut producing state in the country accounting for over

65 per cent of the total production and 70 per cent of the coconut area in India. In Kerala, the crop occupies a place of paramount importance as every part of the tree is used for one purpose or the other. The economy and well being of lakhs of people in Kerala, representing not only the primary producers of the crop, but also those engaged in industries developed around the production, processing and marketing of coconuts and derivative products, is closely associated with the development of the coconut industry. In spite of this, it is a fact that it is one of the inadequately attended crops in India. Consequently, the vast potentialities of the tree have not been exploited for improving the standard of living of the people. While the demand for coconut products has increased considerably during the last two decades, due to increase in population and improvement in the standard of living of the people, the supply has remained far short of the requirements.

Not only the yield per tree in India is low, but it has shown a declining trend according to several surveys conducted in India. The important factors contributing to the declining trend in the yield per tree are the dominance of small cultivators in production, lack of adequate capital and credit to finance the acquisition of necessary inputs, inefficient methods of cultivation, high incidence of coconut diseases, over crowding of coconut trees, slow replacement of low yielding palms, and lack of extension and supply services.

In the perspective, the nationalised banks have been playing an important role in providing credit to coconut cultivators for the purchase of inputs and services. Broadly speaking the coconut farmers require finance for 3 types of purposes and for 3 periods, short term credit for manuring, pest control and other expenses with regard to intercultural operations. This is for a period of one year. Medium term credit for a period upto 5 years utilised for providing irrigational facilities to existing coconut plantation, minor land development etc. and long term credit for a period ranging from 5-16 years. The credit in this case is utilised for major land development, setting up coconut plantations and providing infrastructural facilities like digging wells etc. Very few studies are available regarding the impact of bank finance on coconut cultivation.

In the present study, an effort has been made to explore and compare both borrowers and non-borrowers of short term credit from a nationalised bank for coconut cultivation.

Following were the specific objectives of the present study:

1. To determine and compare the extent of adoption of selected improved agricultural practices, economic performance and management orientation between borrowers and non-borrowers of credit with respect to coconut cultivation.

2. To determine and compare other related characteristics of farmers influencing adoption behaviour, economic performance and management orientation of borrowers and non-borrowers of credit.

3. To find out the relationship between adoption behaviour, economic performance and management orientation of borrower and non-borrowers farmers with respect to the selected independent variables.

4. To identify the information source consultancy, timeliness and adequacy of credit, repayment behaviour and reasons for non-repayment of credit as perceived by the borrowers.

5. To identify the reasons for not availing bank loans as expressed by the non-borrower farmers.

Scope of the study

The study has the limitations of time and resources usually faced by the student investigator. However, considerable care and effort was exercised in making the study as objective and systematic as possible.

Part of the study involved investigation of delicate issues relating to certain economic aspects on which rural people are usually reluctant to give precise information. The correctness of responses (often depending on memory) might inspite of the best efforts of the investigator have margin for error.

The findings can be generalised only to areas in Kerala where similar conditions prevail and not to other areas.

Definitions of terms used

1. Borrower : A farmer who had borrowed short term credit for the purpose of coconut cultivation from the Mukkom branch of Canara Bank in Calicut district during the period 1983-84.

2. Non-borrower : A farmer who had not borrowed from any nationalised bank for agricultural purposes.

3. Adoption behaviour : It refers to the extent of adoption of specific recommended practices of coconut during the period 1983-84. Adoption is the decision to make the continued utilisation of a recommended practice.

4. Economic performance : It refers to the ratio of the value of total output to the total expenditure incurred with respect to all the cropping enterprises for the period 1984-85 of the respondents in the study.

5. Management orientation : It refers to the degree to which a farmer is oriented towards scientific farm management comprising of planning, production and marketing functions of his farm.

6. Personal guidance : It refers to the degree to which guidance in received on better farming by the farmers through extension workers.

7. Social participation : It refers to the degree of involvement of the farmers, ranging from the membership to the organisational position and his active participation in the activity of the formal organisations like village panchayat, cooperative society, farmers forum etc.

8. Lead Bank : The lead bank is the bank which is responsible for taking the lead in surveying the credit needs, development of branch banking and extension of credit facilities in the districts allotted to it. At the same time the lead bank should not have the monopoly of banking business in the district. The lead bank is expected to act as the consortium leader, and after identifying through survey the areas requiring branch expansion and those suffering from credit gaps, it should involve the cooperation of other banks operating in the district for opening branches as well as for meeting credit needs.

REVIEW OF LITERATURE

II. REVIEW OF LITERATURE

In this chapter, a brief review of certain selected reports and previous studies conducted in India and abroad relating to the different variables in this study viz., Adoption behaviour, Economic performance, Management orientation and other important characteristics have been reviewed It is to be noted that there are very few studies with respect to certain characteristics since some of the variables introduced by the researcher were relatively of recent trend. Moreover there were only very few research studies in the present perspective on plantation crops conducted in India.

An attempt has been made to collect the relevant literature pertaining to this study. The reviews have been chronologically organised under the following headlines.

1. Adoption behaviour
2. Economic performance
3. Management orientation
4. Relationship of the characteristics of farmers influencing, adoption behaviour, economic performance and management orientation.

1. Adoption behaviour

Muthaiah (1967) reported that there was no relationship between the size of the land holding and the proportion of borrowing.

Nair (1959) reported positive and significant association of credit orientation of farmers with their adoption behaviour.

Bijaykumar Singh (1971) reported that credit borrowing tendency of farmers was found to be significantly correlated to agriculture progressiveness of farmers.

Ramaswamy (1972) indicated the inability of farmers in obtaining loans from cooperatives, their inability to become members, inability to offer the security demanded, inability to utilise properly the loan and their inability to repay the loan in time.

Ogionwo (1972) concluded that the level of formal education and adoption of agricultural innovations was neither close nor direct.

Kolool (1975) in his study on coffee and cocoa growers indicated that economic incentives alone did not satisfactorily explain the adoption of a crop.

Nanjanatha (1975) concluded that the adoption level of borrowers had not increased due to their participation in the banks credit programme.

Dixit (1975) reported the positive and significant relationship between the size of land holding and the ability to borrow the loans from cooperatives.

Kittur (1976) indicated that there was no significant association between credit borrowing pattern and the adoption behaviour of marginal farmers.

Medina et al. (1976) in a study in Philippines found that farmers who had 400 coconut palms per hectare adopted considerably more than recommended and that only 7 per cent of all farmers used fertilizers.

Santos (1976) in a study of cocoa farmers, noted low rate of adoption, and suggested replanting, changing the credit structure as applied to replanting and more technical information as some of the means to improve adoption.

Aravathakumar (1977) reported that borrowers had higher level of adoption than non-borrowers with respect to dairying practices.

Shanmukappa (1978) reported that credit borrowing pattern of the arecanut grower in relation to the adoption of recommended practices of arecanut cultivation was found to be non-significant. However, a large majority of the respondents had borrowed one or more types of loan and also they had repaid the same in time. He revealed that 5 practices out of 10 selected practices viz., manuring, intercultivation, intercropping, drainage and plant protection were adopted by more than 90 per cent of the respondents.

Patil (1980) indicated that there was significant association between credit borrowing pattern and adoption of recommended hybrid maize cultivation practices by farmers.

Thimmappa (1981) observed that the credit borrowing pattern of coconut cultivators in relation to the adoption of recommended practices of coconut cultivation was significant. Three practices viz., recommended variety, manuring and intercultivation were adopted by all the respondents and a majority (90%) of respondents adopted intercropping and contour bunding.

It was evident from the above cited studies that there was positive and significant association between credit borrowing and adoption. However, some studies indicated no association of adoption behaviour of farmers with credit borrowing tendency. Coconut is a cash crop and needs more cash input for its cultivation in comparison with annuals.

2. Economic performance

Roy et al. (1969) found that there was weak but positive correlation between farming efficiency and adoption.

Radhakrishna (1969) determined the farmers efficiency using discriminate analysis approach. He classified groups into efficient and inefficient groups based on average yield per acre and average cost per pound and observed that average

ratio of value of output to cost was 1.4 : 0.8 in the case of efficient and inefficient groups.

Raju et al. (1974) using production function approach studied the impact of commercial bank finance on productivity of inputs and farm returns. Their results showed that bank finance had significant impact on productivity of inputs as well as on farm returns.

Singh and Mishra (1974) analysed the farm business of borrowers and non-borrowers. They concluded that borrowers had used more of inputs than non-borrowers. Further the output, net income, family labour income and farm business income were higher in case of borrowers compared to non-borrowers.

Chandraiah and Crouch (1977) defined economic performance as the ratio of the value of total property output to total expenses.

They classified graziers into, two groups, 'more successful' and 'less successful' groups wherein the average economic performance was chosen as the separating value. The results indicated that the 'more successful' graziers group was significantly different from the 'less successful' graziers group in their conceptual skills, achievement motivation and technical skills. Farm size, contrary to common

expectations did not differentiate the 'more successful' from the 'less successful' group.

Ennorey (1979) reported that economic performance had a significant influence on the adoption behaviour of cotton farmers.

Ramakrishna (1984) reported that trained farmers were superior in economic performance, management orientation and adoption pattern than the untrained farmers. It was also observed that economic performance had a positive relationship with personal guidance, innovative proneness, media participation, cosmopoliteness nature, social participation and economic motivation. It was found that there was no relationship between economic performance and achievement motivation.

The above reviews point out that economic success of a farmer depends upon his efficiency in production, which in turn, depends on the cost-benefit ratio.

3. Management orientation

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

Waters (1968) used an index of management efficiency as an independent variable in a cost function analysis. He concluded that high cost producers were those who had similar output.

Venkataramaiah (1971) reported that significant relationship existed between planning orientation and intensity of acceptance of high yielding variety programme. Further, he reported that there was favourable attitude for reorientation of the existing marketing system.

Burger and Groenewall (1971) identified progressiveness of European farmers in terms of managerial ability. It recognised the importance of science and technological change for continued development of the enterprise and incorporating the inherotent skills and rationality, for applying with discretion and integrating successfully those practices which increase the level of agricultural productivity on a permanent and scientific basis.

Singh and Singh (1975) pointed out that managerial ability of the farmer was a significant factor in the field of credit planning and need to be assessed on scientific lines to make a sound case for borrowing from banks. Judgement of farmers credit management ability is a pre-requisite fo minimising the risk in agricultural credit. Also, the improvement in the management performance of the farmers can be brough about only by identifying the socio-economic determinants.

Samanta (1977) observed that the cultivators with high management orientation, consisting of planning, production and marketing orientations are likely to repay the loan in time.

On the other hand, the farmers with low marketing orientation are not likely to repay the loan in time.

Shanmukappa (1978) pointed out that there was significant relationship between managerial ability of arecanut growers with adoption of recommended practices.

Yerram Reddy (1979) concluded that the adoption behaviour of the two categories of farmers with respect to recommended practices of paddy cultivation was significantly associated with their management orientation.

Hanasagi (1979) opined that management orientation of the farmers had significant influence on their adoption behaviour.

Badashikar (1979) however reported that there was no difference between large and small farmers in relation to management orientation and their adoption of recommended dry farming practices.

Thimmappa (1981) pointed out that managerial ability was found to have a high significant association with adoption behaviour of coconut cultivators.

Kullayi Reddy (1983) reported that groundnut growers have exhibited variation among themselves with respect to their management orientation and farming efficiency. Management orientation of groundnut growers was significantly associated with education, land holding, gross income,

material possession, contact with extension agency, extension participation and mass media participation.

Ramakaradhya (1984) observed that there was interrelationship between economic performance, management orientation and adoption pattern of trained farmers.

4. Relationship among the characteristics of farmers influencing adoption behaviour, economic performance and management orientation

i. Age : This is an important variable studied by most of the researchers. Coleman (1951), Wilkening (1952), Gross and Taves (1952), Lionberger and Coughenour (1957), Haffer and Strongland (1958), Ryan and Gross (1960), Ganorkar (1961), Nair and Ray (1965), Reddy and Singh (1965), Rai (1967), Maheswari and Tripathi (1968), Sisodia and Mohan Singh (1969), Gurucharan Dasaran (1970), Veerabhadraiah and Dharahimath (1970), Chenkidas and George (1972), Jayarama Reddy and Shankara Reddy (1972), Jha and Shaktawat (1972), Kolte (1973), Veerabhadraiah et al. (1973), Sinai Maria and Mahaboob (1974), Ikramullah Mahmood (1975), Hiriyannaiah (1977), Yerram Reddy (1979), Ramasray (1979), Thimappa (1981), Himantha Raju (1984) have reported a negative association between age and adoption behaviour of farmers.

Marsh and Coleman (1955), Deshpande (1962), Mahadkar (1962), Shankaraiah (1965), Perumal and Duraiswamy (1972),

Singh and Sharma (1973), Badachikar (1979) did not find any association between age and adoption.

However the research studies conducted by Gross (1949), Reddy (1962), Pandit (1964), Choudhary (1967), Dudhani and Sethu Rao (1969) and Sennandaram and Singh (1976), Geetha Kutty (1982) have indicated the positive relationship between age and adoption behaviour of farmers.

Kullayi Reddy (1983) observed that there was an association between age and farming efficiency among ground-nut growers.

ii. Education : A number of studies have been reported in the past by Ryan and Gross (1950), Marsh and Coleman (1955), Silsoo and Gallup (1955), Van Den Ban (1957), Rao and Raheja (1959), Jalihal (1960), Bose (1961), Rahudkar (1962), Pandit (1964), Shankaraiah (1965), Choudhary (1967), Dharmapuri (1968), Dudhani and Sethu Rao (1969), Bhaskaran (1970), Dyna Reddy (1971), Sundaramoorthy (1971), Jha and Chakravarti (1972), Chandrakandan et al. (1975), Dyna Reddy and Jalihal (1975), Pandey (1974), Desai (1975), Gangappa (1975), Kittur (1976), Rashed (1976), Ramalinga Gowda (1978), Ansari (1979), Yerram Reddy (1979), Pomadi (1980) and Hiremath Raju (1984), which indicated the presence of positive relationship between educational level and adoption behaviour of farmers.

Nevertheless the findings of a few studies have contradicted the above trend.

Solanki (1968) and Dadaschikar (1979) reported that education has no effect on the adoption of recommended practices.

Sreenivasamurthy (1978) found that there was no significant difference between the educational level of small farmer members and small farmer non-members of Farmers Service Society.

Veerabhadraiah (1969) pointed out that there was no association between education of hybrid maize growers and their level of adoption. This finding was again reinforced by Veerabhadraiah and Dwarakinath (1970), Alao (1971), Shivaramakrishna and Sethu Rao (1977), Siddalingappa (1978), Shanmukappa (1978), Battaiah (1979), Thimmappa (1981) and Gainath (1982). Since there has been no consistency in this behalf, it would be interesting to probe further to back up either of the findings in the present study, with reference to a speculated association between educational level of coconut cultivators and their adoption behaviour.

iii. Social participation : Wilkening (1952), Van Den Ban (1957), Bose (1961), Shankaraiah (1965), Dasgupta (1965), Fliegel (1956), Gupta (1967), Nair (1969), Bhaskaran (1970), Byra Reddy (1971), Kolte (1973), Ziaul Kareem and Mahboob (1974), Salunkhe and Thorat (1975), Desai (1975), Gangappa [illegible] [illegible] (1978), Shanmukappa (1978), Ramalingegowda

(1978), Siddalingappa (1978), Kattaiah (1979), Yerram Reddy (1979), Patil (1980), Thimmappa (1981), Sinha (1981) and Sainath (1982) reported that social participation had significant positive association with adoption of improved farm practices.

However studies by Kahudkar (1962), Veerabhadraiah and Durgakanth (1970), Choudhari and George (1972), Sinha and Kolte (1974), Kittur (1976) and Pawadi (1980) have shown a negative association between social participation and adoption behaviour.

Govindappa (1974) had observed that social participation of small farmers was low.

Badachikar (1979) indicated that adoption of recommended dry farming practices was not significantly associated with social participation.

Bhat (1980) had pointed out that social participation was found to influence the time-lag factor in adoption.

Geetha Kutty (1982) reported that adoption in the case of potential clientele was found to have a highly significant relationship with social participation.

Kallayi Reddy (1985) had observed that social participation had a highly significant association with farming efficiency of rainfed groundnut growers.

Menakaradhya (1984) noted that there was no significant difference in the social participation of trained and untrained farmers. However there was a positive relationship between social participation and economic performance, adoption behaviour and management orientation of the trained farmers.

Himantha Raju (1984) has reported a non-significant association between social participation and adoption of selected practices.

The above reviews reveal that majority of the studies had reported an association between social participation and adoption behaviour of farmers.

iv. Farm size : It was observed by Wilkening (1952), Marsh and Coleman (1955), Genesekar (1961), Reddy (1962), Shankaraia (1965), Nair (1969), Singh and Singh (1970), Bheekaram (1970) Choukidar and George (1972), Chauhan et al. (1973), Ziaul Kareem and Habbeeb (1974), Sharma and Nair (1974), Desai (1975), Gangappa (1975), Rashed (1976), Gartrell (1977), Siddalingappa (1978), Shanmukappa (1978), Hatteiah (1979), Patel (1980), Thimmappa (1981), Saimath (1982), Sharma et al. (1983), Goudi and Narayana Gowda (1983), and Himantha Raju (1984), that farm size was positively and significantly associated with adoption of improved practices by the farmers.

O'neill (1967) after a survey involving 409 farmers in Ireland reported that borrowing farms were bigger than non-borrowing farms.

However, Enthaish (1967) reported that there was no relationship between the size of holdings and the proportion of borrowings.

Geetha Kutty (1982) reported that farm size had a highly significant relationship with the knowledge of procedure in the case of contact clientele, and adoption behaviour in the case of potential clientele. Farm size was also found to be significantly related to the understanding of principles and the knowledge of procedure in the case of potential clientele.

Kullayi Reddy (1983) had indicated that management orientation of groundnut growers was significantly associated with land holding.

Most of the above mentioned studies revealed that farm size was an important factor that determined the economic performance and potentiality for adoption of improved practices by farmers.

v. Annual income level : A number of studies conducted both in India and abroad to examine the relationship between the income level of the farmers and the adoption of improved agricultural practices revealed positive and significant

association between the two (Gross, 1949; Marsh and Coleman, 1955; Wilson and Gallup, 1955; Lionberger and Coughenour, 1957; Jalihal, 1960; Reddy, 1962; Patel, 1967; Dudhani and Bothra Rao, 1969; Hyre Reddy, 1971; Desai, 1975; Gangappa, 1975; Kittur, 1975; Desai, 1977; Siddalingappa, 1978 and Ravikumar, 1979; Hattaiah, 1979 and Pawadi, 1980).

On the other hand Gopalakrishna (1972) reported that there was no association between the income level of farmers and their adoption behaviour.

Ramalingappa (1978) also reported non-significant association between the income level and the adoption behaviour of farmers cultivating cotton.

Hanamsey (1979) revealed that there was a significant relationship between adoption behaviour and annual income level of farmers cultivating cotton.

Badachikar (1979) indicated that annual income was not significantly associated with adoption of recommended dry farming practices.

vi. Attitude towards credit institutions : Pacal (1967) while studying the sociological behaviour of credit in French agriculture pointed out that the sociologists interest in the development of farm credit was the farmers behaviour with respect to farm credit since it provides a means of examining the decision making of expenditure and investment

end of determining farmers attitude towards savings and banking institutions.

Singh and Singh (1960) revealed that majority of the farmers, expressed, that the use of short term credit has increased their incomes. They further concluded that borrowing has perhaps lost the stigma of debt for the farmers.

Desai and Tambad (1970) reported that the crop production loan given by a commercial bank did not change the attitude of participants towards the credit programme.

Ranganatha (1973) stated that the participant small farmers of a commercial banks credit programme possessed more favourable attitude towards the agricultural credit programme than the non-participants.

Fernandes and Chittambar (1977) observed that most of the beneficiaries had favourable attitude towards Marginal Farmers and Agricultural Labourers Development Agency as against most of the non-beneficiaries who had unfavourable attitude.

Semanta (1977) reported that the cultivators with more favourable attitude towards nationalized bank are likely to repay the loan in time as against those with less favourable attitude, who are not likely to repay the loan in time.

Rao and Parangit Mahan (1978) observed that the farmers' attitudes were not much favourable towards the commercial banks agricultural credit schemes.

Khor and Jha (1970) noted that there was hardly any farmer in low and non-adopter categories who had highly favourable attitude towards primary credit society in Gujarat. Majority of the farmers who were having favourable attitude were medium and high level adopters.

Ghokhar and Gangwar (1975) also revealed similar results in the context of utilization pattern of credit received from small farmers development agency by small farmers.

Annathamurthy (1977) reported that borrowing in general had favourable opinion on various aspects relating to bank credit programme.

Sreenivasamurthy (1978) reported that small farmer members, small farmer non-members and other farmer members had favourable attitude towards farmers service society and its activities in general.

Muralidhara Rao (1978) in a study on the impact of SFDA found that both beneficiaries and non-beneficiaries of SFDA assistance programmes had favourable attitude towards credit borrowing.

Hanumarey (1979) pointed out that attitude towards credit institution was found to have significant influence on the adoption behaviour of farmers with reference to Varalakshmi cotton.

Badashikar (1979) noted that majority of the large as well as small farmers possess less favourable attitude towards credit.

Chandaram et al. (1980) in a study conducted on the impact of SFDA loans on the dairy beneficiaries reported that the programme created favourable attitude among farmers

Pandey and Khanna (1980) in their study on economic evaluation of SFDA in Haryana, observed that SFDA had made a positive attitude and a significant impact on income and consumption of the beneficiaries.

Paramahamsa and Hemalatha (1980) in a study in Andhra Pradesh observed that inspite of difficulties in repaying the loans, 72.9 per cent of beneficiaries wanted to make use of such government assistance for improving their economic status.

Narasimhamurthy (1981) had reported that in general, favourable attitude towards SFDA and its programmes and credit borrowing, prevailed among both the participant and non-participant small farmers, marginal farmers and agricultural labourers.

vii. Field level and adoption : Only few studies could be reviewed on this aspect as the studies related to this variable were limited.

Channegowda (1971) reported that the adoption quotient (A.Q.) of farmers was associated with their yield level of paddy. No farmer having high A.Q. was observed in the low yield level. In all the three categories of farmers having low, medium and high A.Q. the majority of the farmers were producing medium yield.

Sinha and Kolte (1974) revealed that a strong tendency for yield per acre had a positive relationship with adoption of improved practices.

Hanolingegowda (1978) reported the significant association of adoption behaviour of farmers with respect to their yield level per acre of Varalaxmi cotton cultivation.

Sannarey (1979) reported that yield level per acre had a significant influence on the adoption behaviour, in a study of institutionally financed cotton farmers of Nalegrabbe.

viii. Personal guidance : There are very few reviews on the above aspect since it is relatively a novel variable. Still some connected reviews have been done to throw some light into this variable.

Previous studies reported by Wilson and Gallup (1955), Marsh and Coleman (1955), Lionberger and Coughenour (1957), Rogers (1962), Thakur (1965), Jha and Singh (1966), Gangappa (1975), Kittur (1976), Vijayaraghavan and Somasundaram (1977) have indicated that there was a positive and significant

relationship between the extent of contact of the farmers with extension agency and their adoption behaviour.

Similar trend was also noticed in the studies reported by Ravikumar (1979), Hattaiah (1979), Pamidi (1980), Ravindra (1980) and Kantharaj (1980).

Singh (1981) had reported association between personal guidance and adoption.

Desai (1981) had also clearly brought out the positive relationship between extension guidance and adoption of improved cotton practices.

Geetha Kutty (1982) revealed that personal guidance had a significant association with understanding of principles, both in the case of contact clientele and potential clientele. Personal guidance was also found to have a highly significant relationship with the knowledge of procedures in the case of both contact and potential clientele. Also it was found to have a highly significant correlation with adoption in the case of both contact clientele and potential clientele.

Ramakrishna (1984) stated that there was a positive relationship between personal guidance and economic performance, adoption pattern and management orientation of the trained farmers.

Hiremath Raju (1994) reported that there was a significant association between personal guidance received on selected practices by the contact farmers and their adoption level.

It is interesting to note that all the studies had reported a positive relationship between personal guidance and adoption behaviour of farmers.

MATERIAL AND METHODS

III. MATERIAL AND METHODS

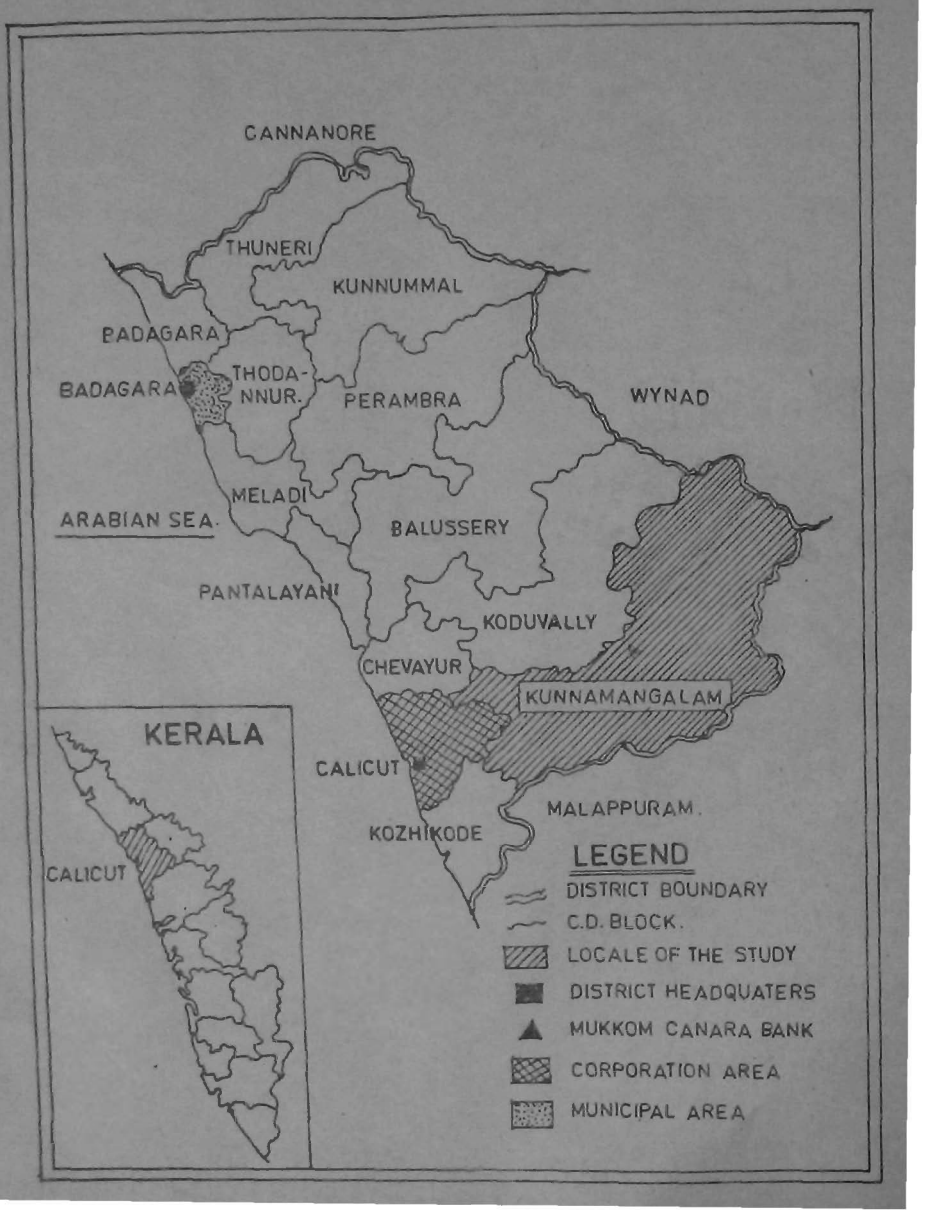
This research study was conducted in Kozhikode taluk of Calicut district in Kerala State during 1984-85. The material and methods used in this study are presented under the following heads:

1. Population for the study
2. Locale and sample for the study
3. Measurement of the dependent variables
4. Methods used for measuring and quantifying independent variables
5. Identification of information source consultancy, timeliness and adequacy of credit, repayment behaviour and reasons for not availing loan.
6. Instrument for data collection
7. Statistical methods and tools used
8. Hypotheses set for the study

1. Population for the study

All coconut cultivators, both borrowers and non-borrowers of credit from nationalised banks of Kunnamangalam block of Kozhikode taluk and who possessed established coconut farms during 1983-84 constituted the population for the present study.

FIG:1. MAP OF CALICUT DISTRICT SHOWING LOCALE OF THE STUDY.



2. Locale and sample for the study

Calicut district of Kerala State was purposively selected since it has the largest area under coconut cultivation. Moreover Calicut district has been the highest producer of coconuts in the State. Another interesting feature was that unlike the central or southern belts in the State, this district was comparatively free from root-wilt disease.

The Lead bank operating in Calicut district is Canara Bank. It was also noticed that the Mukkam branch financed maximum number of short term loans for coconut in Calicut district when compared to other branches of Canara bank in the district. Kunnamangalam Block in Koshikode taluk of Calicut district had a good population of coconut farmers and was selected for the study (Fig. 1). The farmers in this Block were financed by the Mukkom branch of Canara bank. All the villages were included in the study since majority of the beneficiaries were concentrated in this cluster of villages in this block.

Selection of borrowers

A list of farmers who had coconut as one of their farming enterprise and who had availed short term credit for coconut cultivation during 1983-84 was prepared in consultation with the officials in Mukkom branch of Canara bank.

there were over 300 such farmers and from this population a sample of 75 borrowers was prepared using random sampling (random numbers).

Selection of non-borrowers

At the time of interviewing the borrowers in their respective villages, the list of names of these farmers who had coconut cultivation as one of their enterprises and who had not availed loan from any institution for that purpose was prepared. For each borrower selected one non-borrower was selected. Matching was done on the following lines : (a) The non-borrowers should come from the same village as the borrower and preferably have the same land holding as of the borrowers, (b) The non-borrower should be a farmer with coconut cultivation as one of his major enterprise. Thus a sample of 75 non-borrower farmerswas prepared.

3. Measurement of the dependent variables

Dependent variables included in the study were:

(a) Adoption behaviour (Y_1)
(b) Economic performance (Y_2)
(c) Management orientation (Y_3)

(a) Adoption Behaviour (Y_1) : This dependent variable was expressed in terms of general adoption level (GAL). The general adoption level of the respondents was with

respect to selected improved agricultural practices of coconut cultivation. This was measured quantitatively by adopting the Adoption Quotient (A.Q.) developed by Sengupta (1967).

Improved agricultural practices for coconut cultivation which were the impact points emphasised by the Department of Agriculture for Calicut district were collected. Out of these, 15 practices were selected, in consultation with the Professors of Agronomy and Horticulture of Kerala Agriculture University and the Subject Matter Specialists of the Department of Agriculture, Kerala State. These practices are listed out in the Appendix.

The correct adoption of the practice was credited with one score and no score was given for non-adoption of a practice. But in the case of fertiliser and manure applications, 2, 1 and 0 scores were awarded for full, partial and non-adoption respectively.

A.Q. for measuring C.A.L.

$$A.Q. = \frac{\text{Total score obtained by the respondent}}{\text{Maximum score that could be obtained}} \times 100$$

The maximum score that could be obtained by a respondent was 15.

(b) Economic performance (X_2) : The procedure adopted by Shankaraiah and Crouch (1977) to measure the economic performance of graziers was slightly modified and used. The Economic Performance Index (EPI) of a respondent was measured by working out the ratio of the value of total output to total expenditure incurred. In the present study the economic performance was restricted to only one financial year period i.e., March 1984 to March 1985. Only one component, namely, crop enterprise was considered in computing the total output and expenditure. The total value of output and total expenditure were calculated for different crop enterprises on the farm.

Accordingly EPI was

$$EPI = \frac{\sum_{i}^{K} P_i \, Q_i}{\sum_{i}^{K} C_i}$$

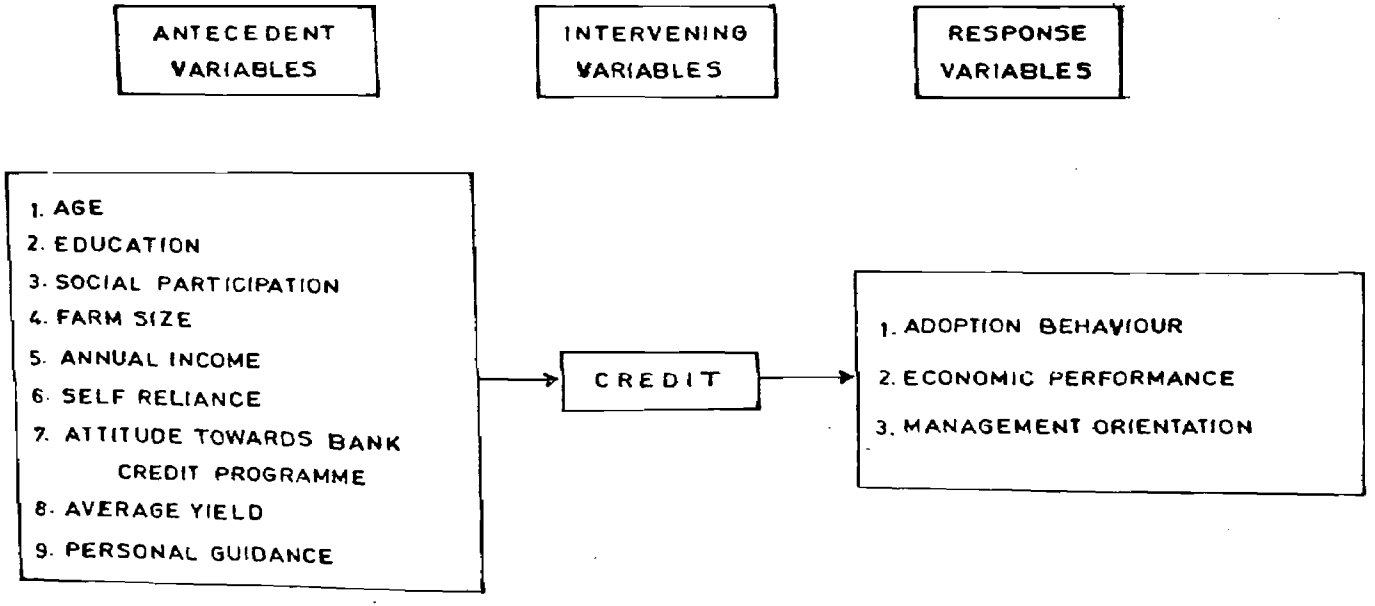
where, P_i is the price per unit of the product of the i^{th} enterprise.

Q_i is the quantity of the i^{th} enterprise

C_i is the total expenses incurred in the i^{th} enterprise

and K refers to crop enterprises.

FIG: 2. CONCEPTURL MODEL DEVELOPED FOR THE STUDY



(c) Management orientation (X_3) : This was measured by adopting the scale developed by Samanta (1977). The scale consists of 18 statements, six statements each for planning, production and marketing orientations. There were both positive and negative statements and they were arranged randomly in each group retaining at the same time a more or less psychological order of the statements. Responses were recorded as either agree or disagree.

The criterion of scoring was conceptually unidirectional. The positive statements were given scores of 1 and 0 for agree and disagree respectively. In the case of the negative statements, the scoring was reversed. The scores for each individual in the management orientation scale was obtained by summation. The range of score for the scale is from 0 to 18.

4. Methods used for measuring and quantifying the independent variables

Independent variables chosen for this study

(a) Age (X_1)
(b) Education (X_2)
(c) Social participation (X_3)
(d) Farm size (X_4)
(e) Annual income level (X_5)

(f) Self-reliance (X_6)

(g) Attitude towards bank credit programme (X_7)

(h) Average yield (X_8)

(i) Personal guidance (X_9)

(a) Age (X_1) : The age of the respondent was measured in the form of completed years as on 1-3-1980.

(b) Education (X_2) : Education was categorised into different levels. The items and weights used by Trivedi (1963) were adopted for measuring the educational level of the respondents as follows:

Sl. No.	Items	Scores
1	Illiterate	0
2	Can read only	1
3	Can read and write	2
4	Primary school education	3
5	Secondary School Education	4
6	High School education	5
7	Diploma or training	6
8	College	7

(c) Social participation (X_3) : This was quantified using Trivedi's Scale (1963) with slight modifications. The respondents were provided with a list of institutions and were asked to mention additional institutions also in which they

were members or office bearers. The membership, organisational position and the extent of participation in each of these institutions was assessed and scored using the following procedure :

Membership	Score
Non-member	0
Member	1
Office bearer	2
Attendance	
Regular	2
Occasional	1
Never	0

The final scores were obtained by summation of the scores obtained for their participation in the different organisations.

(d) Farm size (X_4) : Farm size was recorded in terms of total area owned and cultivated by the respondents. Wet land being cultivated more than once was converted to dryland by multiplying by 2. The total area was arrived at by summation and was recorded in acres.

(e) Annual Income (X_5) : The annual net income level was calculated considering the following two aspects : (i) Main income - the one that was obtained from the farm. (ii) Subsidiary income - includes income from sources other than

agriculture. Net income obtained by each respondent was calculated by deducting the cost incurred from the value of the produce for each enterprise. Subsidiary income if any was added to it. The annual income was expressed in rupees.

(f) Self-reliance (X_6) : Self-reliance is conceptually related to credit orientation and planning orientation. The method used by Singh (1981) was used to quantify self-reliance.

The question used to measure self-reliance (as opposed to fatalism) was "how much of your future depends on yourself?". The responses were measured based on the following scoring system.

Item	Score
100%	5
75-99%	4
50-74%	3
25-49%	2
Less than 25%	1
Not at all	0

The scores of the respondents ranged from 0 to 5.

(g) Attitude towards bank credit programme : The attitude towards bank credit programme was measured by using the procedure suggested by Edwards (1953) with slight modifications.

Twenty one opinion statements relating to borrowing in general were selected on the basis of the attitude scale developed by Ranganatha (1975). They were modified in order to make them appropriate to the local situation. There were nine positive and twelve negative statements. These 21 statements were arranged randomly which formed the attitude scale for administering to the respondents of the study, namely, borrowers and non-borrowers (Appendix).

Likerts method, the method of summated ratings on five point scale, viz., strongly agree, agree, undecided, disagree, strongly disagree was used for measuring the farmers attitude towards bank credit programme. Scoring was in the order of 5, 4, 3, 2 and 1 for positive statements and the reverse for negative statements. The attitude score of an individual respondent was the sum of the scores for all of the 21 statements pertaining to attitude towards bank credit programme. The scores ranged from 21 to 105.

(h) Average yield : Coconut being a perennial crop, the total annual production which accounts for his economic performance depends on the production of each tree. Since the production per tree per year was of significance in deriving at the total production, which in turn decided his annual income, the average yield per tree per year was taken as an index (variable).

(4) Personal guidance : The scale developed by Singh (1981) and used by Nonukaradhya (1984) was used with slight modifications to measure the personal guidance of the respondents. This scale consisted of 12 statements containing the different aspects of farming. The farmers response was recorded on a 3 point scale regarding the amount of advice and help they had received from the Extension Workers with regard to these 12 aspects of farming. Scores of 1, 2 and 3 were awarded for very little, not so much and much respectively. The personal guidance score of an individual respondent was the sum of the scores of the 12 statements pertaining to the different aspects of farming. The scores ranged from 12 to 36.

5. Identification of information source consultancy, simplicness and adequacy of credit, repayment behaviour and reasons for not availing loan

i. Information source consultancy : To know the sources of first information and detailed information for bank credit for coconut cultivation, the respondents were asked to indicate the source they had consulted. The respondents were presented with 20 sources (Appendix).

The responses collected were expressed in frequency and in percentage.

ii. Timeliness of credit : Responses of the borrowers were collected regarding the timeliness of credit and if not the reasons for untimeliness (Appendix). Frequency and percentage were worked out.

iii. Adequacy of credit : The respondents were asked whether the loan amount received was adequate or not. The responses were represented in frequency percentage.

iv. Repayment behaviour : At the time of data collection the borrowers were asked to indicate whether they had repaid the credit taken within the mentioned period. Based on their response they were categorised as follows:

(a) Regular Repayer : Those respondents who had repaid the entire credit borrowed within the prescribed period.

(b) Defaulter : Respondents who failed to repay the credit borrowed within the prescribed time. The responses were represented in percentage.

v. Reasons for non-repayment of credit : The borrowers who fell in the defaulter category were provided with a list of 17 reasons for non-repayment arrived at in consultation with bank officials (Appendix). The responses were represented in percentage.

vi. Reasons for not availing loan : The non-borrowers were provided with a list of 8 reasons which were suitable for

this local setting, for not availing loan (Appendix). The responses were represented in percentage.

6. Instrument for data collection

The information was elicited from the respondents with the help of a structured schedule. The tentatively prepared schedule was pre-tested in a non-sample area, to locate any ambiguity and redundancy of the questions therein. The final schedule was drawn after necessary corrections and modifications in the pre-tested schedule, in consultation with subject matter specialists and technical experts in the University of Agricultural Sciences and Kerala Agricultural University. The schedule is furnished in the Appendix.

Data collection was done by personal interview method between March 1985 and May 1985.

7. Statistical tools used in the study

To compare the means

'F' test was used to compare the variances of the different variables of borrowers with that of non-borrowers.

$$F = \frac{s_1^2}{s_2^2}$$

S_1^2 = Larger variance of one group.

S_2^2 = Variance of the other group.

d.f. = $(n_1 - 1)$ and $(n_2 - 1)$. Where n_1 = sample size of first group, n_2 = sample size of second group. If 'F' was not significant 't' test was used to compare the means of the variables of borrowers with that of the non-borrowers.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{n_1 S_1^2 + n_2 S_2^2}{n_1 + n_2 - 2}\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

where, $\bar{X}_1$ = Mean of borrowers

$\bar{X}_2$ = Mean of non-borrowers

S_1^2 = Variance of borrowers

S_2^2 = Variance of non-borrowers

n_1 = The sample size of borrowers

n_2 = The sample size of non-borrowers

d.f. = $(n_1 + n_2 - 2)$

If 'F' was significant, 't' test using Cochran approximation was done. Since in this case the number of borrower was equal to the number of non-borrowers ($n_1 = n_2$, n = 75) the rule was calculate 't' as in the above method but give it (n-1) degrees of freedom instead of $(n_1 + n_2 - 2)$ degrees of freedom (Cochran).

To find the relationship between the independent variables and the dependent variables

Correlation matrix was found out to find out the relationship of the independent variables viz., age, education, social participation, farm size, annual income, self-reliance, attitude, average yield and personal guidance on the dependent variables viz., adoption behaviour, economic performance and management orientation. Correlation matrix was developed for borrowers and non-borrowers seperately.

To find the inter-relationship among the dependent variables

Correlation was done to find the inter-relationship among adoption behaviour, economic performance and management orientation. Correlation matrix for borrowers and non-borrower were developed seperately.

Apart from the above tests, certain information has also been presented in percentage.

8. Hypothesis set for the study

Null hypothesis

1. There will be no difference in the adoption behaviour, economic performance and management orientation of borrowers with that of the non-borrowers of credit for account cultivation.

2. There will be no difference between the independent variables viz., age, education, social participation, farm size, annual income, self-reliance, attitude, average yield and personal guidance and the dependent variables viz., adoption behaviour, economic performance and management orientation of the borrowers and the non-borrowers of credit for coconut cultivation.

RESULTS

IV. RESULTS

The findings of the present study are presented in this chapter under the following broad headings :

1. Comparison between the dependent variables of both borrowers and non-borrowers of credit.
2. Comparison between the independent variables of both borrowers and non-borrowers of credit.
3. Relationship between dependent and independent variables of borrowers of credit.
4. Relationship between dependent and independent variables of non-borrowers of credit.
5. Inter-relationship among dependent variables of both borrowers and non-borrowers of credit.
6. Identification of information source consultancy, timeliness and adequacy of credit and repayment behaviour of borrowers.
7. Reason of non-borrowers for not availing bank credit.

1. Comparison between the dependent variables of borrowers and non-borrowers of credit

The data in Table I and Figure 3 gives the comparison of the mean values of borrowers and non-borrowers of credit with regard to the dependent variables, namely, Adoption behaviour (Y_1), Economic performance (Y_2), and Management orientation (Y_3).

Table I. Adoption behaviour, economic performance and management orientation of borrowers and non-borrowers of credit.

$N = 150$

$n_1 = n_2 = 75$

Sl. No.	Dependent variables	Respondents		'F' value	't' values
		Borrowers	Non-borrowers		
		Mean	Mean		
1	Adoption behaviour (Y_1)	70.20	51.39	1.55*	9.67**
2	Economic performance (Y_2)	345.50	232.72	1.85**	4.23**
3	Management orientation (Y_3)	16.67	15.93	1.44^{NS}	3.09**

* Significant at 5 per cent level

** Significant at 1 per cent level

NS = Not significant

Calculated 'F' and 't' values showed a significant difference between borrowers and non-borrowers with respect to X_1, X_2 and X_3.

The findings depicted that the borrowers were relatively superior to non-borrowers in their adoption behaviour, economic performance and management orientation.

2. Comparison between the independent variables of both borrowers and non-borrowers of credit

A study of Table XI and Figure 3 gives the comparison of the mean values of borrowers and non-borrowers of credit with regard to the independent variables, viz., Age (X_1), Education (X_2), Social participation (X_3), Farm size (X_4), Annual income (X_5), Self-reliance (X_6), Attitude towards bank credit programme (X_7), Average yield (X_8) and Personal guidance (X_9).

Calculated 'F' and 't' values showed a significant difference between borrowers and non-borrowers of credit in X_3, X_4, X_5, X_6, X_7, X_8 and X_9. There was no significant difference between borrowers and non-borrowers of credit in their age and education.

The results indicated that borrowers of credit had higher social participation, farm size, annual income, self-reliance, attitude towards bank credit programme, average yield and personal guidance than non-borrowers

Table II. Distribution on independent variables of borrowers and non-borrowers of credit.

$N = 150$

$n_1 = n_2 = 75$

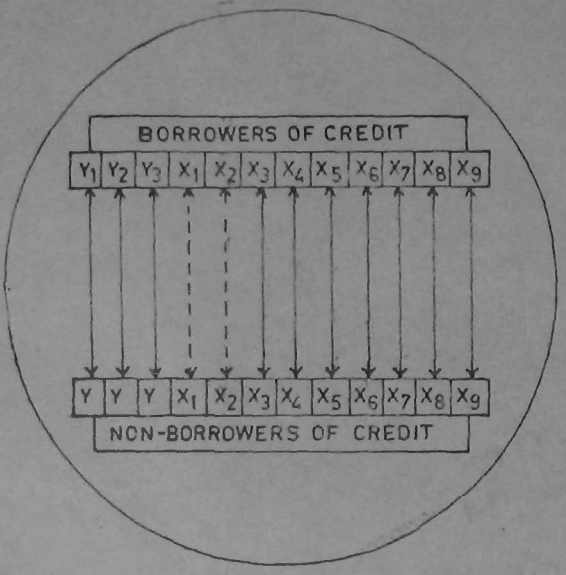
Sl. No.	Independent variables	Respondents		'z' values	't' values
		Borrowers	Non-borrowers		
		Mean	Mean		
1	Age (X_1)	45.53	43.17	1.21^{NS}	1.44^{NS}
2	Education (X_2)	4.01	3.61	1.23^{NS}	1.90^{NS}
3	Social participation (X_3)	1.28	0.52	4.41**	3.45**
4	Farm size (X_4)	4.60	3.72	1.82**	2.20*
5	Annual income (X_5)	10895.33	7899.40	1.59*	2.95**
6	Self-reliance (X_6)	3.15	2.53	1.22^{NS}	4.43**
7	Attitude towards bank credit programme (X_7)	85.83	75.56	1.15^{NS}	7.65**
8	Average yield (X_8)	52.44	41.08	1.23^{NS}	7.70**
9	Personal guidance (X_9)	21.36	13.20	1.21^{NS}	2.85**

* Significant at 5 per cent level

** Significant at 1 per cent level

NS = Not significant

FIG:3 PARADIGM SHOWING COMPARISON OF DEPENDENT VARIABLES AND INDEPENDENT VARIABLES OF BORROWERS OF CREDIT WITH THAT OF NON-BORROWERS OF CREDIT.



LEGEND

X_1 - AGE.
X_2 - EDUCATION.
X_3 - SOCIAL PARTICIPATION.
X_4 - FARM SIZE.
X_5 - ANNUAL INCOME.
X_6 - SELF RELIANCE.
X_7 - ATTITUDE TOWARDS BANK CREDIT PROGRAMME.
X_8 - AVERAGE YIELD.
X_9 - PERSONAL GUIDANCE.

Y_1 - ADOPTION BEHAVIOUR
Y_2 - ECONOMIC PERFORMANCE
Y_3 - MANAGEMENT ORIENTATION

⟶ SIGNIFICANT DIFFERENCE
⇢ NON-SIGNIFICANT DIFFERENCE

of credit. There was no difference between borrowers and non-borrowers of credit with respect to age and education.

3. Relationship between independent variables and dependent variables of borrowers of credit

i. Relationship of independent variables with adoption behaviour of borrowers of credit

An appraisal of Table III and Fig. 4 shows the relationship of independent variables, X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8 and X_9 with adoption behaviour of borrowers of credit.

Correlation analysis shows that age, education, and social participation had significant relationship with adoption behaviour. Independent variables like Annual income, Self-reliance, Attitude, Average yield and Personal guidance, had a highly significant relationship with adoption behaviour of borrowers of credit. Farm size had a non-significant relationship with adoption behaviour.

This also indicated that age had a negative association with adoption behaviour. Education, Social participation, annual income, self-reliance, Attitude, average yield and personal guidance had a positive influence on adoption behaviour.

ii. Relationship of independent variables with economic performance of borrowers of credit

The data in Table IV and Figure 4 reveals the relationship of the independent variables with economic performance

Table III. Relationship of independent variables with adoption behaviour of borrowers of credit.

(n=75)

Sl. No.	Independent variables	Adoption behaviour 'r' values
1.	Age	-0.2528*
2.	Education	0.2401*
3.	Social participation	0.2447*
4.	Farm size	0.1432[NS]
5.	Annual income	0.2979**
6.	Self-reliance	0.5251**
7.	Attitude towards bank credit programme	0.6261**
8.	Average yield	0.6197**
9.	Personal guidance	0.5891**

* Significant at 5 per cent level

** Significant at 1 per cent level

NS = Not significant

Table IV. Relationship of independent variables with economic performance of borrowers of credit.

(n=75)

Sl. No.	Independent variables	Economic performance 'r' values
1	Age	-0.2972**
2	Education	0.1751 NS
3	Social participation	0.0099 NS
4	Farm size	-0.1099 NS
5	Annual income	0.0015 NS
6	Self-reliance	0.4139**
7	Attitude on banks credit program	0.6075**
8	Average yield	0.5462**
9	Personal guidance	0.3730**

* Significant at 5 per cent level

** Significant at 1 per cent level

NS = Not significant

The correlation tests indicate that only age, self-reliance, attitude, average yield and personal guidance had a relationship with economic performance. The other independent variables had no association with economic performance of borrowers. The results also show that age had a negative influence on economic performance, while, self-reliance, attitude, average yield and personal guidance positively influenced personal guidance of borrowers of credit strongly.

iii. Relationship of independent variables with management orientation of borrowers of credit

A perusal of Table V and Figure 4 depicts the relationship of independent variables with management orientation of borrowers of credit.

Correlation analysis results reported a significant association between management orientation and age, annual income, self-reliance, attitude, average yield and personal guidance.

The findings denote a negative influence of age on management orientation. Annual income, self-reliance, attitude, average yield and personal guidance had a positive influence on management orientation. Education, social participation and farm size did not have any significant association with management orientation.

Table V. Relationship of independent variables with management orientation of borrowers of credit.

(n=75)

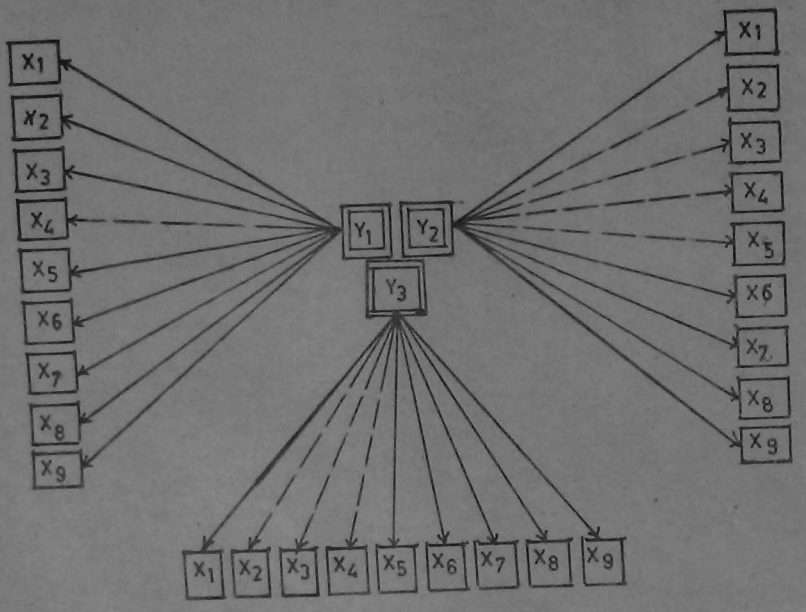
Sl. No.	Independent variables	Management orientation 'r' values
1	Age	-0.2422*
2	Education	0.1069 NS
3	Social participation	0.0950 NS
4	Farm size	0.0609 NS
5	Annual income	0.2511**
6	Self-reliance	0.5541**
7	Attitude towards bank credit programme	0.6340**
8	Average yield	0.5807**
9	Personal guidance	0.5951**

* Significant at 5 per cent level

** Significant at 1 per cent level

NS = Not significant

FIG:4. PARADIGM SHOWING RELATIONSHIP OF INDEPENDENT VARIABLES WITH DEPENDENT VARIABLES OF-NON BORROWERS OF CREDIT.



LEGEND

X_1 - AGE
X_2 - EDUCATION
X_3 - SOCIAL PARTICIPATION
X_4 - FARM SIZE
X_5 - ANNUAL INCOME
X_6 - SELF RELIANCE
X_7 - ATTITUDE TOWARDS BANK CREDIT PROGRAMME
X_8 - AVERAGE YIELD
X_9 - PERSONAL GUIDANCE

DEPENDENT VARIABLE

INDEPENDENT VARIABLE

⟵ SIGNIFICANT RELATIONSHIP

⟵ - - NON-SIGNIFICANT RELATIONSHIP

Y_1 - ADOPTION BEHAVIOUR
Y_2 - ECONOMIC PERFORMANCE
Y_3 - MANAGEMENT ORIENTATION

4. Relationship between dependent and independent variables of non-borrowers of credit

i. Relationship of independent variables with adoption behaviour of non-borrowers of credit

The relationship of independent variables with adoption behaviour of non-borrowers of credit is depicted on Table VI and Figure. 5.

Correlation analysis revealed that education, annual income, self-reliance, attitude and average yield had a very significant association with adoption behaviour. It was also seen that age, social participation, farm size and personal guidance had no effect on adoption behaviour of non-borrowers of credit.

Thus it could be inferred that education, annual income, self-reliance, attitude and average yield contributed significantly to the adoption behaviour of non-borrowers of credit in a positive manner.

ii. Relationship of independent variables with economic performance of non-borrowers of credit

The data in Table VII and Figure 5 presents the relationship of the independent variables with economic performance of non-borrowers of credit.

Table VI. Relationship of independent variables with adoption behaviour of non-borrowers.

(n = 75)

Sl. No.	Independent variables	Adoption behaviour 'r' values
1	Age	-0.0150 NS
2	Education	0.3275**
3	Social participation	0.0850 NS
4	Farm size	0.0468 NS
5	Annual income	0.3819**
6	Self-reliance	0.3940**
7	Attitude	0.5518**
8	Average yield	0.4021**
9	Personal guidance	0.0956 NS

* Significant at 5 per cent level

** Significant at 1 per cent level

NS = Not significant

Table VII. Relationship of independent variables with economic performance of non-borrowers. (n = 75)

Sl. No.	Independent variables	Economic performance 'r' values
1	Age	0.1476 NS
2	Education	0.2510*
3	Social participation	-0.0356 NS
4	Farm size	-0.0832 NS
5	Annual income	0.1135 NS
6	Self-reliance	0.3819**
7	Attitude towards bank credit programme	0.4223**
8	Average yield	0.5257**
9	Personal guidance	0.0576 NS

* Significant at 5 per cent level

** Significant at 1 per cent level

NS = Not significant

Correlation analysis conducted reveals that education, self-reliance, attitude and average yield had a significant association with economic performance of non-borrowers. Age, social participation, farm size, annual income and personal guidance had no significant relationship with economic performance of non-borrowers of credit.

Thus it can be concluded that education, self-reliance, attitude and average yield contribute significantly towards the economic performance of non-borrowers of credit.

3. Relationship of independent variables with management orientation of non-borrowers of credit

Table VIII and Figure 5 bring out the relationship of the independent variables with management orientation of non-borrowers of credit.

A study of the correlation analysis data reveals that education, annual income, self-reliance, attitude, average yield and personal guidance had a significant relationship with management orientation of non-borrowers. However, age, social participation and farm size did not have any association with management orientation.

The results implied that education, annual income, self-reliance, attitude, average yield and personal guidance had a positive influence on the management orientation of non-borrowers of credit.

Table VIII. Relationship of independent variables with management orientation of non-borrower.

(n = 75)

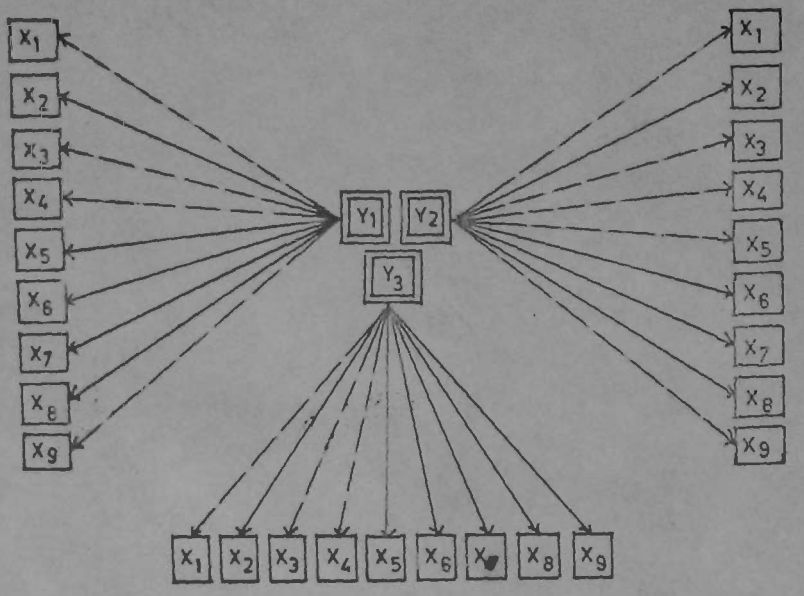
Sl. No.	Independent variables	Management orientation 'r' values
1	Age	0.0834 NS
2	Education	0.2295*
3	Social participation	-0.0706 NS
4	Farm size	0.0963 NS
5	Annual income	0.3814**
6	Self-reliance	0.3456**
7	Attitude towards bank credit programme	0.4678**
8	Average yield	0.4443**
9	Personal guidance	0.3858**

* Significant at 5 per cent level

** Significant at 1 per cent level

NS = Not significant

FIG:5. PARADIGM SHOWING RELATIONSHIP OF INDEPENDENT VARIABLES WITH DEPENDENT VARIABLES OF NON-BORROWERS OF CREDIT.



LEGEND

X_1 - AGE.
X_2 - EDUCATION.
X_3 - SOCIAL PARTICIPATION.
X_4 - FARM SIZE.
X_5 - ANNUAL INCOME.
X_6 - SELF RELIANCE.
X_7 - ATTITUDE TOWARDS BANK CREDIT PROGRAMME.
X_8 - AVERAGE YIELD.
X_9 - PERSONAL GUIDANCE.

DEPENDENT VARIABLE.
INDEPENDENT VARIABLE.
⟵ SIGNIFICANT RELATIONSHIP.
⟵ - - NON SIGNIFICANT RELATIONSHIP.

Y_1 - ADOPTION BEHAVIOUR.
Y_2 - ECONOMIC PERFORMANCE.
Y_3 - MANAGEMENT ORIENTATION.

b. Inter-relationship among dependent variables of borrowers and non-borrowers of credit

Table IX. Inter-relationship among adoption-behaviour, economic performance and management orientation of borrowers of credit.

(n = 75)

Correlation matrix

	Y_1	Y_2	Y_3
Y_1	1.00	0.6214**	0.7502**
Y_2		1.00	0.6427**
Y_3			1.00

** Significant at 1 per cent level

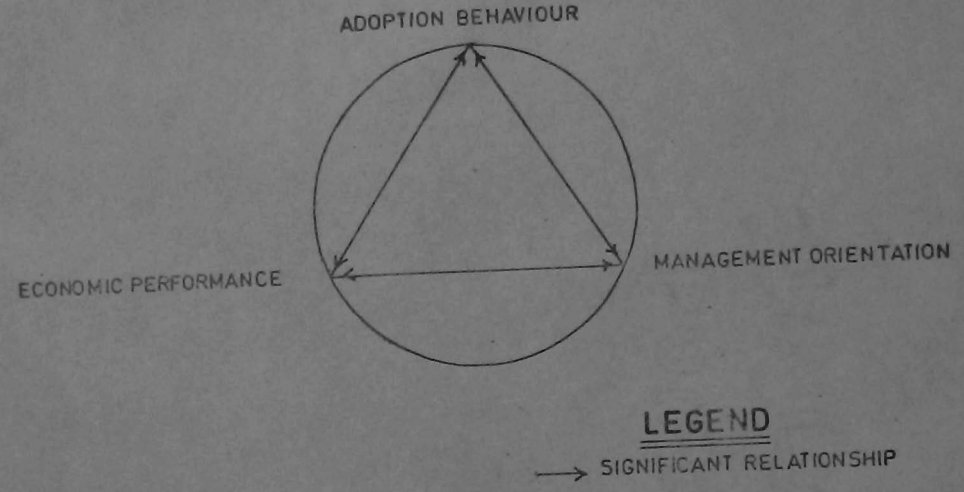
The relationship among the 3 dependent variables has been expressed in Table IX and Figure 6.

Correlation matrix reveals that there was high positive relationship among adoption behaviour, economic performance and management orientation.

Table X and Figure 7 reveals the relationship among the three dependent variables of non-borrowers of credit.

Correlation matrix indicates that there was a positive relationship between adoption behaviour and management orientation, and economic performance and management

FIG:6. INTERRELATIONSHIP AMONG ADOPTION BEHAVIOUR, ECONOMIC PERFORMANCE AND MANAGEMENT ORIENTATION OF BORROWERS OF CREDIT



orientation. The results however show that there was no relationship between economic performance and adoption behaviour.

Table X. Inter-relationship among adoption behaviour, economic performance and management orientation of non-borrowers of credit.

(n = 75)

Correlation matrix

	Y_1	Y_2	Y_3
Y_1	1.00	0.2234 NS	0.2790*
Y_2		1.00	0.3343**
Y_3			1.00

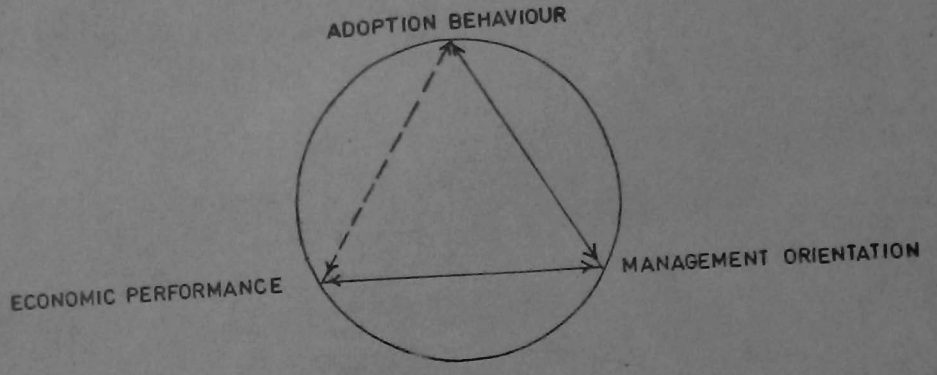
* Significant at 5 per cent level
** Significant at 1 per cent level
NS = Not significant

6. Identification of information source consultancy, timeliness and adequacy of credit and repayment behaviour of borrowers of credit

Information source consultancy

Table XI shows the sources from which the borrowers had first information regarding the bank credit programme.

FIG:7. INTERRELATIONSHIP AMONG ADOPTION BEHAVIOUR, ECONOMIC PERFORMANCE AND MANAGEMENT ORIENTATION OF NON-BORROWERS OF CREDIT.



LEGEND

⟶ SIGNIFICANT RELATIONSHIP.

- - → NON-SIGNIFICANT RELATIONSHIP.

Table XI. Sources of first information of borrowers on bank credit programmes.

(n = 75)

Sl. No.	Sources of first information	Frequency	Percentage
1	Friends	32	42.67
2	Newspaper	11	14.67
3	Neighbours	9	12.00
4	Cooperative society	7	9.33
5	Bank AEO	4	5.33
6	Gramasevak	3	4.00
7	Relatives	3	4.00
8	AEO	3	4.00
9	Family members	2	2.67
10	Dealers in agricultural inputs	1	1.33
	Total	75	100.00

It indicates that friends, newspapers and neighbours were the sources consulted most and family members and dealers in agricultural inputs were the least consulted.

Table XII shows the sources which were used by farmers for detailed information about the bank credit programme.

Table XII. Sources of detailed information of borrowers on bank credit programme.

(n = 75)

Sl. No.	Sources of detailed information	Frequency	Percentage
1	Bank Manager	32	42.67
2	Bank AEO	30	40.00
3	Friends	7	9.33
4	Co-operative society	3	4.00
5	Village panchayat	2	2.67
6	Relatives	1	1.33
	Total	75	100.00

The results revealed that majority of the farmers approached the Bank Manager and the Bank AEO to get detail information regarding the bank credit programme. Relatives and panchayats were the sources least utilised by the borrowers getting detailed information about the bank credit pro

Table XIII. Timeliness and adequacy of credit.

(n = 75)

Item	Frequency	Percentage
Timeliness		
Credit was available on time	75	100.00
Credit was not available on time	-	-
Total	75	100.00
Adequacy		
Received adequate amount	69	92.00
Did not get adequate amount	6	8.00
Total	75	100.00

It is clear from Table XIII that all the farmers had got the credit on time. Majority (92%) of the farmers had received adequate amount as credit.

Repayment behaviour

Table XIV. Percentage of regular repayers and defaulters. (n = 75)

Sl. No.	Item	Frequency	Percentage
1	Regular repayer	70	93.33
2	Defaulter	5	6.67
	Total	75	100.00

It is evident from Table XIV that majority of the borrowers were regular repayers. Defaulters accounted for only 7 per cent.

Reasons for non-repayment of credit

Table XV. Reasons for non-repayment of credit. (n = 5)

Sl. No.	Reasons for non-repayment	Frequency	Percentage
1	Fall in agricultural prices	4	80
2	Inadequate loan amount	2	40
3	High non-farm expenditure	2	40
4	Failure of the crop	1	20

(multiple choice was used)

A study of the above table reveals that the defaulters had attributed to the fall in agricultural prices as the main reason for non-repayment of the availed credit.

7. Reasons of non-borrowers of credit for not availing bank credit

Table XVI depicts that majority of the non-borrowers had not availed loan because they were reluctant to take risks. The other reason was about that inadequacy of security to be offered.

Table XVI. Non-borrowers reasons for not availing credit.

(n = 75)

Sl. No.	Reasons	Frequency	Percentage
1	Do not want to take risk	40	53.33
2	Because of the security they ask	25	34.67
3	Difficulty in obtaining the loan	18	24.00
4	It may not help at all	9	12.00
5	Interest rate is high	6	8.00
6	Refused the loan	4	5.33

(multiple choice was used)

DISCUSSION

V. DISCUSSION

The findings presented in the previous chapter are discussed below.

I. Comparison between adoption behaviour, economic performance and management orientation of borrowers with that of non-borrowers of credit

An appraisal of Table I reveals a relative superiority of borrowers of credit over non-borrowers in their adoption behaviour, economic performance and management orientation. This shows that adoption behaviour, economic performance and management orientation were associated with the borrowing of credit. The higher adoption behaviour of the borrowers may be attributed to the supply of credit and inputs, supported by technical information and close monitoring of the utilisation of credit. Since the bank provided credit for crop enterprise both in the form of cash and kind, along with close supervision, the farmers were persuaded effectively to adopt the improved practices. It could also be indicated that the superior adoption behaviour of the borrowers along with their better orientation towards management could have resulted in their higher economic performance. Moreover, with the higher returns and with the proper utilisation of the bank credit, it is obvious that the borrowers have a positive and superior orientation towards the management of the crop enterprise with regard to the planning, production and marketing aspects of management. In otherwords, it could

be concluded that there is an inter-twining relationship of the varieties influencing the significant difference between the borrowers and non-borrowers of credit with respect to their adoption behaviour, economic performance and management orientation. The findings give credence to the principle that selective stimulus in one area triggers changes in different areas.

The findings of the study are in conformity with the findings of Singh (1969), Chauhan et al. (1973), Sreenivasa Murthy (1978) and Bannerey (1979).

The findings did not agree with the findings of Nanjamatha (1975).

In the context of the findings the Null hypothesis set for the study, that the borrowers will not differ from the non-borrowers with respect to adoption behaviour, economic performance and management orientation stands rejected.

II. Comparison between Age, Education, Social participation, Farm size, Annual Income, Self reliance, Attitude towards bank credit programme, Average yield and Personal confidence of borrowers with that of the non-borrowers credit

The results in Table II indicate that social participation, farm size, annual income, self-reliance, attitude towards bank credit programme, average yield and personal confidence of borrowers differed significantly and were

superior to that of the non-borrowers of credit. This denotes that the above mentioned characteristics of cocoa cultivators were associated with borrowing from the nationalised bank.

The higher annual income of the borrowers might be due to their larger farm size and higher average yield, coupled with better economic performance. It was evident from Table I that the borrowers had a better management orientation and superior adoption. This could have played a role in the borrowers attaining higher average yield which must have resulted in higher annual income.

The better guidance received by the borrowers of credit from the extension agency with regard to their different farming problems must have gone a long way in promoting their average yield and thus increasing their annual income.

The borrower's higher socio-economic status due to his higher annual income might have prompted him to join and participate in formal organizations. This might have contributed to his higher social participation when compared to non-borrowers of credit.

Another finding which was high lighted in this study was the more favourable attitude of the borrowers of credit towards the bank credit programme when compared to the non-borrowers. The borrowers could increase their economic

performance and could achieve higher average yield and higher annual income after utilising the credit from the bank. Therefore, it is quite natural, that these beneficiaries, who derived an appreciable advantage from the agency, should have developed a more favourable attitude towards the bank credit programme than the non-borrowers of credit.

An interesting feature revealed by the findings of this study was the higher self-reliance of the borrowers with respect to the non-borrowers of credit. This might be attributed to the psychological principle of achievement and satisfaction leading to confidence in once oneself.

The findings also indicated the non-association of age and education with respect to borrowing of credit. Age being purely a physical factor, might not have influenced to any large extent. The view of the availability of mass media and non-formal education facilities and formal education level might have failed to influence the borrowers status.

The findings of the study were in conformity with the studies by Desai and Tumbad (1970), O'neill (1967) and Sreenivasamurthy (1970). Ranganatha (1973) had reported that age and education were not associated with borrowing, and attitude was associated with borrowing.

The findings were not in agreement with the findings of Nanjundappa (1975) who had revealed lack of association between social participation and land holding with borrowing.

Hence the Null hypothesis, that the borrowers will not differ with the non-borrowers with respect to social participation, farm size, annual income, self-reliance, attitude towards bank credit programme, average yield and personal guidance stands rejected. However, the exception was with reference to age and education where they did not differ.

III. Relationship of adoption behaviour, economic performance and management orientation with age, education, social participation, farm size, annual income, self-reliance, attitude towards bank credit programme, average yield and personal guidance in the case of borrowers and non-borrowers

1. Age : The data in Table III, IV and V revealed that age was negatively related to all the three dependent variables, viz., adoption behaviour, economic performance and management orientation, in the case of the borrowers of credit. This meant that in the case of the borrowers, the lesser the age, the higher was the adoption behaviour, economic performance and management orientation. This might be due to the fact, that the young borrower farmers were not psychologically conditioned to status quo and had an open mind. The above phenomena might also be due to the character of the older farmers who have certain strong attitudes based on

experience. But in the case of the non-borrowers, age was found to have no influence on the three dependent variables.

Studies by Subramanian and Menon (1973a), Subramanian and Menon (1973b), Ravindra (1980) and Geetha Nutty (1982) support this negative relationship between adoption and age.

The results were not in line with the studies by Reddy (1968), Dudhani and Geetha Rao (1969) and Hemalinga Gowda (1978).

2. Education : A perusal of Table III displays the influence of level of education on the adoption behaviour of borrowers of credit. It is also evident from tables VI, VII and VIII that education had a positive significant relationship with adoption behaviour, economic performance and management orientation of non-borrowers of credit.

Education enables better exposure to printed media of communication, widens the vision of individuals and minds of people, orients them to the outside world and provides new opportunities. The information gained through such exposures might have made them more aware of the recent advances in agriculture and must have motivated them for positive action. Education provides basis for weighing the alternatives to take rational decisions.

The results of the present study depict agreement with the studies by Jalihal (1960), Rose (1961), Lahudkar (1962), Pandit (1964), Shankaraiah (1965), Dudhani and Sethu Rao (1969), Nyre Reddy (1971), Ravindra (1980) and Geethakutty (1982).

3. Social participation : It is evident from Table III that social participation had a positive significant influence on the adoption behaviour of borrowers of credit. Normally, people do not accept or adopt new ideas as soon as they have heard about it. It requires a large number of repeated exposures to the farmers about the same technology to motivate them to adopt the new practice. This would be possible only when the farmers possess high degree of social participation, where there would be better scope to exchange ideas and facts with other farmers. Moreover, the borrowers of credit were accessible to more credit inputs and this coupled with the high participation would have indirectly lead to their better adoption. Social participation psychologically conditions the individual to possess more confidence in decision-making in view of the shared experiences and legitimation which might have possibly influenced the borrowers of credit for better adoption of new technology. However, it was noticed that social participation had no influence on all the three dependent variable of non-borrowers. It also did not have any influence on economic performance and management orientation of borrowers of credit.

The positive significant association between adoption and social participation gets the support of the findings of Grace and Taves (1952), Reddy (1962), Nair (1969), Balasubbo and Thoret (1975), Prasad (1970), Geetha Kutty (1982) and Ramakrishna (1984). The findings do not conform with the findings of Ramakrishna (1984) with respect to the non-association of social participation with economic performance and management orientation.

4. Farm size : It is interesting to note that farm size did not have any significant influence on adoption behaviour, economic performance and management orientation of borrowers and non-borrowers of credit (Table III, IV, V, VI, VII, VIII). Eventhough farm size was found to be associated with borrowing (Table II) it did not have any significant bearing on either of the three dependent variables with regard to borrowers or non-borrowers. This might be attributed to the reason that the farmers are not used to utilising the lands in full for specialised farming, like coconut farming.

The studies were in conformity with the studies of Mahadkar (1962), Singh (1968), Jaiswal (1970) and Radhakrishna (1979).

The studies conducted by Nair (1969), Chauhan et al. (1973), Prasad (1970), and Geetha Kutty (1982) were not in line with the findings of this study with respect to farm size and adoption.

5. Annual income : A study of Tables III, V, VI and VIII reveals that annual income had a positive significant relationship with adoption behaviour, and management orientation of both borrowers and non-borrowers of credit. However, no significant association was recorded between annual income and economic performance of either borrowers or non-borrowers of credit.

Farmers with a higher income level are likely to have better individual status in the community and it has often been quoted that the change agents prefer farmers with higher socio-economic status since it is easier to diffuse the recent advances and technologies through them. Moreover, farmers who adopt new technology has to invest more, since modern agriculture necessitates greater investment than subsistence agriculture. The farmers with a sound financial position can afford to risk the loss that might occur due to natural calamities or other unforseen circumstances. Coconut being a perennial crop, needs sophisticated capital intensive technology and naturally demands of the farmer to be better oriented towards management. Hence a higher annual income induces a farmer to have better management capability and superior adoption even with regard to sophisticated technologies.

A reciprocal cause and effect relationship between annual income, adoption and management orientation is also quite possible. Alertness to innovations and quicker

adoption of new farm practices with better orientation in planning, production and marketing leads to higher income. This in turn makes more capital available for adoption of new practices.

The reason that might be attributed to the lack of significant influence of annual income on economic performance of borrowers and non-borrowers, might be that, annual income boosts the adoption through better management which in turn promotes economic performance and not vice-versa.

The findings by Jalihal (1960), Reddy (1962), Shankaraiah (1969), Patel (1967), Dudhani and Sethu Rao (1969), Kittur (1976), Siddalingappa (1973) and Hanagorey (1979) have revealed the positive and significant association between annual income and adoption. Hullayi Reddy (1983) had reported significant association between annual income and management orientation.

However, Gopalakrishna (1972) and Ramalingegowda (1978) reported the non-significant association between adoption and annual income level.

6. Self-reliance : It was observed from the Tables III, IV, V, VI, VII and VIII that self-reliance was positively and significantly related to adoption behaviour, economic performance and management orientation of both borrowers

and non-borrowers of credit. However the above tables also reveal that self-reliance had a higher degree of association with all the three dependent variables of borrowers when compared to the non-borrowers of credit.

Self-reliance is conceptually related to credit orientation and planning orientation. Borrowing capital for introducing changes in farming and to do it in a planned way presupposes confidence in oneself along with the realisation that all environmental factors are not inscrutable forces beyond ones control. This might be the reason for the above findings. The financial support of the bank provides a conditioning factor to think in terms of self-reliance.

7. Attitude towards bank credit programme : A peep into Table III, IV, V, VI, VII and VIII shows that the attitude towards bank credit programme had a significant influence on the adoption behaviour, economic performance and management orientation of both borrowers and non-borrowers of credit.

This signifies the importance of a favourable attitude towards credit which is one of the most essential inputs in modern agriculture. Modern technology calls for a higher investment in terms of seed, fertilizer, plant protection chemicals, and intercultural operations.

These in turn depend on credit. Hence a favourable attitude towards bank credit programme, which is one of the major sources of credit, cannot be under emphasised, in its relation to adoption behaviour, economic performance and management orientation.

It is also clear from the tables that the borrowers had a higher score in their attitude towards bank credit programme with respect to the three dependent variables than the non-borrowers of credit. This must be due to the fact that the borrowers who had benefitted from the banks credit programme were found to have a more favourable attitude than the non-borrowers. This may also be related to the concept given by Mosher, that farmers continued adoption behaviour and economic performance is related to provision assured arrangement for management services. As this is supposed to come from the bank, there might not be reversal from higher adoption pattern to earlier habit.

The findings of this study agree with the studies reported by Ranganath (1973), Chakar and Gangoor (1975), Kher and Jha (1978), Rammorey (1979) and Kakabathri (1980).

8. <u>Average Yield</u> : It is evident from Tables III, IV, V, VI, VII, VIII that average yield has a highly significant association with adoption behaviour, economic performance

and management orientation of both borrowers and non-borrowers of credit.

The average yield is directly related to the total production which is a result of adoption. Nowadays, due to the non-availability of land, the intensity of farm operations and intensive cultivation is stepped upto increase the average yield which in turn pushes up over all production.

The figures in the tables also reveal the relative higher influence of average yield of borrowers on the three dependent variables. This might be due to the fact that with better credit utilisation, the borrowers had an edge over the non-borrowers of credit with respect to average yield.

Studies by Channegowda (1974), Sinha and Kolte (1974), Ramalingegowda (1978) and Nannaray (1979) are in line with these findings.

9. Personal guidance : The 'r' values of personal guidance have been found to be highly significant for all the three dependent variables in the case of borrowers of credit and with management orientation in the case of non-borrowers of credit.

The farming conditions of each farmer are unique due to the different enterprises undertaken by him, his

farming background and his available resources. Personal guidance which consists of the advice and help given by the extension agency with respect to the modern aspects of farming and the problems faced by the farmer is important in adoption decisions and better management. The reason that can be attributed to the influence by personal guidance on all the three dependent variables of the borrowers might be the better personal guidance received by them than the non-borrowers of credit (Table 11). Possibly the combined guidance of the normal extension agency and the bank might have resulted in the significant association of personal guidance on all the three dependent variables of borrowers of credit.

Vijayaraghavan and Somasundaram (1977), Ravindra (1980), Kantharaj (1980), Geetha Kutty (1982), and Renukaradhya (1984) also reported a significant and positive relationship between personal guidance, adoption and management orientation.

IV. Inter-relationship among dependent variables of both borrowers and non-borrowers of credit

The inter-relationships between adoption behaviour, economic performance and management orientation are depicted in Table IX. It reveals that management orientation and economic performance had a high influence on adoption behaviour. Similarly management orientation and economic

performance were highly co-related. The respondents had borrowed credit in terms of cash and kind from the nationalised bank. Those borrowers might have taken more pains to improve their economic performance through better management and adoption so as to enable them to repay the loan. It can also be seen from Table XIV that majority (93%) of the borrowers had repayed the loans in time. The very process of borrowing credit may exert influence towards management orientation.

Hence it can be inferred that this was due to the judicious use of both local resources and purchased (borrowed) inputs coupled with better personal guidance and higher average yield.

The findings were similar to the findings of Roy *et al.*(1968), Shanmukappa (1978), Yerram Reddy (1979), Renneray (1979) and Renukaradhya (1984).

Management orientation, was related to adoption behaviour and economic performance with respect to non-borrowers (Table X). However it was seen that the adoption behaviour of non-borrowers had no influence on their economic performance. This might probably be attributed to their low adoption behaviour as a result of their limited resource availability. It can be concluded that management orientation is an important component which influences economic performance and adoption behaviour.

The findings were in partial conformity with the findings of Shanmukappa (1970), Narren Reddy (1979), Ramarey (1979) and Renukaradhya (1984).

V. Identification of information source consultancy, timeli-ness and adequacy of credit and repayment behaviour of borrowers of credit

1. Information source consultancy

A study of Table XI reveals that majority of the farmers received first information about the bank credit programme from non-formal sources like friends and neighbours. This also indicates that in a rural setting non-formal sources dominate over formal sources of information. The unique position of the non-formal sources in the rural communication net work of a particular village, puts them above the other sources in providing initial information on many aspects.

Table XII shows that majority of the farmers had approached the bank itself to get detailed information. This might be due to the favourable attitude towards bank credit programme, and the information gained through initial information sources creating desire and interest for more information to allow for action on the farms.

2. Timeliness and adequacy of credit

The data in Table XIII depicts that all the farmers had received the credit on time. Also it was noticed that

almost all farmers (92%) had received adequate amount as credit for their requirements. The timeliness and adequacy must have been one of the important fosters which resulted in borrowers being superior the non-borrower of credit with respect to adoption behaviour economic performance and management orientation. This also supports the theory that extension guidance needs strong supply support for progressi consequences.

Repayment behaviour : Majority (93) of the farmers had repaid the loan in time (Table XIV). This might be attributed to the higher annual income due to higher average yield and better economic performance. The timeliness and adequacy of credit along with the better personal guidance might have resulted in the borrowers of credit to be better performers and thus helped them to repay their loans in time.

The reasons for non-repayment of loans as shown in Table XV indicate that the fall in agricultural prices had reduced the repaying capacity of majority of defaulters. This must be due to the fact that the price of coconut fell from Rs. 4/- per coconut to Rs. 2/- during the year 1984-85.

VI. Reasons of non-borrowers of credit for not availing credit

A good number of the farmers (40%) had not availed credit from the bank since they were reluctant to take

risks (Table XVI). About 26 per cent had refrained from borrowing credit because of the security demanded by the bank. Another 13 per cent had attributed it to the difficulty in obtaining loan due to the cumbersome procedures in availing loan from the bank.

This indicates that agricultural credit which is a pre-requisite for agricultural development should be more liberlised so that more farmers are able to avail credit an increase their production and economic performance. The farmers should also be better educated and the extension agency should be geared up so as to impress on the farmers the importance of credit input in the development of agriculture.

SUMMARY

VI. SUMMARY

India being a developing agricultural country requires a lot of technological changes to propellate economy towards self-sufficiency and thus better the standards of living of its masses. Such a break through can be accomplished only by transforming the traditional and subsistence agriculture into a commercial oriented one. This emphasises the significance of credit as a major input especially in the context of a country like India where majority of the rural masses are poor and lack a firm capital base.

The problem is more acute with regard to plantation crops like coconut, which require more investment than annuals (cereals, pulses, oilseeds, fibre crops and vegetables). Several attempts have been made in this regard by nationalised banks to provide different types of credit. This study was undertaken to probe the impact of bank's credit programme with regard to coconut, which is the major plantation crop in Kerala. The present study was attempted in the district of Calicut which has the largest area and production of coconut in Kerala State.

The present research study was designed to compare and explore the adoption behaviour, economic performance and management orientation of borrowers and non-borrowers of short term credit from Kuttiadi branch of Canara Bank. The specific objectives of the study were:

1. To determine and compare the extent of adoption of selected improved agricultural practices, economic performance and management orientation between borrowers and non-borrowers with respect to coconut cultivation.

2. To determine and compare other related characteristics of farmers influencing adoption behaviour, economic performance and management orientation of borrowers and non-borrowers of credit.

3. To find out the relationship between adoption, behaviour, economic performance and management orientation of borrowers and non-borrowers of credit with respect to the selected independent variables.

4. To identify the information source consultancy, timeliness and adequacy of credit, repayment behaviour and reasons for non-repayment of credit as perceived by the borrowers.

5. To identify the reasons for not availing bank loans as expressed by the non-borrower farmers.

The study was conducted in the year 1985, in Kunnamangalam block in Kozhikode taluk of Calicut district in Kerala State. Coconut cultivators who had availed credit from the Mukkom branch of Canara bank and non-borrower farmers from the same area constituted the population of the study. In all 150 farmers, 75 borrowers and 75 non-borrowers, were selected for the study by random sampling.

The dependent variables used in this study were adoption behaviour, economic performance and management orientation. The independent variables used in the study were age, education, social participation, farm size, annual income, self-reliance, attitude towards bank credit programme, average yield and personal guidance.

Sen Gupta's (1957) scale with slight modifications to measure adoption quotient, economic performance index as used by Bhanbhagwati and Crouch (1977) with slight modifications, management orientation scale developed by Samanta (1977), Attitude towards bank credit programme as used by Ranganatha (1975) with slight modifications, personal guidance and self-reliance scale developed by Singh (1981) with slight modifications were used in this study with necessary modifications.

The data was collected by personal interview's using a structured and pre-tested schedule from the respondents in an informal atmosphere.

Analysis of the data was undertaken by 'F' test 't' test and 't' test using Cochran approximation, correlation analysis and also by simple percentages.

Two Null hypotheses were set for the study and were tested for their validity. The important findings of the study were as follows:

1. There was a significant difference between borrowers and non-borrowers of credit with respect to their adoption behaviour, economic performance and management orientation. Borrowers of credit were superior with respect to all the three dependent variables.

2. There was significant difference between borrowers and non-borrowers of credit with respect to social participation, farm size, annual income, self-reliance, attitude towards bank credit programme average yield and personal guidance. But there was no significant difference between borrowers and non-borrowers of credit with regard to age and education. However the borrowers recorded a higher score than the non-borrowers of credit with respect to all the independent variables.

3. There was a significant relationship between education, social participation, annual income, personal guidance and adoption behaviour of borrowers of credit. However farm size did not have any significant association with the adoption behaviour of borrowers of credit.

4. Personal guidance had a significant association with economic performance of borrowers of credit. However, education, social participation, farm size and annual income had no association with economic performance of borrowers of credit.

5. Annual income and personal guidance were found to be significantly associated with management orientation of borrowers of credit. Whereas education, social participation and annual income had no association with management orientation of borrowers of credit.

6. An interesting feature of the study was that age was found to significantly and negatively associated with adoption behaviour, economic performance and management orientation of borrowers of credit while it was found to have no association with all the three dependent variables of non-borrowers of credit.

7. With regard to the non-borrower of credit, their adoption behaviour was found to have a significant association with education and annual income. Social participation farm size and personal guidance recorded a non-significant association with adoption behaviour of non-borrowers of credit.

8. Economic performance of non-borrowers of credit was found to have a significant association with education. However it was found that social participation, farm size, annual income and personal guidance had no association with economic performance of non-borrowers of credit.

9. With regard to management orientation of non-borrowers of credit, education, annual income and personal

guidance recorded a significant association. Whereas social participation and farm size were not related.

10. Another highlight of the study was the high positive association of self-reliance, attitude towards bank credit programme and average yield with adoption behaviour, economic performance and management orientation of both borrowers and non-borrowers of credit.

11. There was a strong inter-relationship among all the three dependent variables, namely adoption behaviour, economic performance and management orientation in the case of borrowers of credit.

12. There was a positive relationship between adoption behaviour and management orientation of non-borrowers. A strong association was also found to exist between economic performance and management orientation of non-borrowers. However there was no significant relationship between adoption behaviour and economic performance of non-borrowers of credit.

13. The study revealed that non-formal sources like friends were utilised most by the farmers for getting first information on the banks credit programme.

14. Whereas, it was seen that Bank Managers and Banks ADO were the sources consulted most by the farmers for getting detailed information about the banks credit programme.

15. It was also interesting to note that all the farmers who had availed credit had received it in time while majority (92%) had also received adequate amount as credit.

16. Another noteworthy finding was that majority (93%) of the borrowers had repaid the credit in time.

17. The defaulters had attributed to the fall in agricultural prices as the main reason for non-repayment of the credit availed.

18. The attitude of not wanting to take risk was the main reason for most of the non-borrowers in not availing bank loan.

Recommendations and Implications

The findings in the current investigation have brought out certain points for consideration of the banks and development organisations. The higher level of adoption patter economic performance, management orientation, social partic pation, attitude towards bank credit programme, annual inc average yield, self-reliance and personal guidance of the borrower farmers over that of the non-borrower farmers, clearly implied that it might be attributed to the credit borrowing pattern of the borrowers. This clearly shows the significance of credit pattern in improving the socio-economic and psychological status of the farmers. Hence

credit institutions should evolve more strategies for financing farmers which will go a long way in their overall development.

It could be seen that the adoption behaviour, economic performance and management orientation of the farmers were inter-linked and inter-dependent. This calls for a combined approach of credit and personal guidance which will improve the management orientation, thus leading to better adoption and resulting in sustained higher economic performance.

Adoption of improved complex technology like coconut cultivation needs more credit. Hence, provision should be made by the banks to increase credit facilities to its clients, which will go a long way in providing favourable circumstances to enhance the adoption of new technology. In addition to farmers efforts, it is recommended that the banks provide credit build up the intensive technical service and advisory work with regard to the cropping patterns, besides the supply of inputs in time and in adequate quantities.

It was also noticed that the majority of the non-borrowers had not availed loan because of their reluctancy in taking risks. Hence the local [illegible] extension workers and bank officials should play a determining role in educating

and training the farmers and bringing the pace of adoption of improved technology to a greater extent, by more participation of farmers in the banks myriad agricultural development programmes.

There is need for expansion in the existing extension staff of the bank, to decrease the staff-client ratio. This is vital because of the long distances involved in travel in those areas and also due to the large number of clients.

In the study it could be observed that majority of the borrowers had repaid the credit promptly. This shows that the borrower farmers do not want to increase debt on them which only implies that credit institutions should supply supervised credit to farmers which would augment their repaying capacity.

The research study happens to be one of the few in this area. Hence it is desirable to design a study covering larger area to draw generalisation which would throw some useful light for further research and also to credit institutions in developing new strategies for agricultural finance.

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VII. REFERENCES

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*Original not seen.

APPENDIX

APPENDIX

INTERVIEW SCHEDULE

Block : Number :

Village : Date :

Borrower/Non-borrower :

1.0 Name of the farmer :

1.1 Age :

1.2 Education (tick the applicable one)

i. Illiterate ii. Can read only
iii. Can read and write iv. Primary Education
v. Middle school education vi. High school education
vii. Diploma or training viii. Graduate

1.3 Social participation

Institutions	Membership		Attendance		
	Member	Office bearer	Regular	Occasional	Ne
(a) Village Panchayat					
(b) Youth Club					
(c) Co-operative society					
(d) Farmers forum					
(e) MLA/MP					
(f) Any other organization					

1.4 Farm size in acres

Ownership	Dry	Wet	Garden	Total
Owned				
Leased in				
Leased out				
Net				

1.5 Annual income level

(i) What was your annual income approximately from the farm during the year 1984-85 Rs.

(ii) Do you have any subsidiary occupation or other sources of income in addition to agriculture? Yes/No

If Yes, please state the sources of income(1984-85)

Sl. No.	Sources	Income (Rs.)
(i)		
(ii)		
(iii)		
(iv)		

1.6 Self-reliance

How much of your future depends on yourself?

(i) 100%
(ii) 75-99%
(iii) 50-74%
(iv) 25-50%
(v) Less than 25%
(vi) Not at all

1.7 Attitude towards bank credit programme

Please elicit response for the following statements on the five point scale mentioned by making a Tick mark at the appropriate position.

Statements	SA	A	UD	DA
(i) Money borrowed from the bank need not be spent for the purpose for which it is intended				
(ii) If one wants to improve one's economic status one should borrow				
(iii) Bank credit has been available even to small farmers				
(iv) Security demanded by the Bank is not reasonable				
(v) Better to farm with whatever resources one has than to borrow money from the bank				
(vi) Technical advice followed with credit is more important than mere credit from a bank				
(vii) Borrowing makes a man obligated to the lender or lending agencies				
(viii) Bank loan is a boon to farmers				
(ix) Cost of credit involved in availing bank loan is reasonable as compared to other agencies				
(x) Borrowing money for the education of children is good				
(xi) Bank procedure is so cumbersome that borrowing becomes difficult				
(xii) There is now no need for regular repayment in view of the nationalisation of banks				
(xiii) Debts leads to misery and hence it is bad				

Statements	SA	A	UD	DA	D
(xiv) Borrowing habit makes people believ their promises					
(xv) Borrowing often forms a bad habit					
(xvi) Borrowing money for repayment of old debts is good					
(xvii) Borrowing for investment on enterprises is good					
(xviii) Not to benefit from the Bank credit programme is a blunder					
(xix) Members of the borrowing family are likely to become spend thrifts					
(xx) Bank is strict as regards to recovery of loan and therefore it is difficult to go in for credit					
(xxi) The rate of interest charged by the bank is high					

1.8 Yield of coconut

What is the average yield of coconut per tree per year? ———

1.9 What is the average number of trees per acre? ———

1.10 Personal guidance

In connection with your farming you might be receiving general guidance from many sources. However, the need of personal guidance in respect of your specific farming situation might have been felt by you. Please inform how far the various extension personnel have guided you in efficient utilisation of the resources and in solving your problems.

Sl. No.	Statements	Very little	Not so much	Much
(1)	The extent to which you have discussed your farming problems with the extension personnel in the last year			
(2)	The extent to which the extension personnel visited your crop in the last year			
(3)	The assistance you have received in testing your soil			
(4)	The assistance you have received in preparation of your farm plan			
(5)	The help you have received in determining the most suitable cropping pattern for your farm			
(6)	The advice you have received for proper use of fertilizers for different crops on your farm			
(7)	The advice you have received for efficient water use on your farm			
(8)	The advice you have received in identifying insect pests of your crop plants and for prescribing control measures for them			
(9)	The advice you have received in using farm machinery on the farm			
(10)	The assistance you have received in identifying the diseases of your crop and prescribing control measures for them			
(11)	The advice you have received for proper storage of your farm produce			
(12)	The advice you have received in understanding the additional costs and additional returns in the use of inputs			

2.0 Adoption behaviour

(1) Did you plant improved varieties of coconut? Yes/

(2) Did you adopt correct spacing? Yes/

(3) Do you apply manures? Yes/
If yes quantity applied

(4) Do you apply fertilisers? N P K Yes/
If yes quantity applied.

(5) Do you apply straight fertilisers? Yes/

(6) Do you apply fertilisers when there is heavy rainfall? Yes/

(7) Do you irrigate the palms after fertiliser application? Yes/

(8) Do you apply fertilisers in circular basins of radius 1.8 m and 0.25 m depth from base of the palm? Yes/

(9) Do you have intercrops? Yes/
If yes do you add fertiliser for the intercrops

(10) Have you provided drainage facilities? Yes/

(11) Have you done weed control? Yes/

(12) Have you done lime application?

(13) If yes whether it is on the basis of soil test results or not? Yes/No

(14) Do you grow green manure crop in the coconut garden for mulching? Yes/No

(15) Did you have the following pest attack? Yes/No
Rhinoceros beetle, Redpalm weevil, Black headed caterpillar

If yes, did you undertake plant protection measures

3.0 Crop farm orientation

A. Planning orientation

i. Each year one should think afresh about the crops to be cultivated in each type of land	A/D1
ii. It is not necessary to make prior decisions about the variety of crop to be cultivated in the land	A/D1
iii. The amount of seed, fertiliser and plant protection chemicals needed for raising a crop should be assessed before cultivation	A/D1
iv. It is not necessary to think ahead of the cost involved in raising a crop	A/D1
v. One need not consult an agricultural expert for crop planning	A/D
vi. It is possible to increase the yield through farm production plan	A/D

B. Production orientation

i. Timely planting of a crop ensures good yield	A/I
ii. One should use as much fertiliser as one likes	A/I
iii. Determining fertiliser dose by soil testing saves money	A/I
iv. Seed rate should be given as recommended by the specialists	A/I
v. For timely weed control one should even use suitable herbicides	A/I
vi. With low water rates, one should use as much irrigation water as possible	A/I

C. Market orientation

i. Market news is not so useful to a farmer A/DA

ii. A farmer can get good price by trading his produce A/DA

iii. Warehouses can help the farmer to get a better price for his produce A/DA

iv. One should sell his produce to the nearest market irrespective of price A/DA

v. One should purchase his inputs from the shop where his other relatives purchase A/DA

vi. One should grow those crops which have more market demand A/DA

4.0 Economic performance

Details in the last page.

For borrowers

5.0 Information source consistency

When did you consult for bank credit for coconut cultivation mention the source.

Sources	First information	Detailed information
(a) Gramasevak		
(b) Village panchayat		
(c) Village teacher		
(d) Co-operative society		
(e) A.E.O.		
(f) B.D.O.		

Sources	First information	Detailed information
(g) Neighbours		
(h) Friends		
(i) Relatives		
(j) Family members		
(k) Landlords		
(l) Local leaders		
(m) Radio		
(n) Newspaper		
(o) Agricultural magazines		
(p) Bank Manager		
(q) Banks A.C.O's		
(r) Village merchants		
(s) Dealers in Agril. inputs		
(t) Purpose dealers		
(u) Any other specify		

5.4 Particulars of loan borrowed from the bank

(a) Date of borrowing

(b) Duration

(c) Amount

(d) Rate of interest

(e) Security offered

(f) Repayment schedule

(g) Item on which the loan was spent

(h) Deviation if any

(i)

(ii)

(i) How often the AEO need to visit the farm?

(j) Was the information adequate? Yes/No

(k) Was the advisory service satisfactory? Yes/No

5.2 Timeliness and adequacy of credit

(a) Did you get the credit in time? Yes/No

(b) If not, what might be the reason?

i. Too much delayed

ii. Cumbersome procedure

iii. Others specify

(c) Was the credit received adequate? Yes/No

(d) If not, to what extent is adequate

5.3 Repayment behaviour

Have you repaid the loan in time?

Defaulter/Regular repayer

5.4 Reasons for non-repayment

(i) Low non-farm income

(ii) High non-farm expenditure

(iii) Failure of the crop

(iv) Fall in Agricultural prices

(v) Loe not form income

(vi) Increase in cost of cultivation

(vii) Limited resources such as land area, seeds, FYM, fertilizers.

(viii) Lack of technical guidance

(ix) Inadequate loan amount

(x) No proper supervision of loan utilization

(xi) Forced to use the loan for unexpected purposes

(xii) No rigid terms of repayment

(xiii) Better use can be made instead of repayment

(xiv) Family commitments and expenditure

(xv) Repayment of old loans

(xvi) Used for the purchase of assets

(xvii) No marketable surplus

(xviii) Any other specify?

For non-borrowers

5.5 Reasons for not availing loans

(i) Not aware of the facilities

(ii) Difficult in obtaining the loan

(iii) Interest rate is high

(iv) Because of the security they ask

(v) Refused the loan

(vi) Do not want to take risk

(vii) It may not help at all

(viii) The banking institute is far away from the village

(ix) Any others, specify

Economic performance index:

Sl. No.	Season	Enterprise	Total acreage under enterprise	Quantity produced/ acre (quts)	Total production	Value per unit	Total value	Cost of production/ unit	Total cost of production	EPI = Items $\frac{8}{10} \times 100$
1	2	3	4	5	6	7	8	9	10	11