PARTICIPATION OF FARM FAMILY WOMEN IN SERICULTURE IN THE PALAKKAD DISTRICT

By

SAJAN ANDREWS, K.

THESIS

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requirement for the degree of

Master of Science in Agriculture

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Vellanikkara Thrissur

1994

DECLARATION

I hereby declare that this thesis entitled **Participation of Farm Family Women in Sericulture in the Palakkad District"** is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis of the award to me of any degree diploma associateship fellow ship or other similar title of any other University or Society

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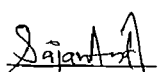

SAJAN ANDREWS K

Dr P S GEETHAKUTTY
Assistant Professor
Dept of Agricultural Extension
College of Horticulture

Vellanikkara

CERTIFICATE

Certified that this thesis entitled **Participation of Farm family Women in Sericulture in the Palakkad District** is a record of research work done independently by **Mr Sajan Andrews, K** under my guidance and supervision and that it has not previously formed the basis for the award of any degree fellow ship or associateship to him

Dr P S GEETHAKUTTY
Chairperson
Advisory Committee

CLR I IFICA Γь

We the undersigned members of the Advisory Committee of **Mr Sajan Andrews, K** a candidate for the degree of **Master of Science in Agriculture** with major in **Agricultural Extension** agree that the thesis entitled **Participation of Farm Family Women in Sericulture in the Palakkad District** may be submit ted by Mr Sajan Andrews K in partial fulfilment of the requirement for the de gree

Dr P S Geethakutty
Assistant Professor
Department of Agricultural Extension
College of Horticulture Vellanikkara
(Chairperson)

Dr C Bhaskaran
Associate Professor and Head
Dept of Agricultural Extension
College of Horticulture
Vellanikkara
(Member)

Dr N P Kumari Sushama
Assistant Professor
Dept of Agricultural Extension
College of Horticulture
Vellamkkara
(Member)

Smt Graceamma Kurian
Assistant Professor
Dept of Agricultural Statistics
College of Horticulture
Vellanikkara
(Member)

EXTERNAL EXAMINER 10/3/97
(Dr V RAVICHANDRAN)

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SAJAN ANDREWS K

Dedicated to
My Loving Parents

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Introduction

CHAPTER I

INTRODUCTION

The contribution of women to a nation s development is immense But from time immemorial their services go unrecognized Women in the rural areas form the most important productive workforce m the national economy of majority of developmg countries including India They play a significant role in agriculture and contribute one third of the labour force required for farming operations m the country The supply of work effort by women in partnership with men has character ised the development of every society Their role in farm and at home is multi faceted assessing or influencing directly or indirectly in all decisions of their coun terpart and often they have to face the double drudgery of being both the contribu tors to family income and responsible for household maintenance In most of the Indian families men tend to value their own role as the principal one in the family economy while women are excessively undervalued This patriarchial thinking per vades every sphere of the society and continues to act as barrier in full and active participation of women m the development process and organization of the economy for the home and the nation at large Although women form half of the human capi tal in the country in this way they remain the most deprived and long neglected segment of the society The process of social development would be incomplete and lopsided unless women are fully involved in it and are given equal chance with that of men in the society Permanent changes are to take place in the status of women that empower them with control over their income autonomy and self confidence

The needs of women from the lower strata of rural society have long been ignored or overlooked by the policy makers Together with this in most cases the negative consequences of development process have been felt more acutely by rural women because of gender based hierarchies which on the one hand limits women s access to resources and participation and on the other impose sexual devi sion of labour that allocate to women the most tedious labour intensive and poorly rewarded wage Heyzer (1987) indicated that while landless women face the prob lem of too much work for little income the wives of better off farmers often with draw from manual work as a status symbol These withdrawn and passive forces are also to be brought to the productive and remunerative work scene Such pro grammes are also to form the part of policy for nation s development Generation and spread of technologies appropriate to employment of these group is one potential source for accelerating the possible farm women s participation in development through their family development

In the recent past there were some efforts of planning and implementa tion of programmes focussing on the farm women in our nation and the state The introduction of sericulture as a cottage industry in Kerala under the Kerala State Khadi and Village Industries Board is to be viewed and appreciated as an effort of this kind

The sericulture technology as such is highly suited to the participation of women it involves mostly indoor activities which require low energy or manual labour the work is spread through out the day and can be undertaken during leisure hours Since carried out at the household premises it can be synchronized with other

household chores It can provide an additional income throughout the year and can improve the women s status as they are contributing towards family income

Sericulture was introduced in Kerala for the first time during 1986-87 in certain pockets in the districts of Idukki and Palakkad Encouraged by the success of the programme sericulture was extended in a very modest scale to the remaining districts in the following year Based on the recommendation of a special task force constituted by the State Planning Board sericulture has been declared as a village industry A technical wing has been established in the Kerala State Khadi and Vil lage Industries Board under a Director (Seri Tech) for the implementation of the programme During 1990 91 nearly 4800 acres of land were brought under mulber ry cultivation (Kerala State Khadi and Village Industries Board 1992) It is estimat ed that little over six million people are deriving their livelihood from sericulture and associated activities all over the country Every hectare of mulberry garden can generate 13 work years ie 4745 work days throughout the year (Dandin 1994)

Sericulture enterprise has two components viz agriculture and industry Essentially the farm families derive income from agricultural component which starts from cultivation of mulberry and ends in cocoon sale in the market The indus try starts where agriculture leaves processing of cocoons reeling of silk processing of yarn and weaving There is immense scope for farm families to involve in the production of cocoon and to evolve real cash together with their traditional farming

Since majority of the activities in mulberry cocoon production are basi cally cottage industries or individual activities it can be attended easily by house holds as a self employment avenue in the rural socio economic set up Against this background the participation of farm women in the sericultural operations and their

role in decision making in this field assume much importance Their involvement as an invisible workforce role in decision making and sharing the benefits need more attention and emphasis to develop their entrepreneurship leadership qualities skill upgradation with respect to communication human relations co-operative spirit and finally the economic empowerment of women To derive insight and data into these aspects a study was conducted to assess the extent of participation of farm family women in sericultural operations and decision making

The main objectives of the study were

1) to measure the extent of participation of farm family women in sericultural operations
2) to measure the extent of participation of farm family women in decision making in sericultural operations
3) to analyse the relationship between the personal socio-cultural and techno economic characters of farm women with their extent of participation in seri cultural operations
4) to analyse the relationship between the personal socio cultural and techno-economic characters of farm women with their extent of participation in deci sion making in sericultural operations
5) to identify the constraints faced by the farm family women in sericultural enterprise
6) to study the consequences perceived by the farm family women due to their participation in sericultural operations

Scope of the study

The study which intended to measure the extent of participation of farm family women in sericulture in Kerala was the first of its kind on the topic The role of farm family women in decision making in sericulture in relation to their personal socio-cultural and techno-economic factors and constraints faced by them in their work was also studied Consequences perceived by the farm family women due to their participation in sericulture were also identified in this endeavour Since rearing of silkworm is a labour intensive and technology oriented one the utilization of family women labour will be much more desirable than hired labour which will increases the profitability of the enterprise and find a solution to the present unem ployment situation among educated women The results of the study would also pave way for formulating appropriate training strategies and co operative movement for farm women engaged in sericulture The measurement procedures for the quantifica tion of variables in this study would be useful contributions to the body of research in agricultural extension

Limitations of the study

The present research work forms a part of the post graduate degree programme which is a single student investigation and hence time money and other resources at the disposal of the investigator were limited Because of this limitation the student researcher was forced to confine the study to selected locations and re stricted sample size from a single district of the State Although such limitations were encountered intensive care was taken to conduct the study as scientifically and

systematically as possible Hence it is hoped that the results of this study will en lighten the concerned authorities for improvement in the sector and will be useful for succeeding investigations of similar kind

The study was based on the expressed information and opinions of the farm women which may not be free from their individual biases and prejudices There could be some distortions in the interpretation of the responses of the farm women though every care was taken to collect the information without any loss

In spite of these limitations the findings of this study are expected to throw substantial light on the participation and decision making role of farm women with regard to sericulture enterprise in the State and constraints and consequences of participation there of

Presentation of the thesis

Besides the present introduction chapter the second chapter viz theoreti cal orientation deals with the review of selected important and related studies in the field of the present investigation The third chapter presents the methodology used in the study The location of the study area sampling procedure followed quantifica tion of variables selected for the study statistical techniques employed etc are dealt with in this chapter The fourth chapter contains the results of the study and discus sion on the results of the study are also presented The last chapter summarises the study with implications and suggestions for future research

Theoretical Orientation

CHAPTER II

THEORETICAL ORIENTATION

This chapter is aimed at developing a theoretical framework based on review of past research studies related to participation of women in sericultural activities A review of the past efforts would help to form a clear concept about the topic to identify the variables that are relevant to the area of present research and to presume the probable relationships Hence an attempt is made here to present the available literature directly or indirectly related to the topic They are given under the following main heads

2 1 Concept of participation

2 2 Studies on participation of farm family women in sericulture

2 3 Concept of Decision Making

2 4 Studies on participation of women in decision making in sericulture

2 5 Relationship of selected personal characteristics of farm family women with their extent of participation m sericultural operations and decision making

2 6 Constraints of participation in sericultural operations

2 7 Consequences of participation

2 8 Conceptual frame work

2 1 Concept of participation

Participation is the voluntary involvement of people in any enterprise According to Bhaduri and Rahman (1982) participation is a social experience shared by individuals and groups who live in definite economic and social relations to each other in a society

Ookley (1987) highlighted the very different ways in which the word participation is used Participation can describe attempts to encourage rural people to collaborate with programmes which have already been devised it can cover activ ities of the community development type in which community involvement is sought as a means of ensuring the survival of a project it can be applied to initiatives to facilitate the formation of people s organizations at local level as a means by which poor people will gain a voice in decision making and it may be seen as in essence a process by which the empowerment (both economic and political) of hitherto power less people is achieved Participation is however generally understood as a process and not as some kind of static end product of development

According to Saiyadain (1988) participation refers to sharing in an appropriate way the decision making power with the subordinates

In the opinion of Mishra (1994) the term participation has three connota tions Participation means co-operating taking part in something the mere presence even silent presence of individual or representative of an organization at different levels According to him participation can be direct or indirect passive/active and it is one of the important techniques to achieve the desired goal

In general participation is regarded a value in itself and a means by which the society can tap and maximise the use of human and material resources for the benefit of majority of its citizens The extent and quality of participation at indi vidual level amounts to the participation at societal level In this process of participa tion how far the farm women take part and what is the nature of their involvement? These aspects are of much concern since women form almost an equal majority in the national human resource In this context the present study makes an attempt to determine these roles played by the farm women with particular reference to sericul ture enterprise in Palakkad district

2 2 Studies on participation of farm family women in sericultural opera tions

Samuel and Erappa (1987) reported that silk output was high among women workers in Karnataka

Panda (1990) observed that women and children of the silkworm rearer s family have been actively taking part in rearing i e in plucking leaves cutting them to required size feeding the worms cleaning beds etc which indicates better utilization of family labour

Pandey and Pareek (1990) reported that sericulture is an important trade in which women participate They identified that sericulture is largely based on mulberry and castor plantations and involve operations like collection of eggs at low temperature and their hatching to coincide with the appearance of foliage in the plantations feeding tender leaves to the worms cleaning and changing of feeding trays boiling of cocoons reeling of s·lk etc which are easily done by women

Rani and Narayana (1990) pointed out that women can beneficially engage in rearing of silkworms The participation of women at the time of feeding young age worms and at the time of transferring riped silkworms from trays to chandrikas were very high they observed

Sharma (1990) opined that sericulture is an important field wherein rearing of silkworm is primarily dominated by womenfolk It can provide alternative employment opportunities to landless or land poor womenfolk in rural areas specially in the semiarid region

Swamy *et al* (1990) reported that in mulberry cultivation and management including preparation of land planting of cuttings intercultivation irrigation harvesting and transportation of mulberry leaves women edge out men in operations like planting manuring weeding and leaf plucking They estimated that about 29 8 per cent of work involved in mulberry leaf production is done by women In the production of D F L s Women s timely and precise activities like sorting of cocoons picking pairing and depairing of moths mother moth examination and handling eggs are indispensible During disinfection women play a vital role in the activity In the rearing section women are engaged from brushing of worms till the marketing of cocoons In general about 43 per cent of the operations involved in the silkworm rearing were done by women

Kumar (1992) reported that women constitute a large proportion of work force in sericulture in Karnataka

Shilaja *et al* (1992) opined that women play a crucial role in sericultural operations like plucking of the mulberry leaves feeding the worms cleaning the

rearing house and equipments and realing of the cocoons In short nearly 90 per cent of the operations in sericulture is done by women They also jointly participate with men in mulberry practices like intercultivation weeding pruning levelling irriga tion and fertilizer application

Vasanthi (1992) concluded that about 51 per cent of the labour force in sericulture is women who are employed in mulberry garden silkworm rearing weaving or garment making factories

Kumar *et al* (1993) suggested that sericulture is a labour intensive family based occupation suitable for women They observed that in Darjeeling hills nearly 50 per cent of the rearers were women who were involved in silkworm rearing grainage reeling and cultural operations

Devi (1994) reported that women in all traditional sericulture states constitute a substantial proportion (53%) of the total work force in sericulture and contribute vitally to the sectors of silkworm rearing reeling of cocoons twisting weaving printing and dyeing She also found that in weeding the participation of women ranges from 80 per cent in traditional rainfed to 90 per cent in traditional irrigated and 50 per cent in new irrigated areas

Dhandapani and Mukerji (1994) reported that about 65 per cent of labour engaged in reeling was female

Rao (1994) observed that one hectare of irrigated mulberry provide year round employment for 13 persons the bulk of it on the farm itself A good propor tion of this work force is made up of farm women

Rao and Singh (1994) pointed out that the Eri silkworms were reared in indoor by tribal women by feeding castor leaves collected from backward plants and stray castor plants available in the vicinity of the villages They also observed that most of the tribal women from upper and lower Assam participated in the rearing of Muga silkworms

Sen *et al* (1994) in a sample survey in Assam showed that about 60 per cent tribal women attended to all activities of Eri silkworm rearing It was also observed that tribal women performed almost all the activities of silkworm rearing such as leaf plucking feeding of worms bed cleaning collection of dry leaves for spinning and lastly harvesting

Venugopal (1994) opined that sericulture is a sustainable economic activ ity positively favouring the rural poor in the unorganized sector He also reported that about 60 per cent of the work force engaged in sericulture were women

2 3 Concept of Decision Making

The process ot choice or decision making involves selection of goals to be attained and also alternative means to be evaluated for their efficacy in the at tainment of selected goals This process of choice has been studied considerably by many research workers in the field of Sociology Psychology Social Psychology and Economics

According to Bates (1954) decision making process involves a decision maker (actor) an environment (situation) in which the decision makers must oper ate a set of actions available (means) and a set of goals to be accomplished

According to Deacon and Firebaugh (1981) decision making is a process of evaluation in making choices or resolving alternatives All decision making involves a subjective aspect (goals) and an objective or resource aspect Decision making is the process through which the subjective and objective evaluation takes place and the decision is a form of value

Nandapurkar (1982) defined decision making as the degree to which an individual justifies by selection of most efficient means from among the available alternatives on the basis of scientific criteria for achieving maximum economic profit

2 4 Studies on participation of women in decision making in sericulture

Studies on participation of farm women in decision making in sericulture were not available due to the lack of research work in this field Hence some of the related studies showing the importance of farm women in decision making in farming and related areas are given below

Singh and Singhal (1969) defined participation in decision making as social and emotional involvement of a person in a group situation which encourages him to contribute to group goals and share responsibility in group activity

Savarimuthu (1981) indicated that women made lesser independent decisions on matter relating to farming when compared to collective decisions

Dubey *et al* (1982) revealed that majority of farm women participated highly in decision making on aspects such as the number of milch animals to be kept and quantity and type of fodder to be fed to milch animals

Rani and Bhave (1982) reported that majority of the rural women were participating passively in different areas of decision making with regard to produc tion oriented expenditures

Singh and Chander (1983) stated that women played a keyrole in imple menting various decisions regarding development of the farm and exercised great influence on farm policies and practices They had also reported that women made decisions on procuring loans and credit

Castillo (1985) noted that wives were very much involved in decision making in rice cultivation Citing a study conducted in Baybay Leyte she asserted that they participated actively in decisions regarding the allocation of money on farm activities such as land prepartion purchase of planting materials inputs farm equipment and hiring of labourers Sixty per cent of them did so by themselves or jointly with their husbands More than half participated even in technical decisions such as which tools to use extent of fertilizer and chemical to use etc

Sisodia (1985) stated that women had a significant role in decision making in farm operations

Wahyuni *et al* (1985) showed that women play a larger role in decision making related to planning organizing controlling marketing herding cutting grass feeding marketing and health care in small ruminant production in West Java

Dak *et al* (1986) reported that participation of women with respect to decision making is mainly of a supportive nature

Seema (1986) indicated that more than 80 per cent of the farm women were participating in adoption of decisions with respect to selection of crop and variety to be grown in the field type of weeding to be accepted type of manure/fertilizer to be applied plant protection measures time of harvest and type of implements to be used

Escalada and Binongo (1988) indicated that decisions related to market ing and processing are made by the women in root crop production in Philippines

A study conducted by Giriappa (1988) in the role of women in rural development revealed that women take decisions along with males and other mem bers

Kaur *et al* (1988) showed that in large farm size category husband and wife were participating in farm related decisions like purchase of animals

Singh *et al* (1988) in a study on the participation of rural women in agriculture in the hills of Uttar Pradesh revealed that women have a positive role in decision making

Anil (1992) observed that majority of the wives (54%) showed medium involvement 32 per cent of the wives showed low involvement and 14 per cent of the wives had high involvement in decision making in dairying

Hamilton (1992) revealed that women make important production deci sions determining how land will be used and how money will be spent selecting plant varieties and inputs

Ramon *et al* (1993) reported that women assumes almost all the initia tives and decision making in relation to farm in the costal area of Galicia

2 5 Relationship of selected characteristics of farm family women with their extent of participation in sericultural operations and decision making

Since not much studies have been conducted on the participation of farm family women in sericulture in our country or elsewhere the researcher could not come across any study relating the independent variables with extent of participation of farm family women in sericultural operations or in decision making Hence a few available studies on related areas were reviewed for formulating the hypothesis

Age

Sharma and Singh (1970) reported that women belonging to middle age participated in farm operations more than others

Badiger (1979) established that the independent variables associated with the degree of involvement of farm women in farm and home aspects were age and marital status

Deepali (1979) found that there was significant relationship between age and participation of rural women in agriculture

Grover and Kapoor (1988) indicated that age had a negative relationship with farm women s participation in agriculture

Kaur and Puma (1988) in a study on the work participation of women in rural households found that age of the women was negatively and significantly relat ed with activities in dairy sector

Goyal and Sharma (1992) found that age of the female members was positively affecting the time spent on food and kitchen management and fetching of fodder

Based on the above reviews a positive relationship between age of farm women and their extent of participation is postulated in this study

Badiger (1979) established that the independent variables associated with the degree of involvement and decision making of farm women in farm and home aspects were age and marital status

Singh and Chander (1983) reported that age was found to exercise non significant effect on womens participation in decision making in cattle management

Seema (1986) revealed that age had no significant relationship with extent of participation of farm women in implementing the decisions

However positive relationship between age and participation in decision making activities of the women sericulturists was anticipated in the present study

Education

Deepali (1979) found that there was significant relationship between education and participation of rural women in agriculture

Singh and Chander (1983) reported that education was found to exercise non significant effect on women s participation in farm credit

Devi and Reddy (1984) indicated that education was negatively related with farm role performance of rural women Similar results were reported by Grover and Kapoor (1988) and Kapur (1988)

Kanwar and Koranne (1989) reported that 45 35 per cent of working females were uneducated and 34 64 per cent took education only upto primary school level

Barrett *et al* (1991) in a study on the female labour force participation in urban and rural China found that participation tends to increase in urban and indus trialized places where women have higher levels of education and fewer children

Thus the findings of most of the above research studies pointed out that there was negative relationship between education and extent of participation of farm women but a few researchers have concluded to the contrary However a positive relationship between education and participation of women in sericultural practices is anticipated in this study

Dubey *et al* (1982) concluded that participation of rural women in deci sion making regarding animal husbandry practices remained mostly the same irres pective of their educational level and herd size

Singh and Chander (1983) reported that education had non significant effect on women s participation in farm credit

Rexlin (1984) reported that there was positive and significant relationship between participation of women in decision making in farm practices and education

Seema (1986) found that education had no significant relationship with role performance of farm women in decision making process

However in the present study a positive relationship between education and decision making is postulated

Family size

Deepali (1979) found that there was significant relationship between family size and participation of rural women in agriculture

Bhatnagar and Saxena (1987) reported that there was significant effect of the size of the family on daily time utilization pattern of tribal and non tribal women in home and farm activities They also found that the mean time spent on each activ ity was relatively high for large nuclear families as compared to that of small nuclear families

Devi and Reddy (1987) in a study on the role performance of women in farm and home management found that family size exerted an influence on work participation

Goyal and Sharma (1992) observed that family size as a variable was found to be positively affecting the time spent on personal grooming food and kitchen management

Susamma (1994) reported positive and significant relationship between family size and adoption of sericulture practices

The above studies establish significant relationship between family size and extent of participation of farm women In this study also a significant influence of family size on the activities of women sericulturists is expected Hence it is postu lated that there would be a positive relationship between family size and extent of participation of farm family women in sericulture operations and decision making

Farm size

Deepali (1979) found that there was significant relationship between land holding status of the family and participation of rural women in agriculture

Devi and Reddy (1984) indicated that size of the land holding was posi tively related with farm role performance of the rural women

Grover and Kapoor (1988) indicated that farm size has a negative rela tionship with women s participation

Similarly Kaur and Puma (1988) reported that size of the land holding is negatively and significantly related to time spent on activities m dairying

Pandey *et al* (1988) reported that the size of the operational holding and ratio of crops to total cropped area were positively and significantly related to the employment of rural women

Arora (1990) opined that the size of the holding exercises a commanding influence on work participation of rural women

Sangwan *et al* (1990) revealed that with increase in farm s size partici pation of farm women in farm activities decreases Sudha *et al* (1991) also reported similar relationship between farm size and participation of farm women in farm activities

Many research studies cited above establish both positive as well as negative associations between farm size and participation of women in various activi ties Hence it would be interesting to test these findings in the case of women seri culturists by anticipating a positive relationship between farm size and women par ticipation in sericulture operations

Dean *et al* (1958) found that rationality in decision making was positive ly correlated with size of the holding

Deb *et al* (1968) revealed that rationality of farmer in decision making was related to size of the farm

Dubey *et al* (1982) concluded that participation of rural women in deci sion making regarding animal husbandry practices remained almost the same irres pective of land holding and herd size

Dak *et al* (1986) found that the supportive role performed by women in decision making was positively related to their land holding status

Seema (1986) reported that land size had no significant relationship with extent of participation of farm women in implementing the decisions

Kaur *et al* (1988) showed that in large farm size category husband and wife were participating in farm related decisions

The above studies show that farm size was positively related with participation of farm women in decision making Hence in the present study also a positive relationship between farm size and decision making role of women sericulturists is expected

Experience in sericulture

Sawar (1973) pointed that opportunities for women to participate in farm management was influenced by their limited knowledge and farming experience

Lakshmikumari and Chari (1990) reported that in tobacco curing process the unloading and bulking of cured leaf is carried out by experienced women

Susamma (1994) found a positive and significant relation between experience in sericulture and adoption of recommended sericulture practices

Since sericulture activities require specialised skills and great care only experienced women can participate in it Hence it is not ironical to anticipate a positive association between experience and participation of women in sericulture operations

Rexlin (1984) reported positive and significant relationship between participation of farm women in decision making and farm experience

On the contrary Seema (1986) revealed that no relationship existed between farming experience and role of farm women in decision making Similar

result was reported by Alex (1994) between farming experience and role performance of female agricultural labourers in decision making in paddy cultivation by farmers

The preceding review shows that the relationship between farming experience and participation in decision making manifests fluctuations either in the positive or in negative directions However it is postulated that the experience of women in sericulture has a positive influence on their role in decision making in its various activities

Leisure time availability

Spiro (1987) reported that farming occupied 25 per cent of all women s time

Yadav *et al* (1989) found that financial availability skills place of work and time availability were the important factors which influence the participation of women in any income generating activities

Shilaja *et al* (1992) suggested that women can utilize the leisure time for engaging in silkworm rearing practices

Rao and Singh (1994) opined that Ericulture is practiced traditionally by rural women during leisure time

A positive significant relationship between adoption of recommended sericulture practices and leisure time availability was reported by Susamma (1994)

It is therefore expected that the leisure time availability may have a

positive influence on the participation of farm family women in sericulture enterprise

The researcher could not come across any studies showing relationship between leisure time availability and decision making either in sericulture or in related areas The leisure time available to a farm women helps her to think more comfortably deprived of the drudgeries of the farm and home aspects It can boost her logical reasoning capacity and there by decision making power Therefore it is presumed that the leisure time availability is likely to be positively related to participation of women sericulturists in decision making

Self reliance

Prasad (1983) had reported a high and significant relationship between self reliance and achievement motivation in the case of rice farmers

Significant relationship of self reliance of farmers with their management orientation was reported by Sreekumar (1985)

Porchezhian (1992) pointed out significant correlation between self reliance and entrepreneurial behaviour of farmers

Since sericulture is a budding small scale agro-based industry that can easily be taken up by family women it will be interesting to explore the relationship between self reliance and participation of women sericulturists in various activities of sericulture operations In the present study it is presumed that self reliance of women sericulturists is likely to be positively associated with their extent of participation in various sericulture operations and decision making in it

Information source utilization

Saradamoni (1983) opined that women in land owning households were aware of the radio programme for farmers and listen to them But they would follow the suggestions only if they felt they were beneficial to them

Bhaghath and Mathur (1989) in their study on "Mass media and farm women indicated that about 25 per cent of women had low mass media exposure where as 26 per cent had high mass media exposure

Punithasagar (1989) reported that there was no significant relationship between mass media exposure and role performance of women in rice cultivation

Lanjewar (1993) revealed that Television is playing an important role in disseminating information in various areas of knowledge among the farm women

The above studies strongly indicated the importance of information sources in the activities of women in farm and home aspects Hence a positive asso ciation between these two is expected in the case of women sericulturists too

Studies showing relationship between information source utilization and decision making were lacking However exposure to new information increases the awareness among the farm women and boost up their decision making ability as shown by Sudha *et al* (1992)

In the present study a positive relationship is anticipated between expo sure of women sericulturists to information sources and their role in decision mak ing

Extension orientation

Deepali (1979) revealed that rural women who had contacted with exten sion agency were found to have participated less in agricultural operations in com parison with those non-contacted group

Rameshbabu (1987) reported a significant association between extension participation and economic performance of grape growers

Govind and Subhramanyam (1989) revealed that only a small percentage of farm women had extension agency contact

Aswathanarayana (1989) reported that there was positive and highly significant association between extension contact and adoption of improved sericul ture practices

Satheesh (1990) observed a positive and significant relationship between extension participation and adoption of chawki rearing practices

Based on the above review a positive relationship between extension orientation and participation of farm family women in sericultural operations is expected

Deb *et al* (1968) found that rationality of farmers was related to exten sion contact

Sawer (1973) reported that wife s extension contact was significantly related to involvement in either general dicision or decision leading to adoption

Badiger (1979) stated that there was no significant association between farm women s participation in decision making and extension participation

Rexlin (1984) found that no significant relation exists between extension agency contact and participation of farm women in decision making where as Seema (1986) showed that contact with extension agency had positive and significant relationship with role performance of women (single) in decision making

Though the above studies do not bring out a clear cut relationship bet ween extension orientation and decision making role of farm women a positive and significant relationship between extension orientation and decision making role of women sericulturists is postulated in this study

Risk orientation

Thangaraju (1979) reported a significant relationship between risk orien tation and adoption of sericulture technology

Pillai (1983) established positive and significant association between risk orientation and adoption behaviour of the farmers of Kerala about soil conservation practices

Rani and Narayana (1990) opined that sericulture acts as a home industry providing employment to women and aged people with minimum risk

In the new and non traditional areas sericulture is prone to several risk factors and some times the farmers experience heavy loss (Rao and Kumar 1993)

Positive and significant relationship between risk orientation and adop tion of recommended sericulture practices was established by Susamma (1994)

In the present study a positive relationship between risk orientation and participation of women sericulturists is anticipated

Cancian (1979) provided a theoretical frame work for studying the role of risk and uncertainnty in the farmers "decison making process The patterns he traced suggested that poorer farmer would take a greater role in technological change than they had often been accorded and that past hesitancy on the part of farmers who were well off in local terms may be due to more rank protection than the intransi gence

Iyengar *et al* (1994) opined that women sericulturists were less involved in decision making activity since it involved high risk and expenses

In the present study a positive relationship between risk orientation and extent of participation of women sericulturists in decision making is hypothesized

Scientific orientation

Supe and Kolte (1972) found that a farmer who is pre disposed to ration al values such as economic motivation scientific orientation mental activity and risk preference was more likely to adopt innovations in farming

Ramagowda and Siddaramaiah (1987) reported that scientific orientation was positively and significantly related with innovativeness of farmers in adopting MR 301 paddy variety

A positive association between scientific orientation and participation of women sericulturists is hypothesized in this study

Significant positive relationship between knowledge of labourers regard ing scientific agriculture and their participation in decision making by the farmers was reported by Padmanabhan (1981) and Alex (1994)

In this study also a positive significant relationship between scientific orientation and decision making role of women sericulturists is anticipated

Economic motivation

Renukaradhya (1983) found a significant relationship between degree of economic motivation of trained farmers with level of economic performance

Gowda (1988) observed that variation in ragi productivity of small and marginal farmers was influenced by economic motivation

Punithasagar (1989) reported that there was no significant relationship between economic motivation and role performance of farm women in rice cultiva tion

Satheesh (1990) indicated that economic motivation possessed a non significant relationship with adoption of chawki rearing practices However Pra kashkumar (1986) and Susamma (1994) observed a significant and positive relation ship between economic motivation and adoption of recommended sericulture practic es

The above studies show that economic motivation is closely related with farming activities especially in the case of sericulture which is a commercial enterprise Hence it is not surprising to anticipate a positive relation between economic motivation and participation of farm family women in sericultural operation

Since economic motivation is at the root of any decision making process in farming it is quite reasonable to postulate that a positive relationship exist between economic motivation and extent of participation of farm family women in decision making in sericulture

Management orientation

Renukaradhya (1983) observed positive and significant correlation between management orientation and economic performance of trained farmers in command areas of Karnataka State

Syamala (1988) reported that management orientation was positively and significantly related to the attitude of farmers towards demonstrated practices

In sericulture planning and management is quite crucial for productivity improvement for increasing production as well as development of the industry At household level this is not practicable unless farm family women co ordinate the various activities in mulberry cultivation and silkworm rearing with active participation Hence in the present study a positive association between participation of farm women in sericulture operations with their managerial efficiency is expected

The decision making ability of a sericulturist has been operationally

defined as the degree of weighing the available alternatives in terms of their desir ability and likelihoods and choosing the most appropriate one for achieving maxi mum profit from the enterprise Chatterjee (1983) and Olsson (1988) have expressed the importance of rational decision making in efficient management of enterprise Hence in the present study also a positive association between management orienta tion of women sericulturists and their decision making ability is hypothesized

Knowledge of sericulture

Deepali (1979) revealed that there was positive relationship between level of knowledge of rural women in farm practices and their degree of participa tion in agricultural operations

Devi and Reddy (1984) reported that knowledge in management and role expectation and role performance of rural women in farm activities have no relation

Patel (1985) observed that majority of sericulturists both men and women have medium knowledge with regard to improved sericulture practices The percentage of sericulturists possessing high knowledge is slightly more in case of women (9 0%) than in case of men (4 0%)

Seema (1986) indicated that majority of farm women had low level of knowledge in agriculture She also concluded that knowledge in farming was nega tively related with role performance of farm women

Devi and Reddy (1987) found that knowledge and family size exerted the largest total indirect effects on participation of women in home management role

Patel (1988) observed that there was significant difference in the knowl edge level of farm men and women about sericulture activities

Punithasagar (1989) reported that majority of rural women had medium level of knowledge about recommended practices of paddy cultivation

Geethakutty (1993) observed a positive and significant relationship between knowledge and adoption of rice management practices Similar result was obtained by Susamma (1994) in the case of recommended sericultural practices

The studies cited above do not give any clear picture about the relation ship Hence it will be useful to study the relationship between knowledge of sericul ture and extent of participation of farm family women in sericultural operations

It is postulated that the knowledge of sericulture will have a positive relationship with participation of women sericulturists

Ramsey *et al* (1959) suggested that cognitive adoption i e in decision taken includes obtaining knowledge and critical evaluation of practices in terms of individual situation

Seema (1986) found no significant relationship between knowledge of farming and role of farm women in decision making

However Alex (1994) reported a positive and significant association between knowledge of scientific agriculture and role perception and role perfor mance of agricultural labourers (male and female) in decision making in paddy culti vation by the farmers

Since sericulture is a new enterprise adequate knowledge of mulberry cultivation and silkworm rearing is a must for taking timely and proper decisions Hence a positive association between the two is anticipated in this study

Attitude towards sericulture

Seema (1986) in her study revealed that majority of women in Nadar community of Trivandrum district had either high or medium level of attitude towards farming She also observed that role perception and performance of farm women were not significantly related with attitude towards farming

Reddy (1987) opined that attitude towards watershed management pro gramme was significantly associated with the productivity of dryland ragi

Gowda (1988) found that attitude towards watershed management programme was significantly associated with the productivity of ragi crop and he also observed that attitude had no significant relationship with productivity of groundnut in the case of small and marginal farmers

Susamma (1994) observed a positive and significant association between attitude of farmers towards sericulture and adoption of recommended sericulture practices

Studies indicated above clearly outline the attitude of farmers including women towards farm activities with their association in the corresponding field

So it is quite natural to expect a positive relationship between the attitude of women sericulturists towards sericulture and their extent of participation in vari ous activities

Singh (1978) showed that high scores on attitude towards farming and continuous decision making were associated with progressive farm behaviour However Seema (1986) reported a negative significant relationship between attitude towards farming and role of farm women in decision making

Alex (1994) observed a positive and significant relationship between role performance of agricultural labourers (male and female) in decision making by the farmers and their attitude towards job

Geethakutty (1994) observed that a high majority of farm women from their two to three years experience in sericulture were with highly favourable attitude towards the enterprise as a self employment avenue

Based on the above reviews a positive relationship between attitude towards sericulture and participation in decision making is postulated in this study

Family income

Deepali (1979) found that there was significant relationship between annual income and participation of rural women in agriculture

Rahman (1987) observed that the social and economic status of the family determines whether its women participate in agriculture high caste and rich women do not work in the fields while the opposite holds for poorer and lower caste women

Grover and Kapoor (1988) indicated that per capita income had negative relationship with women s participation The same result was indicated by Kapur

(1988) between family income and women participation in agriculture

Shilaja and Jayaramiah (1993) reported that farm women perform majori ty of the field operations in their own land and engage in post harvest operations in other farm families to earn an extra source of income

Vidhale *et al* (1993) revealed that higher income women may not like to participate dominantly in the tillage operations

From the above studies it is seen that income level is closely associated with female participation in farm activities Hence a positive relationship is postulat ed in this study between family income and participation of women in sericultural operations

Wilkening and Johnson (1958) reported that wife s status was positively associated with her involvement in major decisions only in those families having high income

On the contrary studies conducted by Singh and Chander (1983) and Seema (1986) indicated that there was no association between income from agricul ture and women s participation in decision making

Giriappa (1988) concluded that females in poor households have lower participation role in decision making

Though the researchers in the above studies had contradictory views regarding income and participation of women in decision making in the present study a positive relationship is expected in the case of women sericulturists

2 6 Constraints of participation

Pandya and Trivedi (1988) defined constraints as those items of difficul ties or problems faced by individuals in the adoption of a technology

Zinyama (1988) referred to any problem or limitations as constraints

Any problems or limitations which hinders the successful participation of farm family women in sericulture operations are considered as constraints in this study

Only a few researchers had identified such constraints of farm women in sericulture activities which are outlined as follows

Jolly (1982) and Kasturibai (1982) reported the uzyfly attack and control measures as the important problems of sericulture

Nagaraj *et al* (1986) reported that the problems faced by sericulturists were inadequate supply of d f ls during certain months muscardine and uzyfly menace shortage of labour during peak periods and lack of availability of mountages in adequate quantity and in time

Asuri and Mahadevappa (1990) reported that the problems faced by the women in sericulture were lack of knowledge strain of work and lack of leisure time

Raveendran *et al* (1993) revealed that the high mortality rate of silk worms is the major problem resulting in financial loss to the growers The second major problem was the supply of poor quality eggs leading to low hatchings thus

reducing the larval population lack of skilled labour and inadequate visits by techni cal staff had also caused concern among the mulberry growers

Devi (1994) reported that the barriers of technological awareness access to resources like land credit training and women s own status in the household size of the holdings and economic conditions of the family sericulture status of the area all have hindered women s fuller and gainful participation in silkworm rearing The other constraints faced by women are lack of confidence and knowledge about improved rearing methods fear of losing crops due to improper rearing methods the need to liberate themselves from other domestic works and the need to exercise more care and skill in disease identification dissinfection moult setting and chawki rearing etc he observed

According to Dhandapani and Mukerji (1994) only a few women con tinue sericulture activity when they have young children to take care of

Many workers had identified the multifaced constraints faced by farm women in the field of agriculture and other activities They are summarised as follows

Author (year)	Constraints identified
Charyulu and Reddy (1987)	Lack of knowledge lack of education lack of time lack of encouragement from family members and lack of interest
Bahar (1988)	Non accessibility to extension services non avai lability of institutional support
Kashyap and Sharma (1988)	Irregular supply of raw materials lack of incenti ves lack of market intelligence lack of post train mg follow up pre occupation with child care social and political views of elders

Rivera (1988)	Low price of farm produce oversupply of vegeta bles at peak harvest high transportation cost for bringing vegetables to market poor market facili ties
Supriadi *et al* (1988)	Drudgery time consumption
Govind and Subramanyam (1989)	Lack of knowledge
Punithasagar (1989)	Non availability of professional extension worker for consultation or to give needed help illeteracy financial problems physical hardships energy constraints
Yadav *et al* (1989)	Lack of time family values
Sudha *et al* (1991)	Traditionality lack of awareness

2 7 Consequences of participation

Rogers and Shoemaker (1971) defined consequences as the changes that occur within a social system as a result of the adoption and rejection of an innova tion

In the present study any positive or adverse effect on women due to their participation in sericulture is considered as a consequence

Hegade (1982) stated that women s participation in decision making resulted in increasing the employment opportunities for women increasing the produce and income level of community reducing the exploitative elements in the economic system co operativizing the production marketing and distribution

Swaminathan (1985) reported that creation of new jobs for farm women is perhaps the most crucial concern to raise income during the lean period He also observed that adoption of sericulture in non traiditional areas is one of the important example for creating gainful employment

Reddy (1987) showed that sericulture is a strong activity in rural areas for creating gainful employment and continuous income

Asuri and Mahadevappa (1990) pointed that sericulture provides an important opportunity of gainful employment for farm family women

Kumar (1992) opined that organizing co-operatives of women sericultur ists would be a step towards achieving equality and increased social status for women

Basu (1994) opined that women s multidimensional activity in the field of sericulture is definitely supposed to offer them a vast scope to uplift the family income and influence the national economy

Geethakutty (1994) indicated that majority of farm women had devel oped a feeling of independance and ability to get along well in the family and society as a result of their success in sericulture and concluded that apart from the economic benefits that accrue women are also personally benefited due to their involvement in sericulture

Jesia (1994) suggested that sericulture provide an income generating activity which has multiple advantages for women from the following reasons (a) Since this can be done at home women gets fairer deal from the economy for less effort she earns more (b) She controls her own earnings the harder she works more she earns (c) She is ensured of a year round income and (d) she learns to deal with people outside her home/community/village and develops her own personality and her confidence

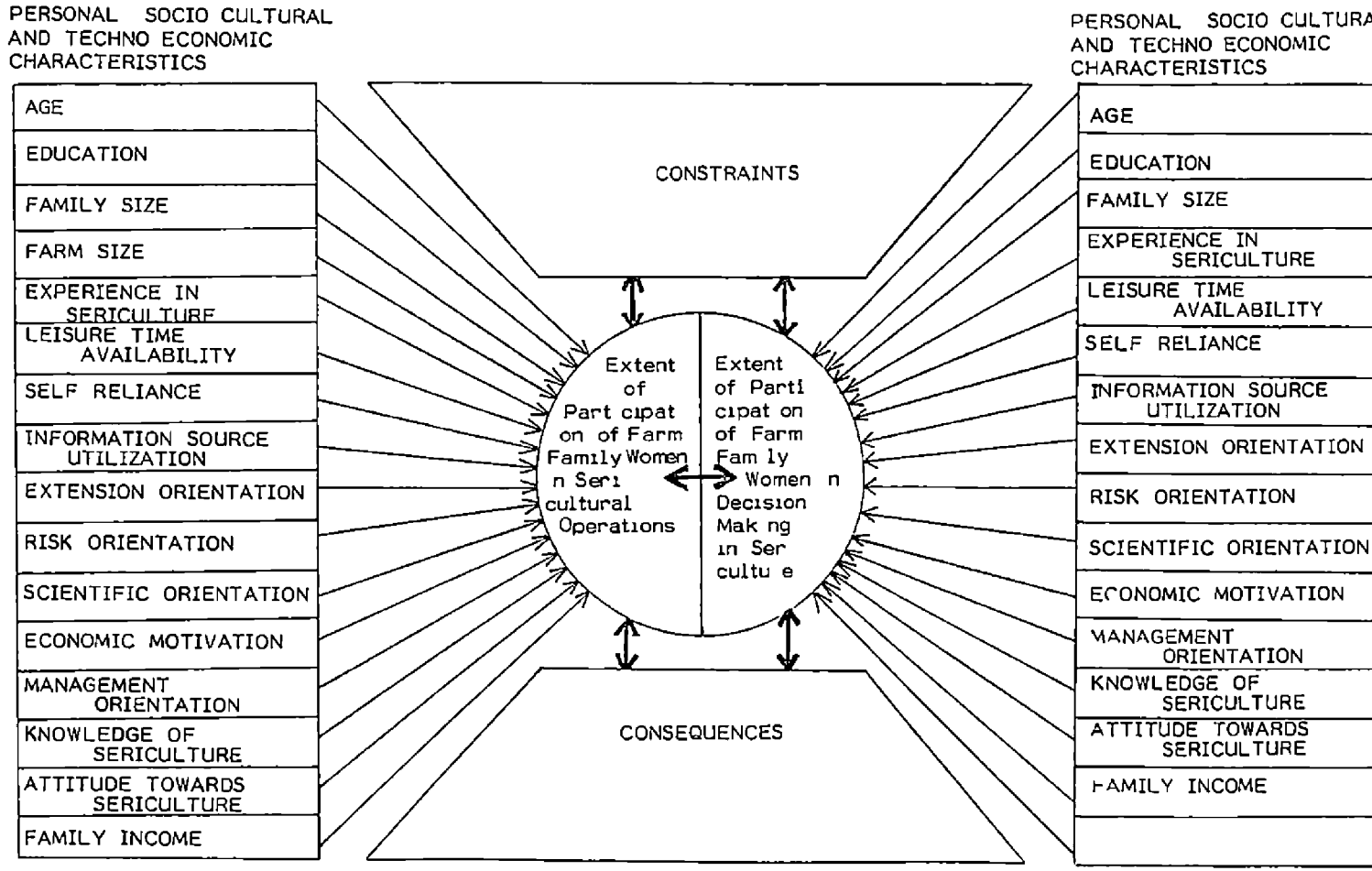

FIG 1 CONCEPTUAL FRAME WORK OF THE STUDY

Methodology

CHAPTER III

METHODOLOGY

The methodology followed in the study is presented under the following main headings

3 1 Locale of the study

3 2 Selection of the sample

3 3 Operationalisation and measurement of variables

3 4 Constraints experienced by the farm family women in participation in sericultural operations and decision making

3 5 Consequences perceived by the farm family women as a result of their participation in sericultural operations and decision making

3 6 Methods used for data collection

3 7 Statistical tools used for the study

3 1 Locale of the study

The study was conducted in the Palakkad district of Kerala which is a traditional sericulture area with largest number of sericulture units compared to other regions of Kerala The study covered all the four Agricultural Sub divisions of the district These sub divisions were Alathur Mannarkadu Chittoor and Shornur Map showing the area of study is presented as Fig 2

3 2 Selection of the sample

From the sub divisions the list of 400 sericulture units involving house wives was prepared with the help of Khadi Board and Silk Board From the prepared

FIG 2 MAP OF KERALA SHOWING THE LOCALE OF THE STUDY

list a stratified random sample of 150 sericulture units was selected for the study Each sub division was treated as a stratum Allocation of sample size was done using proportional allocation with respect to stratum size as follows

Sl No	Name of the sub division	Stratum size	Sample size drawn
1	Alathur	136	51
2	Mannarkad	128	48
3	Shornur	80	30
4	Chittoor	56	21
Total		400	150

3 3 Operationalisation and measurement of variables

3 3 1 Operationalisation and measurement of dependent variables

The dependent variables for the present study was the extent of participa tion of farm family women in sericulture operations and the decision making in sericultural operations These variables were measured by developing separate par ticipation indices for sericulture activities and decision making

Extent of participation of farm family women in sericultural operations (EPSO)

For the present study EPSO was operationalised as the involvement of the farm family women in various activities in the sericulture enterprise

Several researches had adopted different methods for measurement of extent of participation of farm women in various fields and activities

Badiger (1979) quantified participation of women in paddy cultivation in a three point continuum such as greater extent some extent and no participation with weightages of 2 1 and 0 respectively

Govind (1984) used a five point continuum i e self doing jointly doing self supervising jointly supervising and only exchanging ideas with weightages of 5 4 3 2 and 1 respectively

Dak *et al* (1986) conceptualized four types of roles by women in agricul ture They are monopolising roles dominating roles which are performed mostly by women with men s help supportive roles which mostly males perform but with the help of women and roleless role implying that the work is exclusively performed by males and women have no roles to play

Nataraju and Lovely (1993) measured participation of farm women in livestock activities in terms of three components such as supervision doing and no participation

Vidhale *et al* (1993) measured participation of tribal women in agricul ture operations in terms of amount of contributions such as major partial and negli gible

The extent of participation of farm family women in sericultural opera tions (EPSO) was measured in this study in terms of two dimensions namely actual hours of work and nature of participation in each of the operations

Based on pilot study conducted in the non sampling area and review of literature nineteen operations in sericulture (seven under mulberry cultivation and

twelve under silkworm rearing) were identified and included in the final study which are given below

A Mulberry cultivation

a) Application of cowdung

b) Application of chemical fertilizers

c) Pruning

d) Weeding

e) Irrigation

f) Plant protection

g) Harvesting and transportation of leaves

B Silkworm rearing

a) Collection of D F Ls

b) Disinfection of rearing house and equipments

c) Hatching (Incubation and brushing)

d) Chopping of leaves

e) Feeding of worms

f) Bed cleaning

g) Care at moulting

h) Protection of worm

i) Mounting of worms

j) Harvesting of cocoons

k) Cleaning and grading the cocoons

l) Marketing of the cocoons

Since the farmers in the study area had well established mulberry gar dens the operations needed for raising mulberry nursery and establishment of garden were excluded in the schedule Reeling of cocoons also was not considered since in the study area it is not a household practice

Thus only those operations which occur with every batch of silkworm rearing were considered for inclusion in the index for measuring the extent of partic ipation of farm family women in sericultural operations

The respondents were asked to indicate their amount of contribution in terms of hours in each of the operations and their nature of participation in the corresponding operation The nature of participation was categorized into four heads namely solely "jointly "supervisory and not at all with weightages 5 3 3 and 0 respectively based on judges rating The participation index for each respond ent was formulated using the method of Weighted Arithmetic Mean

$$Ip = \frac{\Sigma \text{ Wap Snp}}{\Sigma \text{ Wap}}$$

Where Ip = Participation Index

Wap – Actual hours of participation in each operations

Snp – Nature of participation in each operation

The participation indices for the different crops (number of rearings) taken up by the respondent s family during one year were summed up to get the yearly participation index of that respondent

Extent of participation of farm family women in decision making in sericultural operations (EPDS)

The decision making role of farm wives has been a subject of interest in the diffusion of agricultural innovations and acceptance of technological changes The role of women in development has been a matter of concern for both policy makers and economists In Indian society the housewife is the custodian of the tradition of the family who has much say in the total behavioural pattern of the family members As a mother and lady of the family she is fully responsible for the food habits and hence management Hence disregarding her opinion and without her knowledge farmers may not be able to make changes in the farm

Badiger (1979) measured the participation of farm women in decision making on a three point continuum such as always sometimes and never with weightages of 2 1 and 0

Based on pilot study and review of literature thirty important areas of decision making were identified in sericulture enterprise which are given below

A Mulberry cultivation

a) Choice of the variety

b) Type of the crop (rainfed/irrigated)

c) Nature of the crop (pure cop/intercrop)

d) Time of prunning

e) Time of weeding

f) Time of application of fertilizers

g) Plant protection measures

h) Irrigation during summer

i) Time of harvesting of leaves

j) Stage of harvesting of leaves

k) Storage of leaves

B Silkworm rearing

a) Selection of breed

b) Number of crops taken

c) Number of D F Ls raised

d) Rearing season

e) Disinfection of rearing house and equipments

f) Method of hatching

g) Number of feedings

h) Leaf size and quality

i) Method of bed cleaning

j) Maintenance of temperature and humidity

k) Spacing of worms

l) Caring of worms

m) Number of trays

n) Time of mounting of worms

o) Time of harvesting of cocoons

p) Grading of cocoons

q) Selection of market

r) Time of marketing

s) Way of marketing

In this study the extent of participation of farm family women in decision making in sericultural operations was measured under two dimensions namely nature of decision making of farm women in sericultural operations and frequency of participation in decision making A four point continuum was formulated for each of this dimension and weightages were assigned based on judges rating as follows

Nature of participation

Category	Score
Solely	5
Jointly	3
Supervision	3
Not at all	0

Frequency of participation

Category	Score
Always	5
Frequently	3
Sometimes	1
Never	0

The participation index for decision making was formulated using Weighted Arithematic Mean

$$Ipdm = \frac{\Sigma \text{ Wnd Sfd}}{\Sigma \text{ Wnd}}$$

Where Ipdm = Participation index for decision making

Wnd = Nature of participation in decision making

Sfd = Frequency of participation in decision making

3 3 2 Operationalisation and measurement of Independent variables

1 Age

Age was operationalised as the number of years completed by the respondent at the time of investigation

2 Education

It refers to the extent of informal or formal learning received by the farm women The different educational levels of the respondents were scored as per the procedure followed in the socio-economic status scale of Trivedi (1963) The scoring procedure was as follows

Level of education	Scores
Illiterate	0
Can read only	1
Can read and write	2
Primary school	3
Middle school	4
High school	5
Collegiate	6

3 Family size

This is operationalized as the number of persons dependent on the respondent including respondent himself/herself

4 Farm size

Farm size is defined as the total area of land in hectars owned by the respondent s family

5 Experience in sericulture

It is operationalized as the total number of years since the farm women is engaged in sericulture

6 Leisure time availability

It is the extent of free time available to a farm women per day which can be utilized for income generating activities like sericulture In this study it is measured in terms of the number of hours available to a farm women per day

7 Self reliance

It is operationalized as the extent of one s own belief confidence credence dependence or faith to control the span of life for future For the measurement of this variable the procedure followed by Prasad (1983) and later modified by Manandhar (1987) was used The question used to measure this variable is "How much of your future you feel depends on yourself?" Out of 100 please indicate on one of the following items

Items	Scores
100 per cent	5
75 per cent	4
50 per cent	3
25 per cent	2
Not at all dependent	1

8 Information source utilization

The information source utilization is studied in terms of utilization of both mass media sources and interpersonal sources of communication The mass media source utilization is operationally defined as the extent of use of different mass media sources by a farm woman with a view to obtain information about improved agricultural/sericultural practices

The procedure followed by Nair (1969) is adopted in the present study to develop an index of mass media source utilization Each respondent was asked to indicate as to how often she obtained information regarding improved agicultural/sericultural practices from each of the listed mass media sources

The range of response and scoring pattern is as follows

Frequency	Score
Most often (once a week)	4
Often (once a fortnight)	3
Sometimes (once a month)	2
Rarely (once a year)	1

The scores were summed up across each item to form the index of mass media utilization

Interpersonal source utilization is operationally defined as the extent of use of different personal sources by a farm women with a view to obtain information about improved agricultural/sericultural practices

The procedure followed by Nair (1969) is adopted in this case also to develop an index of interpersonal source utilization

Each respondent was asked to indicate as to howoften she received information regarding improved agricultural/sericultural practices from each of the listed personal sources

The range of response and the scoring pattern is as follows

Freqency	Scores
Most often (once a week)	4
Often (once a fortnight)	3
Sometimes (once a month)	2
Rarely (once a year)	1

The scores were summed up across each item to form the index of inter personal source utilization

The index for information source utilization of each respondent is arrived at by summing up the indices of both mass media source utilization and interpersonal source utilization

9 Extension orientation

This is operationally defined as the extent of contact of a farm women with different extension agencies and her participation in various extension activities or programmes like meetings seminars etc organized by these agencies The method followed by Kareem (1984) is used for quantifying this variable The exten sion orientation was measured on two dimensions viz extension contact and exten sion participation

Extension contact is operationalised as the frequency of contact of the individual respondent with different extension personnel The categories of extension personnel included in the study were Assistant Directors of Agriculture Agricultural Officers and Agricultural Assistants The frequency of contact was assessed by using the scoring procedure of Kareem (1984) with slight modification

Sl No	Category of response	Score
1	Twice or more a week	4
2	Once a week	3
3	Once a fortnight	2
4	Once a month	1
5	Never	0

Extension participation is defined as frequency of participation of the individual respondent in different extension activities conducted for the past one year Extension activities conducted to evaluate the extension participation of the respondents were study tours seminars farm fair meetings of the group demon strations and others

The respondent s participation in the above extension activities for the past one year is the index used to arrive at extension participation scores as below

Sl No	Category or Response	Scores
1	Attended whenever conducted	2
2	Attended occasionally	1
3	Never attended	0

The scores obtained for both the sub items by each respondent was calcu lated and the total score for extension orientation was obtained by summation of these two scores

10 Risk orientation

It is the degree to which a farm women is oriented towards risk and uncertainity and the courage to face problems in sericulture

In this study risk preference is measured with the help of the scale devel oped by Supe (1969) This scale consists of six statements out of which two are negative statements The responses were collected on a five point continnum as shown below

Points in the continuum	Scores
Strongly disagree	1
Disagree	3
Undecided	4
Agree	5
Strongly agree	7

As far the negative statements are concerned the scoring pattern was reversed The total scores thus obtained by a respondent was considered as his score for risk preference

11 Scientific orientation

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

For the measurement of this variable scale developed by Supe (1969) was followed The scale consisted of six statements regarding the use of scientific methods in farming in which five statements are positive and one is negative These statements were subjected to respondents in the following scoring continuum

Category	Score	
Strongly agree	7	In the case of
Agree	5	negative statement
Undecided	4	the scoring system
Disagree	3	was reversed
Strongly disagree	1	

12 Economic motivation

Economic motivation referred to the extent to which an individual is oriented towards achievement of the maximum economic ends such as maximisation of farm profit

This was measured using Supe s (1969) scale with modifications in the scoring procedure Instead of five point continuum of response as developed by Supe a dichotomy of Yes or No pattern was used in this study as done by Prasad (1983) The scale consisted of six statements of which first five statements are posi tive while the last one is negative A score of 1 has assigned for the Yes response and O score for No response in the case of positive statements The scoring procedure was reversed in the case of negative statement The scores obtained on each statement were comulated to obtain the total score of a respondent on this variable

13 Management orientation

Management orientation is operationalised in this study as the degree to which a farm women is oriented towards scientific farm management comprising planning production and marketing function on her sericulture enterprise

For the measurement of this variable a scale developed by Samantha (1977) is used It consisted of eighteen statements six each for planning production and marketing orientation Under each group positive and negative statements are mixed retaining at the same time a more or less psychological order of the state ments For positive statements a score of one was assigned for agreement and zero for disagreement For negative statements the scoring system was reversed The scores were summed up corresponding to the response pattern which gives the management orientation score of that respondent

14 Knowledge of sericulture

For the purpose of this study the "knowledge was operationalised as the knowledge status of the farm women regarding mulberry cultivation aspects and silkworm rearing methods

Knowledge test

Cronbach (1949) defined knowledge test as one in which procedures apparatus and scoring have been fixed so precisely that the same test can be given at different times and places A standard knowledge test is defined by Knoll (1957) is one that has been carefully constructed by experts in the light of acceptable objec tives or purposes and procedures for administering scoring and interpreting scores which are specified in detail so that the results should be comparable and norms and averages for different age and status have been predetermined

In this study the extent of knowledge of farm family women about the sericulture practices was measured using a knowledge test developed for the pur pose The steps followed in developing the knowledge test are described below

Collection of items

The content of a knowledge test is composed of questions called items An item pool of questions was prepared by reviewing literature such as the package of practices recommendations of the Kerala Agricultural University (1993) and conducting discussions with the subject matter specialists and the extension personnel of the Khadi Board and Silk Board Finally a thorough scrutiny of the item pool was made with the assistance of the subject matter specialists The selection of the items was done on the basis of the following criteria

1 The items should promote thinking

2 It should differentiate the well informed farm women from the poorly informed ones and

3 It should have a certain difficulty index

Thirty two items (questions) which covered all aspects of sericulture practices were selected to carry out item analysis for developing a standardised knowledge test (Appendix IIa)

Item analysis

The initially prepared thirty two items were checked to thirty nine respondents prior to the preparation of the final schedule The respondents were randomly selected farm family women who were altogether different from the sample selected for the main study and at the same time having identical conditions

Item analysis yields two kinds of information item difficulty and item discrimination The index of item difficulty reveals how difficult an item is whereas the index of discrimination indicates the extent to which an item discriminates the well informed individuals from the poorly informed ones

Scores of values one and zero were given to correct and incorrect responses respectively There was thus a possibility of respondents scoring a maximum of thirty two points for all correct answere and zero for all wrong answers

The scores obtained by the thirty nine respondents were arranged in the descending order of total scores from the highest to the lowest and the respondents were divided into three equal groups arranged in descending order of total scores obtained by them The three groups were G1 G2 and G3 with thirteen respondents

in each group For item analysis the middle group namely G2 was eliminated retaining only the terminal ones with high and low scores

The data pertaining to correct responses for all the items in respect of these two groups G1 and G3 were tabulated and the difficulty and discrimination indices calculated (Appendix IIb)

An example of the calculation of the difficulty and discrimination indices is presented below

Item number in the initial test	Frequency of correct answers		Total frequencies	Percentage of respondents giving correct answers (P)	$E^{1/3}$
	S_1	S_2			
9	10	1	11	28 20	0 69
15	11	10	21	53 84	0 07
18	7	4	11	28 20	0 23

P – index of item difficulty

$E^{1/3}$ = index of discrimination

$$E^{1/3} = \frac{(S_1)\ (S_3)}{N/3}$$

Where S_1 and S_3 are the frequencies of correct answeres in the group G1 and G3 respectively

N Total number of respondents in the sample substituting the value for item number (9) of the above table the value arrived at was

$$E^{1/3} \text{ for item } 9 = \frac{10\text{-}1}{39/3} - 0\ 69$$

Calculation of item difficulty index

The index of item difficulty as worked out in this study refers to the percentage of the respondents answering an item correctly As Coombs (1950) pointed out the difficulty of an item varied for different individuals In the present study the items with P value ranging from 25 to 75 were considered for final selec tion for knowledge test

Calculation of Discrimination index

The second criterion for item selection was the discrimination index indicated by $E^{1/3}$ Mehta (1958) in using $E^{1/3}$ method to find out item discrimina tion values emphasised that this method was somewhat analogous to and therefore a convement substitute for the phi coefficient as formulated by Perry and Michael (1951) In the present study the items were $E^{1/3}$ value above 0 40 were considered for the final selection as definite criteria of selection is not advocated by any re searchers In their studies Lokhande (1973) Reddy (1976) Sadamate (1978) and Pillai (1983) had put these units as 0 35 to 0 55 0 17 to 0 79 0 12 to 0 87 and 0 35 to 0 50 respectively The selected 13 items for the final format of the knowledge test are given in Appendix IIa

Reliability

The split half method was used to test the reliability of the test All the 13 items of the knowledge test were divided into two one having seven odd numbered items and the other one with six even numbered items and were adminis tered to thirty respondents The coefficient of correlation between the two sets of scores was 0 76 which was significant at 1 per cent level of probability This indi cated that the reliability of the test was high

Content validity

Content validity is a kind of validity by assumption as described by Guilford (1954) Care was taken to include items covering the entire universe of relevant aspects of knowledge of farm family women in sericulture Items were collected through various sources such as specialists in Agronomy Extension and Entomology and also the subject matter specialists of the Khadi and Silk Boards so that it was assumed that the test could measure the knowledge of the farm family women in sericulture

Method of scoring

Thirteen items were included in the knowledge test Each respondent was given one score for correct answer and zero score for incorrect answer The total knowledge score for each respondent was calculated by summing up the scores given for each item Thus the maximum knowledge score that could be obtained by a re spondent was 13 and the minimum zero

15 Attitude towards sericulture

Attitude of farm family women towards sericulture was measured by using the scale developed by Sastry and Reddy (1992) with appropriate modifica tions to suit the context of the study Eight statements (four favourable and four unfavourable) representing the attitude towards sericulture were included in the scale on a four point continuum of Strongly agree Agree Undecided Disagree and Strongly disagree scoring pattern was as follows

Sl.No.	Category of response	Score	
1	Strongly agree	4	
2	Agree	3	Scoring pattern was
3	Undecided	2	reversed in the case of
4	Disagree	1	negative items
5	Strongly disagree	0	

Attitude score of the respondent was obtained by adding up the individu al score of all statements

16 Family income

It was operationalised as the total annual income obtained by the re spondent from agriculture sericulture and other sources

3 4 Constraints experienced by the farm family women in participation in the sericultural operations and decision making

Based on the discussion with farm women and also through review of relevant literature the constraints faced by the farm women were collected A list containing ten important constraints were included in the final interview schedule

The response to each constraint was obtained on a four point continuum viz most important important, less important and least important with weights 4 3 2 and 1 respectively For each constraint the frequency of response under various points in the continuum were multiplied with the respective weights and added upto get a cumulative index for that particular constraint Based on the cumulative scores obtained the important constraints were identified

3 5 Consequences perceived by the farm family women as a result of their participation in sericultural operations and decision making

Based on pilot study and relevant literature some of the consequences of participation experienced by farm women in sericulture operations were selected Twelve of the consequences were listed in the final interview schedule

The response to each consequence was obtained on a four point continu um viz most important important less important and least important with weights 4 3 2 and 1 respectively For each consequence the frequency of respons es under various points in the continuum were multiplied with the respective weights and added upto get a cumulative score Based on the cumulative scores the major consequences were identified and grouped as postive and negative consequences

3 6 Methods used for data collection

A pre tested structured interview schedule containing appropriate ques tions for obtaining the required data was prepared The interview schedule was discussed with a group of experts and necessary modifications were made to avoid ambiguity and redundance in the questions The schedule was pre tested before it was finalised Using the interview schedule data were collected through personal interview with women heads of farm families The researcher had developed ade quate rapport with the respondents before the interview

3 7 Statistical tools used for the study

The following statistical techniques were used in the analysis of data Correlation analysis

Correlation coefficient was worked out to measure the degree of association between extent of participation and the different explanatory variables

Delinious Hodges Cumulative Root f' Method

Using the cumulative root f' method the respondents were catagorised into four classes based on their extent of participation in sericulture operations and decision making in it The classes were Q1 Q2 Q3 and Q4 Specific category names were given to these classes such as Q1 very low Q2 low Q3 medium and Q4 high

Mean

The respondents were grouped into categories with reference to the means of the independent variables After grouping the respondents into two categories the frequency of farm women falling under each category and their percentages were worked out

Step down Regression Analysis

Step down regression analysis was carried out to trace the independent variables contributing maximum variability in the dependent variables

Multivariate Path Coefficient Analysis

Path analysis orginally developed by Wright (1921) followed by Li (1955) was made use of to know the nature of influence with direct or indirect effect of the personal socio-cultural and techno-economic characteristics on the dependent variables

Multiple Linear Regression Analaysis (M L R)

Multiple Linear Regression Analysis was carried out to find the relative contribution of each of the personal socio cultural and techno economic characteris tics on the dependent variables (Y_1) and (Y_2)

Results and Discussion

CHAPTER IV

RESULTS AND DISCUSSION

This chapter deals with the results obtained in this study and the discussion based on the results Keeping the objectives in view the findings as well as the discussion on them are presented in the following sequence

4 1 Profile of the respondents based on their extent of participation in sericultural operations

4 2 Profile of the respondents based on their extent of participation in decision making in sericultural operations

4 3 Distribution of respondents based on their personal socio-cultural and techno economic characteristics

4 4 Influence of the personal socio cultural and techno economic characteristics of farm family women on their extent of participation in sericultural operations

4 5 Influence of the personal socio-cultural and techno economic characteristics of farm family women on their extent of participation in decision making in sericultural operations

4 6 Relationship between extent of participation of farm family women in sericultural operations and decision making

4 7 Major constraints experienced by the farm family women in participation in sericultural operations and decision making

4 8 Consequences perceived by the farm family women due to their participation in sericultural operations and decision making

4 1 Profile of the respondents based on their extent of participation in sericultural operations

4 1 1 Categorywise distribution of respondents based on their extent of participation in sericultural operations

A perusal of Table 1 highlights the observation that only a small percentage of the farm women of sericulture units had put forth high and medium participation (10 00% and 24 67% respectively) In other words the observation indicated that in sericultural operations totally more than sixty five percentage of the farm women were of low and very low participation (32 67% each)

This finding was in contradiction with the anticipated result of the study Based on the special attributes and scope of the enterprise a high and active participation on the side of the farm women was anticipated But the observed low participation may be due to the fact that the index of extent of participation of farm women in sericultural operations in the present study was a combined index of mulberry cultivation activities and silkworm rearing activities of the farm women i e the farm women may be having a low participation index in mulberry activities Many of the past studies in this enterprise had also revealed such a tendency on the part of the farm women to take part less in activities related to mulberry cultivation while to take part actively in activities related to the rearing practice This was further established by the operations wise analysis of their extent of participation which is discussed in detail under 4 2

4 1 2 Operationwise distribution of respondents based on their extent and nature of participation in various sericultural operations

Table 2 furnishes the distribution of farm women based on their extent

Table 1 Categorywise distribution of respondents based on their extent of participation in sericultural operations

(n – 150)

Sl No	Category	Quartile class	Frequency	Percentage
1	Very low	< 14 06	49	32 67
2	Low	14 06 21 84	49	32 67
3	Medium	21 84-31 67	37	24 67
4	High	> 31 67	15	10 00
	Total		150	100 00

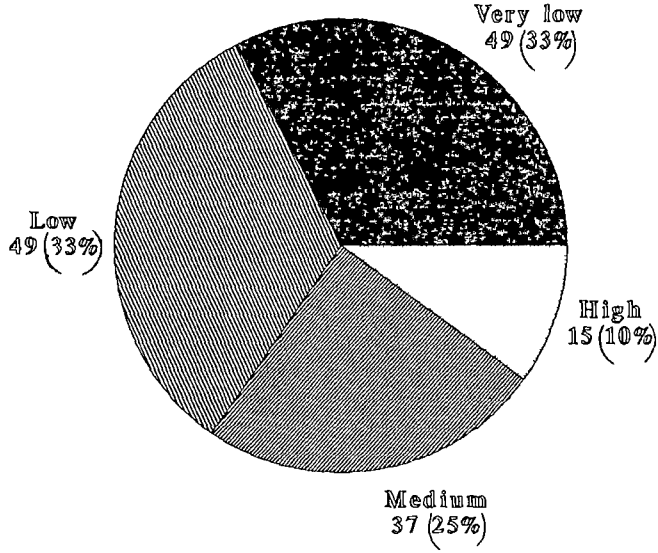

Fig.3 Categorywise distribution of respondents based on their extent of participation in sericultural operations

Table 2 Operationwise d stribution of respondents based on the r amount and nature of partic pation in various sericultural operations

(n 150)

Sl No	Name of the operation	Amount of partic pation								Nature of partic pation							
	A Mulbery cultivation	Abo e 5 hrs		2 ɔ hrs		Upto 2 hrs		Not at all		Solely		Joinly		Supervi sion		Not at all	
		f	⅋	f	%	f	%	f	%	f	%	f	%	f	%	f	⅋
1	Appl cation of cowdung	11	7 33	34	22 67	15	10 00	90	60 00	0	0	20	13 33	31	20 67	99	66 00
2	Application of chemical fertilizers	19	12 67	43	28 67	27	18 00	61	40 67	0	0	22	14 67	44	29 33	75	50 00
3	Prun ng	30	20 00	39	26 00	25	16 67	56	37 33	0	0	91	60 67	32	21 33	27	18 00
4	Weeding	30	20 00	39	26 00	28	18 67	53	35 33	0	0	94	62 67	32	21 33	24	16 00
5	Irrigation	18	12 00	20	13 33	18	12 00	94	62 67	0	0	21	14 00	40	26 67	89	59 33
6	Plant protection	19	12 67	19	12 67	19	12 67	93	62 00	0	0	20	13 33	31	20 67	99	66 00
7	Harvesting and trans portation of leaves	74	49 33	37	24 67	12	8 00	27	18 00	0	0	108	72 00	22	14 67	20	13 33

Contd

Table 2 Continued

Name of the operation	Amount of participation								Nature of participation							
B Silkworm rearing	Above 5 hrs		2 5 hrs		Upto 2 hrs		Not at all		Solely		Jointly		Super vision		Not at all	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
1 Collection of D F Ls	0	0	0	0	0	0	150	100 00	0	0	0	0	0	0	150	100 00
2 Disinfection of rearing house and equipments	32	21 33	61	40 67	22	14 67	35	23 33	0	0	106	70 67	22	14 67	22	14 67
3 Hatching (Incubation and brushing)	0	0	9	6 00	123	82 00	18	12 00	13	8 67	110	73 33	18	12 00	9	6 00
4 Chopping of leaves	31	20 67	97	64 67	22	14 67	0	0 00	14	9 33	115	76 67	21	14 00	0	0 00
5 Feeding of worms	32	21 33	99	66 00	19	12 67	0	0 00	13	8 67	118	78 67	19	12 67	0	0 00
6 Care at moulting	32	21 33	108	72 00	10	6 67	0	0 00	14	9 33	116	77 33	20	13 33	0	0 00
7 Bed cleaning	32	21 33	101	67 33	17	11 33	0	0 00	12	8 00	117	78 00	21	14 00	0	0 00
8 Protection of worms	32	21 33	99	66 00	19	12 67	0	0 00	7	4 67	120	80 00	20	13 33	0	0 00
9 Mounting of riped worms	36	24 00	95	63 33	19	12 67	0	0 00	12	8 00	120	80 00	18	12 00	0	0 00
10 Harvesting of cocoons	39	26 00	95	63 33	16	10 67	0	0 00	12	8 00	126	84 00	12	8 00	0	0 00
11 Cleaning and grading of cocoons	39	26 00	100	66 67	11	7 30	0	0 00	14	9 33	120	80 00	16	10 67	0	0 00
12 Marketing of cocoons	0	0	0	0	0	0	150	100 00	0	0	0	0	0	0	150	100 00

f frequency

and nature of participation in various sericultural operations under the major two heads of mulberry cultivation and silkworm rearing

A Mulberry cultivation

A perusal of Table 2 shows that in almost all operations of the mulberry cultivation the farm women had no major contribution It can be noticed especially in the practices like application of cowdung irrigation and plant protection where more than sixty per cent of the respondents were not at all participating It may also be noticed that none of the respondents was solely carrying out any of the practices of mulberry cultivation Only in the case of application of chemical fertilizers pruning weeding and harvesting and transportation of leaves some amount of partic ipation could be accounted If we analyse the nautre of participation of the women in these activities we can notice that they were again carried out either as jointly (leaf harvesting and transportation 72% weeding 62 67% and pruning 60 67%) or as a supervisory activity only (irrigation 26 67% application of chemical fertilizers 29 33%)

Since most of the operations in mulberry practices are carried outside the home and need more physical effort naturally family female participation would have been comparatively low in these operations More over the traditional trend of responsibility for these manual activities by the male members of the family or by the hired labourers also may be the reasons for this low participation Further the timing of the practices of irrigation and plant protection which are being carried out in the morning hours make it difficult for the farm women to participate in them since they would be otherwise engaged at that time The risky nature of plant protec tion measures may also be one of the reasons for their low participation in that field

A significantly higher percentage of the respondents took part in operations like pruning weeding and harvesting and transportation of leaves which are traditionally dominated by female labour Swami *et al* (1990) also had reported that in mulberry cultivation women edge out men in operations like weeding and leaf plucking which is in conformity with the outcome of the present study

B Silkworm rearing

It could also be seen from the Table 2 that in activities like collecton of D F Ls and marketing of cocoons the farm women had no contribution whereas in other operations they had a significant role which are mainly carried out jointly with their husbands Majority of the farm women spend about 2 5 hours in operations like chopping of leaves (64 67%) feeding of worms (66%) care at moulting (72%) bed cleaning (67 33%) protection of worms (66%) mounting of riped worms (63 33%) harvesting of cocoons (63 33%) and cleaning and grading of cocoons (66 67%) with joint nature of participation Only a very low percentage of the respondents had solely and supervisory nature of participations in various silk worm rearing activities as indicated in the table Hatching of the D F Ls were carried out jointly by majority of the respondents in which they usually spent about two hours per crop

Since activities like collection of D F Ls and marketing of cocoons need more cosmopoliteness and bargaining power which are usually carried out by the male head of the family the farm women had practically no role to play in it and hence the above result

From the table it is clear that majority of the respondents had a significant contribution in all of the rearing activities Since these activities are carried out in the household premises and require less physical effort farm women could play a significant role by making use of the leisure time available between and together with other domestic obligations Observations by Rani and Narayana (1990) and Swamy *et al* (1990) also justify this result

It is clear from the table that majority of the farm women had joint participation with their husbands in all the major operations in silkworm rearing Since rearing of silkworm requires constant attention and care the housewife who is the female head bestowed with responsibilities of mother can t be expected to spend her entire time in these activities So it is reasonable to think that she would have acted like a helping hand to her husband in various rearing activities and hence the high joint participation

The table also indicates that the supervisory role of the farm women is negligible when compared to their joint participation which indicated farm women s genuine desire to involve themselves in various operations than to supervise it Nataraju and Lovely (1993) also revealed that in livestock activities participation of farm women is higher in terms of doing than in terms of supervision

The results of operations wise analysis reinstate the observed result of low participation put forthe by the high majority of the farm women as discussed under Table 1

This observation has got much relevance in planning and implementing extension activities and trainings for sericulture families A whole family approach

with gender specific orientation is to be adopted for training strategies in sericulture Along with general training on sericulture more emphasis should be given for trans ferring the skills and knowledge of mulberry cultivation to the sericulture farmers of the sericulture unit while the necessary skills and knowledge on silkworm rearing practices may be imparted to the whole family

4 2 Profile of the respondents based on their extent of participation in decision making in sericultural operations

4 2 1 Categorywise distribution of respondents based on their extent of participa tion in decision making in sericultural operations

Table 3 outlines the distribution of farm women under different catego ries based on their extent of participation in decision making in sericulture

It could be seen from the table that only 10 67 percentage of the farm women had high participation while 33 33 per cent of farm women were with medium participation in decision making This observation other wise reflects that the other 55 percentage had only low or very low participation in decision making in sericultural activity

The effect of comparitively low involvement of women in mulberry related paractices of sericulture enterprise might be reflecting in the data on decision making process just as in its operations discussed under 4 1 The operations wise analysis of participation of women in decision making presented elsewhere re estab lish this observation

Table 3 Categorywise distribution of respondents based on their extent of participation in decision making in sericultural operations

(n – 150)

Sl No	Category	Quartile class	Frequency	Percentage
1	Very low	< 1 65	40	26 67
2	Low	1 65 2 46	44	29 33
3	Medium	2 46 3 19	50	33 33
4	High	> 3 19	16	10 67
	Total		150	100 00

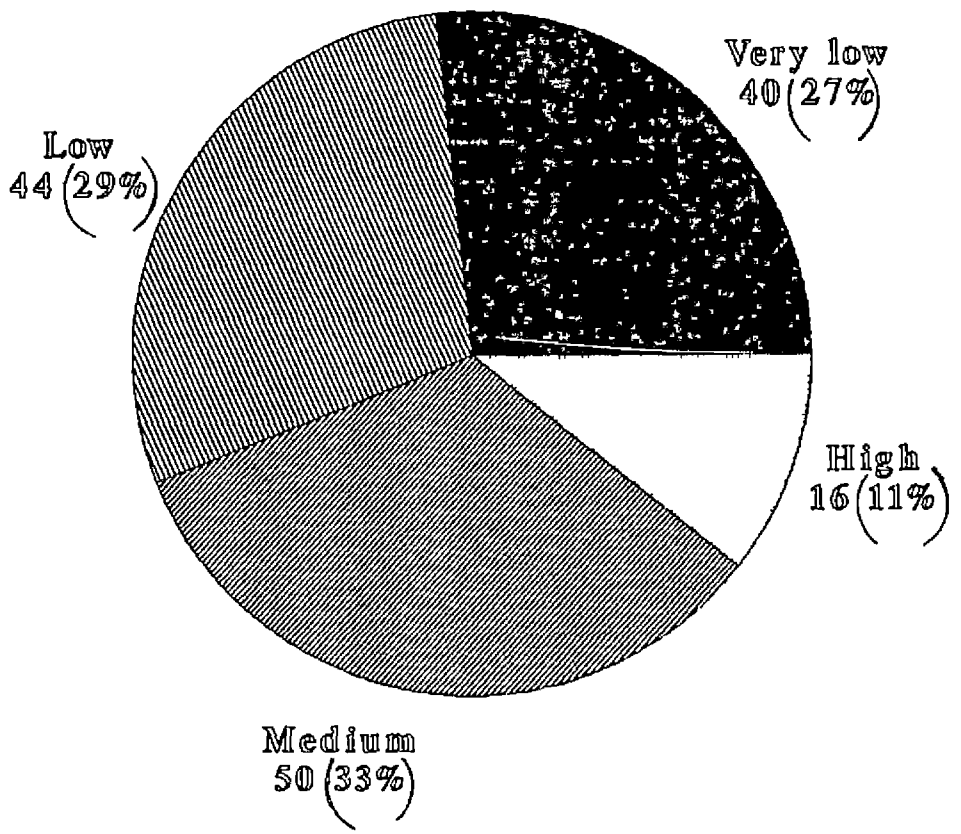

Fig.4 Categorywise distribution of respondents based on their extent of participation in decision making

4 2 2 Operationwise distribution of respondents based on their nature and frequency of participation in decision making in various sericultural operations

Table 4 furnishes the distribution of farm family women based on their nature and frequency of participation in decision making in various sericultural operations

A Mulberry cultivation

A perusal of the table shows that none of the respondents had solely participation in decision making in any of the activities of mulberry cultivation A majority of the farm women (57 33%) had joint participation in decision making on harvesting aspects with 52 67 per cent of them frequently participating in it

The table also indicates that a noticeable fraction of the respondents had either joint participation or their presence in decision making in activities like choice of the mulberry variety type of the crop to be raised nature of the crop time of pruning and time of weeding Yet another important finding from the table is that only a moderate fraction of the respondents participated sometimes in decision making in almost all activities of mulberry cultivation It is also interesting to notice that majority of the respondents (more than 50%) had not involved in any form in decision making in activities like choice of the mulberry variety type of the crop nature of the crop time of application of fertilizers plant protection measures and irrigation during summer

The observation that none of the respondents had solely participation in the decisions regarding mulberry cultivation might be due to their low or indirect involvement in those practices in the field discussed elsewhere in the text Since

Table 4 Operationwise distribution of respondents based on their nature and frequency of participation in decision making in sericultural operations
(n − 150)

Name of the operations	Nature of participation in decision making								Frequency of participation in decision making							
	Solely		Jointly		Presence only		Not at all		Always		Frequently		Sometimes		Never	
A Mulberry cultivation	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
1 Choice of the mulberry variety	0	0	32	21 33	41	27 33	77	51 33	4	2 67	19	12 67	45	30 00	82	54 67
2 Type of crop (rainfed/ irrigated)	0	0	31	20 67	40	26 67	81	54 00	4	2 67	20	13 33	46	30 67	80	53 33
3 Nature of crop (pure crop/ intercrop)	0	0	31	20 67	43	28 67	76	50 67	3	2 00	24	16 00	48	32 00	80	53 33
4 Time of pruning	0	0	43	28 67	42	28 00	71	47 33	5	3 33	28	18 67	44	29 33	73	48 67
5 Time of weeding	0	0	44	29 33	39	26 00	61	40 67	4	2 67	29	19 33	44	29 33	73	48 67
6 Time of application of fertilizers	0	0	14	9 33	40	26 67	96	64 00	4	2 67	16	10 67	38	25 33	92	61 33
7 Plant protection measures	0	0	14	9 33	34	22 67	102	68 00	4	2 67	16	10 67	33	22 00	97	64 67
8 Irrigation during summer	0	0	14	9 33	38	25 33	98	55 33	3	2 00	16	10 67	32	21 33	99	66 00
9 Time of harvest of leaves	0	0	86	57 00	46	30 67	18	12 00	19	12 67	79	52 67	34	22 67	18	12 00
10 Stage of harvest of leaves	0	0	86	57 00	46	30 67	18	12 00	17	11 33	79	52 67	39	26 00	15	10 00
11 Storage of leaves	0	0	86	57 00	46	30 67	18	12 00	16	10 67	79	52 67	37	24 67	18	12 00

Contd

Table 4 Continued

Name of the operations	Nature of participation in decision making								Frequency of participation in decision making							
	Solely		Jointly		Presence only		Not at all		Always		Frequently		Sometimes		Never	
B Silk worm rearing	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
1 Selection of breed	0	0	31	20 67	43	28 67	76	50 67	7	4 67	30	20 00	42	28 00	71	47 33
2 Number of crops taken	0	0	41	27 33	49	32 67	60	40 00	6	4 00	36	24 00	49	32 67	59	39 33
3 Number of DFLs raised/ crop	0	0	47	31 33	44	29 33	59	39 33	8	5 33	35	23 33	51	34 00	50	33 33
4 Rearing season	0	0	31	20 67	51	34 00	68	45 33	7	4 67	26	17 33	52	34 67	65	43 33
5 Disinfection of rearing house and equipments	0	0	60	40 00	64	42 67	26	17 33	9	6 00	63	42 00	62	41 33	16	10 67
6 Method of hatching	11	7 30	59	39 33	58	38 67	22	14 67	7	4 67	74	49 33	51	34 00	18	12 00
7 Number of feedings	13	8 67	92	61 33	42	28 00	3	2 00	8	5 33	73	48 67	66	44 00	3	2 00
8 Leaf size and quality	14	9 33	88	58 67	42	28 00	6	4 00	7	4 67	70	46 67	69	46 00	4	2 67
9 Method of bed cleaning	9	6 00	81	54 00	45	30 00	15	10 00	11	7 30	60	40 00	76	50 67	13	8 67
10 Maintenance of temperature and humidity	0	0	60	40 00	60	40 00	30	20 00	6	4 00	37	24 67	70	46 67	37	24 67
11 Spacing	9	6 00	94	62 67	46	30 67	1	0 60	12	8 00	67	44 67	71	47 33	0	0
12 Caring of worms	7	4 67	90	60 00	53	35 33	0	0 00	10	6 67	71	47 33	69	46 00	0	0
13 Number of trays	6	4 00	89	59 33	55	36 67	0	0 00	14	9 33	72	48 00	64	42 67	0	0
14 Time of mounting of riped worms	8	5 33	82	54 33	58	38 67	0	0 00	14	9 33	92	61 33	44	29 33	0	0
15 Time of harvesting of cocoons	7	4 67	86	57 33	57	38 00	0	0 00	14	9 33	92	61 33	44	29 33	0	0
16 Grading of cocoons	0	0	96	64 00	48	32 00	6	4 00	14	9 33	92	61 33	52	34 67	0	0
17 Selection of market	0	0	61	40 67	63	42 00	26	17 33	9	6 00	31	20 67	81	54 00	29	19 33
18 Time of marketing	0	0	55	36 67	63	42 00	32	21 33	7	4 67	32	21 33	81	54 00	30	20 00
19 Way of marketing	0	0	55	36 67	63	42 00	32	21 33	6	4 00	33	22 00	81	54 00	30	20 00

f frequency

they are not having responsibility towards those operations naturally low/no participation can comeforth The principle of group activity can be quoted here a decision taken by a group becomes the commitment of the whole members of the group while a decision taken by a member is his/her sole responsibility

Majority of the respondents took joint decisions and participated frequently in the harvesting of mulberry leaves Since the housewives are actively involved in most of the silkworm rearing activities they are aware of the quality and quantity of mulberry leaves required for various stages of the worms Hence the women took much interest along with their husbands in various decisions regarding these aspects The simple nature of the activity which does not necessitate much physical exertion also might have led to their participation in the field The direct involvement naturally encourages or prompt them for increased involvement in rational decision making activities The study also draws support from Achanta (1982) and Sisodia (1985)

The observation that a noticeable fraction of the respondents had joint participation in decision making regarding majority of the mulberry operations (time of pruning 28 67% time of weeding 29 33% time of harvest stage of harvest and storage of leaves 57% each) can be due to the fact that the high extension and management orientation of the farm women would have helped them to realize the importance of improved mulberry cultivars cropping systems and recommended cultivation practices for increasing quality leaf yield in mulberry Hence they jointly participated with their husbands in these aspects Hamilton (1992) also showed that women make important production decisions determining how land will be used and how money will be spent selecting plant varieties and inputs

The striking observation that majority of the respondents had a poor say in most of the cultivation aspects in mulberry might be due to the traditionality of male dominance in the cultural operations

B Silkworm rearing

It is clear from the table that none of the respondents had participated solely in decisions in activities regarding selection of breed number of crops taken number of D F Ls raised rearing season disinfection of rearing house and equipments maintenance of temperature and humidity grading of cocoons and marketing aspects The table also shows that a majority of the respondents (54%) had participated sometimes in marketing aspects with forty two per cent of them indicating their passive presence only in such decisions making It is equally import ant to find that more than fifty per cent of the respondents participated jointly in decision making in activities relating to number of feedings (61 33%) leaf size and quality (58 67%) spacing of worms (62 67%) caring of worms (60 00%) method of bed cleaning (54 00%) number of trays (59 33%) time of mounting of worms (54 67%) time of harvesting of cocoons (57 33%) and grading of cocoons (64 00%) with moderate frequent participation Regarding the frequency of partici pation a considerable fraction (61 33%) of the respondents were with frequent par ticipation in decision making in aspects like time of mounting of worms time of harvesting and grading of cocoons

Activities in silkworm rearing like selection of breed number of crops taken number of D F Ls raised rearing season disinfection of rearing house and equipments maintenance of temperature and humidity grading of cocoons and

marketing of cocoons require advanced planning market intelligence and are m fluenced by many socio-economic factors So one could not expect a solely nature of participation of farm family women m these areas

It can be noticed that majority of the respondents participated sometimes m decisions regarding marketing of cocoons This indicates that most of the farm women were aware of the marketing channels and their influence on price of the produce Studies by Escalada and Binongo (1988) also indicated that decisions related to marketing and processing are made by women in root crop production in Philippines

The observation that a significant percentage of the respondents jointly participated m decision making in many areas of silkworm rearing is a clear indica tion that sericulture farmers would have sought the opinions and suggestions of their counterpart who is the "invisible work force behind the sericulture enterprise

These roles of farm women in sericulture enterprise played together with the men of the units emphasize the "needed shift" in policy and training strategies The enterprise should be viewed m a business perspective and as an avenue for the unemployed and under employed The trainers should consider the potentiality and should be able to inculcate and foster the necessary enterpreneurship among the man and wife of the sericulture units there by making the units economically viable

4 3 Distribution of Respondents Based on their Personal, Socio cultural and Techno-economic Characteristics

An attempt was made to know the distribution of respondents based on

Table 5 Distribution of respondents based on their personal socio cultural and techno economic characteristics

(n = 150)

Variable	Characteristic	Category	Range	Frequency	Percentage
1	2	3	4	5	6
1	Age	Low	< 40 21	80	53 33
		High	40 21 and above	70	46 67
2	Education	Low	< 4 06	91	60 67
		High	4 06 and above	59	39 33
3	Family size	Low	< 5 02	103	68 67
		High	5 02 and above	47	31 33
4	Farm size	Low	< 1 78	85	56 67
		High	1 78 and above	65	43 33
5	Experience in sericulture	Low	< 4 55	83	55 33
		High	4 55 and above	67	44 67
6	Leisure time availability	Low	< 2 71	66	44 00
		High	2 71 and above	84	56 00
7	Self reliance	Low	< 3 21	92	61 33
		High	3 21 and above	58	38 67
8	Information source utilization	Low	< 16 57	80	53 33
		High	16 57 and above	70	46 67
9	Extension orientation	Low	< 7 48	70	46 67
		High	7 48 and above	80	53 33

Contd

Table 5 Continued

1	2	3	4	5	6
10	Risk orientation	Low High	< 23 03 23 03 and above	77 73	51 33 48 67
11	Scientific orientation	Low High	< 25 17 25 17 and above	77 73	51 33 48 67
12	Economic motivation	Low High	< 4 01 4 01 and above	87 63	58 00 42 00
13	Management orientation	Low High	< 10 39 10 39 and above	73 77	48 67 51 33
14	Knowledge of sericulture	Low High	< 7 34 7 34 and above	79 71	52 67 47 33
15	Attitude towards sericulture	Low High	< 19 41 19 41 and above	73 77	48 67 51 33
16	Income	Low High	< 17390 17390 and above	84 66	56 00 44 00

their personal socio cultural and techno-economic characteristics and the results are presented in Table 5

A perusal of Table 5 reveals that majority of respondents were in high category in the case of variables leisure time availability extension orientation management orientation and attitude towards sericulture Maximum number of respondents (56 00%) in high category was observed for the variable leisure time availability followed extension orientation (53 33%) management orientation and attitude towards sericulture (51 33%) in that order Regarding the rest of the varia bles only less than fifty per cent of the respondents were in high category Among them maximum number of respondents (68 67%) was found in low category in the case of variable family size followed by self reliance (61 33%) education (60 67%) economic motivation (58 00%) farm size (56 67%) income (56 00%) experience in sericulture (55 33%) age and information source utilization (53 33%) knowledge of sericulture (52 67%) risk orientation and scientific orientation (51 33%) in that order

4 4 Influence of personal socio-cultural and techno-economic charac teristics of farm family women on their extent of participation in sericultural operations (EPSO)

The relationship of personal socio-cultural and techno-economic charac teristics with EPSO was established in this study first by simple correlation analysis and the findings are presented in Table 6

4 4 1 Simple correlation analysis of EPSO with their personal socio-ecultural and techno-economic characteristics

It was found that out of sixteen independent variables included in the

Table 6 Results of simple correlation analysis of extent of participation of farm family women in sericultural operations with their personal socio-cultural and techno-economic characteristics

(n − 150)

Variable No	Characteristic	Correlation coefficient
X_1	Age	0 061 NS
X_2	Education	0 274**
X_3	Family size	0 396**
X_4	Farm size	0 235**
X_5	Experience in sericulture	0 678**
X_6	Leisure time availability	0 573**
X_7	Self reliance	0 579**
X_8	Information source utilization	0 516**
X_9	Extension orientation	0 708**
X_{10}	Risk orientation	0 647**
X_{11}	Scientific orientation	0 689**
X_{12}	Economic motivation	0 650**
X_{13}	Management orientation	0 768**
X_{14}	Knowledge of sericulture	0 677**
X_{15}	Attitude towards sericulture	0 768**
X_{16}	Family income	0 477**

** Significant at 1% level of significance
NS Not significant

study the variables education (X_2) family size (X_3) farm size (X_4) experience in sericulture (X_5) leisure time availability (X_6) self reliance (X_7) information source utilization (X_8) extention orientation (X_9) risk orientation (X_{10}) scientific orientation (X_{11}) economic motivation (X_{12}) management orientation (X_{13}) knowledge of sericulture (X_{14}) attitude towards sericulture (X_{15}) and family income (X_{16}) were positively and significantly related with dependent variable Extent of participation of farm family women in sericultural operations at one per cent level of significance Only one variable namely age (X_1) did not have any significant relationship with the dependent variable

4 4 2 Multiple Linear Regression Analysis (MLR)

In correlation analysis the research worker deals with the relationship of dependent variable with an independent variable But in practice several independ ent variables or causal factors affect the response (dependent variable) In the study of simultaneous variability of two or more causal factors on an effect (dependent variable) the researcher may want to get the relative contribution of each of the independent variables on the dependent variable and the total predictability of the linear model in representing the relationship The method of multiple linear regres sion was used for this purpose in the present study The result of MLR are presented in Table 7

The findings of multiple linear regression analysis in Table 7 revealed that the F value (27 99) obtained was significant indicating that all the variables together contributed significantly in the variation of extent of participation of farm family women in sericultural operations The coefficient of determination (R^2) revealed that 77 10 per cent of the variation in the EPSO was explained by these sixteen variables

Table 7 Results of Multiple Linear Regression Analysis of EPSO with the personal socio cultural and techno economic characteristics

(n = 150)

Variable No	Characteristic	Regression coefficient	Standard error of regression coefficient	t value
X_1	Age	0 004	0 046	0 097 NS
X_2	Education	0 351	0 450	0 780 NS
X_3	Family size	0 206	0 422	0 489 NS
X_4	Farm size	-0 325	0 431	0 754 NS
X_5	Experience in sericulture	1 835	0 677	2 710**
X_6	Leisure time availability	-0 711	0 639	1 112 NS
X_7	Self reliance	-0 804	0 427	1 883 NS
X_8	Information source utilization	0 042	0 130	0 323 NS
X_9	Extension orientation	0 300	0 225	1 333 NS
X_{10}	Risk orientation	0 083	0 100	0 770 NS
X_{11}	Scientific orientation	0 340	0 156	2 183*
X_{12}	Economic motivation	0 231	-0 533	0 433 NS
X_{13}	Management orientation	0 536	0 220	2 441*
X_{14}	Knowledge of sericulture	0 247	0 367	0 673 NS
X_{15}	Attitude towards sericulture	0 406	0 136	2 976**
X_{16}	Family income	0 000	0 000	4 676**

Intercept = 18 59
R^2 = 0 771
F = 27 99**

** Significant at 1% level of significance
* Significant at 5% level of significance
NS Not significant

Out of the sixteen independent variables only five were found to be significant in explaining the extent of variation in participation namely experience in sericulture scientific orientation management orientation attitude towards sericul ture and family income

4 4 3 Step down regression analysis

Though the MLR analysis gave the joint influence of all the selected independent variables on extent of participation in sericultural operations it is always better to have a simpler model in which there is less number of predictors in explaining the relationship So to get the joint influence of the best subset of predic tors on EPSO step down regression analysis was done The results of step down regression analysis are presented in Table 8

It was found that out of the total contribution to variation of 77 10 per cent by all the independent variables 75 65 per cent was contributed by five varia bles viz experience in sericulture scientific orientation management orientation attitude towards sericulture and family income Thus these variables could be con sidered as the best in predicting the extent of participation of farm family women in sericultural operations

4 4 4 Path analysis

The simple correlation coefficients indicated the degree and nature of relationship of each personal socio cultural and techno-economic characteristics on the extent of participation of farm family women in sericulture operations ignoring the possible influence of other independent variables on the dependent variable It

Table 8 Results of step down regression analysis of EPSO with the personal socio cultural and techno economic characteristics

Step No	Variables for regression	Multiple correlation coefficient (R)	R^2	F value
1	X_1 X_2 X_3 X_4 X_5 X_6 X_7 X_8 X_9 X_{10} X_{11} X_{12} X_{13} X_{14} X_{15} and X_{16}	0 8781	0 7710	27 99**
2	Down X_1	0 8781	0 7710	30 08**
3	Down X_8	0 8780	0 7708	32 43**
4	Down X_{12}	0 8777	0 7704	35 11**
5	Down X_3	0 8776	0 7701	38 24**
6	Down X_{10}	0 8771	0 7693	41 84**
7	Down X_{14}	0 8768	0 7688	46 22**
8	Down X_4	0 8762	0 7677	51 42**
9	Down X_2	0 8756	0 7666	57 90**
10	Down X_6	0 8746	0 7649	66 00**
11	Down X_9	0 8728	0 7618	76 22**
12	Down X_7 (Remaining variables X_5 X_{11} X_{13} X_{15} and X_{16})	0 8698	0 7565	89 46**

** Significant at 1% level of significance

Table 9 Results of path analysis of selected personal socio-cultural and techno economic characteristics of respondents with extent of participation in sericultural operations

(n – 150)

Variables No	Characteristic	Direct effect		Total indirect effect		Indirect effect	
		Effect	Rank	Effect	Rank	Effect	Through variable number
X_2	Education	0 0372	9	0 2366	15	0 0485	15
X_3	Family size	0 0246	10	0 3719	12	0 0991	15
X_4	Farm size	-0 0364	13	0 2713	13	0 0706	15
X_5	Experience in sericulture	0 1794	5	0 4985	9	0 1682	15
X_6	Leisure time availablility	0 0714	14	0 6444	3	0 1662	15
X_7	Self reliance	-0 1240	15	0 7026	1	0 1886	15
X_8	Information source utilization	-0 0230	11	0 5387	8	0 1695	15
X_9	Extension orientation	0 1039	6	0 604	5	0 2138	15
X_{10}	Risk orientation	0 0683	7	0 5787	6	0 1907	15
X_{11}	Scientific orientation	0 1995	4	0 4897	10	0 2021	15
X_{12}	Economic motivation	-0 0325	12	0 6825	2	0 1917	15
X_{13}	Management orientation	0 2071	3	0 5613	7	0 2191	15
X_{14}	Knowledge of sericulture	0 0565	8	0 6207	4	0 2479	15
X_{15}	Attitude towards sericulture	0 2920	1	0 4768	11	0 1554	13
X_{16}	Family income	0 2237	2	0 2531	14	0 0787	15

Residual effect = 0 4026

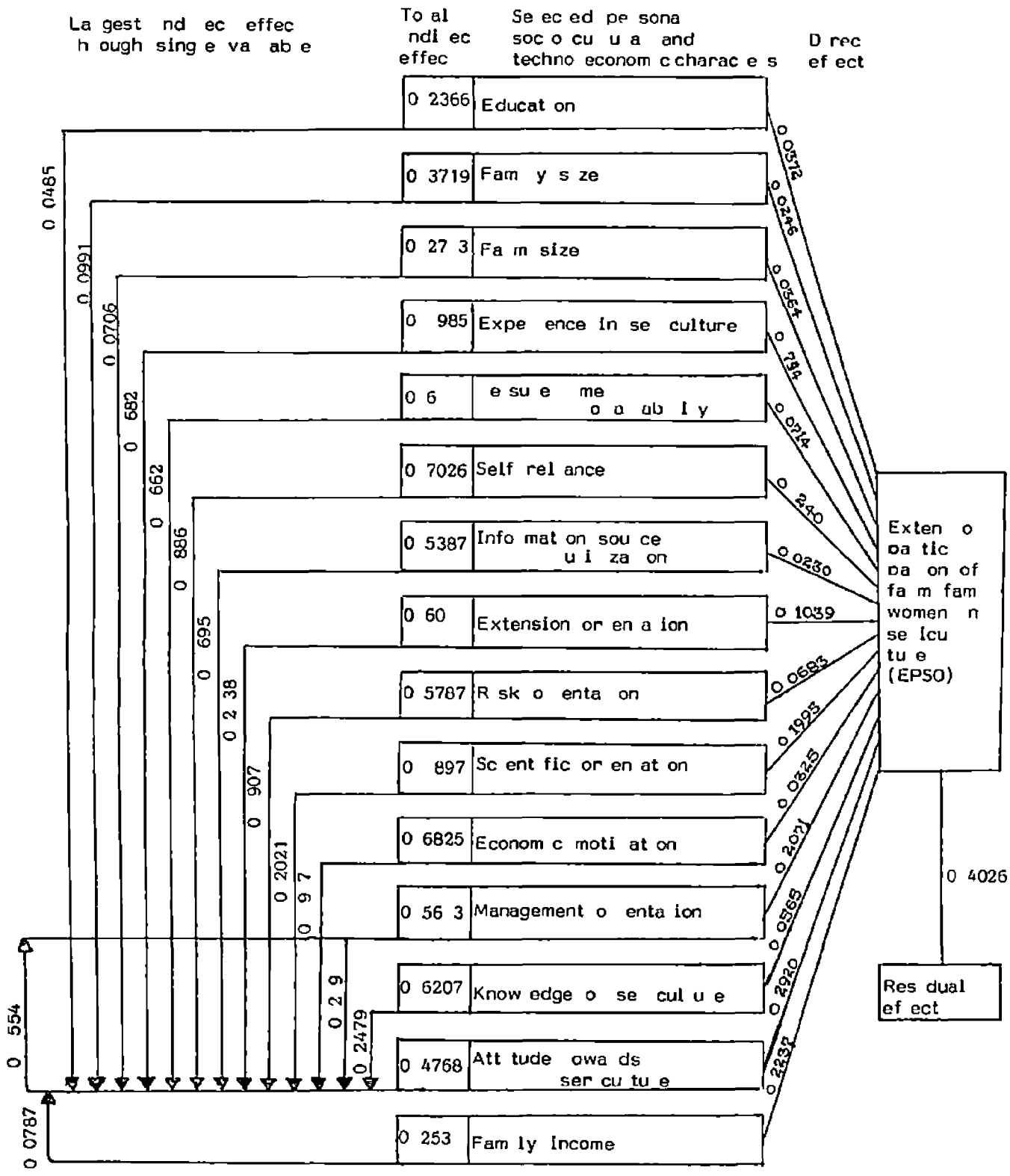

Fig 5 Path diag am show ng the d ect and nd ect e fect of he selected persona soc o-cultu a and echno econom c cha acte ist cs of farm fam ly women on the r EPSO

could be of interest to split the amount of relationship that a particular characteristic had with the dependent variable into

1) its direct influence on the dependent variable and
2) possible indirect effect on the dependent variable through other personal socio-cultural and techno economic characterisitcs

Since this information was not available in the earlier analysis the data were subjected to multi variate path analysis inorder to get the desired information Path coefficient analysis would enable us to measure the direct and indirect effects of each personal socio cultural and techno-economic characteristic on the extent of participation of farm women in sericultural operations Path analysis was done using fifteen variables which were found to be significant in correlation analysis and the results are presented in Table 9

From the Table 9 it is interesting to note that attitude towards sericulture had the highest direct effect on the dependent variable followed by family income Similarly management orientation and scientific orientation are the other two variables with substantial direct effects

The remaining variables such as experience in sericulture extension orientation risk orientation knowledge of sericulture education and family size also had positive direct effects on the dependent variable The rest of the variables like information source utilization economic motivation farm size leisure time availability and self reliance had negative direct effect on the dependent variable

The correlation analysis (Table 6) regression analysis (Table 7) step down regression analysis (Table 8) and path analysis (Table 9) revealed that the most

important variable significantly affecting EPSO was attitude towards sericulture

The theory of attitude behaviour consistency (Fishbem and Raven 1962 MC Guire 1969) indicated that the development of favourable or unfavourable atti tude towards an object or situation will be dependent on the benefits associated with the object Based on the experience in sericulture majority of the farm women would have felt that this enterprise can be a solution to their unemployment problem to certain extent Since women can undertake majority of the operations in silkworm rearing in the household premises they can run this enterprise without breakdown in their routine work of home management So it is reasonable to think that these farm women would have developed a deep rooted favourable attitude to this small scale industry which they nk as a means of livelihood This might be acted as a drive m their participation ericulture enterprise

Attitude of a person will decide and direct his behaviour and to an extent it get reflected through the behaviour Participation is nothing but an active process of expressive behaviour Hence it is reasonable to think that a farm women having high favourable attitude towards sericulture would participate more in it. The study conducted by Geethakutty (1994) also had shown that a high majority of farm women from their two to three years experience in sericulture were with highly favourable attitude towards the enterprise as a self employment avenue

The next important variable was found to be family income owing to its significant correlation coefficient regression coefficient and high direct effect which was supplemented by a fairly high indirect effect through attitude towards sericul ture

The adoption of sericulture requires a high initial investment So when the family income increases the household can take up this enterprise easily Seri culture is generally regarded as a highly remunerative industry which is primarly regarded as a "women s job" It will supply a visible and additional income to the family throughout the year The economically well off position and the resultant saving mentality of the family itself will be pushing its members with economic motivation to participate more in sericulture enterprise This could be the reason for the above observed result Shilaja and Jayaramiah (1993) also reported that farm women perform majority of the field operations in their own land to earn an extra source of income

The next variable that exhibited positive and significant relationship with EPSO was management orientation Management is regarded as a dynamic life giving force to any enterprise It creates condition for its profitability and increased productivity which are the most essential push for the survival for an enterprise In sericulture synchronization of various activities i e production of quality mulberry leaves and rearing of worms and marketing of cocoons need advanced planning and proper co-ordination Hence naturally farm family women bestowed with more management orientation can and will co-ordinate and participate more actively and efficiently in various sericulture operations This underlines the need for inculcating management orientation at an enterprise level among farm women and unemployed youth to find self employment avenues

The variable scientific orientation also established significant and positive correlation with EPSO

The scientific orientation exposes the farm family women to modern scientific practices in both mulberry cultivation and silkworm rearing The scientific orientation of an individual will naturally encourage and force the individual to try and adopt a profitable enterprise in scientific manner Scientific management of the enterprise enables the women sericulturists to get more income from their crop This increased income would have motivated the farm women to participate more actively in this enterprise Hence the observed relationship is self explanatory

The positive and significant correlation of experience in sericulture and EPSO is quite natural Experience in an enterprise enables the individual to identify the merits and demerits of its practices Even though the sericulture enterprise is a relatively new area through the experience acquired the farm women might have realised the benefits of sericulture as a highly remunerative enterprise The experi ence they derived out of the high remuneration obtained from otherwise wasted time and labour will naturally encourage for more active and direct participation in its operations Observation by Susamma (1994) is also in concordance with this result

The variable extension orientation also showed positive and significant correlation with EPSO

The farm women who had the opportunity to come into contact with change agents or participated in training or seminars might have developed a favour able attitude towards such sources since it helped them to gain more knowledge about sericulture enterprise A high orientation and favourable attitude towards

information source possessed by the individuals will increase the acceptance and utilization of the messages from such channels (Berlo 1960) Hence the observed association between extension orientation and extent of participation is well within the realm of ponderables This study draws support from Gowda (1986) who observed that extension participation was significantly associated with economic performance of contact farmers and follower farmers Since sericulture enterprise is an innovation to Kerala much effort is being put into its popularisation in the State by the extension functionaries facilitating frequent extension participation by the respondents

Another variable that established positive and significant association with the dependent variable was risk orientation

Admittedly sericulture is a high risk enterprise Since the worms are highly prone to sporadic incidence of pests and diseases and are highly susceptible to climatic variations only those women who are ready to take high risk and who are confident in their own ability to face risks can adopt such practices and actively participate and continue with them This could be the probable reason for the positive and significant relationship observed between risk orientation and participation of women sericulturists The observation made by Susamma (1994) in her study substantiates this result

The results obtained in the study revealed positive and significant relationship between knowledge of sericulture and EPSO

Knowledge is one of the three components of behaviour which is vital for behaviour change and adoption The concept of information influence (Deutsch

and Gerald 1955) indicated that when an individual possesses adequate knowledge his or her activities are largely determined by a tendency to conform with the knowledge level This brings out the reason for the observed association between knowledge and participation This finding comply with that of Dipali (1979) who reported a positive relationship between level of knowledge of farm women in farm operations and their degree of participation in agricultural operations

The positive and significant correlation observed in the case of education with the dependent variable EPSO is in line with that of Barret *et al* (1991) Since most of the modern technologies are complex education would have helped the farm women to obtain more scientific knowledge and skill with better comprehension Moreover education might have enabled them to interact with various organizations agencies and media thereby acquiring more information These reasons could adduce evidence to the positive and significant correlation between education and extent of participation of farm women in sericulture operations Quite an auxiliary reason that can be appended for this observation is the underemployment and unemployment prevalent among the educated youth Educated youth take up sericulture as a self employment activity This association is also reflected in the present observation

Another variable significantly and positively correlated with the depend ent variable was family size Traditionally the housewife is considered to be respon sible for the running of the family especially with regard to bread and other house hold expenditures As the family size increases more burden will fall on her should ers because she finds it too difficult to run the family with the limited income She is forced to devote more time for supplimenting the farm income by taking up new ventures suitable at household level Sericulture is one among them The increased

family size acts as a boon in the running of these type of enterprises This also ena bles to share responsibilities and to make alternate arrangements in the household activities so that the housewife can find more time and attention to invest in the sericulture activities This finding is supported by the study of Deepali (1979) who reported a significant relationship between family size and participation of rural women in agricultural operations

The positive and significant relation between information source utiliza tion and EPSO reinforces the information threshold theory (Gaikwad 1968) The high exposure of an individual to different information sources may impell him to compare the various technologies and select the most rational information to be used by him in his farming activity When a farmer receives information about a technol ogy through different sources it may not be possible for him to resist his attention from concentrating on that technology and its further use In the case of a farm woman who obtains information about sericulture from different sources the same process is likely to operate Hence the observed finding Susamma (1994) also had reported a similar relationship between extension linkage and adoption of recom mended sericulture practices

The positive and significant relationship between economic motivation and EPSO obtained in the study is not beyond logical reasoning It is obvious that farmers tend to undergo a process of change only when there is a strong economic urge Normally all sericulture farmers are highly motivated to increase profit as they have taken up this highly paying enterprise Hence this active force leads to more adoption resulting in enhanced participation in various operations This reason could be attributed to the above results The exchange theory postulated by Thibaut

and Kelly (1959) can be cited here People seek out situations with the best profit or reward cost ratio i e people calculate expected rewards versus costs and adjust their behaviour to maximise the former The finding of Susamma (1994) that a significant and positive relationship existed between economic motivation and adoption of recommended sericulture practices also supported the present result

Farm size was significantly and positively correlated with EPSO When the size of the holding increases the farmer gets more space for growing mulberry resulting in increased production of quality mulberry leaves in time and rearing of more number of crops All these necessitate more manual working hours which can not be met with hired labourers due to high wage rate Then the only possible and economically feasible solution for the family is the increased involvement of family members in the rearing activities Thus increase in farm size will naturally call for better participation by the family members especially the farm women

Significant positive relationship was observed between leisure time avail ability and EPSO The extent of leisure time available to the members in a family determines how much time they can spare on subsidiary activities Sericulture is such a suitable enterprise that can be attended by the family members by exploiting the otherways waisted leisure hours This might be the probable reason for the exist ence of a positive and significant correlation between leisure time availability and extent of participation Susamma (1994) had reported similar relationship between leisure time availability and extent of adoption of recommended sericulture practic es

The variable self reliance was also significantly and positively correlated with EPSO According to Ariyaratna (1979) self reliance is more than merely

financial and it includes the possibility for dynamic adjustment with a changing system and as a value basis pertaining to the attainment of broader goals that an individual has set himself Hence a farm women having high self reliance is natural ly motivated to initiate new ventures like sericulture for getting higher income to meet the changing needs of the family High and significant association between self reliance and achievement motivation was established by Prasad (1983) in the case of rice farmers

From the table it is observed that the only one variable which was not significantly correlated with EPSO was age This indicated that irrespective of age farm women might be convinced of the importance of sericulture as a profitable enterprise and participate in it Silkworm rearing doesn t need much physical effort and can be carried out within the household premises The less physical effort re quired and nonessentiality of high mobility makes it possible for even old aged women to invariably participate in various rearing activities and hence the above nonsignificant association

4 5 Influence of personal socio cultural and techno-economic charac teristics of farm women on their extent of participation in decision making in sericultural operations

The relationship of EPDS with their personal socio-cultural and techno economic characteristics was established in this study first by simple correlation analysis and the findings are presented in Table 10

4 5 1 Simple correlation analysis of EPDS with their personal socio cultural and techno economic characteristics

A perusal of Table 10 showed that out of the sixteen independent varia

Table 10 Results of the simple correlation analysis of Extent of participation of farm family women in decision making in sericultural operations with the personal socio cultural and techno economic characteristics

(n = 150)

Variable No	Characteristic	Correlation coefficient
X_1	Age	-0 023 NS
X_2	Education	0 150 NS
X_3	Family size	0 264**
X_4	Farm size	0 238**
X_5	Experience in sericulture	0 496**
X_6	Leisure time availability	0 478**
X_7	Self reliance	0 546**
X_8	Information source utilization	0 566**
X_9	Extension orientation	0 615**
X_{10}	Risk orientation	0 586**
X_{11}	Scientific orientation	0 647**
X_{12}	Economic motivation	0 644**
X_{13}	Management orientation	0 649**
X_{14}	Knowledge of sericulture	0 601**
X_{15}	Attitude towards sericulture	0 710**
X_{16}	Family income	0 215**

** Significant at 1% level of significance
NS Not significant

bles family size (X_3) farm size (X_4) experience in sericulture (X_5) leisure time availability (X_6) self reliance (X_7) information source utilization (X_8) extension orientation (X_9) risk orientation (X_{10}) scientific orientation (X_{11}) economic motivation (X_{12}) management orientation (X_{13}) knowledge of sericulture (X_{14}) attitude towards sericulture (X_{15}) and family income (X_{16}) were positively and significantly related with dependent variable at one per cent level of significance However it was seen that two variables namely age (X_1) and education (X_2) did not have any significant relationship with EPDS

4 5 2 Multiple Linear Regression Analysis (M L R)

Using all the sixteen independent variables MLR was done in order to get the relative contribution of each of the independent variable to the dependent variable The findings are presented in Table 11

The findings of the MLR analysis in Table 11 revealed that the F value (12 53) obtained was significant indicating that all the variables together contributed significantly in the variation of extent of participation in decision making The coef ficient of determination (R^2) revealed that 60 12 per cent of the variation in the dependent variable was explained by these sixteen independent variables

Out of the sixteen variables only two were found to be with significant relation namely information source utilization and attitude towards sericulture

4 5 3 Step down regression analysis

The step down regression analysis was employed to identify the best set of variables that could predict the dependent variables The results of step down regression analysis are presented in Table 12

Table 11 Results of Multiple Linear Regression analysis of EPDS with the personal socio cultural and techno economic characteristics

(n − 150)

Variables	Characteristic	Regression coefficient	Standard error of regression coefficient	t value
X_1	Age	-0 006	0 006	1 127 NS
X_2	Education	0 043	0 055	0 775 NS
X_3	Family size	0 049	0 052	0 948 NS
X_4	Farm size	0 020	0 053	0 381 NS
X_5	Experience in sericulture	0 125	0 083	1 498 NS
X_6	Leisure time availability	0 074	0 079	0 939 NS
X_7	Self reliance	0 007	0 053	0 141 NS
X_8	Information source utilization	0 033	0 016	2 047*
X_9	Extension orientation	0 012	0 028	0 419 NS
X_{10}	Risk orientation	0 010	0 013	0 737 NS
X_{11}	Scientific orientation	0 029	0 019	1 501 NS
X_{12}	Economic motivation	0 127	0 066	1 938 NS
X_{13}	Management orientation	0 031	0 027	1 156 NS
X_{14}	Knowledge of sericulture	0 027	0 045	0 599 NS
X_{15}	Attitude towards sericulture	0 055	0 017	3 253*
X_{16}	Family income	0 000	0 000	0 526 NS

Intercept = 0 11
R^2 = 60 12
F = 12 53**

**Significant at 1% level of significance
*Significant at 5% level of significance
NS Not significant

Table 12 Results of step down regression analysis of EPDS with the personal socio cultural and techno economic characteristics (n – 150)

Step No	Variables for regression	Multiple correlation coefficient (R)	R^2	F value
1	X_1 X_2 X_3 X_4 X_5 X_6 X_7 X_8 X_9 X_{10} X_{11} X_{12} X_{13} X_{14} X_{15} and X_{16}	0 7754	0 6012	12 53**
2	Down X_7	0 7753	0 6011	13 46**
3	Down X_4	0 7751	0 6007	14 51**
4	Down X_9	0 7748	0 6002	15 71**
5	Down X_{16}	0 7741	0 5993	17 07**
6	Down X_{14}	0 7734	0 5981	18 67**
7	Down X_{10}	0 7726	0 5969	20 58**
8	Down X_{13}	0 7709	0 5942	22 78**
9	Down X_2	0 7693	0 5919	25 56**
10	Down X_1	0 7676	0 5892	29 09**
11	Down X_3	0 7653	0 5857	33 70**
12	Down X_6	0 7626	0 5810	39 94**
13	Down X_5	0 7601	0 5777	49 59**
14	Down X_8 (Remaining variables are X_{11} X_{12} and X_{15})	0 7575	0 5738	65 53**

**Significant at 1% level of significance

It was found that out of the total contribution to variation of 60 12 per cent by all the independent variables 57 38 per cent was contributed by three variables viz scientific orientation economic motivation and attitude towards sericulture Thus these three variables could be considered as the best in predicting the extent of participation in decision making by farm family women in sericultural operations

4 5 4 Path analysis

Path analysis was carried out in order to measure the direct and indirect effects of each personal socio-cultural and techno economic characters on the dependent variable and the results are presented in Table 13

The results of path analysis indicated that attitude towards sericulture had the highest direct effect on the extent of participation of farm family women in decision making in sericulture followed by economic motivation Similarly scientific orientation and information source utilization were the other two variables with substantial direct effect

The remaining variables such as experience in sericulture and management orientation also had positive direct effects on the dependent variable The rest of the variables like self reliance farm size income extension orientation family size leisure time availability knowledge of sericulture and risk orientation had negative direct effect on the dependent variable

It is quite noticeable from Table 13 that all the variables had their largest indirect effect through the variable attitude towards sericulture whereas attitude

Table 13 Results of path analysis of selected personal socio-cultural and techno economic characteristics of respondents with their extent of participation in decision making in the operations in sericulture

(n 150)

Variable No	Characteristics	Direct effect		Total indirect effect		Indirect effect	
		Effect	Rank	Effect	Rank	Effect	Through variable number
X_3	Family size	0 0659	11	0 3296	11	0 1486	15
X_4	Farm size	-0 0220	8	0 260	13	0 1058	15
X_5	Experience in sericulture	0 1164	5	0 3794	10	0 2523	15
X_6	Leisure time availability	-0 0780	12	0 5562	5	0 2492	15
X_7	Self reliance	-0 0200	7	0 5663	4	0 2828	15
X_8	Information source utilization	0 1823	4	0 3831	9	0 2541	15
X_9	Extension orientation	0 0452	10	0 6596	3	0 3206	15
X_{10}	Risk orientation	-0 0958	14	0 6818	1	0 2859	15
X_{11}	Scientific orientation	0 2005	3	0 446	7	0 3031	15
X_{12}	Economic motivation	0 2073	2	0 4368	8	0 2874	15
X_{13}	Management orientation	0 1111	6	0 5377	6	0 3286	15
X_{14}	Knowledge of sericulture	-0 0806	13	0 6818	1	0 3717	15
X_{15}	Attitude towards sericulture	0 4379	1	0 2725	12	0 1388	11
X_{16}	Family income	-0 0359	9	0 2505	14	0 1181	15

Residual effect = 0 4030

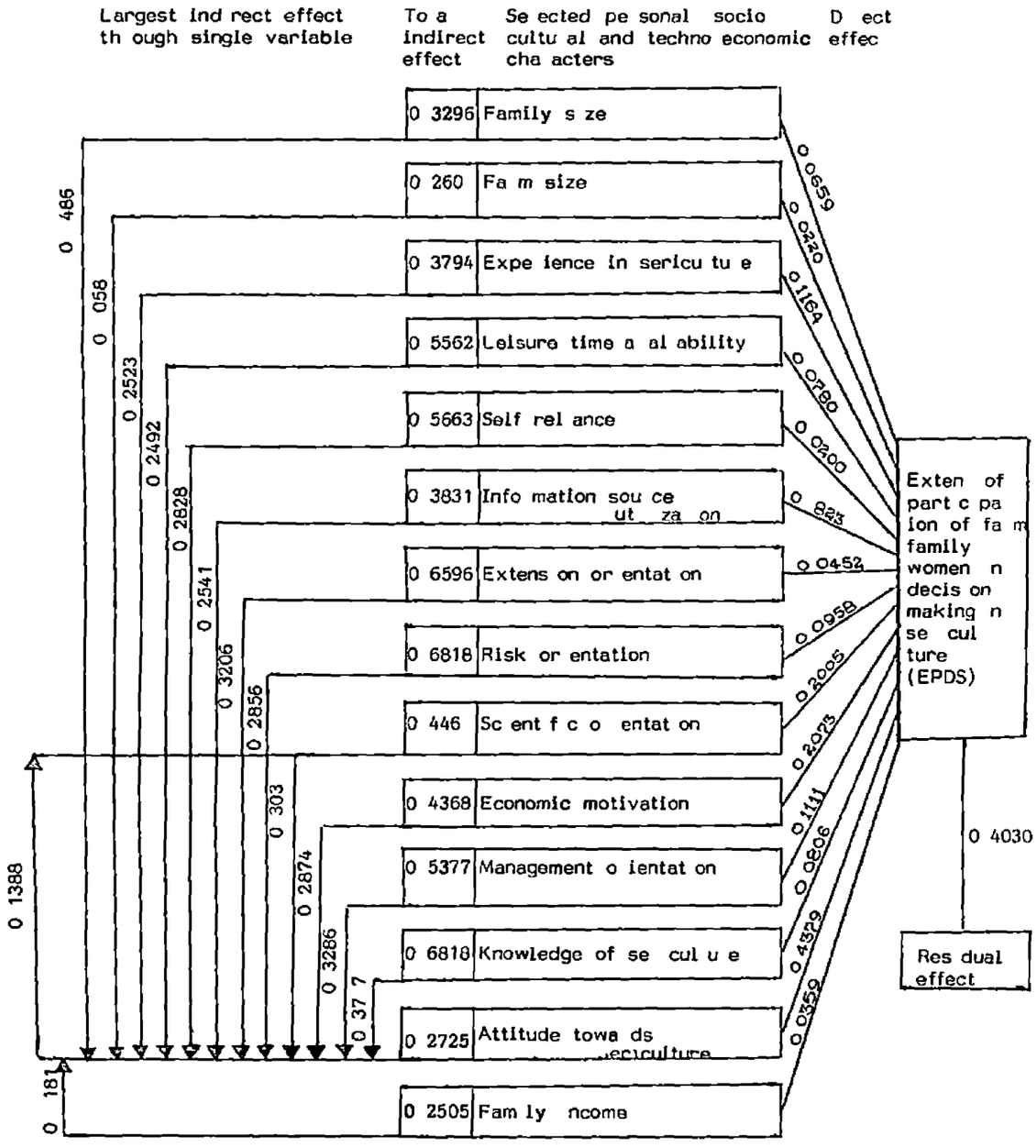

Fig 6 Pa h diagram showing the d rect and ind rect effect of the selec ed pe sonal socio-cultural and techno economic cha acteristics on EPDS

towards sericulture had its indirect effect through scientific orientation

The correlation analysis (Table 10) regression analysis (Table 11) step down regression analysis (Table 12) and path analysis (Table 13) revealed that the most important variable significantly affecting the extent of participation of farm family women in decision making in sericultural operations was their attitude to wards sericulture Thurstone (1946) defined attitude as the positive or negative affect associated with a psychological object Viewed from this angle one can see that women s involvement in sericulture for generating more income should have helped them to develop a positive orientation towards this enterprise due to its high advan tage over other avenues This positive attitude might have motivated the farm women to take part in deciding the best course of action among the given alterna tives to meet their goal In this view point the direct and indirect effect of attitude on the participation of women in decision making is self explanatory This result is in accordance with the finding of Singh (1978) who showed that high scores on atti tude towards farming and continuous decision making were associated with progres sive farm behaviour

The next important variable was found to be economic motivation owing to its significant correlation coefficient regression coefficient and direct effect which was supplimented by a fairly high indirect effect through attitude towards sericul ture Economic success is one of the values in any social systems A minimum level of attainment of economic ends is essential for the satisfaction of basic needs This desire for economic success of the housewife will act as an increasing motive on women to shoulder the responsibility of household maintenance through various resources As this inner push is greater the more will be their participation in family

labour as well as in planning activities Since the profit from sericulture can provide them with real and visible cash unlike traditional crops which are mainly used for consumption purpose also activate the women for increased participation Findings by Prakashkumar (1986) and Susamma (1984) are in accordance with this result

The variable scientific orientation showed positive and significant rela tionship with EPDS Scientific orientation is widely held as a value in many socie ties In a sense scientism is a counter part to traditionalism because it places emphasis on new innovations which may offer a broader array of alternative means to obtain the best ends during the course of decision making Nandapurkar (1982) defined decision making as the degree to which an individual justifies by selection of most efficient means from among the available alternatives on the basis of scientific criteria for achieving maximum economic profit Based on the above views it is undoubtedly clear that farm women who had high scientific orientation would have been confronted with better options during decision making in sericulture activities

The variable information source utilization established a positive and significant relationship with the dependent variable Sources of information are the gateways for acquiring tremendous knowledge According to Simon (1957) sources of information impart knowledge to an individual about the ends to be attained by the choice of a particular behaviour alternative The knowledge gained through exposure to different sources of information influences the behaviour of the individ ual and based on this he decides the future course of action Based on this opinion one could argue that farm women who had high exposure to information sources would have participated more in decision making in sericulture enterprise which justifies the above result The finding by Sudha *et al* (1991) that the exposure to

new information increases the awareness among the farm women and boost up their decision making ability is in conformity with the above observed relationship

It can be noticed from the table that the variable experience in sericulture showed a positive and significant relationship with EPDS According to New Comb *et al* (1965) human action is a function of the interaction of three variables experi ence current values and attitudes and current situation The cognitive domain of an experienced person is very high when compared to less experienced persons It is apt to quote here the concept of life long learning which points out to the importance of learning from life s encounters and the process of learning to learn from one s past experiences An experienced person always has more span of choices at his disposal while taking a decision Hence it is obvious that farm women who had experience would have participated more in decisions regarding sericulture activities than who is not experienced Mann *et al* (1989) reported that decision making competence is attained through the development of mature cognitive processes relat ing to problem solving and is learned gradually through a variety of life experiences

The results in the table indicated that management orientation is positive ly and significantly correlated with decision making Harding (1982) indicated that farm management process is essentially one of the decision making incorporating the two stages of search and choice The search involved an identification and eval uation of alternative production strategies The choice required strategy selection So a women sericulturist with high management orientation could take the best possible decision after sorting through the various means at her disposal in matters relating to sericulture and hence the positive and significant association between the two Chatterjee (1983) and Olsson (1988) had also expressed the importance of rational

decision making in efficient management of any enterprise

The variable self reliance also showed significant positive correlation with the EPDS Coleman (1971) stated that self structure is one of the major determinants for developing assumptions and attitudes about anythings So when people are highly self reliant they think that they can take the best possible decisions This is quite applicable to women enterpreneurs of sericulture The confidence and belief in one s own potentialities and the resulting rationality is also an activating factor Porchezhian (1992) also had pointed out significant correlation between self reliance and entrepreneurial behaviour of farmers

It can also be noticed from the table that farm size was positively and significantly correlated with EPDS The size of the farm as an economic unit has been almost universally recognized in increasing the productivity When the production increases the economic condition and position of the farm women also increases which provides her better access to information sources and thereby increases her rational decision making ability Studies by Dean *et al* (1958) and Dak *et al* (1986) also were in accordance with this result

The variable family income showed positive significant relation with the dependent variable EPDS This result is contradictory to the findings of Singh and Chander (1983) and Seema (1986) Every decisions of activities of an individual are preceded by a cumulation of possible profit and the resultant rationality behind it The proportionately high income generated from sericulture might have motivated the farm women to take more rational decisions in its various activities to maximise the profit Further more the economically well of position of the family will be directly influencing the status of the women in the family their information source

utilization their cosmopoliteness and in turn which will be indirectly increases their involvement in decision making Similar result was reported by Wilkening and Johnson (1958)

The results also showed that extension orientation was postively and significantly correlated with EPDS According to cognitive dissonance theory (Festinger 1957) while taking a decision dissonance is predicted to follow Exten sion orientation enables a farm woman to overcome any dissonant information while taking the decisions regarding mulberry cultivation and silkworm rearing Farm women who are oriented positively towards the extension activity will be naturally getting exposed to the scientific management of any enterprise and will be convinced about its worth As a result of this exposure and conviction readiness on the part of these individuals will be more to take part in its related activities to take rational decisions and hence the present finding Deb *et al* (1958) and Grunig (1970) also had reported that rationality of the farmers was related to their extension contact This result also got necessary support from Seema (1986)

Another variable which established significant and positive correlation with EPDS was family size Women are carrying out a number of activities inside as well as outside their homes It is more true in the case of rural women who partici pate equally with men folk in performing many of the farm operations in addition to the household obligations She also has a say in the decisions on the farm and home aspects When the family size increases she finds it difficult to make both ends to meet with the limited family income So she is also forced to choose more alterna tives together with the male head to take a decisions regarding the economic en hancement of her family through enterprises like sericulture and its efficient running

This could have been the possible reason for the above significant association

The variable leisure time availability also did establish a positive and significant correlation with the dependent variable According to Deacon and Fire baugh (1981) decision making is a process of evaluation in making choices or resolv mg alternatives It is natural that when a farm woman gets more leisure time the more will be her participation in sericultural operations When her direct participa tion increases in those activities her concern for the success of the activities also will be more This concern for success will motivate the individual to take best possible decision after evaluating the various alternatives before her In another view point we can argue that when the leisure time available to a farm woman increases She will be getting more opportunity to think creatively which will stimulate her intellectual and logical reasoning ability This ultimately helps her to take appro priate and timely decisions As the decision taken by the farm women solely or jointly gets a better outcome or desired outcome it will further acts as a reinforcer for her continued participation (Reinforcement theory Skinner 1969) From these views the positive and significant association between leisure time availability and decision making role of women sericulturists obtained is quite evident

The results showed that the variable knowledge of sericulture was signif icantly and positively correlated with EPDS of the farm women The ability of a person to be logical in his decision and descrimination ability inturn brings about the capability to take faithful decisions when and where necessary So it is natural that knowledge will impart the rational decision making ability Further more the in creased knowledge and comprehension about scientific management aspects will enhance the confidence of the enterprenur This will be directly increasing their

involvement and say in decision making process Similar finding was reported in the case of adoption of the recommended practices of sericulture by Susamma (1994) and in the case of rice cultivation by Geethakutty (1993)

Positive and significant correlation was obtained between risk orientation and dependent variable EPDS Farming is affected by many factors such as prices of the products weather elements incidence of pest and diseases etc which are beyond the control of farmers A farm women who is highly oriented to risk can make deci sions with sufficient informations and can establish a probability distribution of expected outcomes that follow the alternative courses of action Adoption of scientif ic practices will increase the success of any enterprise which in turn will be increas ing the confidence in them and thus favouring their risk orientation The risk orienta tion developed out of this confidence can thus motivate the individual for increased participation

From the Table 10 it can be observed that the variables such as age and education were not significantly correlated with the EPDS

The non significant relationship between age and participation of farm women in decision making indicated that irrespective of age the farm women partic ipated in decision making in sericulture This finding is quite justifiable on the ground that the decision making activity is not a manual activity but an activity which necessitates experience and favourable attitude on the part of the individual This result is more justified by the findings of Singh and Chander (1983) and Seema (1986)

It is not the formal education that one attains from schools and colleges

that orients an individual to perceive and perform their roles in decision making with regard to sericulture enterprise It is the actual involvement in different aspects of silkworm rearing coupled with the experience obtained enables the farm women to perform her role in decision making This could be the reason for the non significant association between education and decision making This finding is well supported by the observations of Singh and Chander (1983) and Seema (1986)

4 6 Relationship between extent of participation of farm family women in sericultural operations and decision making

Simple correlation analysis carried out between the extent of participation in sericultural activities and the extent of participation in decision making in sericultural activities of the farm women brought out a high significant and positive correlation (r = 0 6524) A farm woman having higher participation in sericulture activities is also likely to involve in the decision matters regarding the enterprise This might have been the possible reason for the observed significant and positive correlation between extent of participation and decision making role In short decision making is an integral part of participation as indicated by Misra (1980) This result is quite explainable based on the Congruity theory (Osgood and Tannenbaum 19כ) It can naturally be predicted the individual to put forth kinds of behaviour which are in congruence with his or her attitude and beliefs so that the individual is maintaining the balance The very same association can be explained in the light of reinforcement theory (Skinner 1969) also The achievement or approval yielded through participation in sericultural activities will be motivating or conditioning the individual for their increased participation in its decision making also This observation emphasizes the essentiality of a holistic approach to be taken towards the enterprise by the enterpruneurs and by the policy makers There can t be a watertight com

partmentalization as physical operations and decision making activities involved in this enterprise It is hightime that enterprise as a whole is to be considered in its business and management perspective The spontaneous and simultaneous involve ment of these processes is an indication of commitment on the part of the enterpre neurs This commitment as in any scenario is the deciding factor of its success or efficiency

4 7 Constraints of participation of farm family women in sericultural operations and decision making

Table 14 outlines the important constraints experienced by the farm family women in sericultural operations

From the table it is clear that low price of cocoons and price fluctuations in the market lack of leisure time availability lack of knowledge about sericulture and death of worms due to diseases were the important constraints experienced by the farm women in sericulture enterprise

Price of the produce is one of the major factors that influences the suc cessful running of any enterprise The price of a commodity in the market is deter mined not only by the quality and quantity of the produce but also by the govern ment policies Due to the liberalisation policy announced by the Union Government in 1992 the textile owners in the South India have started importing silk from other countries Due to this the price of the indegenous cocoons comes down heavily which questions the very existence of the sericulture enterprise in South India Since the return from sericulture decrease the households have reduced their involvement in silkworm rearing which could be the major reason for ranking "Low price of cocoons as the major constraint Susamma (1994) also has reported that low price

Table 14 Major constraints experienced by the farm family women in participation in sericultural operations and decision making

(n = 150)

Sl No	Constraints	Cumulative index
1	Low price of cocoons and price fluctuations in the market	600
2	Lack of leisure time availability	566
3	Lack of knowledge about the sericulture practices	564
4	Death of worms due to diseases	558
5	Lack of irrigation facilities	557
6	Increased cost of fertilizers	551
7	Women s low status in the family	548
8	Lack of timely availability of loans	547
9	Lack of extension guidance	537
10	Poor bargaining power in the market	520

of cocoon acted as a problem in the adoption of sericulture in the districts of Thris sur and Palakkad The significant and positive relation between extent of participa tion of respondents and their economic motivation was discussed in detail elsewhere in the text So naturally when the prices of the produce become low enthusiastic participation also may tend to be low The lack of regional markets also contributed to the decrease of return from cocoon since the farmers have to bear huge transpor tation cost Hence the State Government should declare floor price for cocoon and establish regional cocoon collection centres inorder to solve the problems faced by the women sericulturists

Leisure time available to a farm women during the domestic work ena bles her to involve in various income generating activities Sericulture is one such vocation

Since in many rural households the women have to work with their counterparts in performing farm operations as well as doing all the roles related to home management chores the leisure time available to her will be very limited This mturn restrict her whole hearted participation in income generating activities like sericulture This might be the probable reason for ranking "Lack of leisure time availability as an important constraint This result is also supported by the findings of Yadav *et al* (1989) and Asuri and Mahadevappa (1990) Since most of the housewives are totally unaware of the economic utility of the leisure time available during the household work suitable strategies should be planned and evolved by the social agencies inorder to make the farm women aware of the importance of the household leisures

Silkworm rearing needs specialised skills and perfect knowledge about

various practices Though Khadi Board and Silk Board are conducting various train mg programmes to impart this knowledge and skills these are mainly of male ori ented with less female participation Govind and Subhramanyan (1989) m their study revealed that lack of knowledge emerged as the problem against active participation of farm women m agriculture and other home based operations Asuri and Mahade vappa (1990) also reported that lack of knowledge about sericulture is an important problem faced by farm women Introduction of regional training programmes seminars and field trips intended for housewives could solve this problem to certain extent

Since silkworms are highly prone to the incidence of pests and diseases the mortality rate is very high resulting in heavy loss to the enterpreneurs Hence the women sericulturists should be made aware of the importance of timely applica tion of pesticides and maintenance of hygienic conditions in the rearing house through group contact or individual contact programmes

Other major constraints experienced by the women sericulturists of Palakkad district were lack of irrigation facilities increased cost of fertilizers women s low status m the family and lack of timely availability of loans

Irrigation during summer months is very essential for production of quality leaves in mulberry through out the year which ensures the year round rear mgs Since Palakkad is a low rainfall area with poor irrigation facilities the majority of the farmers could not undertake rearing during summer months Introduction of new irrigation projects and subsidised supply of pumpsets could solve this problem to certain extent

Fertilizer is universally recognized as an important input for increasing crop production In mulberry timely application of fertilizers is essential to increase production of quality leaves But due to the high prices of the fertilizers and low price of the cocoon the poor farmers can t resort to its application This results in low production of quality mulberry leaves Subsidised supply of this vital input to farmers could definitely sove this problem

In the tradition bound Indian societies the women is considered as inferior to men in all respects They have limited involvement in decision matters related to home and farm aspects and are expected to follow the suggestions made by their husbands Further more the status of a person in the household or even in the society is determined by the money he/she possess or earns The housewife who has no role in household money matters thereby enjoy low status in the family also Devi (1994) also reported that barriers of women s own status in the household hindered their fuller and gainful participation in silkworm rearing Making the women aware that their roles and status in the household and society are secondary to none through education programmes will definitely pave the ways to improve their status and thereby decision making ability Concerted efforts of social reform ers and developmental agencies are needed for this facelift

Timely supply of loans for farmers will enable them to undertake the farming operations properly But in most cases the farmers have to wait even for months to get the crop loans This situation brings out failure on the part of the farmers to apply even basic inputs to their crop resulting in poor crop yield Timely supply of crop loans at low interest to farmers would enable the farmers to counter this problem

Lack of extension guidance and poor bargaining power of women in the market were also identified by the respondents as other important constraints Evolv ing suitable extension strategies like campaigns and need based training seminars demonstrations etc by the help of subject matter specialists could surely help to sort these problems

4 8 Consequences perceived by the farm family women due to their participation in sericultural operations and decision making

Table 15 outlines the important consequences perceived by the farm family women as a result of their involvement in sericulture operations and decision making

The data reveals that enhancement of managerial economy economic utilization of leisure time status elevation in the family and society etc were the important consequences which were positively perceived by the farm women

Sericulture is popularly recognised as a agro based cottage industry in which women can actively take part This involvement enables the farm women to earn an extra source of income by economic utilization of leisure time available during the household work This observation become more relevant on analysing the relation between one s perception and its result A positively perceived stimuli will act as a reinforcer for its continued activity The continued increased utilization and participation can be predicted from these positively perceived consequences

Economic status leads to enhanced social status in society In the case of family also the status of members has profound say in family matters and decision making Due to the gainful participation of farm family women in sericulture their

Table 15 Consequences perceived by the farm family women due to their participation in sericultural operations and decision making

(n 150)

Sl No	Consequences of participation	Cumulative index
A	Positive consequences	
1	Enhancement of managerial economy	580
2	Economic utilization of leisure time	570
3	Status elevation in the family and society	560
4	Self reliance	559
5	Increased self confidence	552
6	Aspiration and self fulfillment	536
7	Enhanced self image	530
8	Sense of accomplishment	510
B	Negative consequences	
1	Lack of time to attend children and other home and farm operations	566
2	Drudgery	550
3	Exhaustion	532
4	Frustration	350

income status increases resulting in status elevation in the family and society Geethakutty (1994) also indicated that majority of farm women had developed a feeling of independance and ability to get along well in the family and society as a result of their success in sericulture

Consequences such as lack of time to attend children and other farm and home operations drudgery exhaustion and frustration were reported as the important negative consequences perceived by the farm women as a result of their participation in sericulture enterprise

The primary duty of a mother is to look after her children care for the family and management of household aspects It is natural that she will not get enought time for the welfare of her family if she is actively participated in sericul ture These are to be taken into account as the role conflict and resultant frustration aroused by inclusion of an additional duty together with the traditional and accepted roles of the female head of the family

In this way though sericulture is a highly profitable enterprise for rural women their active participation in it causes many problems and inconviniences also to them Many farm women can t run this enterprise successfully without obstructing their personal commitments It may forture them both physically and mentally Hence the resultant drudgery and exhaustion are also to be considered as integral parts of womens participation

Other major positive consequences experienced by the farm family women as a result of their participation in sericulture were increased self reliance increased self confidence aspiration and fulfillment enhanced self immage and sense of accomplishment

Geethakutty (1994) had revealed the positive impact of women s in volvement and participation in enterprises like sericulture as their self reliance and related virtues and characteristics such as self confidence self image self help and development aspiration self fulfillment etc and had concluded that apart from the economic benefits that accrue women are also personally benefited due to their involvement in sericulture

Empirical model of the study

The results discussed so far on the extent of participation of farm family women in sericultural operations are presented diagramatically in the empirical model (Fig 7)

Two dimensions of women participation in sericulture were measured in this study They are the extent of participation of farm family women in sericultural operations and their extent of participation in decision making in sericultural opera tions which were depicted in the either half of the inner circle The high degree of association existed between the two dimensions of extent of participation in sericul tural activities is represented by the arrows directed in two ways inside the inner circle These two dimensions were influenced by personal socio cultural and techno economic characteristics of farm farmily women which were shown in the two boxes separately on either side of the circle The important constraints faced by the farm family women in participation in sericulture and the consequences they faced out ot their participation in sericulture were indicated above and below the circle respec tively The arrows presented in both direction from the constraints and consequences towards participation indicate the influence exerted by them on the extent of partici pation and vice versa

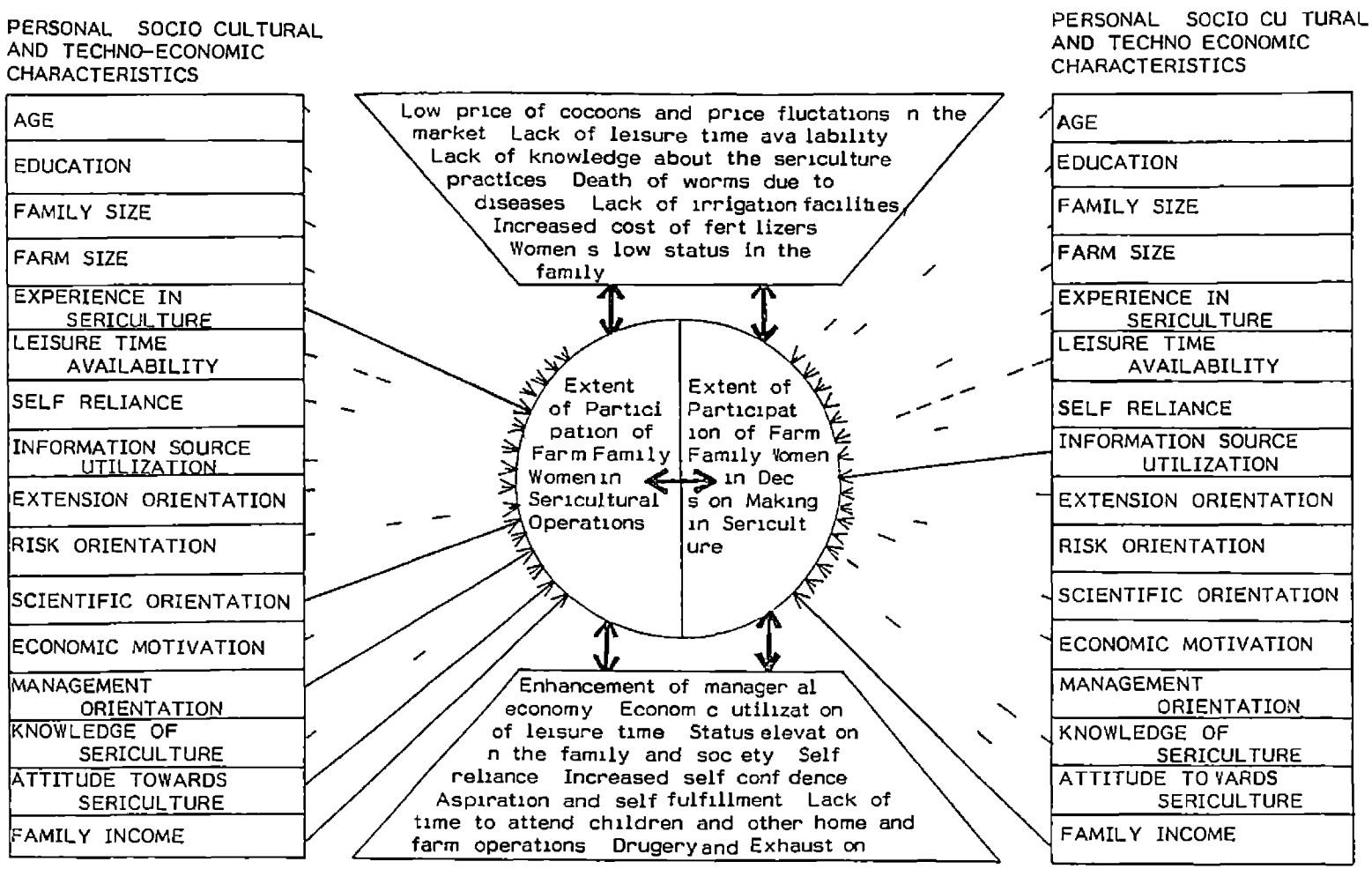

FIG 7 EMPIRICAL MODEL OF THE STUDY

The MLR revealed that the socio-cultural and techno economic characters significant in predicting the participation of farm women in sericulture are experience in sericulture scientific orientation management orientation attitude towards sericulture and family income Characters such as information source utilization and attitude towards sericulture are significant in predicting the extent of women participation in decision making in sericultural operations

The major constraints faced by farm women in their participation in sericulture were low price of the cocoons and price fluctuations in the market lack of leisure time availability lack of knowledge death of worms due to diseases lack of irrigation facilities and increased cost of fertilizers Important consequences experienced by farm family women due to their involvement in sericulture were enhancement of managerial economy economic utilization of leisure time status elevation in the family self reliance lack of time to attend children and other farm and home operations drudgery and exhaustion

Summary

CHAPTER V

SUMMARY

India is an agrarian country with more than 70 per cent of the population depending directly or indirectly on agriculture and allied aspects for survival Agri culture is basically a family enterprise in India in which women are active participants She is a cultivator co-operator labourer and contributer to farm decision making and family income Economic and social development of women has been the professed policy of the union government If women are made productive and more effective income earners it will make them self reliant contributing more effectively towards family income Appropriateness of technology timely and need based input supplies sharper focus of extension on farm women and integration of all these factors with relevant income generating activities can bring about economic and social development of farm women Sericulture is considered such a suitable technology for farm family women

Sericulture is an important agro based industry where in rearing of silk worm is primarily dominated by women folk It can provide alternate employment opportunities to landless or land poor womenfolk in rural areas at household level The participation of farm family women in various activities of sericulture enter prise including their decision making role are much important for the welfare of the households and increases their status as they are considered as productive elements m the society Hence it is of much use to study the roles played by farm women in this small scale industry and to highlight the problems faced by them in their partici pation which would help the planners and policy makers o evolve suitable exten sion strategies to bring down the grievences of the women enterpreneurs

The study was conducted with the following specific objectives

1) to measure the extent of participation of farm family women in sericultural operations

2) to measure the extent of participation of farm family women in decision making in sericultural operations

3) to analyse the relationship between personal socio cultural and techno-economic characteristics of farm family women with their extent of participation in sericul tural operations

4) to analyse the relationship between personal socio cultural and techno economic characteristics of farm family women with their extent of participation in deci sion making in sericultural operations

5) to identify the constraints faced by the farm family women in sericultural opera tions

6) to study the consequences perceived by the farm family women due to their participation in sericultural operations

A sample of one hundred and fifty respondents were selected from the Palakkad district which is a traditional and potential sericulture area compared to other dis tricts of Kerala The required information was collected through personal interview using a pre tested structured interview schedule The major results of the study are detailed below

1) There was significant variation in the extent of participation of farm family women in sericultural operations It was observed that only a small percentage of the farm women had put forth high and medium participation in sericultural operations More than sixty five percentage of the farm women were of low and very low participation in various activities of sericulture enterprise

2) Operationwise analysis revealed that in almost all operations of mulberry farm women had no major contribution None of the respondents was solely carrying out any activities in mulberry cultivation Only in the case of application of chemical fertilizers pruning weeding and harvesting and transportation of leaves at least some amount of participation could be accounted Those activities were carried out either jointly or with supervision only Majority of farm women spend 2 5 hours for chopping the leaves feeding the worms care at moulting bed cleaning protection of worms mounting of worms harvesting the cocoons cleaning and grading the cocoons with joint nature of participation

3) The results revealed that only a very low percentage of the farm women had high participation in decision making in sericultural operations While nearly one third of the farm women put forth medium involvement a majority of them were having either low or very low participation in decision making in sericulture activity

4) None of the farm women had solely participation in decision making in any activities of mulberry cultivation A majority had joint participation in decision making with frequent involvement Another fraction of respondents had either joint

participation or having their presence in decision matters related to choice of mul berry variety type of crop nature of crop time of pruning and time of weeding In silkworm rearing also none of the respondents was solely participating in decision making in aspects like selection of breed number of crops taken number of D F Ls raised rearing season disinfection of rearing house and equipments maintenance of temperature and humidity grading and marketing of the cocoons More than fifty percentage of farm women made joint decisions in matters regarding number of feedings to be given to the worms size and quality of leaves spacing of worms caring of worms method of bed cleaning number of trays time of mounting of worms harvesting of cocoons and grading of cocoons with moderate frequent partic ipation

5) Distribution of the respondents based on their personal socio cultural and techno economic characteristics showed that majority of the farm women were belonging to higher category with regard to leisure time availability extension orien tation management orientation and attitude towards sericulture For the rest of the variables majority of the respondents were in lower category

6) The simple correlation analysis to study the influence of personal socio-cultural and techno-economic characteristics of farm women on their extent of par ticipation in sericultural operations revealed that out of sixteen variables except age all the variables were positively and significantly related with EPSO Multiple re gression analysis explained 77 1 per cent variation in the dependent variable by these selected personal characteristics and only five variables namely experience in sericul ture scientific orientation management orientation attitude towards sericulture and family income were positively and significantly related with EPSO The step down

regression analysis explained 75 65 per cent variability on EPSO by these five vana bles The results of path analysis also showed that the highest direct effects on EPSO were due to these five variables

7) The simple correlation analysis between extent of participation of farm family women in decision making in sericulture and their personal socio-cultural and techno economic characteristics revealed that out of the sixteen selected depend ent variables all the variables except age and education were positively and signifi cantly correlated with EPDS Multiple regression analysis explained 60 12 per cent variation in the dependent variable by these selected personal characteristics and only two variables namely information source utilization and attitude towards sericulture were positively and significantly related with EPDS The step down regression analysis pointed out that 57 38 per cent of variation was explained by three variables namely scientific orientation economic motivation and attitude towards sericulture Path analysis also indicated that these three variables exerted the highest direct ef fects on EPDS

8) Major constraints experienced by the farm family women in their partici pation in sericulture and decision making are low price of cocoons and price fluctua tion in the market lack of leisure time availability lack of knowledge about the practice and death of worms due to diseases were the important constraints followed by lack of irrigation facilities and increased cost of fertilizers

9) Enhancement of managerial economy economic utilization of leisure time status elevation in the family and society were identified as the important posi tive consequences perceived by farm women due to their participation in sericulture The major negative consequences experienced by farm family women due to their

participation in sericulture were lack of time to attend children and other farm and home operations drudgery exhaustion and frustration

Implications of the study

The general view on the results of the present study implies the following facts

Sericulture is an agro-based small scale cottage industry highly suitable to farm women It is a major solution to the unemployment and under employment problems prevailing among the women folk in the country

Majority of the farm women had low involvement in mulberry cultivation due to the particular nature of work involved and the traditionality of male dominance in field operations This calls for planning and implementing specific training strategy focussing on the target group of farm women to make them aware of their own potentialities to involve in such productive activities as sericulture Training in different aspects of the enterprise should be imparted so that more knowledge and skill in various agronomic practices of mulberry and silkworm rearing will be developed in the farm women In many rural households the decision making role of farm women is limited Organizing gender specific trainings to make farm women conscious of their role and importance in the changing rural sociological set up could definitely motivate the rural womenfolk to actively take part in decision making in sericulture along with their counterpart Attitude towards sericulture family income management orientation risk orientation economic motivation knowledge of sericulture and extension orientation were the important factors influencing the involvement of women in sericultural operations and their decision

making role in this enterprise This emphasizes the need for evolving appropriate training strategies for farm women supported by adequate supply of inputs and other infrastructrual facilities which allow them access to knowledge skill and self income leading to increased decision making and economic independance which ultimately lead to their empowerment The trainers should consider these points while formulat ing training modules for women sericulturists

One of the major constraints faced by farm women in sericulture was low price of the cocoons So the authorities should take necessary steps to ensure support price to the cocoons Lack of good domestic markets also contribute to this low price Though the Khadi Board started regional cocoon collection centres many farmers were reluctant to sell their produce to these centres mainly because of the delay in getting the price of the cocoon The concerned agencies should seriously consider this ill effects Starting of regional cocoon reeling units on co-operative basis will not only help to fetch reasonable price for the cocoons but also will create more employment opportunities to women Since poor quality of cocoons is one of the reasons for its low price in the market the farm women should be made quality conscious Introduction of group management in sericulture as in the case of paddy cultivation and coconut cultivation would also pave way for the farm women to organize themselves and carry out various activities of silkworm rearing including marketing of cocoons with more efficiency and economy Last but not least, the society at large should also come forward to appreciate the involvement of women in sericulture for giving them a moral support for their continued participation in the industry

Suggestions for future research

1) Locations specific problems oriented action research should be carried out to bring out new recommendations for sericulture practices in Kerala conditions
2) Cost benefit analysis of sericulture enterprise including market analysis should be conducted to assess the economic performance of this technology in Kerala
3) In the present study only a single district with limited sample size was covered An indepth survey covering the entire state including more number of variabales would help to get a more realistic picture about women s involvement in sericul ture
4) A survey and indepth study about the implementation of various activities for the dissemination of sericulture technology in Kerala by the central silk board and khadi board and its utilization by the farmers has to be done in order to assess its utility
5) An evaluation of the various training activities conducted by the central silk board and khadi board should be carried out to measure its contribution to farm ers and also to make improvements in the future performance

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*Originals not seen

Appendices

APPENDIX I

KERALA AGRICULTURAL UNIVERSITY
COLLEGE OF HORTICULTURE
VELLANIKKARA THRISSUR

Dr P S Geethakutty
Assistant Professor

Dept of Agricultural Extension
Dated 18 3 1994

Sir

Sri Sajan Andrews K one of the M Sc (Ag) students of this Department is undertaking a research study titled Participation of Farm Family Women in Sericulture in the Palakkad District as part of his research work

In view of your professional experience and expertise you have been identified as a judge for rating the relevancy of a list of independent variables furnished in schedule attached I therefore request you to kindly spare some of your valuable time for this purpose You are free to add any new variable relevant to this study I request you to return the l st duly filled at your earliest convenience in the enclosed self addressed stamped envelope Hoping your kind co operation

Thanking you

Yours sincerely

(P S Geethakutty)

Encl 1 Schedule
2 Stamped self addressed envelope

List of variables selected for relevancy rating with their mean Relevancy Score

Variables	Mean Relevancy Score
1	2
* Age	3 6
* Education	3 4
* Family size	3 8
Family educational status	2 9
Number of female children	3 1
* Farm size	3 9
Occupational status	2 4
* Extension orientation	4 0
* Management orientation	3 7
* Scientific orientation	3 4
Information seeking behaviour	2 9
Social participation	2 7
Mass media participation	3 2
Training	2 6
Socio economic status	2 8
* Attitude towards sericulture	3 6
Attitude towards other farmers	3 1
Cosmopoliteness	2 93
Cosmopolitanism	2 6
* Knowledge of sericulture	4 2
Self confidence	2 9
* Experience in sericulture	4 1

Contd

List continued

1	2
Achievement motivation	2 8
* Economic motivation	3 5
* Risk orientation	3 4
Level of aspiration (past present and future)	3 2
Change proneness	3 0
Innovativeness	2 7
Credit utilization	3 1
Credit orientation	3 2
* Information source utilization	4 1
Fatalism	3 0
Official orientation	2 6
* Self reliance	3 65
Optimism	2 5
Thrift orientation	2 75
* Family income	3 4
Labour availability	2 8
* Leisure time availability	3 9
Rationalism in decision making	3 0
Deferred gratification	3 2
Accessibility to infrastructural facilities	3 23
Irrigation	2 9
Cropping intensity	2 8
Market perception	2 4

*Variables selected for the study

APPENDIX IIa

Statements initially included for the knowledge test

Sl No	Statements
*1	A mulberry variety suitable for Kerala conditions?
2	Spacing of mulberry crop?
3	Organic manure requirement of mulberry (in one hectare/year)?
4	Quantity of chemical fertilizers required for mulberry per hectare/year?
5	Number of plants required per hectare?
6	Name a major pest of mulberry?
7	Name a major disease of mulberry?
8	Season for planting mulberry?
*9	Time of pruning in mulberry?
10	Method of harvesting in mulberry?
*11	Which time is suitable for harvesting mulberry leaves?
12	How to preserve the harvested leaves?
13	Average yield of mulberry (hectare/year)?
14	How many prunings are required in mulberry?
15	How to control the quality of leaves in mulberry?
*16	Name a silk worm breed suitable to Kerala conditions?
17	What is the advantage of rearing improved races?
18	How to disinfect the rearing house?
*19	From where D F Ls are available?
20	How many crops can be taken per year?
*21	Equipments required for silk worm rearing?
*22	How to ensure uniform hatching of silk worm eggs?
*23	Quality of leaves required for young worms?
24	What are the problems of crowded rearing?

*25 How many times moulting take place in silk worm larva?

*26 What happens to the worms during moulting?

27 Which moulting takes longer period?

28 Name a common pest of silk worm?

*29 How to control uzy fly attack?

*30 After how many days of 4th moulting the worms become ripe for mounting?

31 After how many days of mounting spinning will be completed by the worms?

*32 What is the average yield of cocoons from 100 D F Ls?

* Items selected for knowledge test

APPENDIX IIb

Difficulty Indices and Discrimination Indices of the items of knowledge test

Sl No	Frequencies of correct answers given by each group of respondents		Total frequencies of correct answers (n–39)	Difficulty index (P)	Discrimination index E 1/3
	G_1	G_3			
* 1	13	7	20	51 28	0 46
2	6	2	8	20 50	0 30
3	4	2	6	15 38	0 15
4	6	1	7	17 95	0 38
5	4	0	4	10 25	0 31
6	3	0	3	17 95	0 23
7	0	0	0	00 00	0 00
8	10	7	17	43 59	0 23
* 9	10	1	11	28 20	0 69
10	7	1	8	20 50	0 46
*11	9	3	12	30 76	0 46
12	6	0	6	15 38	0 46
13	7	0	7	17 90	0 54
14	10	7	17	43 59	0 23
15	11	10	21	53 84	0 07
*16	10	2	12	30 77	0 61
17	3	0	3	7 69	0 23
18	7	4	11	28 20	0 23
*19	11	3	14	35 89	0 61
20	13	8	21	53 85	0 38
*21	10	3	13	33 33	0 53
*22	9	3	12	30 76	0 46
*23	9	2	11	28 20	0 53
24	8	1	9	23 07	0 53
*25	10	4	14	35 89	0 46
*26	10	4	14	35 89	0 46
27	4	2	6	15 38	0 15
28	10	5	15	38 46	0 38
*29	11	2	13	33 33	0 69
*30	13	5	18	46 15	0 62
31	12	11	23	58 97	0 08
*32	10	0	10	25 64	0 77

*Items selected for the final test

APPENDIX III

INTERVIEW SCHEDULE/QUESTIONNAIRE

PART A

Name of the S D
Name of the Panchayath

1 Name and address of the farmer (Farm woman)

Age

2 Education — Illiterate/can read only/can read and write/primary school/middle school/ High school/collegiate

3 Family size

4 Farm size

5 Experience in sericulture (years)

6 Leisure time availability per day

7 Family income (Rs)

a) From agriculture

b) From sericulture

c) Others

Total income

8 Self reliance

How much of your future you feel depends in yourself?
(out of 100 per cent please indicate)

100 per cent/75 per cent/50 per cent/25 per cent/Not at all

9 Information source utilization

Mass media	Frequency			
	Most often	Often	Some times	Rarely
1 T V				
2 Radio				
3 Newspaper				
4 Farm magazine (Indian silk)				
5 Any other (specify)				
Interpersonal				
1 Agricultural Assistants				
2 Agricultural/Sericulture officials				
3 University scientists				
4 Input agencies				
5 Neighbours				
6 Relatives				
7 Any other (specify)				

10 Extension orientation
a) Extension contact

Category of personnel	Frequency of contact				
	Twice or more a week	Once a week	Once a fort night	Once a month	Never
Assistant Director of Agriculture					
Agricultural Officer/Sericultural officer					
Agricultural Assistant					

b) Extension participation

Sl No	Activities	Attending whenever	Occasionally attending	Never attending
1	Study tours			
2	Seminars			
3	Farm fair			
4	Meeting of the group			
5	Demonstrations			
6	Others (specify)			

11 Risk orientation
(Please indicate the degree of agreement or disagreement or undecidedness with each of the following statements)

Statements		Strongly agree	Agree	Undicided	Disagree	Strongly disagree
1	A farmer should grow large number of crops to avoid greater risks involved in growing one or two crops					
2	A farmer should rather take more of choice in making a big profit than to be content with smaller but less risky profits					
3	A farmer who is willing to take greater risks than average farmers usually does better financially					
4	It is good for a farmer to take risk when he knows chances of success is fairly high					

5 It is better for a farmer not to try new farming methods unless most other farmers have used them with success

6 Trying an entirely new method in farming by a farmer involves risks but it is worth it

12 Scientific orientation

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
	(7)	(5)	(4)	(3)	(1)
(+)1 New methods of farming give better results to a farmer than the old method					
( )2 The way of farming of our forefathers is still the best way to farm today					
(+)3 Even a farmer with lots of experience should use new methods of farming					
(+)4 Though it takes times for a farmer to learn new methods in farming it is worth the efforts					
(+)5 A good farmer experi ments with new ideas in farming					

(+)6 Traditional methods of farming have to be changed in order to rise the level of living of a farmer

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13 Economic motivation
Indicate whether you agree/disagree with the following statements

Statements		Agree	Disagree
1	A farmer should work toward large yields and economic profit		
2	The most successful farmer is one who makes the maximum profit		
3	A farmer should try any new farming idea which may earn him more money		
4	A farmer should grow cash crops to increase monetary benefits in comparison to growing of food crops for home consumption		
5	It is difficult for the farmer s children to make good start unless he provides them with economic assistance		
6	A farmer must earn his livings but the most important thing in life cannot be defined in economic terms		

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14 Management orientation

a Planning orientation
Give your agreement/disagreement

		Agree	Disagree
1	Each year one should think of a fresh about crop to be cultivated in each type of land		

2 Its not necessary to make prior decision about the variety of crops to be cultivated

3 The amount of seeds fertilizers PP chemicals need for raising a crop should be assessed before cultivation

4 It is now necessary to think ahead of the cost involved in raising a crop

5 One need not consult any agricultural expert for planning

6 It is possible to increase yield through farm production

b Production orientation

1 Timely planting of a crop ensures good yield

2 One should use as much fertilizers as he likes

3 Determining fertilizer dose by soil testing saves time

4 For timely weed control one should even use suitable herbicides

5 Seed rate should be given as recommended by the specialists

6 With low water rates one should use as much irrigation water as possible

c Marketing orientation

1 Market is not so useful to a farmer

2 A farmer can get good price by grading his produce

3 Processing facilities can help a farmer to get better price for his produce

	market irrespective of price	
5	One should purchase his inputs from the shop where his relatives purchase	
6	One should grow those crops which have more market demand	

15 Attitude towards sericulture

Sl No	Statements	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1	One can achieve a reasonably good living by sericulture (3 78)					
2	S W rearing does not require any technical skills (3 09)					
3	Sericulture has helped the rural youth in increasing the employ ment status in rural areas (2 88)					
4	Sericulture has no prestige in rural society (2 78)					
5	Because of the adoption of sericulture the income of the farm woman has increased (2 45)					
6	Sericulture is not producing the desired effect and so it would be replaced by a new enterprise (2 67)					
7	Scientific sericulture is definitely paying remunerative (2 20)					
8	Sericulture affects the other farming operations So it is not adopted (2 18)					

16 Knowledge of sericulture

1 A mulberry variety suitable for Kerala conditions?

2 Time of pruning in mulberry?

3 Which time is suitable for harvesting mulberry leaves?

4 Name a S W breed suitable to Kerala?

5 From where D F Ls are available?

6 Equipments required for S W rearing?

7 How to ensure uniform hatching of eggs?

8 Quality of leaves required for young worms?

9 How many times moulting take place?

10 What happens to the worms during moulting?

11 How to control Uzy fly attack?

12 After how many days of 4th moulting the worms become ripe for mounting

13 What is the average yield of cocoons from 100 D F Ls?

PART B

(1) Extent of participation of farm family women m sericultural operations

Name of the operation	Amount of participation	Nature of participation			
		Solely	Jointly	Supervision	Not at all
		5	3	3	0
A Mulberry cultivation					
a) Application of cow dung					
b) Applin of fertilizers					
c) Pruning					
d) Weeding					
e) Irrigation					
f) Plant protection					
g) Harvesting and transportation of leaves					
B Silkworm rearing					
a) Collection of D F Ls					
b) Disinfection of rearing house and equipments					
c) Hatching (Incubation & Brushing)					
d) chopping of leaves					
e) feeding of worms					
f) Bed cleaning					
g) Care at moulting					
h) Protection of worms					
i) Mounting of worms					
j) Harvesting of cocoons					
k) Cleaning and grading the cocoons					
l) Marketing the cocoons					

ii) Extent of participation of farm family women in decision making in sericulture

	Nature of participation in decision making				Frequency of participation in decision making			
	Solely	Jointly carrying	Presence only	Not at all	Always	Frequently	Sometimes	Never
	(5)	(3)	(1)	(0)	(5)	(3)	(1)	(0)
A Mulberry cultivation								
a) Choice of variety								
b) Type of crop (rainfed/irrigated)								
c) Nature of crop (purecrop/intercrop)								
d) Time of pruning								
e) Time of weeding								
f) Time of appln of fertilizers								
g) Plant protection measures								
h) Irrigation during summer								
i) Time of harvest of leaves								
j) Stage of harvest of leaves								
k) Storage of leaves								
B Silkworm rearing								
a) Selection of breed								
b) No of crops taken								
c) No of D F Ls raised								
d) Rearing season								
e) Disinfection of rearing house and equipments								
f) Method of hatching								
g) No of feedings								

h) Leaf size and quality
i) Method of bed cleaning
j) Maintenance of
temperature and
humidity
k) Spacing of worms
l) Caring of worms
m) No of trays
n) Time of mounting of
worms
o) Time of harvesting of cocoons
p) Grading of cocoons
q) Selection of market
r) Time of marketing
s) Way of marketing

PART C

Constraints of participation of farm family women in sericulture

Constraints	Most Important	Important	Less Important	Least Important
1 Lack of leisure time				
2 Low price of cocoons				
3 Lack of availability of hired labourers				
4 Death of worms due to diseases				
5 Lack of irrigation facilities				
6 Women s low status in the family				
7 Lack of extension guidance				
8 Increased cost of fertilizers				
9 Lack of timely availability of loans				
10 Poor bargaining power in the market				
11 Lack of knowledge about the practices				
12 Inadequate training				

PART D

Consequences of participation experienced by farm family women in sericulture

Consequences of participation	Most Important	Important	Less Important	Least Important
1 Enhancement of managerial economy				
2 Economic utilization of leisure time				
3 Increased self confidence				
4 Self reliance				
5 Sense of accomplishment				
6 Status elevation in the family				
7 Increased role in dicision making				
8 Enhanced self image				
9 Aspiration and self fulfilment				
10 Drudgery				
11 Exhaustion				
12 Not getting time to attend children and other farm and home affairs				
13 Humiliation by other family members and neighbours				
14 Frustration				

ABSTRACT

A research study entitled "Participation of farm family women in sericul ture in the Palakad District" was conducted to identify the extent of participation of farm family women in decision making and in the operations in sericulture in rela tion to their personal socio-cultural and techno economic factors and the constraints and consequences there of

The study area comprised of the four agricultural subdivisions of the Palakad district namely Alathoor Mannarkad Shornur and Chittoor A stratified random sample of 150 sericulture units was selected for the study Data were col lected from the women heads of sericulture units using a pre tested structured inter view schedule Appropriate statistical techniques like correlation analysis regression analysis and path analysis were done to analyse the data

The extent of participation of farm family women in sericultural opera tions (EPSO) was measured in terms of two dimensions namely actual hours of work and nature of participation in each of the operations Nineteen operations in sericul ture (seven under mulberry cultivation and twelve under silkworm rearing) were identified and included in the study

The extent of participation of farm family women in decision making in sericultural operations (EPDS) was measured in terms of two dimensions nature of participation and frequency of participation Thirty important areas of decision making in sericulture were identified and measured in the study

The study revealed that only a small percentage of the farm women had put forth high and medium participation in sericultural operations while a major ity of them were of low and very low participation in various activities of sericul ture enterprise Operationwise analysis revealed that in almost all operations of mulberry farm women had no major contribution Only in the case of application of chemical fertilizers pruning weeding and harvesting of leaves at least some amount of participation could be accounted which were carried out either jointly or with supervision only Majority of the farm women spend 2 5 hours for chopping the leaves feeding the worms caring the worms at moulting bed cleaning protection of worms mounting of worms harvesting of cocoons and cleaning and grading of cocoons with joint nature of participation

Regarding the extent of participation of farm family women in decision making in sericultural operations the study revealed that nearly one third of the farm women had medium involvement while a majority of them had either low or very low participation A majority of the farm women had joint participation in decision making in all activities of mulberry cultivation None of the respondents had solely participation in decision making in any of the activities of mulberry cultivation and silkworm rearing More than fifty per cent of farm women made joint decisions in matters regarding number of feedings to be given to the worms size and quality of leaves spacing of worms caring of worms method of bed clean ing number of trays time of mounting of worms harvesting of cocoons and grad ing and cleaning of cocoons with moderate frequent participation

The simple correlation analysis showed that out of sixteen variables except age all variables were positively and significantly related with EPSO Multi ple r ression analysis revealed that five variables namely experience in sericulture scientific orientation management orientation attitude towards sericulture and family income were significant in explaining the variability in EPSO Except age and education all the variables showed positive and significant correlation with EPDS Multiple regression analysis revealed that only two variables namely informa tion source utilization and attitude towards sericulture were significant in explaining the variability in EPDS

The major constraints experienced by the farm family women in partici pation in sericulture and decision making were low price of the cocoons and price fluctuations in the market lack of leisure time availability lack of knowledge about the practices and death of worms due to diseases Enhancement of managerial economy economic utilization of leisure time and status elevation in the family were identified as the most important positive consequences experienced by the farm family women in sericulture The major negative consequences experienced by farm family women due to their participation in sericulture were lack of time to attend children and other farm and home operations drudgery exhaustion and frustration