# ENTREPRENEURIAL BEHAVIOUR OF FARMER PRODUCER ORGANIZATION (FPO) MEMBERS FOR LIVELIHOOD SECURITY

**by**

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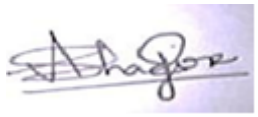
**KERALA, INDIA**

**2020**

## DECLARATION

I, hereby declare that this thesis entitled **"Entrepreneurial behaviour of Farmer Producer Organization (FPO) members for livelihood security"** is a bonafide record of research work done by me during the course of research and the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any other University or Society.



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## CERTIFICATE

Certified that this thesis entitled **"Entrepreneurial behaviour of Farmer Producer Organization (FPO) members for livelihood security"** is a record of research work done by **Ms. Asha Elizabeth Jose** under my guidance and supervision and that it has not previously formed the basis for the award of any degree, diploma, fellowship or associateship to her.

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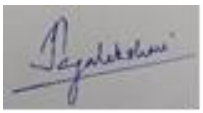

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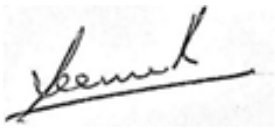

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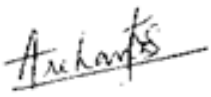

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***Asha Elizabeth Jose***

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| **Abbreviations** | **Full form** |
|---|---|
| % | Percentage |
| FPO | Farmer Producer Organization |
| FPC | Farmer Producer Company |
| NABARD | National Bank for Agriculture and Rural Development |
| POPI | Producer Organization Promoting Institute |
| PO | Producer Organization |
| DAC | Department of Agricultural Cooperation |
| *et. al* | Co-workers |
| GoI | Government of India |
| GoK | Government of Kerala |
| SFAC | Small Farmers Agribusiness Consortium |
| PODF | Producer Organization Development Fund |
| PACS | Primary Agricultural Cooperative Society |
| NKFL | NABARD Kisan Finance Ltd |
| KVK | Krishi Vigyan Kendra |
| KAU | Kerala Agricultural University |
| No. | Number |
| ODF | Open Defecation Free |
| MDWS | Ministry of Drinking Water and Sanitation |

# *Introduction*

# 1. INTRODUCTION

"Alone we can do so little: together we can do so much"

Helen Keller

Agriculture plays a major role in achieving livelihood security as farm sources for livelihood are generally dominant in rural areas. Livelihoods are the sum of ways in which people make a living. Livelihood is the means of securing the necessities of life. Farm sources of livelihood generally include crop, livestock, rented out land, agriculture wages labour, farm machinery, fruit, vegetables and fodder. Livelihoods can be made up of a range of on-farm and off-farm activities which together provide a variety of procurement strategies for food and cash (Frankerberger, 1998). Livelihood security of a household is defined as its ability to meet basic needs like food, health, shelter, and minimal levels of income, basic education and community participation (Beevi and Rohit, 2018). Small farmers' livelihoods are being threatened due to liberalization and privatization of Indian agriculture (Trebbin, 2014). The risk of livelihood failure determines the level of vulnerability of a household to income, food, health and nutritional insecurity. A livelihood is sustainable, when it can cope with or recover from the stress and shocks, maintain its capability and assets, and provide sustainable livelihood opportunities for the next generation (Chambers and Conway, 1992). Unfortunately, not all households are equal in their ability to cope with stress and repeated shocks. Small and marginal farmers' livelihoods are endangered due to the liberalization, privatization and globalization policies, but many chances are made for private capital in the agriculture sector.

Livelihood promotion involves improving the resilience of household livelihoods so that food and other basic needs can be met on a sustainable basis. Interventions of this type often aim to reduce the structural vulnerability of livelihood systems by focusing on:

- ➢ Improving production to stabilize yields through diversification into agro-ecologically appropriate crops and natural resource management measures.

- ➢ Creating alternative income-generating activities that is activities to develop small enterprise.

- ➢ Reinforcing coping strategies that are economically and environmentally sustainable like seasonally appropriate off-farm employment.

- ➢ Reducing post harvest losses by improving on-farm storage capacity to increase the availability of buffer stocks.

- ➢ Improving common property management through community participation (Frankenberger, 1998)

In order to increase the income of farmers at farm level many initiatives are being taken up by the governments. The most important among these include collectivization of producers, especially small and marginal farmers, into Producer Organizations (PO). A Producer Organization (PO) can be a producer company, a cooperative society, or anyother legal form which provides for sharing profits among members. The concept of producer companies was introduced in 2002 by incorporating a new part IXA, into the Indian Companies Act, 1956 (NABARD, 2015). Producer Organization (PO) is any legal entity formed by the primary producers like farmers, milk producers, fishermen, weavers, rural artisans, craftsmen (Venkattakumar et al., 2017).or private capital in the agriculture sector.

**1.1 Farmer Producer Organization (FPO)**

FPO is an organization of the farmers, for the farmers and by the farmers. It is a means to bring together the small and marginal farmers and other small producers to build their own business enterprise that will be managed by professionals. FPO offer small farmers to participate in the market more effectively and help to enhance agricultural production, productivity and profitability (Shubhangi, 2016). It has emerged as one of the most effective pathways to address many challenges of

agriculture, specifically improved access to investments, technology, inputs and markets (DAC, 2013).

The main aim of FPO is to ensure better income for the producers through an organization of their own. Small producers do not have the volume individually (both inputs and produce) to get the benefit of economies of scale. Besides, in agricultural marketing, there is a long chain of intermediaries who very often work non-transparently leading to the situation where the producer receives only a small part of the value that the ultimate consumer pays. Through aggregation, the primary producers can avail the benefit of economies of scale. They will also have better bargaining power vis-à-vis the bulk buyers of produce and bulk suppliers of inputs (NABARD, 2015). It is well recognized that the commercialization of produce of small-scale, resource-poor farmers is closely linked to higher productivity, greater specialization, and higher income (Bernard and Spielman, 2009).

FPO can help small farmers to have bargaining power in negotiating prices and to attain benefits of economies of scale (Dorward et al., 2005). Improvement in status of the farmer is possible only through diversification and commercialization of their agricultural activities. This is possible only through implementation of agricultural policy reforms, introducing sustainable agricultural practices, optimizing input efficiency, bringing about institutional change, developing human resources capital and through participation of the non-governmental sector in agriculture. There is a need to strengthen support services for small farmers by developing link between farmers and purchasers of agricultural produce (Shubhangi, 2016).

FPOs offer small farmers to be in a better position to reduce transaction costs of accessing inputs and outputs and obtaining the necessary market information (Stockbridge et al., 2003). The creation of countervailing power, access to capital markets on favorable terms, risk management and income improvements are other major benefits obtained from establishing FPO (Datta, 2004). Agriculture marketing is a complex process. Because of which there is a big challenge for small farmers today and they are unable to earn good profits from their produce. Linking the farm gate with retail outlets is the surest way to reduce losses and marketing costs and thereby

increase marketing efficiency. FPOs can help farmers for successfully dealing with a range of challenges that small producers are facing today ( Shubhangi, 2016 ).

### 1.1.1. CURRENT STATUS OF FPO IN KERALA

Presently, around 5000 FPOs (including FPCs) are present in the country, which were formed under various initiatives of the Govt. of India like NABARD, SFAC, State Governments and other organizations over the last 8-10 years. Out of these, around 3200 FPOs are registered as Producer Companies (NABARD, 2015). 100 FPOs are present in Kerala, which were formed under the initiative of NABARD. Maximum number of FPOs are present in Idukki with 13 FPOs and minimum number of FPOs are present in Kollam with 3 FPOs.

### 1.1.2. Support systems for FPO

NABARD and SFAC are the major institutions that provide support to FPO. Small Farmers' Agribusiness Consortium (SFAC) is designated agency of Department of Agriculture and Cooperation (DAC) to act as a single-window for technical support, training needs, research and knowledge management and to create linkages to in markets (DAC, 2013). The functioning of these FPOs is supervised by NABARD through a series of evaluation through POPI (Producer Organizations Promoting Institute).

### 1.1.3. NABARD's Support to Farmer Producers' Organization

NABARD created Producers Organization Development Fund (PODF) with initial corpus of Rs. 50 crores out of its operating surplus during 2011-12, for supporting the existing POs including PACS to create innovative financing models for mainstream banking. The broad objective of the fund is to provide financial/ non-financial support to FPO for facilitating improved credit access, ensure adequate capacity building, market linkages and need based handholding services to meet their 'end to end' requirements and thereby ensuring sustainability and economic viability. Considering the success of financing to POs/PACS in terms of improved access to inputs, affordable credit, better price realization by members for building scale and enhanced skill development of farmers, NABARD created its own subsidiary,

NABKISAN Finance Limited (NKFL) for meeting the credit requirements of FPOs by adopting a flexible approach based on life cycle needs, while it continues to provide promotional support towards capacity building, market linkages and other incubation services to FPOs out of grant fund. (NABARD, 2015).

Majority of these FPOs are in the nascent stage of their operations. The major reason for the failure of farmers' organization is due to the lack of entrepreneurial and management skills of the farmer members due to their low education status (Pingali et. al., 2005). Various studies have been conducted regarding the personal traits and behaviour of entrepreneurs of farmers and Self Help Groups. But intensive research is required in the field of entrepreneurship inorder to attain deep insight into psychological methods for quantitative measurement of entrepreneurship. The available knowledge represents only the tip of the iceberg with both agreements and debate. This situation brought a commence to the study on "Entrepreneurial behaviour of Farmer Producer Organization (FPO) members for livelihood security".

### 1.2. Objectives

Assess the entrepreneurial behaviour of members of FPOs in enhancing the livelihood security and to study the socio- psychological constructs and perceived economic variables affecting the functioning along with the constraints experienced by the members of the FPOs.

### 1.3. Limitations of the study

The present study focuses on the member farmers, Board of Director members and CEOs of the FPO. The difficulty faced during the study was that the Board of Director members and CEOs give only positive information whereas the members were not having much information about the FPO. Efforts were taken to reduce such influence of Board of Director members and CEOs of FPOs on the research outcome as well as to overcome the inherent constraints due to time, resources and sample size.

## 1.4. Presentation of the study

The report of the study is presented as five chapters. Introduction chapter consist of brief description of the topic, statement of the problem, objective of the study, scope and limitations faced by the researcher. Review of literature chapter consist of comprehensive reviewing of the past related works to the objective and the variable selected. Third chapter is the methodology which gives an idea about the process and procedure of carrying out the research. Result and discussion deals with the description of the result along with their interpretation. Summary concludes with salient findings and future area of research. The reference, appendices and abstract of the thesis are provided at the end.

# *Review of literature*

# 2. REVIEW OF LITERATURE

This chapter aims to collect the review of past research for a proper understanding of the research problem. Acquaintance with past research have been felt necessary to develop deep insights on the broader areas of the topic, to increase the knowledge on what have been already established on the current topic of interest. The collected information has been presented under the following sub-headings.

2.1 Entrepreneur definition

2.2 Concept of entrepreneurship

2.3 Concept of entrepreneurial behaviour

2.4 Concept of FPO

2.5 Concept of livelihood security

2.6 Personal socio-psychological and economic characters along with their relationship with entrepreneurial behaviour

2.7 Constraints faced by the members of the FPO

## 2.1. Entrepreneur definition

The word 'Entrepreneur' takes its origin from French word 'Entrepredre' which means 'to undertake'. During 16thcentury in France, 'entrepreneur' was used to refer military expedition leader.

Walrus (1954) defined entrepreneur as the one who continues other factors such as land, labour, capital and thereby becomes the fourth factor of production.

Joshi and Kapur (1973) defined farm entrepreneur as the person who is responsible for the profit and loss from the business because they establish as well as run the business.

Drucker (1985) described the entrepreneur as the person who pursuits for a change, explores the change and utilizes it as an opportunity.

Porchezian (1991) defined agri-preneur as a person who sustains supplementary enterprises sideways with the major occupation of crop husbandry.

Palanivelu and Rajanarayanan (2005) defined entrepreneur as a person who makes an attempt to enhance the value of the product by introducing innovations and combining the factors of production.

Haugen and Vik (2008) defined agri-preneurs as distinct type of farmers who are characterized by having a great interest in creation of additional activities in the farm, which cannot be described as traditional farm.

Ahmed et al. (2010) described entrepreneurs as the people who have the goal to start a new business by using innovation as a tool to progress their business.

**2.2. Concept of entrepreneurship**

Khanka (2000) described entrepreneurship as an effort to generate value through identification of business opportunity, the management of risk, undertaking essential steps to utilize the opportunity and to assemble human, financial and material resources necessary to bring the project to a success.

Ganeshan (2001) stated that entrepreneurship is the capability of a person to introduce innovative technique to business.

Bheemappa (2003) described entrepreneurship as the is the potential limiting factor of economic development because it introduces creative and innovative response to the environment, which can take place in various fields of social endeavor such as business, industry, agriculture, education and social work.

European commission (2003) defined entrepreneurship as a process to develop economic activity by undertaking risk, introducing innovation along with a good management within a new or an existing organization.

Suresh Reddy (2004) described entrepreneurship as the process which is the outcome of various traits of an individual like willingness to undertake risk, ability to

organize the tangible factors like production, capital, labour, land and intangible factors like scientific and technological advances.

Kadharlal and Premavathy (2008) described entrepreneurship as a process where women herself become self employed as well as provide jobs to others.

Naveen (2012) reported that entrepreneurship as a deliberate adaptation of behaviour launched for initiating, promoting and maintaining economic activities for the production and mobilization of monetary resources.

Nair (2017) described agri-preneurship as a sustainable, community oriented, directly marketed agriculture.

**2.3. Concept of entrepreneurial behaviour**

Narinder Paul and Sharma (2007) based on their study on entrepreneurial behaviour of poultry farmers reported that 54.58 per cent of the respondents had low entrepreneurial behaviour, 28.75 per cent and 16.67 per cent of the respondents had medium and high entrepreneurial behaviour respectively.

Subramanyeswari et al. (2007) described entrepreneurial behaviour as changes in knowledge, skill and attitude of women livestock farmers towards dairy entreprises.

Naveen (2012) from his study on entrepreneurial behaviour of pomegranate farmers revealed that 39.17 per cent of respondents had medium entrepreneurial behaviour, 35 per cent and 25.83 per cent of the respondents had high and low entrepreneurial behaviour respectively.

Kacharu (2013) based on his study on entrepreneurial behaviour of floriculturist revealed that 63.34 per cent of respondents had medium entrepreneurial behaviour, 20 per cent and 15.83 per cent of respondents had high and low entrepreneurial behaviour respectively.

Shivachandran (2014) based on his study on entrepreneurial behaviour and attitude of rural youth towards agricultural entrepreneurship reported that 29. 17 per cent of respondents had medium entrepreneurial behaviour, 27. 50 per cent of

respondents hadhigh entrepreneurial behaviour, 23.33 per cent, 14.17 per cent and 5.83 per cent had very high, low and very low entrepreneurial behaviour respectively.

Chandra (2017) based on his study on entrepreneurial behaviour of agri-input dealers revealed that 55.57 per cent of respondents had medium entrepreneurial behaviour, 20 per cent and 17.89 per cent of respondents had high and low entrepreneurial behaviour respectively.

Merity (2017) based on her study on entrepreneurial behaviour of rural women reported that entrepreneurial behaviour is the cumulative outcome of eight dimensions like risk taking ability, leadership ability, innovativeness, achievement motivation, information seeking ability, knowledgeability and coordination ability

Nagarva (2017) based on his study on entrepreneurial behaviour of sugarcane growers revealed that 33.65 per cent of respondents had medium entrepreneurial behaviour, 30 per cent and 25.35 per cent of respondents had high and low entrepreneurial behaviour respectively.

Raju (2017) based on his study on entrepreneurial behaviour of agripreneurs revealed that 66.34 per cent of respondents had medium entrepreneurial behaviour, 18.20 per cent and 17.83 per cent of respondents had high and low entrepreneurial behaviour respectively.

Amareliya (2018) based on her study on entrepreneurial behaviour of dairy farm women described entrepreneurial behaviour as the cumulative outcome of seven dimensions like decision making ability, risk taking ability, leadership ability, innovativeness, achievement motivation, information seeking ability and coordination ability.

Pal (2018) based on his study on entrepreneurial behaviour of safedmusli growers reported that entrepreneurial behaviour is the cumulative outcome of six dimensions like risk taking ability, leadership ability, innovativeness, achievement motivation, information seeking ability and coordination ability.

Raj (2018) based on her study on entrepreneurial behaviour of lease land vegetable growers reported that 62.5 per cent of respondents had medium entrepreneurial behaviour.

Bora (2019) based on his study on entrepreneurial behaviour of nursery owners reported that entrepreneurial behaviour is the cumulative outcome of six dimensions like leadership ability, innovativeness, achievement motivation, risk taking ability, information seeking ability and coordination ability

**2.4. Concept of FPO**

Rondot and Collion (2001) reported that Producer Organizations (POs) are formal organizations with the objective of improving farm income through innovation, production, processing and marketing techniques.

Dorward and Kachule (2005) reported that POs help small farmers by providing bargaining power in negotiating prices and to entail the benefits of economies of scale.

Farmer's Organizations (FOs) are essential institution for empowerment, poverty alleviation and advancement of farmers and rural poor. (FAO, 2006).

Birthal and Joshi (2007) reported that Pos help smallholder farmer by increasing market possibilities through close linkages between farmers and different stakeholders in value chains which is necessary to co-ordinate supply and demand. Institutions like co-operatives, farmer's organizations and contract farming can help creation of such links.

Pastakia (2007) reported that the Farmer Producer Company (FPC) has emerged as the strategy for attaining livelihood security.

Hellin e. al. (2009) reported that FO acts as a critical factor in making markets work for the poor, but the role and timing of public and private investment in these organizations is poorly understood.

Vorley et al. (2009) suggested that PO helps the farmers to get the benefits of economies of scales and provide access to information, finance, and technology.

Patkar et al. (2012) reported that the major objectives of organizing farmers include ensuring better price for commodities, reducing production & marketing risk and eliminating traditional intermediaries.

Trebbin and Hassler (2012) reported that FPC is a hybrid between company and cooperative society. It combines the efficiency of a company and the spirit of traditional cooperative society.

Jaishankar (2014) reported that the major activities of FPO are supply of inputs, market linkage, training & networking and providing financial & technical advice to the member farmers.

Trebbin (2014) suggested that FOs plays limited role in supermarket supply chains in India whereas Producer Companies are promising tool to strengthen farmers position in their relationship with supermarket chains in India. Producer Company can develop into business hubs for retailers and input suppliers.

Kumar and Ajith (2017) studied Sanghamaithri FPO in Trivandrum run by farmers. It helped in exclusion of middlemen and created favourable market environment for farmers. FPO made farmer capable of understanding market scenario, helped in value addition thereby increasing farmers' income.

Bikkinia et al. (2018) suggested that FPOs have the potential to provide benefits through effective collective actions. Main challenge is to raise sufficient capital that can maximize these benefits.

Dewangan (2018) reported that FPO helped the farmer members to increase their income by 28 per cent, savings by 50 per cent, price received for vegetables by 75 per cent and price received for milk by 28 per cent. There was a significant difference noticed in terms of food security, habitat security, educational security, health security and social empowerments.

## 2.5. Concept of livelihood security

Ali (2005) based on his study on livelihood and food security in rural Bangladesh reported that capital of women played an important role in attaining food security. He also reported that women mainly young and widowed or divorced without son took responsibility in attaining livelihood security by engaging in more economic activities.

Bentaya (2009) reported about numerous standards for calculating food security like accessing number of meals consumed, number of different food items consumed, frequency of common food items, number of meals exclusively of staples and per centage of household consuming minimum daily calorie required.

Alinorie et al. (2010) defined livelihood security as the goal of achieving livelihood strategies like enhanced income, well- being, food security and reduced vulnerability due to the sustainable use of natural resources.

Shyamalie and Saini (2010) based on her study on comparison between the livelihood security of women in Kangra district of India and Nuwara Eliya district of Sri Lanka found that the food security, habitat security, health security, educational and social network security were higher in Nuwara Eliya district than in Kangra district even though the economic security was same in both districts.

Kassie et al. (2012) reported that food insecurity is more in female head households than male head households because the female head households get less opportunity to earn their livelihood than male head households.

Tsegaye (2012) reported that agriculture plays an important role in livelihood security in most of the Sub- Saharan African countries even though food security remains at risk in this region.

Sajjad and Nasreen (2014) based on their study on food security in rural areas reported that most of the large farmers experience high food security, medium farmers experience moderate food security whereas semi-medium, small and marginal farmers experience low food security.

Akter (2016) defined livelihood security as the combination of five components namely food security, economic, educational, health and habitat security.

Ramya (2016) defined livelihood security as the cumulative outcome of six components namely food security, occupational, educational, health, social and habitat security.

Hridya (2018) defined livelihood security as a combination of seven components namely food security, occupational security, habitat security, education security, social security, health security and environmental security.

## 2.6 Personal socio-psychological and economic variables

### 2.6.1 Personal variables

#### 2.6.1.1 Age

Kumar (2008) based on his study on entrepreneurial characteristics and attitude of pineapple farmers revealed that more than two-third (66.67%) of pineapple growers belonged to middle age group whereas 17.78 per cent of farmers belonged to old age group and 15.55 per cent of pineapple farmers belonged to young age group.

Kumar et al. (2012) based on his study on entrepreneurial behaviour of vermicompost entrepreneurs reported that nearly two-third (60.00%) of vermicompost entrepreneurs.

Onwurafare and Enwelui (2013) based on their study on rural entrepreneurship in agro-food processing reported from their study on rural entrepreneurship in agro food processing that two-fifth (41.60 %) of the respondents were in the age group of 39-48 followed by 27 per cent of respondents within the age group of 49-58, 19 per cent within the age group of 29-38, 6.20 per cent with age group of 19-29 and 6.20 per cent of respondents with age group above 59 years.

Ram et al. (2013) from their study on entrepreneurial behaviour of women farmers that more than two-third (66.67%) of women engaged in agriculture-based enterprises belonged to age group of 38-62, whereas 16.7 per cent belonged to 32-38

age group and 16.7 per cent of women entrepreneurs belonged to 62-75 years of age group.

Emmanuel and Olaseinde (2016) based on their study on assessing future agriculture reported that 81.70 per cent of respondents were 15 to 25 years of age, 16.70 per cent of respondents were 26 to 35 years of age and 1.70 per cent of respondents were 36 to 45 years of age. Mbah et al. (2016) based on their study on analysis on youth participation in family farming reported that 67.50 per cent of respondents belonged to 21 to 40 years of age, 32.50 per cent of respondents belonged to more than 20 years of age.

Raj (2018) based on her study on entrepreneurial behaviour of vegetable seed growers reported that 66.28 per cent of respondents belonged to old age category

**2.6.1.2 Education**

Ram et al. (2013) based on their study on entrepreneurial behaviour of women entrepreneurs reported that one-third (33.33%) of women entrepreneurs were illiterate, 23.30 per cent had middle school education, 16 per cent of respondents had primary education.

Emmanuel and Olaseinde (2016) based on their study on assessing future agriculture reported that 3.3 per cent of respondents were illiterate, 40 per cent had secondary school education, 32.5 per cent of respondents had ordinary or high national diploma, 19.20 per cent had university education, 4.20 per cent had primary education and 0.80 per cent had technical school education.

Ajith (2018) based on his study on multidimensional analysis of FPO reported that 55 per cent of respondents had high school education, 30.83 per cent had college level education, 11.66 per cent of respondents had primary school education and 2.5 per cent of respondents were illiterate.

**2.6.1.3 Scientific orientation**

Karpangam (2000) based on his study on knowledge and adoption of turmeric growers reported that majority (75%) of respondents had medium scientific

orientation followed by low scientific orientation (13.33%) and high scientific orientation (11.67%) respectively.

Patel (2005) based on his study on peasantry modernization in integrated tribal development project reported that half of the respondents had medium level of scientific orientation.

### 2.6.2 Economic variable

#### 2.6.2.1 Annual Income

Kumar (2008) based on his study on entrepreneurial characteristics and attitude of pineapple farmers reported that majority (71.11%) of pineapple entrepreneurs belonged to medium income group, 15.56 per cent belonged to high income group and 13.33 per cent belonged to low income group.

Naveen (2012) based on his study on entrepreneurial behaviour of pomegranate farmers reported that majority (74.17%) belonged to medium income group followed by low income group (13.33%) and high income group (12.50%) respectively.

Ram et al. (2013) based on his study on entrepreneurial behaviour of women entrepreneurs that majority (62.00%) belonged to medium income group followed by high income group (22.60%) and low income group (15.40%) respectively.

Singh (2013) based on his study on entrepreneurship among farming community revealed that there was a sharp difference in the total income of traditional farmers and agripreneurs. On an average, total annual per household net income of an agricultural entrepreneur was 3.2 times more than total annual net income of traditional farmers.

Ajith (2018) based on his study on multidimensional analysis of FPO reported that 39.16 per cent of respondents belonged to medium income group followed by high income group (31.66%) and low income group (29.16%) respectively.

Kacharu (2013) based on his study on entrepreneurial behaviour of floriculturist reported that 40 per cent of respondents had medium scientific orientation followed by low scientific orientation (33.00%) and high scientific orientation (26.67%) respectively.

Raj (2018) based on her study on entrepreneurial behaviour of vegetable seed growers reported that 58.75 per cent of respondents had medium scientific orientation.

### 2.6.3 Socio- psychological variables

#### 2.6.3.1 Social participation

Anitha (2004) based on her study on entrepreneurial behaviour and market participation of farm women reported that 44.2 per centage of respondents had medium social participation, 38.30 per cent and 17.5 per cent had low and high social participation respectively.

Bharathamma (2005) based on her study on empowerment of rural women through income generating activities revealed that two-third (73.33%) of respondents had low social participation, 26.77 of respondents had high social participation.

Gurubalan (2007) based on his study on entrepreneurial behaviour of coconut oil-based unit owners reported that 49.34 per centage of respondents had low level of social participation, 33.33 per cent and 17.33 per cent had medium and high level of social participation respectively.

Madhushekhar (2009) based on his study on marketing behaviour of chilly growers reported that 54.37 per centage of respondents had medium level of social participation, 25.63 per cent and 20.00 per cent had low and high level of social participation.

Chithra (2011) based on her study on impact of Kudumbasree programme on rural women reported that half of respondents (45%) had medium social participation followed by low social participation (33.32%) and high social participation (27.78%) respectively.

Mbah et al. (2016) based on their study on analysis on youth participation in family farming reported that 87.50 per cent of respondents had no membership in formal organization and 12.50 per cent of respondents were members of formal organization.

Ajith (2018) based on his study on multidimensional analysis of FPO reported that 85.83 per cent of respondents had membership in formal organization, 22.5 per cent of respondents were office bearers and 14.6 per cent of respondents had no membership.

**2.6.3.2 Trainings attended**

Ganeshan et al. (2002) based on his study on profile of women entrepreneurs reported that 47.06 per cent of entrepreneurs received development training whereas 52.94 per cent has not undergone any training programme due to various reasons like unawareness, and heavy work load.

Suneetha (2003) based on her study on entrepreneurial behaviour of sericulture farmers reported that majority of respondents (74.67%) received medium level of training followed by low (16.66%) and high level of training (8.67%) respectively.

Naidu (2012) based on her study on empowerment of rural women through income generating activities reported that majority of respondents (91.67%) received three days training followed by 51.64 per cent who underwent more than one-month training and 5.8 per cent of respondents had undergone one week to four-week training.

**2.6.3.3. Credit orientation**

Himaja (2001) based on her study on entrepreneurial behaviour of Self Help Group (SHG) women reported that 60.00 per centage of respondents had medium

level of credit orientation, 23.33 per cent and 16.67 per cent had low and high level of credit orientation respectively.

Nagabhushana (2007) reported based on his study on potato farmers that 43.33 per cent of respondents had medium level of credit orientation, 30.67 per cent and 26.00 per cent had high and low level of credit orientation respectively.

Vidhyadhari (2007) based on her study on entrepreneurial behaviour of prawn producers reported that 51.67 per centage of respondents had medium level of credit orientation, 29.17 per cent and 19.16 per cent had high and low level of credit orientation respectively.

Beegam (2008) based on her study on entrepreneurial behaviour of groundnut farmers reported that 77.50 per centage of respondents had medium level of credit orientation, 13.33 per cent and 9.17 per cent had high and low level of credit orientation respectively.

Raj (2018) based on her study on entrepreneurial behaviour of vegetable seed growers reported that 75.8 per cent of respondents had medium credit orientation

**2.6.3.4. Creativity**

Patel et al. (2003) based on his study on entrepreneurial behaviour of sugarcane farmers reported that 74.00 per centage of respondents had medium level of creativity, 14.5per cent had high level of creativity followed by low level of creativity.

Anitha (2004) based on her study on entrepreneurial behaviour and market participation of farm women reported that 44.2 per centage of respondents had medium creativity, 28.30 per cent and 27.50 per cent had high and low level of creativity respectively.

Suresh (2004) based on his study reported that 45 per centage of respondents had low creativity,44.17 per cent and10.83 per cent had medium and high level of creativity respectively.

### 2.6.3.5. Group cohesion

Sreedaya (2000) based on her study on Self Help Groups in Thiruvananthapuram district reported that 60 per cent of respondents had medium group cohesiveness, 25 per cent of respondents had high group cohesiveness and 15 per cent of respondents had low group cohesiveness.

Naveen (2012) based on their study on entrepreneurial behaviour of pomegranate farmers reported that group cohesiveness was essential for entrepreneurial success.

Kacharu (2013) based on his study on entrepreneurial behaviour of floriculturist revealed that group cohesiveness ranked lowest among the overall functioning characteristics index in non- functional farmers group of Punjab.

### 2.6.4. Institutional intervention

Bheemappa (2003) based on his study on entrepreneurial development in agriculture reported that the extend of institutional intervention influenced the capacity of farmer organization.

Pastakia (2007) based on his study on livelihood interventions reported that addition of a greater number of institutions and tiers to FPO in order to deal with themarket force and upgradation of technology would help the FPO to undertake more functions and cover more geographical area.

Madhushekhar (2009) based on his study on marketing behaviour of chilly growers reported that the importance of institutional intervention is in the creation of policy and it would be beneficial for both the farmers and organization.

Ajith (2018) based on his study on multidimensional analysis of FPO reported that FPOs are supported by lots of institutions in terms of finance, extension and inputs.

### 2.6.5. Relationship between personal and socio-economic characters with entrepreneurial behaviour

#### 2.6.5.1. Personal variables

##### 2.6.5.1.1. Age

Gowda (2009) based on his study on entrepreneurial behaviour of sugarcane farmers reported that there is a negative and non-significant relationship between age and entrepreneurial behaviour.

Mehta and Madhur (2012) based on their study on entrepreneurial behaviour of mango growers reported from his study on mango farmers that there is a negative and non- significant relationship between age and entrepreneurial behaviour.

Naveen (2012) based on his study on entrepreneurial behaviour of pomegranate farmers reported from his study that there is a negative and non-significant relationship between age and entrepreneurial behaviour.

Sreeram (2013) based on his study on entrepreneurial behaviour of members of "Kudumbasree" reported that there is a non- significant relationship between age and entrepreneurial behaviour.

Shaikh et al. (2014) based on their study on relationship between personal socio economic, communicational and psychological characteristics of dairy farmers with their entrepreneurial behaviour reported from his study on dairy farmers that there is a negative and significant relationship between age and entrepreneurial behaviour.

Avhad et al. (2015) based on their study on entrepreneurial behaviour of dairy farmers reported that there is a negative and significant relationship between age and entrepreneurial behaviour.

Rituraj et al. (2015) based on their study on entrepreneurial behaviour of tribal winter vegetable growers reported that there is no significant relationship between age and entrepreneurial behaviour.

Pal (2018) based on his study on entrepreneurial behaviour of safedmusli farmers reported that there is non-significant relationship between age and entrepreneurial behaviour.

Raj (2018) based on her study on entrepreneurial behaviour of vegetable seed producing farmers reported that there is no significant relationship between age and entrepreneurial behaviour.

**2.6.5.1.2. Education**

Ram et al. (2010) based on their study reported that there is positive and significant relationship between education and entrepreneurial behaviour of vegetable growers.

Borate et al. (2012) based on their study on entrepreneurial behaviour of sapota growers reported that education and entrepreneurial behaviour of sugarcane farmers are positively and significantly correlated.

Lawrence and Ganguly (2012) based on their study entrepreneurship behaviour of dairy farmers on reported that there is positive and significant relationship between education and entrepreneurial behaviour of dairy farmers.

Mehta and Madhur (2012) based on their study on entrepreneurial behaviour of mango growers reported from his study on mango farmers that there is positive and significant relationship between education and entrepreneurial behaviour.

Naveen (2012) based on his study on entrepreneurial behaviour of pomegranate farmers reported that there is positive and significant relationship between education and entrepreneurial behaviour of pomegranate farmers.

Sreeram (2013) based on his study on entrepreneurial behaviour of members of “Kudumbasree” reported from his study that there is positive and significant relationship between education and entrepreneurial behaviour.

Raut and Shankhala (2014) based on their study on entrepreneurship among commercial dairy farmers reported that there is positive and significant relationship between education and entrepreneurial behaviour of commercial dairy farmers.

Avhad et al. (2015) based on his study on entrepreneurial behaviour of dairy farmers reported from his study on dairy farmers that there is positive and significant relationship between education and entrepreneurial behaviour.

Ajith (2018) based on his study on role, function and performance of FPOs reported that there is positive and significant relationship between education and entrepreneurial behaviour.

**2.6.5.1.3. Scientific orientation**

Kacharu (2013) based on his study on entrepreneurial behaviour of floriculturist reported that scientific orientation and entrepreneurial behaviour are non-significantly related.

Avhad et al. (2015) based on his study on entrepreneurial behaviour of dairy farmers reported that scientific orientation and entrepreneurial behaviour is positively and significantly related.

Raj (2018) based on her study on entrepreneurial behaviour of vegetable seed producing farmers reported that scientific orientation and entrepreneurial behaviour are positively and significantly related.

**2.6.5.2. Economic variable**

**2.6.5.2.1. Annual Income**

Kiran et al. (2012) based on his on entrepreneurial behaviour of ruralwomen reported that there is significant relationship between annual income and entrepreneurial behaviour of rural women.

Mehta and Madhur (2012) based on their study on entrepreneurial behaviour of mango growers reported from their study that there is positive and significant relationship between annual income and entrepreneurial behaviour.

Naveen (2012) based on his study on entrepreneurial behaviour of pomegranate farmers reported that there is positive and significant relationship between annual income and entrepreneurial behaviour.

Sreeram (2013) based on his study on entrepreneurial behaviour of members of "Kudumbasree" reported that there is positive and significant relationship between annual income and entrepreneurial behaviour.

Patel et al. (2014) based on his study on entrepreneurial behaviour of dairy farmers reported that there is positive and significant relationship between annual income and entrepreneurial behaviour of dairy farmers.

Raut and Shankhala (2014) based on their study on entrepreneurship among commercial dairy farmers reported from their study that there is positive and significant relationship between annual income and entrepreneurial behaviour of commercial dairy farmers.

Avhad et al. (2015) based on his study on entrepreneurial behaviour of dairy farmers reported that there is positive and significant relationship between annual income and entrepreneurial behaviour of dairy farmers.

Nagarve (2016) based on his study on entrepreneurial behaviour of sugarcane farmers reported that there is a positive and significant relationship between annual income and entrepreneurial behaviour.

Ajith (2018) based on his study on role, function and performance of FPOs reported that there is positive and significant relationship between annual income and entrepreneurial behaviour.

**2.6.5.3. Socio psychological variables**

**2.6.5.3.1. Social participation**

Nomeshkumar and Narayanaswamy (2000) based on their study on entrepreneurial behaviour and socio-economic characteristics of farmers who adopted

sustainable agriculture reported that social participation and entrepreneurial behaviour are significantly related.

Anitha (2004) based on her study on entrepreneurial behaviour and market participation of farm women in Bangalore rural districts of Karnataka reported that social participation and entrepreneurial behaviour are not significantly related.

Gurubalan (2007) based on his study on entrepreneurial behaviour of coconut oil-based unit owners reported that social participation and entrepreneurial behaviour are positively and significantly related.

Kacharu (2013) based on his study on entrepreneurial behaviour of floriculturist reported that social participation and entrepreneurial behaviour are positively and significantly related.

Ajith (2018) based on his study on role, function and performance of FPOs reported that there is positive and significant relationship between social participation and entrepreneurial behaviour

**2.6.5.3.2. Training attended**

Sreeram (2013) based on his study on entrepreneurial behaviour of members of "Kudumbasree" reported that training attended and entrepreneurial behaviour are positively and significantly related.

Chandra (2017) based on his study on entrepreneurial behaviour of agri- input dealers reported that there is a positive and significant relationship between training attended and entrepreneurial behaviour of trained dairy farmers.

**2.6.5.3.3 Creativity**

Savitha (2007) based on her study on critical analysis of entrepreneurial behaviour of rural and urban women entrepreneurs reported that creativity and entrepreneurial behaviour is positively and highly significantly related.

Sowmya (2009) based on her study on entrepreneurial behaviour of rural women reported that creativity is significantly related to entrepreneurial behaviour.

Naveen (2012) based on his study on entrepreneurial behaviour of pomegranate farmers reported that creativity is positively and significantly related to entrepreneurial behaviour.

Kacharu (2013) based on his study on entrepreneurial behaviour of floriculturist reported that creativity and entrepreneurial behaviour are positively and significantly related.

Nagarve (2016) based on his study on entrepreneurial behaviour of sugarcane farmers reported that there is a positive and significant relationship between creativity and entrepreneurial behaviour.

**2.6.5.3.4 Credit orientation**

Sreeram (2013) based on his study on entrepreneurial behaviour of members of "Kudumbasree" reported that credit orientation and entrepreneurial behaviour are positively and significantly related.

Raju (2017) based on his study on entrepreneurial behaviour of agripreneurs reported that there is a negative and non- significant relationship between age and entrepreneurial behaviour of trained dairy farmers.

Raj (2018) based on her study on entrepreneurial behaviour of vegetable seed producing farmers reported that credit orientation and entrepreneurial behaviour are negatively and non- significantly related.

**2.6.5.3.4. Group cohesion**

Naveen (2012) based on their study on entrepreneurial behaviour of pomegranate farmers reported positively and significantly related to entrepreneurial success.

Kacharu (2013) based on his study on entrepreneurial behaviour of floriculturist revealed that group cohesiveness was non significantly related to entrepreneurialbehaviour.

## 2.7 Constraints faced by FPO members

Sahu (2014) based on his study on success and sustainability of farm produce promotion society reported that the constraints faced by FPO are inability to meet export standards, lack of government price policy and crop insurance for crop production, lack of group cohesiveness, unavailability and high cost of labour and high price fluctuation.

Jaishankar (2014) based on his study on FPO concepts reported that though FPO has the capability to transform the economy of progressive farmers, it had not achieved the expected success.

Nayanabhai and Bhatt (2016) based on her study on economic aspects of Mangrol Magbali Farmer Producer Company Ltd reported that the major constraints faced by groundnut farmers were high transportation cost followed by low market price and low demand of groundnut.

Ajith (2018) based on his study on multidimensional analysis on role, function and performance of Farmer Producer Organization reported that low scores by FPOs were due to the reason that they don't organize trainings or meetings regularly. Organizations with

low performance indicate that they are not providing enough services. In the case of many FPOs in Idukki, no organizations provide all the services, as they miss out at least on one of the services. The services that these organizations don't provide include, input services credit and financial services.

Dewangan (2018) based on his study on socio economic impact of Farmer Producer Organization (FPO) reported that the major constraints faced by FPO were technical constraints like lack of proper infrastructure and computer illiteracy, economic constraints like high labour cost and marketing constraints like distant market, high transportation cost and perishable nature of commodity.

Kumar et al. (2018) based on his study on economic analysis of Farmer Producer Organization reported that the major constraints faced by FPO were lack of

adequate number of storehouses, lack of sufficient finance and difficulty to meet export standards.

# *Methodology*

## 3. METHODOLOGY

This chapter deals with the methods and procedures followed for achieving the objectives set-forth in the study. The information is presented under the following sub headings.

3.1 Locale of study

3.2 Selection of respondents

3.3 Research design

3.4 Selection of variables

3.5 Operationalization and measurement of dependent variable

3.6 Operationalization and measurement of independent variable

3.7 Constraints experienced by the members of the FPO

3.8 Data collection

3.9 Analysis of data

### 3.1. Locale of the study

Districts from Northern, Central and Southern Kerala having maximum number of FPOs were selected for the study. Wayanad from Northern Kerala, Idukki from Central Kerala and Trivandrum from Southern Kerala were purposively selected for the study. Functioning FPOs were purposively selected from the three districts based on discussion with NABARD, SFAC and Krishi Vigyan Kendra (KVK).

### 3.2. Selection of respondents

Two functioning FPOs each were selected from Wayanad, Idukki and Trivandrum based on the discussion with NABARD, SFAC and KVK. From each selected FPO, 20 members were randomly selected. A total of 40 farmers were surveyed from each district thus making a total of 120 farmers from six FPOs located at three districts.

| District | Farmer Producer Organization (FPO) | No.of respondents |
|---|---|---|
| Wayanad | 1) Wayanad Agriculture Spices Producer Company Ltd<br>2) Bana Agro. & Allied Producer Company Ltd | 20<br>20 |
| Idukki | 1) Neyyasseri Agro. Producer Company Ltd<br>2) Thodupuzha Farmer Agro. Producer Company | 20<br>20 |
| Trivandrum | 1) Sangamaithri Farmer Producer Organization<br>2) Sabarmati Agro. & Livestock FPC | 20<br>20 |

### 3.2. Research design

Ex-post facto research design was used to study the "Entrepreneurial behaviour of Farmer Producer Organization members for livelihood security". This design was used because the study aims at measuring the phenomenon which has already occurred and is continuing. The researcher has no control over independent variable and manipulation is not possible because variables are inherently constant. (Kerlinger, 1983)

### 3.3. Selection of variables

The objective of the study is to assess the entrepreneurial behaviour of members of the FPO in enhancing livelihood security. Thus, entrepreneurial behaviour and livelihood security are the dependent variables. A list of 35 independent variables which were associated with socio-economic constructs and

perceivedeconomicvariablesof the respondents were selected based on the review of literature and informal discussion with subject experts. The list of independent variables along with their operational definition were sent to 30 judges for rating. The rating was done on a five- point continuum ranging from 'most relevant', 'more relevant', 'relevant', 'less relevant' and 'least relevant' with scores 5, 4, 3, 2 and 1 respectively. The variables were selected based on mean relevancy score. The score obtained for each variable from 30 judges were added and divided by total number of judges. Average of the total score obtained for all the variables were calculated. The variables that scored more than the mean relevancy score were selected for the study. Thus, the independent variables selected through judges rating were age, education, annual income, scientific orientation, number of trainings attended, social participation, group cohesion, credit orientation, institutional intervention and creativity.

### 3.4. Operationalization and measurement of dependent variable

Entrepreneurial behaviour and livelihood security were selected as dependent variable.

#### 3.4.1. Entrepreneurial behaviour

Entrepreneurial behaviour is defined as the ability of an entrepreneur to undertake risk, coordinate activities, take intelligent decisions and utilize the innovative ideas to maximize the profit from the enterprise. (Naveen, 2012)

In the present study entrepreneurial behavior is operationally defined as the cumulative outcome of ten components namely risk taking, innovativeness, manageability, self confidence, knowledgeability, persistence, feedback usage, persuasibility, hope of success and achievement motivation.

##### 3.4.1.1. Components of entrepreneurial behaviour

The dimension of entrepreneurial behaviour identified by Wankhade et al. (2005) was selected for the study. The components of the entrepreneurial behaviour along with their operational definitions are given below,

a) Risk taking

It was operationally defined as the degree to which the respondent is oriented towards risk and uncertainty with regard to facing problem while running the FPO.

b) Hope of success

It was operationally defined as the degree to which a person believes that the problems and barriers which he faces can be turned to opportunities.

c) Persuasibility

It was operationally defined as the ability of an individual to influence other individuals, customers and even competitors inorder to create and maintain a good rapport.

d) Feedback usage

It was operationally defined as the degree to which individual is ready to accept feedback and utilize it to improve their produce.

e) Persistence

It was operationally defined as the degree to which an individual is persistent to achieve his goal.

f) Self confidence

It was operationally defined as the degree to which a person believes in his quality, abilities and judgements.

g) Knowledgeability

It was operationally defined as degree to which an individual has knowledge of his business, market, demand and supply.

h) Manageability

It was operationally defined as ability of an individual to manage his business by himself.

i) Innovativeness

It was the degree to which an individual adopts new ideas comparatively earlier than other members of the social system.

j) Achievement motivation

It is a psychological variable that creates a desire in an individual to reach some goal, which he has set for himself and it differs from individual to individual.

**3.4.1.2. Computing of entrepreneurial behaviour**

Scale developed for entrepreneurial behaviour by Wankhade et al. (2013) consisted of ten dimensions namely risk taking, hope of success, persuasibility, feedback usage, persistence, self-confidence, knowledgeability, manageability, innovativeness and achievement motivation. Each dimension consisted of 5 statements, thus making a total of 50 statements. The statements were measured on a five-point continuum ranging from 'strongly agree', 'agree', 'undecided', 'disagree' and 'strongly disagree' with weightage of 5, 4, 3, 2 and 1 respectively. The weightage was given in the reverse order for negative statements. Thus, for each component the minimum score was 5 and maximum score was 25.

There were equal number of statements for each component. So, every component had equal range of scores and there was no need of standardization. The total entrepreneurial behaviour obtained for each respondent was calculated by adding the scores obtained by the respondent in each component.

$EB = \sum Yij$

Yij = Value of the ith respondent on jth component ( i = 1,…120 )

( j = 1,… 10 )

**3.4.2. Livelihood security**

Livelihood security is defined as adequate and sustainable access to income and resources to meet basic needs including clean water, balanced food, health

facilities, housing facility, clean environment, educational opportunities and social integration (Hridya, 2018)

#### 3.4.2.1. Components of livelihood security

The dimensions of livelihood security identified by Baby (2005) was selected for the study. The components of livelihood security are listed below along with their operational definition.

a) Food security

It was operationally defined as the ability of the respondent's family to meet their nutritional needs through proper availability and accessibility of balanced food.

b) Occupational security

It was operationally defined as the access of the respondent to a regular and satisfied employment.

c) Habitat security

It was operationally defined as the availability of housing and basic amenities.

d) Educational security

It was operationally defined as the access of respondents and their household towards educational facilities including higher education.

e) Social security

It was operationally defined as the social status of respondent's family and access to social participation.

f) Health security

It was operationally defined as the health status of the family and access to health care facilities.

### 3.4.2.2. Computing of livelihood security

Livelihood security is defined as adequate and sustainable access to income and resources to meet basic needs including clean water, balanced food, health facilities, housing facility, clean environment, educational opportunities and social integration (Hridya, 2018)

Each component of livelihood security consisted of various number of statements. So, each component had different range of scores. Therefore, it was necessary to standardize and convert the scores of all the six components into unit scores. Weighted average method was used for standardization based on expert advice. The formula for the conversion of scores to unit score is given below,

$$U_{ij} = \frac{(Y_{ij} \times \text{Number of statements of the component})}{\text{(total number of statements for livelihood)}}$$

Uij = Unit score of the ith respondent on jth component

Yij = Value of ith respondent on jth component

### 3.5. Operationalization and measurement of independent variable

Independent variables and their measurement techniques are given in the table below.

Table 2: Independent variable and their measurement

| Sl. No | Variable | Measurement |
|---|---|---|
| 1. | Age | Measured according to 2011 census |
| 2. | Education | Scale developed byTrivedi (1963) with slight modification. |
| 3. | Annual income | Scoring pattern developed by Vivek (2017) |

| | | |
|---|---|---|
| 4. | Training attended | Scoring pattern developed by Meera (2001) |
| 5. | Creativity | Scale developed by Reddy (1990) with slight modification. |
| 6. | Scientific orientation | Scale developed by Supe (1963) with slight modification later used by Nagaraj (1989) |
| 7. | Group cohesiveness | Scale developed by Grandhi (2016) with slight modification. |
| 8. | Social participation | Scoring procedure developed by Sayuj (2012) with slight modification. |
| 9. | Credit orientation | Scale developed by Balakrishnan (2011) with slight modification |
| 10. | Institutional intervention | Secondary data collected from CEO of the FPO |

### 3.5.1. Age

Age was operationally defined as the number of calendar years completed by the respondent at the time of enquiry. Age was recorded by directly asking the respondents. The measurement was done according to 2011 Census.

Table 3: Scoring pattern of Age

| Sl. No. | Age category | Years | Score |
|---|---|---|---|
| 1 | Young | < 35 | 1 |

| | | | |
|---|---|---|---|
| 2. | Middle aged | 35-55 | 2 |
| 3. | Aged | > 55 | 3 |

3.5.2 Education

Education was operationally defined as the highest academic qualification owned by the respondent through formal and informal education. Education was recorded by directly asking the respondents. Scale developed by Trivedi (1963) with slight modification was used for measurement.

Table 4: Scoring pattern of education

| **Sl. No.** | **Category** | **Score** |
|---|---|---|
| 1 | Illiterate | 1 |
| 2. | Primary school | 2 |
| 3. | Middle school | 3 |
| 4. | High school | 4 |
| 5. | College | 5 |
| 6. | Professional degree | 6 |

**3.5.3. Annual Income**

It was operationally defined as the total income earned by the respondents from farming and other allied enterprises and expressed in rupees.Scoring pattern developed by Vivek (2017) was used for measurement. Annual income was recorded by directly asking the respondents.

Table 5: Scoring pattern of annual income

| Sl.No | Category | Range of annual income (Rs.) |
|---|---|---|
| 1. | Low | < 1,65,000 |
| 2. | Medium | 1,65,000 – 5,41,000 |
| 3. | High | >5,41,000 |

### 3.5.4 Scientific orientation

It was operationally defined as the degree to which a farmer was focused to the practice of scientific methods in decision making. Scale developed by Supe (1963) followed by Nagaraj (1989) with suitable modification was made and used for measuring the variable. The scale consisted of 6 statements which were measured on a five-point continuum ranging from 'strongly agree', 'agree', 'undecided', 'disagree' and 'strongly disagree' with weightage of 5, 4, 3, 2 and 1 respectively. The weightage is given in the reverse order for negative statements. Thus, the minimum score was 0 and maximum score was 30.

### 3.5.5. Training attended

It was operationally defined as the number of trainings attended by the respondent in various production and marketing activities during the last three years. Scoring pattern developed by Meera (2001) was used for measurement. Score given were 1, 2 and 3 for one, two and more than three trainings attended respectively.

| Sl. No | Number of training attended | Score |
|---|---|---|
| 1. | One | 1 |
| 2. | Two | 2 |
| 3. | Three or more | 3 |

### 3.5.6. Social participation

It was operationally defined as the extent and nature of participation of the respondent in various activities of social organization. Scoring procedure developed by Sayuj (2012) with slight modification was used for measurement. Scale consisted of two dimensions namely nature of participation and frequency of participation. Scores assigned for nature of participation were '2' for 'office bearer', '1' for 'membership' and '0' for 'not a member'. Scores assigned for frequency of participation were '0' for 'never', '1' for 'sometimes' and '2' for 'regularly'.

### 3.5.7. Group cohesiveness

It was operationally defined as the extent to which the members of the FPO perceived the level of intimacy or closeness they had among the other members of the group. Scale developed by Grandhi (2016) with slight modification was used for measurement. The scale consisted of 6 statements which were measured on a three-point continuum ranging from 'true', 'somewhat true' and 'not true' with weightage of 2, 1 and 0 respectively. The weightage was given in the reverse order for negative statements. Thus, the minimum score was 0 and maximum score was 12.

### 3.5.7. Credit orientation

Credit orientation was operationally defined as the orientation of the FPO members to take advantage of the financial institution for credit, which help to improve their economic status. Scale developed by Balakrishnan (2011) with slight modification was used for the study. Scale consisted of seven statements with scores given as '1' for Yes and '0' for No. Thus, maximum score was 7 and minimum score was 0.

### 3.5.8. Institutional intervention

Institutional intervention was operationally defined as the financial, technology related and training support received by the FPO from formal and non-formal institutions. Information related to institutional intervention were collected from CEO of the organization using open-ended question.

### 3.5.9. Creativity

Creativity was operationally defined as the capability of the FPO member to generate new ideas and solve problems. Scale developed by Reddy (1990) with slight modification was used for the study. Scale consisted of 6 statements which were measured on a five- point continuum ranging from ‘always’, ‘very often’, ‘sometimes’, ‘rarely’ and ‘never’ with weightage of 5, 4, 3, 2 and 1 respectively. The weightage was given in the reverse order for negative statements. Thus, the maximum score was 30 and minimum score was 0.

## 3.6. Constraints faced by FPO members

Constraints experienced by the members of the FPO were identified based on the discussion with NABARD and informal discussion with experts. During the direct interview, respondents were asked to rank the constraints and mention other constraints they faced. The ranks were analyzed using Garrett ranking technique. Based on the findings of the research, suggestions were proposed to overcome the constraints.

## 3.7. Data collection methods and tools

Interview schedule was used for data collection which was prepared after discussion with experts inorder to meet the objective of the study. Data collection was carried out through structured interview.

## 3.8. Statistical tools used

### 3.8.1. Mean and Standard deviation

Arithmetic mean is ratio of the sum of all the observations to the total number of observations. Standard deviation is the positive square root of the mean of the squared deviation taken from the arithmetic mean. Mean and standard deviation were used to classify the respondents into low, medium and high categories

Table 7: Classification of respondents into low, medium and high

| Sl. No | Category | Range of Score |
|---|---|---|
| 1 | Low | < (Mean – 1SD) |
| 2 | Medium | (Mean+/- 1SD) |
| 3 | High | >(Mean+1SD) |

### 3.8.2. Frequency and per centage analysis

The selected variables were studied and analyzed using frequency and per centage analysis. After calculation of the frequency by counting the number of times the data is repeated, per centage was obtained by dividing it with the number of respondents and further multiplying it with 100.

### 3.8.3. Karl Pearson correlation coefficient

Correlation coefficient (r) helps to understand the strength and direction of relationship between the variables. In this study, correlation coefficient was used to understand the relationship between entrepreneurial behaviour and livelihood security. It was also used to understand the strength and direction of relationship between entrepreneurial behaviour and the 10 personal and socio- economic characters under study.

### 3.8.4. Garrett Ranking

It is used to rank the preference indicated by the respondents on different factors. In this study, Garrett ranking is used to rank the constraints faced by the members of the FPO. The ranks assigned by members were converted into scores by using Garettes' ranking technique.

Per cent Position = 100 (Rij – 0.50) / Nj

Where, Rij = Rank given for the ith factor by jth individual Nj = Number of problems ranked by jth individual

Further, per cent position obtained were converted into scores using the table given by Garrett. The scores of various respondents were added and mean value were calculated. The mean value were arranged in descending order.

# *Results and discussion*

# 4. RESULT AND DISCUSSION

This chapter focuses on the findings of the study and their integration presented in systematic manner under the following sub headings.

4.1 Identification of the FPOs

4.1.1 Income generating activities of the identified FPOs

4.1.2 Organizational profile of the selected FPOs

4.2 Profile characteristics of FPO members

4.3 Entrepreneurial behaviour of FPO members

4.3.1 Entrepreneurial Behaviour Index (EBI) of FPO members

4.3.2 Risk taking ability of FPO members

4.3.3 Hope of success of FPO members

4.3.4 Persistence of FPO members

4.3.5 Feedback usage of FPO members

4.3.6 Self confidence of FPO members

4.3.7 Knowledgeability of FPO members

4.3.8 Persuasibility of FPO members

4.3.9 Manageability of FPO members

4.3.10 Innovativeness of FPO members

4.3.11 Achievement motivation of FPO members

4.4 Correlation of EB of FPO members to their livelihood security

4.5 Correlation between the entrepreneurial behaviour and independent variables

4.6 Marketing channels of the FPO

4.7 Constraints faced by the FPO members

## 4.1. Identification of the FPOs

Districts from Northern, Central and Southern Kerala having maximum number of FPOs were selected for the study. Wayanad district from Northern Kerala, Idukki from Central Kerala and Trivandrum from Southern Kerala were purposively selected for the study. Each FPOs in the selected districts and their income generating activities are described in the tables below.

### 4.1.1 Identified FPOs and their income generating activities

**Table 7: FPOs of Trivandrum district and their income generating activities**

| Sl. No. | Name of the FPO | Activity |
|---|---|---|
| 1 | Sabarmati Agri & Livestock FPC (Email Id-salfpcoltd@gmail.com) | Poultry & egg marketing, livestock feed production and marketing |
| 2 | Sanghamaithri FPC Kerala (sanghamaitri@gmail.com) | Vegetable and food crops procurement and marketing |
| 3 | Panasa Farmer Producer Company (panasafpc@gmail.com) | Jackfruit procurement and value addition |
| 4 | Marayamuttom Farmers and Producers Company(nanthan.ma@gmail.com) | Poultry and organic vegetables procurement and marketing |
| 6 | Jaivamitra Toxin free Food products and Producer Company | Vegetables and food crops procurement and marketing |

| | | |
|---|---|---|
| 7 | Ananthapuri Coconut Farmer Producer Company(pkrishnannair.1952@gmail.com) | Copra procurement, coconut oil production and marketing |
| 8 | Thiruvithamcore Honey FPC (hemambikav1982@gmail.com) | Honey production and marketing |

**Table 8: FPOs of Idukki district and their income generating activities**

| Sl. No. | Name of the FPO | Activity |
|---|---|---|
| 1 | Thodupuzha Farmer Agro. Producer Company (Email Id-TFAPC123@gmail.com) | Cattle feed production, Coconut oil extraction and arrowroot powder production |
| 2 | Neyyassery Agro. Producer Company (neyyasseryproducerco@gmail.com) | Jackfruit, tapioca, turmeric and ginger procurement, processing and marketing |
| 3 | Tillage Agro. Producer Company (binoythekkel@gmail.com) | Vegetables and fruit procurement and marketing |
| 4 | Karshakamitra Toxinfree Food products and Producer Company | Vegetables and food crops procurement and marketing |
| 5 | Marayoor Valley Toxinfree Food products and Producer Company | Vegetables and food crops procurement and marketing |
| 6 | Sahya Farmer Producer Company (sahyafpoltd@gmail.com) | Spices procurement, processing and marketing |
| 7 | Marayoor Agro. Producer Company (mapco123@gmail.com) | Jaggery production and marketing |

| | | |
|---|---|---|
| 8 | Mangulam Agri Multipurpose Producer Company(manpcomankulam@gmail.com) | Jackfruit, cocoa, coffee and spices procurement, processing and marketing |
| 9 | Green Vivo Agro Producer Company(vivogreen9@gmail.com) | Cardamom, pepper, coffee and ginger processing and marketing |
| 10 | High Range Organic Producer Company(hopcoltd@gmail.com) | Pepper, clove and cocoa procurement and marketing |
| 11 | Mannen Organic FPC (mannenorganic@gmail.com) | Jackfruit, tapioca, banana value addition and marketing |
| 12 | Kanthalloor Agrocare Producer Company(kanthalloor.acpl@gmail.com) | Spices procurement and marketing |
| 13 | Green Idukki Producer Company (sabumarackal@gmail.com) | Jackfruit procurement, processing and marketing |
| 14 | Idukki Spices Producer Company (nithin9476@gmail.com) | Spices trading & Cocoa processing and trading |
| 15 | Kumily Agro Spice Producer Company | Vermicompost production and marketing |
| 16 | Hill Range Tribal FPC | Wild honey, garcinia, spices, coffee, cocoa, banana processing |
| 17 | Valara Spices FPC (valaraspicesfpcl@gmail.com) | Spices processing and marketing |
| 18 | Vattavada Farmer Producer Company (vattavadafpcl@gmail.com) | Cool season vegetables procurement and marketing |

| | | |
|---|---|---|
| 19 | Konnathady Attaining Mythical Environment FPC (kamefpcl@gmail.com) | Nutmeg procurement and value addition |

**Table 9: FPOs of Wayanad district and their income generating activities**

| Sl. No. | Name of the FPO | Activity |
|---|---|---|
| 1 | Bana Agro & Allied PC (geethavijayan321@gmail.com) | Poultry (egg) and milk procurement, value addition and marketing |
| 2 | Wayanad Agriculture & Spices PC (waspwayanad123@gmail.com) | Paddy procurement and rice marketing |
| 3 | WAYFARM Producer Company(ak.kairali@gmail.com) | Vegetables and jackfruit procurement, processing and marketing |
| 5 | Loga Farmer Producer Company(logafpo@gmail.com) | Coffee, pepper and spices processing and marketing |
| 6 | Bhoomika Farmer Producer Company | Pepper processing and Marketing |
| 7 | Wayanad Tribal FPC (wayanadtribalfarmers@gmail.com) | Coffee, Pepper, tubers and vegetables procurement and marketing |
| 8 | Sreyas Tribal FPC (shreyasbathery@gmail.com) | Coffee, pepper, rice and pulse procurement and marketing |
| 9 | Adima Tribal FPC (adimafpo2017@gmail.com) | Coffee, pepper, rice and pulse procurement and marketing |
| 10 | Thirunelli Agri Producer Company | Paddy procurement and rice marketing |

| | | |
|---|---|---|
| 11 | Wayanad Agri. Marketing PC<br>(stanleybluehills@gmail.com) | Coffee, pepper, rice, pulse<br>procurement and marketing |

Table 7 shows the activities carried out by FPOs in Trivandrum district. Majority of them deals with cattle feed production, vegetables procurement & marketing. This might be due to the fact that majority of the farmers are vegetable growers and thus the produce is easily available. Large number of dairy farmers might have increased the demand for cattle feed.

Table 8 clearly indicates the FPOs in Idukki and the activities carried out by them. Majority of the FPOs deals with spices processing and cattle rearing. Idukki district is well-known for spices and condiments because of its high production due to the favourable climate. Majority of the farmers cultivates spices and thus the produce is easily available for procurement. High quality produce has increased its demand.

Table 9 shows the activities carried out by FPOs in Wayanad district. Majority of them deals with coffee processing, paddy procurement & marketing. This might be due to the fact that majority of the farmers are involved in paddy cultivation contributing towards high rice production. Favourable climate for coffee and tea production increased its availability in Wayanad. Also, its superior quality increased the demand of the produce.

### 4.1.2. Organizational profile of the selected FPOs

Two Functioning FPOs were purposively selected from Wayanad, Idukki and Trivandrum based on discussion with NABARD, SFAC and KVK. As a result, Wayanad Agriculture Spices Producer Company (WASP) and Bana Agro. & Allied Producer Company were selected from Wayanad, Neyyasseri Agro. Producer Company and Thodupuzha Farmer Agro. Producer Company were selected from Idukki, Sangamaithri Farmer Producer Organization and Sabarmati Agro. & Livestock FPO were selected from Trivandrum. The organization profile of the selected FPOs are given below.

#### 4.1.2.1 Neyyasseri Agro. Producer Company

Neyyasseri Agro. Producer Company was registered under NABARD as FPO in the year 2016. It was functionally and technically supported by NABARD through Idukki District Cooperative Bank as Producer Organization Promoting Institute (POPI). Initially it was started with 7 members and 5 Board of Director members, who were all members of Karimanoor Rubber Producer Society. During those days, jackfruit gained attraction as commercial crop and found that large quantity of jackfruits in Karimanoor being wasted every year.

This paved a way towards the foundation for the initiation of Neyyasseri Agro. Producer Company Ltd, with value addition of jackfruit as their major activity. At present, membership has been increased to 350. The company owns its own building with office and infrastructure at Neyyasseri of Idukki district. Jackfruit powder, jackfruit halwa, dried tapioca, tapioca chips, turmeric powder and dried ginger are the main products of the company. These company is successfully marketing their products through Sulabha stores of Thodupuzha.

#### 4.1.2.2. Thodupuzha Farmers Agro. Producer Company

Thodupuzha Farmers Agro. Producer Company was established in the year 2016. It was functionally and technically supported by NABARD through Idukki District Cooperative Bank as Producer Organization Promoting Institute (POPI). Initially it was started with 20 members and 7 Board of Director members. The company is located at Vannappuram of Idukki district. The company started their activity with cattle feed production under the brand name “Govamithram”. In addition to this, copra is collected from the farmer members for coconut oil production. Arrow root production was another initiative from the company but later it was found non profitable.

#### 4.1.2.3 Wayanad Agriculture Spices Producer Company

Wayanad Agriculture Spices Producer Company (WASP) was established under NABARD as FPO in the year 2013 at Panamaram of Wayanad district. The company started with 47 members including Board of Directors, which later increased

to 107. WASP was started with the vision of promoting and supporting organic and indigenous rice production in Wayanad district. Organic rice producing farmers, who are the members of the FPO follow Good Agricultural Practices (GAP).

They procures 10 tons of paddy every month from their farmer members which is milled at Wayanad Rice Mill. Their products are marketed through Lulu malls and various stores all across Kerala under the brand name “Kabani”. Since they act as POPI, they provide training to their farmer members on Good Agricultural Practices (GAP). They also provide NABARD funded training to Kudumbasree units on importance of organic food products.

#### 4.1.2.4 Bana Agro. and Allied Producer Company

Bana Agro. and Allied Producer Company was established in the year 2016 at Padinjarathara of Wayanad district. Initially, the FPO had 40 members who all were part of three Self Help Groups. At present the membership increased to 120. All the members of the SHGs were provided with two cows each by the Panchayat. But the members faced difficulty in selling milk. This led to the emergence of Bana Agro. and Allied Producer Company. Later, the, milk society was clubbed to the company. At present, the FPO has 120 members. Bana Agro. and Allied Producer Company do value addition for the total amount of milk available and produce dairy products like ice cream, sweets, ghee, chocolate and paneer. Milk, poultry, egg and curd were sold directly to the consumers. They also supply their products like ice cream, sweets and curd during special occasions like marriages. The FPO members were divided into three groups and each group had installed their kiosk in the nearby towns namely Padinjarathara and Kalpetta. The members of the FPO themselves were engaged in the value addition activities thus saving the labour cost. The major problem they faced by them was the increasing competition from branded products.

#### 4.1.2.5 Sabarmati Agro. and Livestock Farmer Producer Company

Sabarmati Agro. and Livestock Farmer Producer Company receives financial and technical support from NABARD through Trivandrum District Cooperative Bank as POPI. The major activity includes poultry and livestock feed production. They also

supply poultry to the customers. They have 15 outlets which supply hybrid vegetable seeds, grow bags, organic insecticides, pesticides and organic manure. They also provide veterinary services to the livestocks, as veterinary doctors will be available weekly twice.

#### 4.1.2.6 Sanghamaithri Farmer Producer Company

Sanghamaithri Farmer Producer Company was established in the year 2003 as Neyyar Fruits and Vegetables registered under Charitable Society Act. It started with an initial investment of Rs. 20,000 and 20 members. Aim of the organization is to act as a bridge between farmers and consumers by procuring fresh vegetables and fruits from the farmers at better price than the market and make it available to the consumers at market price. Head Office is at Pallichal whereas it has outlets at Neyyattinkara, Attingal and also at several places in the southern sides of the district. Rashtriya Krishi Vigyan Yojana (RKVY) provided Rs.2.5lakhs and Cochin Shipyard Provided Rs.46 lakhs. Funds from State Horticulture Mission (SHM) made it possible for the formation of vegetable cluster with the vision of producing pesticide free vegetables which was a great success.

### 4.2. Profile characteristics of the FPO members

The personal, socio - psychological constructs and perceived economic variables affecting the functioning of FPOs were studied and quantified. The variables include age, education, annual income, scientific orientation, training attended, social participation, group cohesiveness, credit orientation, institutional intervention and creativity.

#### 4.2.1. Age

Table 10: Distribution of respondents based on their age

| Sl. No. | Age group | Category | Percentage | Frequency |
|---|---|---|---|---|
| 1 | Young | <35 | 6.67 | 8 |
| 2 | Middle age | 35-55 | 52.50 | 63 |
| 3 | Old | >55 | 40.83 | 49 |

It is clear from the Table (10) that more than half of the respondents (52.50%) belonged to middle age group. 40.83 per cent of the respondents belonged to old age group followed by 6.67 per cent of the respondents belonged to young age group. This was in confirmation with the study on entrepreneurial behaviour of vegetable seed producing farmers conducted by Raj (2018). This result is an indication that old aged farmers have a sentimental approach towards farming and might not be much interested to get engaged as agripreneurs whereas young farmers are more interested in commercialized agriculture. The result also indicates that younger generation is more interested towards white- collar jobs than agriculture.

### 4.2.2. Education

Table 11: Distribution of respondents based on their education

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Illiterate | 0 | 0 |
| 2 | Primary school | 20 | 16.67 |
| 3 | Middle school | 30 | 25.00 |
| 4 | High school | 42 | 35.00 |
| 5 | College | 23 | 19.17 |
| 6 | Professional degree | 5 | 4.17 |

It is clear from the Table (11) that nearly one third (35%) of the respondents had education up to high school, 25 per cent of the respondents had education up to middle school, 19.17 per cent of respondents had education up to college level,16.67 per cent had education up to primary school followed by those with professional degree (4.17%). This result is in agreement with the study on multidimensional analysis of role, function and performance of FPOs of Idukki district conducted by Ajith (2018). This result clearly reflects high literacy rate in Kerala. Another interesting fact that is derived from the Table number 8 is that 4.17 per cent of the

respondents who had professional degree are the Board of Director members (BODs) and Chief Executive Officers (CEOs) of the FPOs.

### 4.2.3. Annual Income

Table 12: Distribution of respondents according to the annual income

| Sl. No. | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (< Rs.60,000) | 47 | 39.17 |
| 2 | Medium (Rs.60,000- Rs.2 lakhs) | 51 | 42.50 |
| 3 | High (> Rs.2lakhs) | 22 | 18.33 |

It is clear from the Table (12) that 42.50 per cent of the respondents had medium level of income ( Rs.60,000 – Rs 2,00,000), 39.17 per cent of the respondents had low level of income (below Rs.60,000), 18.33 per cent of the respondents had high level of income( above Rs.2,00,000). The result obtained clearly reflects that majority of farmers in Kerala belonged to middle class in the economic status of the society. The findings are in line with Ajith (2018) in his study on multidimensional analysis of role, function and performance of FPOs of Idukki district.

### 4.2.4. Scientific Orientation

Table 13: Distribution of respondents according to level of scientific orientation

| Sl. No. | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (< 14.11) | 18 | 15 |
| 2 | Medium (14.11-23.37) | 73 | 60.83 |
| 3 | High (> 23.37) | 29 | 24.17 |

Mean = 18.74, SD = 4.63, Range = 8 to 28

It is clear from the Table (13) that majority of the respondents (60.83%) had medium level of scientific orientation followed by respondents with high (24.17%) and low (15%) scientific orientation respectively. Innovativeness of entrepreneurs might have created an interest among the farmers to try for novel and scientific methods of farming which might be responsible for increased production. This might have increased their income and helped them to achieve livelihood security.

4.2.5 Training attended

Table 14: Distribution of respondents based on the number of trainings attended

| Sl. No. | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | One | 20 | 16.67 |
| 2 | Two | 51 | 42.50 |
| 3 | Three or more | 49 | 40.83 |

The above result Table (14) indicates that 42.50 per cent of respondents had attended two trainings followed by three or more and one training by 40.83% and 16.67% of the respondents respectively. It clearly reflects that FPO members are exposed to trainings which help them to increase their professional knowledge in marketing and enhance their business skills. The result is in agreement with Naidu (2012) in his study on farming performance and entrepreneurial behaviour of sugarcane farmers.

### 4.2.6 Credit Orientation

Table 15: Distribution of respondents based on their credit orientation

| Sl. No. | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (< 0.42) | 26 | 21.67 |
| 2 | Medium (0.42 – 1.38) | 61 | 50.83 |
| 3 | High (> 1.38) | 33 | 27.5 |

Mean = 0.9, SD = 1.126, Range = 0 to 4

It is clear from the above Table (15) that 50.83 per cent of respondents had medium level of credit orientation followed by high and low credit orientation for 27.50 per cent and 21.67 per cent of respondents respectively. It shows that the membership in FPOs increases the extend of availability of credit to the farmers. The result is in agreement with Sreeram (2013) in his study on entrepreneurial behaviour of Kudumbsree units of Palakkad.

### 4.2.7 Group cohesiveness

Table 16: Distribution of respondents based on the group cohesiveness

| Sl. No. | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (>2.54) | 22 | 18.33 |
| 2 | Medium (2.54-5.51) | 78 | 65.00 |
| 3 | High (>5.51) | 20 | 16.67 |

Mean = 4.025, SD = 1.481, Range = 1 to 8

It is clear from the above Table (16) that majority of the respondents (65%) had medium group cohesiveness. The result is in line with Sreeram (2013) in his study on entrepreneurial behaviour of Kudumbsree units in Palakkad. 18.33 per cent of respondents had low group cohesiveness followed by 16.67 per cent of respondents with high group cohesiveness. Since FPO consist of group of farmers who themselves

manages all the activities, group cohesiveness is an important component of entrepreneurial success.

### 4.2.8 Creativity

Table 17: Distribution of respondents based on creativity

| Sl. No. | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<15.48) | 19 | 15.83 |
| 2 | Medium (15.48-19.12) | 79 | 65.83 |
| 3 | High (>19.12) | 22 | 18.33 |

Mean = 17.28, SD = 4.23, Range = 8 to 27

The result presented in Table (17) clearly shows that 65.83 per cent of respondents had medium creativity followed by 18.33 per cent of respondents with high creativity and 15.83 per cent of respondents with low creativity. FPO aims to increase the entrepreneurial behaviour of farmers. Creativity is an important component of entrepreneurial behaviour which aims to increase the capability of the farmer to offer products that are unique in the market space. The result is in agreement with Sreeram (2013) in his study on entrepreneurial behaviour of Kudumbsree units of Palakkad.

### 4.2.9 Institutional intervention

NABARD and SFAC are the major institutions that provide support to FPO. Small Farmers' Agribusiness Consortium (SFAC) is a designated agency of Department of Agriculture and Cooperation (DAC) to act as a single-window for technical support, training needs, research and knowledge management and to create linkages with markets (DAC, 2013). The functioning of these FPOs is supervised by NABARD through a series of evaluation through POPI (Producer Organizations Promoting Institute). All the FPOs selected except Sanghamaitri received financial and training support from NABARD.

#### 4.2.9.1 NABARD's Support to Farmer Producers' Organizations

NABARD created Producers Organization Development Fund (PODF) with initial corpus of Rs. 50 crores out of its operating surplus during 2011-12, for supporting the existing POs including PACS to create innovative financing models for mainstream banking. The broad objective of the fund is to provide financial/ non-financial support to FPO for facilitating improved credit access, ensure adequate capacity building, market linkages and need based handholding services to meet their 'end to end' requirements and thereby ensuring sustainability and economic viability. Considering the success of financing to POs/PACS in terms of improved access to inputs, affordable credit, better price realization by members for building scale and enhanced skill development of farmers, NABARD created its own subsidiary, NABKISAN Finance Limited

(NKFL) for meeting the credit requirements of FPOs by adopting a flexible approach based on life cycle needs, while it continues to provide promotional support towards capacity building, market linkages and other incubation services to FPOs out of grant fund (NABARD, 2015).

#### 4.2.9.2 DAC's Support to Farmer Producers' Organizations

Department of Agriculture and Cooperation (DAC) provided training to members of Farmer Producer Organizations (FPOs) through universities and KVKs. In 2015, Bana Agro. & Allied Producer Company received ten days training on production of value-added dairy products. 16 members of the above said FPO attended the meeting. Wayanad Agriculture Spices Producer Company (WASP) also received training on production practices of rice and conservation of indigenous traditional rice varieties. At present, WASP is acting as the master trainers to the tribal rice farmers of Wayanad. FPOs are also provided with free stalls during exhibitions like VAIGA (Value Addition for Income Generation in Agriculture) which helps to display their products. Sanghamaithri Farmer Producer Company reported that funds from State Horticulture Mission (SHM) made it possible for the formation of vegetable cluster with the vision of producing pesticide free vegetables which was a great success.

### 4.2.10 Social Participation

Social participation includes nature and frequency of participation.

Table18: Distribution of respondents based on nature of participation

| Sl. No | Category | Percentage | Frequency |
|---|---|---|---|
| 1 | No membership | 10.3 | 13 |
| 2 | Membership | 76.83 | 90 |
| 3 | Office bearer | 13.87 | 17 |

Table19: Distribution of respondents based on frequency of participation

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Never attending | 14.83 | 12.5 |
| 2 | Sometimes | 56.83 | 47.5 |
| 3 | Regularly attending | 51.33 | 42.75 |

From the Table (18), it is evident that with regard to nature of participation, 76.83 per cent of respondents are members of organizations followed by 13.87 per cent of respondents are office bearers and 10.30 per cent of respondents have no membership in any organization.

In case of frequency of participation, Table (19) clearly shows that 56.83 per cent of respondents attends meetings sometimes followed by 51.33 per cent of respondents attending meetings regularly and 14.83 percent of respondents, who never attends meetings. Thus, we can conclude that respondents show an overall medium level of social participation. This might be due to the negative association between social participation and extent of involvement in farm activities.

## 4.3 Entrepreneurial behaviour of FPO members

### 4.3.1 Entrepreneurial behaviour Index of FPO members

Table 20: Distribution of respondents according to entrepreneurial behavior

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<37.26) | 20 | 16.67 |
| 2 | Medium (37.26-103.55) | 79 | 65.83 |
| 3 | High (>103.55) | 21 | 17.50 |

Mean = 103.55, SD = 37.26, Range = 56 to 215

Entrepreneurial Behaviour Index was calculated by the summation of scores of all the ten selected components of Entrepreneurial Behaviour like risk taking, hope of success, persistence, feedback usage, self confidence, knowledgeability, persuasibility, manageability, innovativeness and achievement motivation. The result given in the above table 17 shows that almost two third of the respondents (65.83%) had medium entrepreneurial behaviour followed by 17.50 and 16.67 per cent of respondents with high and low entrepreneurial behaviour respectively. The possible reason for medium followed by high and low entrepreneurial behaviour might be due to the fact that majority of respondents had medium level of creativity, annual income, credit orientation, education, social participation and group cohesiveness. However, all the ten components of entrepreneurial behaviour together have a direct reflection towards medium level of entrepreneurial behaviour.

### 4.3.2 Risk taking

Table 21: Distribution of respondents based on risk taking

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<4.83) | 13 | 10.83 |
| 2 | Medium (4.83-14.44) | 86 | 71.67 |

| | | | |
|---|---|---|---|
| 3 | High (> 14.44) | 21 | 17.50 |

Table (21) clearly shows that majority of respondents (71.67%) had medium risk-taking ability followed by 17.50 per cent and 10.83 per cent of respondents with high and low risk taking ability respectively. Risk taking ability of an individual is related to his or her personal and socio-economic characters. Another reason might be due to attending trainings which increases the self confidence and enhances the risk taking ability. All these might have resulted in the medium risk taking ability for majority of the respondents. The result is in line with the findings of Suresh (2004), Vijaykumar (2011) and Pal (2018).

### 4.3.3 Hope of success

Table 22: Distribution of respondents based on hope of success

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<5.66) | 17 | 14.17 |
| 2 | Medium (5.66-17.09) | 78 | 65.00 |
| 3 | High (>17.09) | 25 | 20.83 |

Mean = 11.38, SD = 5.71, Range = 2 to 24 Table (22) clearly shows that majority of respondents (65%) had medium hope of success followed by 20.83 per cent and 14.17 per cent of respondents with high and low hope of success respectively. FPOs receive financial and technical support from NABARD and SFAC which increases the self confidence of the members of the FPO which thereby increases the hope of success. The result is in line with the findings of Raj (2018) in the study on entrepreneurial behaviour of vegetable seed producing farmers.

### 4.3.4 Persistence

The result Table (23) shows that majority of respondents (65%) had medium persistence followed by 20.83 per cent and 14.17 per cent of respondents with high and low persistence respectively. This might be due to medium creativity and self confidence. The result is in line with the findings of Amareliya (2018) in the study on entrepreneurial behaviour of vegetable seed producing farmers.

Table 23: Distribution of respondents based on persistence

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<4.99) | 17 | 14.17 |
| 2 | Medium (4.99-15.33) | 78 | 65.00 |
| 3 | High (> 15.33) | 25 | 20.83 |

Mean = 10.15, SD = 5.16, Range = 2 to 23

### 4.3.1 Feedback usage

Table 24: Distribution of respondents based feedback usage

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<6.57) | 20 | 16.67 |
| 2 | Medium (6.57-18.38) | 69 | 57.50 |
| 3 | High (>18.38) | 31 | 25.83 |

Mean = 12.48, SD = 5.91, Range = 4 to 25

Majority of respondents (57.50%) had medium feedback usage followed by 25.83 per cent and 16.67 per cent of respondents with high and low feedback usage respectively. The possible reason might be due to the medium level of achievement motivation for majority of respondents. This creates a need in them to improve the quality of their product by collecting feedback and use it for further improvement

which help them to fetch higher price for the product. The result is in line with the findings of Dewangan (2018) in his study on socio economic impact of Farmer Producer Organization (FPO).

### 4.3.2 Self confidence

Table 25: Distribution of respondents based on self confidence

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<4.20) | 18 | 15.00 |
| 2 | Medium (4.20-12.46) | 86 | 71.67 |
| 3 | High (>12.46) | 16 | 13.33 |

Mean = 8.33, SD = 4.12, Range = 2 to 22

Table (25) clearly shows that majority of respondents (71.67%) had medium self confidence followed by 15.00 per cent and 13.33 percent of respondents with high and low self confidence respectively. The possible reason might be due to the medium group cohesiveness among FPO members. Training increased their knowledge about scientific methods of farming, latest technology and skill to manage the activities of FPO which further increased their self confidence. The result is in line with the findings of Rameshchandran (2018) in his study on entrepreneur behaviour of dairy farmers.

### 4.3.3 Knowledgeability

Table 26: Distribution of respondents based on knowledgeability

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (< 5.89) | 14 | 11.67 |
| 2 | Medium (5.89-17.68) | 77 | 64.17 |
| 3 | High (>17.68) | 29 | 24.17 |

Mean = 11.78, SD = 5.89, Range = 2 to 24

Result clearly depicted on Table (26) shows that majority of respondents (71.67%) had medium knowledgeability followed by 15.00 per cent and 13.33 per cent of respondents with high and low knowledgeability respectively. The result clearly reflects the impact of training attended by the members of the FPO. They were given training on crop production, protection and value addition aspects of agriculture. Board of Director members and CEOs were given training on professional business skills. The result is in line with the findings of Chandra (2017) in his study on entrepreneurial behaviour of vegetable seed producing farmers.

### 4.3.4 Persuasibility

Table 27: Distribution of respondents based on persuasibility

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<6.02) | 24 | 20 |
| 2 | Medium (6.02-17.42) | 69 | 57.5 |
| 3 | High (>17.42) | 27 | 22.5 |

Mean = 11.72, SD = 5.70, Range = 2 to 23

Table (27) clearly shows that majority of respondents (57.50%) had medium persuasibility followed by 22.50 per cent and 20 per cent of respondents with high and low persuasibility respectively. This might be due to medium social participation and group cohesiveness. The result is in line with the findings of Nagarve (2017) in his study on Entrepreneur behaviour of dairy farmers.

### 4.3.5 Manageability

Table 28: Distribution of respondents based on manageability

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<4.85) | 15 | 12.50 |
| 2 | Medium (4.85-15.60) | 83 | 69.17 |
| 3 | High (>15.60) | 22 | 18.33 |

Mean = 10.23, SD = 5.38, Range = 2 to 23

The result depicted in Table (28) clearly shows that majority of respondents (69.17%) had medium manageability followed by 18.33 per cent and 12.50 per cent of respondents with high and low manageability respectively. This might be due to the reason that farmers face complex situations with little or sometimes no resemblance with past conditions such as climate change.

### 4.3.6 Innovativeness

Table 29: Distribution of respondents based on innovativeness

| Sl.No. | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<4.95) | 13 | 10.83 |
| 2 | Medium (4.95-13.28) | 92 | 76.67 |
| 3 | High (>13.28) | 15 | 12.50 |

Mean = 9.12, SD = 4.16, Range = 2 to 23

Table (29) shows that majority of respondents (76.67%) had medium innovativeness followed by 12.50 per cent and 10.83 per cent of respondents with high and low innovativeness respectively. The possible reason might be medium creativity and annual income level of majority of FPO members. The result is in line with the findings of Merity (2017) in his study on entrepreneurial behaviour of pomegranate farmers.

### 4.3.7 Achievement motivation

Table 30: Distribution of respondents based on achievement motivation

| Sl. No | Category | Frequency | Percentage |
|---|---|---|---|
| 1 | Low (<4.38) | 15 | 12.5 |

| | | | |
|---|---|---|---|
| 2 | Medium (4.38-13.23) | 87 | 72.5 |
| 3 | High (>13.23) | 18 | 15 |

Mean = 8.81, SD = 4.43, Range = 2 to 24

Table 30 shows that majority of the respondents (72.50%) had medium achievement motivation followed by 15.00 per cent and 12.50 per cent of respondents with high and low achievement motivation respectively. Achievement motivation is a psychological character which motivates individual to do anything to achieve success. It helps the individual to aspire for higher level of earning and living. The result is in line with Bora (2019) in his study on entrepreneurial behaviour of pomegranate farmers.

### 4.4 Livelihood Security of FPO members

The dimensions of livelihood security identified by Baby (2005) was selected for the study. The components of livelihood security were food security, occupational security, habitat security, educational security, social security and health security. Each component of livelihood security consisted of various number of statements. So, each component had different range of scores. Therefore, it was necessary to standardize and convert the scores of all the six components into unit scores. Weighted average method was used for standardization based on expert advice. Hence the score of each component of each respondent ranged from 0 to 1. The unit score thus obtained were multiplied by the number of statements given for each component inorder to give different weightage for each component of the livelihood security. The scores thus obtained for all the components were added to get the total livelihood security of each respondent.

Table 31: Distribution of respondents based on livelihood security

| **Sl. No** | **Category** | **Frequency** | **Percentage** |
|---|---|---|---|
| 1 | Low (<44.34) | 19 | 15.83 |
| 2 | Medium (44.34- 73.83) | 79 | 65.83 |

| | | | |
|---|---|---|---|
| 3 | High (> 73.83) | 22 | 18.33 |

Mean = 59.09, SD = 14.75, Range = 22.07 to 91.72

The result given in the table 31 shows that almost two third of the respondents (65.83%) had medium secure livelihood followed by 18.33 and 15.83 per cent of respondents with high and less secure livelihood respectively. The possible reason for medium followed by high and low livelihood security might be due to the fact that majority of respondents had medium level of annual income, credit orientation, social participation and group cohesiveness. However, all the six components of livelihood security together have a direct reflection towards medium livelihood security. The findings of the present study are in agreement with Hridya (2018) in her study on livelihood security assessment of women agripreneurs of Self Help Groups in Kerala.

### 4.4 Correlation between Entrepreneurial Behaviour and Livelihood Security

Correlation between entrepreneurial behaviour and livelihood security of FPO members are presented in the table (31). Entrepreneurial behaviour shows positive and significant correlation with food security, habitat security, educational security, social security, occupational security and livelihood security. Entrepreneurial behaviour shows non-significant correlation with health security.

Table 31: Correlation between entrepreneurial behaviour and livelihood security

(n = 120)

| **Variable** | **Correlation coefficient** |
|---|---|
| Livelihood Security | 0.610** |
| Food Security | 0.304** |
| Habitat Security | 0.157* |
| Educational Security | 0.274** |
| Health Security | 0.057 NS |

| | |
|---|---|
| Social Security | 0.429** |
| Occupational Security | 0.663** |

NS- Non Significant

*Significant at 5 per cent level

**Significant at 1 per cent level

Table (31) that food security was positively and significantly correlated with entrepreneurial behaviour. This might be due to the fact that majority of the FPO members have medium level of achievement motivation and self confidence which helped them to achieve success and thereby increase the income level. Increased income level helped the farmers to meet the basic needs and therby achieve food security. The result is in line with the findings of Ramya (2016).

Habitat security was positively and significantly correlated with entrepreneurial behaviour. Habitat security was measured using indicators like ownership of the house, housing type, toilet facilities in house, electric supply, water supply and transport facilities in the house. Majority of FPO members had medium entrepreneurial behaviour and annual income, which ensured their habitat security. All the respondents had toilet facilities and electric supply in their houses. Ministry of Drinking Water and Sanitation (MDWS) recently declared Kerala as an Open Defecation Free (ODF) state (GOI, 2018). Kerala was declared as fully electrified on May 29, 2017 (NITI Aayog, 2018). The result is in line with the findings of Hridya (2018).

Educational security was positively and significantly correlated with entrepreneurial behaviour. Educational security was measured using indicators like educational status of the respondents and access towards educational facilities by their households. Majority of the respondents had medium entrepreneurial behaviour which helped them to commercialize agriculture and increase their income. This helped them to increase their savings which was contributed towards meeting the expenses which arises from educating their children. Government of Kerala took several steps to

improve the quality of education in the state such as speedy delivery of textbooks, free school uniforms, insurance scheme to students and increase in wages for teachers (GOK, 2018 ). The result is in line with the findings of Ramya (2016).

Social security is positively and significantly correlated with entrepreneurial behaviour. This might be due to the reason that majority of respondents had medium level of innovativeness, risk taking, self confidence and achievement motivation. All these factors contributed towards increased annual income which leads to increased social status and thereby achieve social security. The result is in line with the findings of Ajith (2018).

Occupational security is positively and significantly correlated with entrepreneurial behaviour. Occupational security of the respondents indicated the access to regular and satisfied employment. The respondents were the members of the FPO who were actively involved in entrepreneurial activities. This ensured them a regular employment which might be the reason for high occupational security. The result is in line with the findings of Hridya (2018).

### 4.5 Correlation between entrepreneurial behaviour and independent variables

Correlation between entrepreneurial behaviour and independent variables of FPO members are presented in the table (32). Entrepreneurial behavior shows positive and significant correlation with education, income, training, scientific orientation, group cohesiveness and creativity. It shows negative and non- significant correlation with age and credit orientation. Creativity and training attended by the respondents were found to be crucial to have better entrepreneurial behaviour.

Table 32: Comparative analysis of entrepreneurial behaviour and independent variables (n=120)

| Independent variable | Correlation coefficient |
|---|---|
| Age | -0.52 NS |
| Education | 0.534** |
| Income | 0.33** |
| Training | 0.565** |
| Scientific orientation | 0.399** |
| Group cohesion | 0.464** |
| Credit orientation | -0.14 NS |
| Creativity | 0.683** |
| Social participation | 0.470** |

NS- Non Significant "*"Significant at 5 per cent level "**" Significant at 1 per cent level

From the Table 32, it is evident that age was negatively and non-significantly correlated with entrepreneurial behaviour. Compared to aged groups, young groups are more interested in commercialized agriculture. The old aged farmers had a sentiment on the old methods and might not be much interested to know new technologies. The results were in agreement with the findings of Pal (2018).

Education was positively and significantly correlated to entrepreneurial behaviour which implies that education had an important role in entrepreneurial behaviour. Educated farmers are able to understand, interpret and utilize the information in an appropriate way. Education also help in decision making and to manage planning, production and marketing aspects efficiently. This result is in agreement with the findings of Raut and Sankhala (2014).

Relationship between annual income and entrepreneurial behaviour was significantly and positively correlated. It might be due to the influence of annual

income on the economic viability, stability & rational behaviour of an individual and also the increase in the income level enhances the farming activities. This result is in agreement with Nagarve (2016).

Scientific orientation was positively and significantly correlated to entrepreneurial behaviour. This is due to the fact that the respondents with higher scientific orientation would try to gather more information, which could be applied at the field level, thus increasing production. This result is in agreement with Chandra (2017).

Training attended was positively and significantly correlated to entrepreneurial behaviour. The might be due to the reason that training increases the knowledge of FPO members on agricultural production, protection and marketing aspects. This increased knowledge along with the hands on experience increases the self-confidence and thereby entrepreneurial behaviour. This result is in agreement with Sreeram (2013).

Credit orientation was negatively and non- significantly correlated to entrepreneurial behaviour.

NABARD and Small Farmers' Agribusiness Consortium (SFAC) satisfies the credit needs of the FPOs. SFAC is designated agency of Department of Agriculture and Cooperation (DAC) to act as a single- window for technical support, training needs, research and knowledge management and to create linkages to in markets (DAC, 2013). NABARD created Producers Organization Development Fund (PODF) with the broad objective of providing financial/ non- financial support to FPO for facilitating improved credit access. This shows that FPOs receive credit support from NABARD and SFAC in a structured manner. This result is in agreement with Raju (2017).

Group cohesiveness shows positive and significant relationship to entrepreneurial behaviour. Karanja and Bwisa (2013) reported that group cohesiveness is essential in entrepreneurial success. Since most of the farmers are poor and small scale, they may not undertake risk. But group cohesiveness may

increase their confidence and thereby increases their entrepreneurial behaviour for which Self Help Groups and FPOs are evidences. The result is in agreement with Ajith (2018).

Relationship between creativity and entrepreneurial behaviour was positive and significant. This might be due to the fact that people who are highly creative try for new methods of farming which helps them to increases their entrepreneurial behaviour. This result is in agreement with Raj (2018).

Social participation and entrepreneurial behaviour was significantly and positively correlated. Involvement and participation in various organization helps the FPO members to gain more experience and knowledge. This directly have an impact on entrepreneurial behaviour. This result is in agreement with Gurubalan (2007).in his study on entrepreneurial behaviour of coconut oil producing farmers.

### 4.6 Marketing channels used by the FPO

The data obtained regarding the open-ended question on marketing channels revealed that the following marketing channels were used by the FPOs.

i. Producer – Farmer Producer Organization – Retailer – Consumer

ii. Producer- FPO- Commission agent- Retailer- Consumer

iii. Producer- Farmer Producer Organization- Consumer

i. Producer- Farmer Producer Organization- Retailer- Consumer

This marketing channel was followed by Neyyasseri Agro. Producer Company, Thodupuzha Farmer Agro. Producer Company, Wayanad Agriculture Spices Producer Company, Bana Agro. & Allied Producer Company. Neyyasseri Agro. Producer Company utilize this channel for the marketing of jackfruit and tapioca value added products. Thodupuzha Farmer Agro. Producer Company markets cattle feed and coconut oil using this channel. Wayanad Agriculture Spices Producer Company (WASP) markets indigenous rice in this channel. The major problem faced by the FPOs following this marketing channel was the reduced FPOs share in

consumer rupee due to commission charged by the retailer. BOD (Board of Director) members of Bana Agro. & Allied Producer Company reported that they had to pay Rs.5 and Rs.50 for marketing half litre of curd and 1kg of ghee respectively. The lack of outlet owned by the FPO involuntarily forced them to depend this marketing channel. BOD (Board of Director) members of WASP pointed out that the products which are marketed through Lulu malls has to be packed according to the standards suggested by them.

ii. Producer- FPO- Commission agent- Retailer- Consumer

The above said marketing channel was followed by Thodupuzha Farmer Agro. Producer Company, Wayanad Agriculture Spices Producer Company (WASP), Bana Agro. & Allied Producer Company and Sabarmati Farmer Producer Company. Cattle feed produced by Sabarmati FPC and Thodupuzha Farmer Agro. Producer Company was marketed by this channel. WASP markets indigenous rice in this channel. Commission agents have both positive and negative roles to play in this marketing channel. The advantage of involving commission agents in this marketing channel is that it helps the produce to attain place utility. The major disadvantage is the reduced price value of the product due to the poor marketing efficiency. This reduces the income earned by them and thereby hindering the growth of the FPO. Since, Bana Agro. & Allied Producer Company had not yet branded their dairy products; they were forced to depend this channel for marketing their product.

iii. Producer- Farmer Producer Organization- Consumer

This direct marketing channel of FPO was followed by Sabarmati Farmer Producer Company, Sanghamaithri Farmer Producer Organization and Bana Agro. & Allied Producer Company. Vegetables and fruits of Sanghamaithri Farmer Producer Organization are marketed by this channel. Bana Agro. & Allied Producer Company use this channel to market dairy products. This channel was highly useful to Sanghamaithri Farmer Producer Organization and Bana Agro. & Allied Producer Company for the marketing of perishable commodities. Bana Agro. & Allied Producer Company supply their products like ice cream, sweets and curd during special occasions like marriages. Members of the above said FPO were divided into

three groups and each group had installed their kiosk in the nearby towns namely Padinjarathara and Kalpetta. Sabarmati Farmer Producer Company owns outlets in cities which enable them to market poultry and egg using this channel.

The above mentioned three marketing channels followed by the selected FPOs. Direct marketing is found to be most efficient because of its contribution towards increased producer share in consumer rupee. However, the role of commission agents in increasing the place utility of the produce is remarkable. But at the same time, it reduce the farmers' income. Emerging online marketing platforms like e- NAM can be explored by the FPO members for marketing their products. Local marketing channel and consumer preference can be used by the FPOs for developing their own.marketing strategy.

### 4.7 Constraints faced by the FPO members and suggestive measures

In the present study, constraints faced by FPO members were also studied. The data regarding constraints is given in table 36.

Table 36: Constraints faced by FPO members

| **Constraints** | **Garett Score** | **Rank** |
|---|---|---|
| 1. Marketing challenge | 78.25 | 1 |
| 2. Lack of professional business skills | 61.73 | 2 |
| 3. Lack of training on packaging | 59.74 | 3 |
| 4. Lack of funds | 54.07 | 4 |
| 5. Competition from branded products | 51.98 | 5 |
| 6. Less membership in FPO | 50.74 | 6 |
| 7. Seasonality of products | 47.66 | 7 |
| 8. Lack of awareness about the FPO | 36.40 | 8 |

| | | |
|---|---|---|
| 9. Frequent change in CEO | 31.43 | 9 |

The above result table (33) clearly shows that the major constraints faced by FPO members were marketing challenge (78.25), lack of professional business skill (61.73), lack of training on packaging (59.74), lack of funds(54.07), competition from branded products (51.98), less membership in FPO (50.74), seasonality of products (47.66), lack of awareness about the FPO (36.40) and frequent change in CEO (31.43).

### 4.7.1 Marketing challenge

Marketing challenge include lower price for products, lack of sufficient number of vehicles for transport, lack of facilities for latest marketing information, difficulty to meet export standards, lack of selling shops or outlets owned by the FPO (Birthal and Joshi, 2007). From the table, it is clear that marketing challenge was ranked the first position by the respondents.

Cold storage facilities should be provided to FPOs dealing with perishable commodities (Dewanagan, 2018). Training need assessment should be conducted before training to identify the areas to which training should be focused like improving the quality of the product which helps in exporting. FPOs can display their product during exhibition to increase their publicity and reach maximum number of customers.

### 4.7.2 Lack of professional business skill

In the present study, the result on the personal and socio- economic profile clearly depicts that majority of respondents have education status up to high school. Since, they lack professional knowledge and skill in business, it is difficult for them to run the business and utilize marketing technique. All the FPOs selected for the study reported that they spend large amount of money withdrawn from working capital for auditing in the FPOs. Training should be provided to the BODs and CEOs in increasing professional knowledge and business skills.

### 4.7.3 Lack of training on packaging

The major areas of operation of FPOs are value addition and processing. The products were safe for consumption but still faced a tight competition with branded products which affected the marketing. So there was a need to improve the quality and packaging of the product. Quality control managers can be appointed in the FPOs. Government run quality testing and assurance centres can help in certification of the product which also opens the door of export linkage. This is followed by Marayoor Agri FPO which can be replicated to other FPOs (Ajith, 2018).

### 4.7.4 Competition from branded products

FPOs try to establish a direct linkage between farmer and the consumer by eliminating the middlemen. Producer can fetch good price for the product which is affordable for the consumer. But consumers are more attracted to purchase the product from retail outlets and supermarkets because of the availability of more variety of products for a single item giving better options and choices to the consumers. Neyyasseri Agro FPC and Bana Agro FPC is facing the problems to a greater extend. To overcome such competitions better marketing linkage can be established with the retail outlets for the FPCs.

### 4.7.5 Lack of funds

Lack of enough capital for initial investment is a hindering factor for the growth of FPOs. Most of the FPOs require three to four year to reach the break-even level but the NABARD provides loan only up to three years. Incubation support can be provided by the entrepreneurship development institutes. Interest free loans can be provided in addition to financial support from NABARD which will reduce the financial stress these organizations face during this period.

### 4.7.6 Less membership in FPOs

Membership is received after payment of basic equity share of Rs. 100 which is added to the seed investment of FPO. But majority of FPOs have members ranging

from 75-150. There is a need to increase the awareness and interest of farmer members about the existence of FPOs and its benefits through educational campaigns.

### 4.7.7 Seasonality of products

Neyyasseri FPO face this problem of seasonality of products. Their major activity is jackfruit processing but its availability is seasonal. More number of cold storage facilities can be made available to store the perishable fruits and vegetables procured during glut season at low cost. Community level participation for procurement using LSGD (Local Self Government Department), Krishi Bhavan, progressive farmers and other line departments can be promoted so that the perishable commodities like fruits and vegetables can be procured at farm gate to prevent post-harvest losses. FPOs should concentrate on year-round income generating activities. Instead on focusing on mono crop related activities, more crops should be identified and followed by the FPOs based on the availability of local resources to provide sustainable income.

### 4.7.8 Lack of awareness about the FPO

As a suggestive measure to this constraint, stalls can be installed by the FPOs during exhibitions. FPOs shall sell its produce at a remunerative price inorder to retain its stability and increase the membership. Proper mass media awareness can be given by the government to make more farmers to join the FPO.

### 4.7.9 Frequent changes of CEOs

CEOs are imperative for the proper functioning of the FPOs. Frequent change of CEOs is observed in many FPOs since they are under paid, which hinders their smooth functioning. Newly emerging FPOs face difficulty in appointing CEOs with good professional qualification due to their low turn-over. The solution to this problem has been incorporated in the revised guidelines of NABARD (2020) where it is said that financial support will be provided for paying salary to CEO.

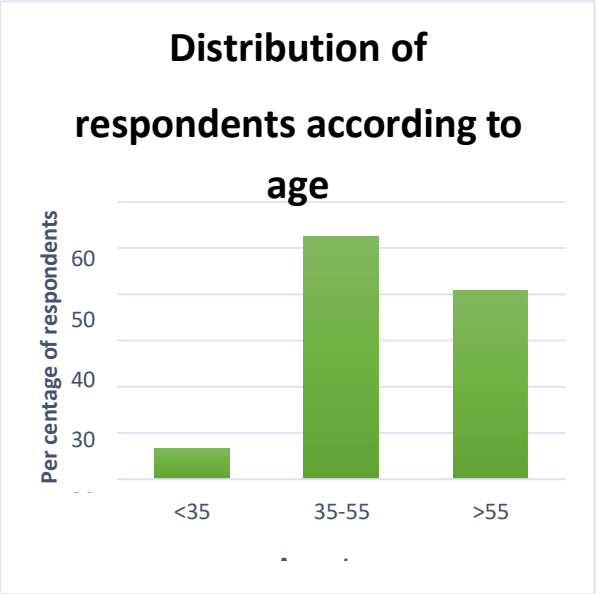


Fig 1: Distribution of respondents based on age

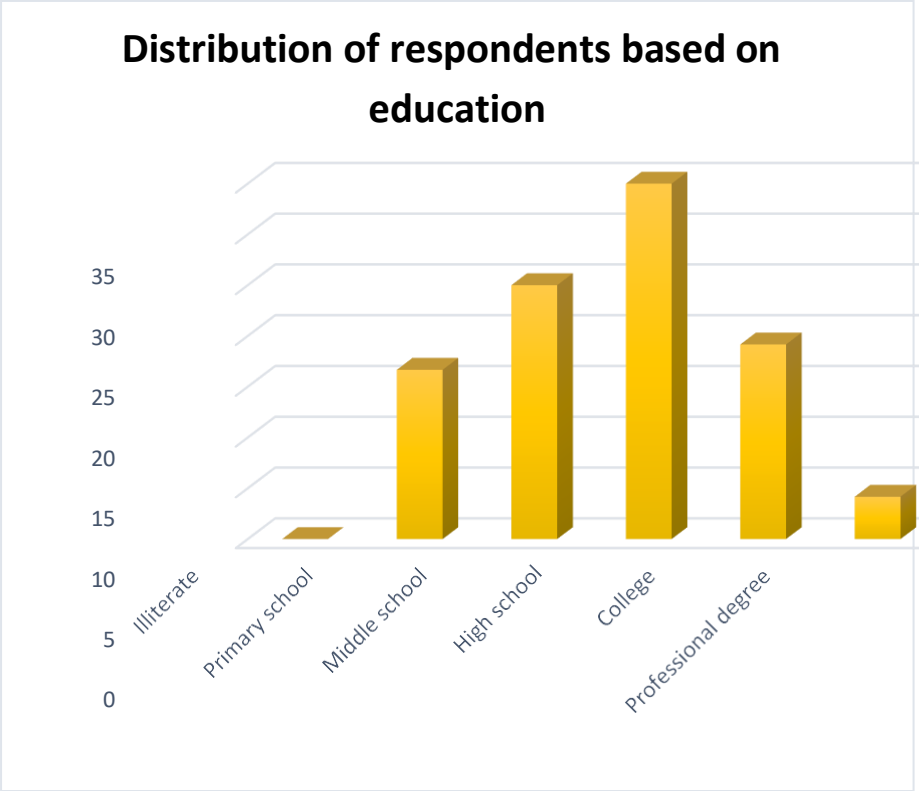


Fig 2: Distribution of respondents based on education

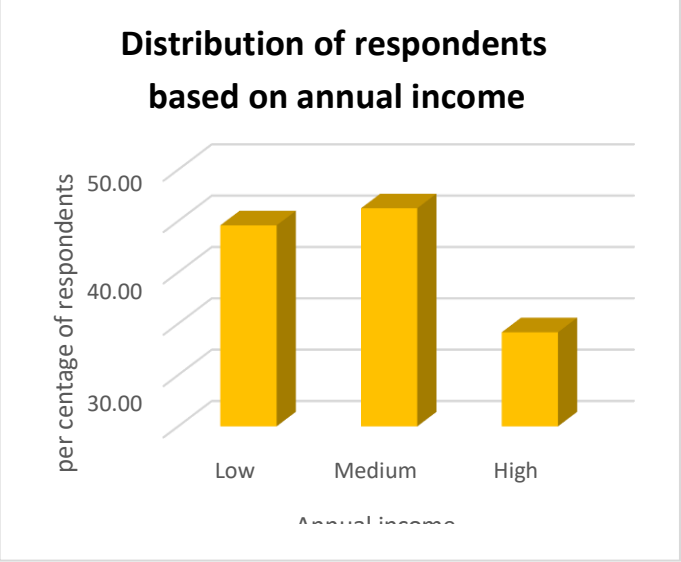


Fig 3: Distribution of respondents based on annual income

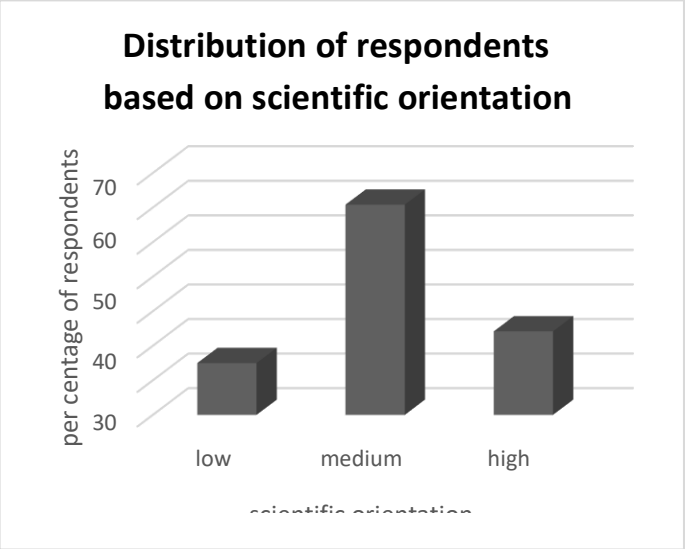


Fig 4: Distribution of respondents based on scientific orientation

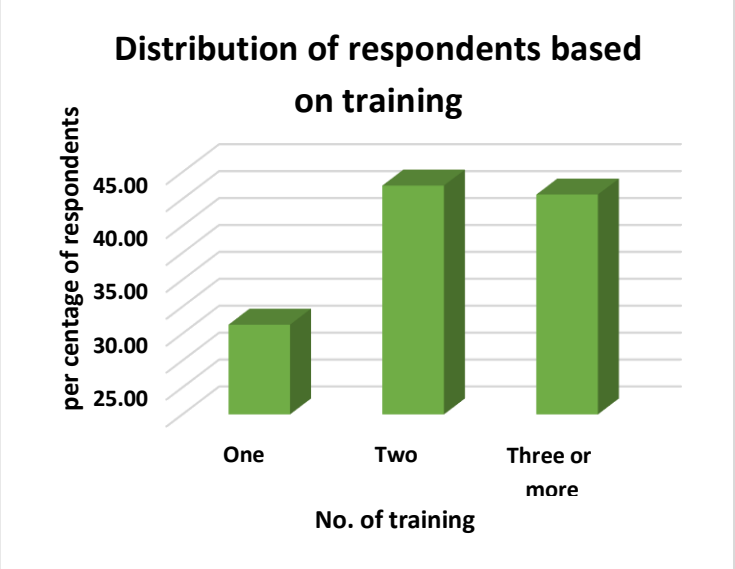


Fig 5: Distribution of respondents based on training

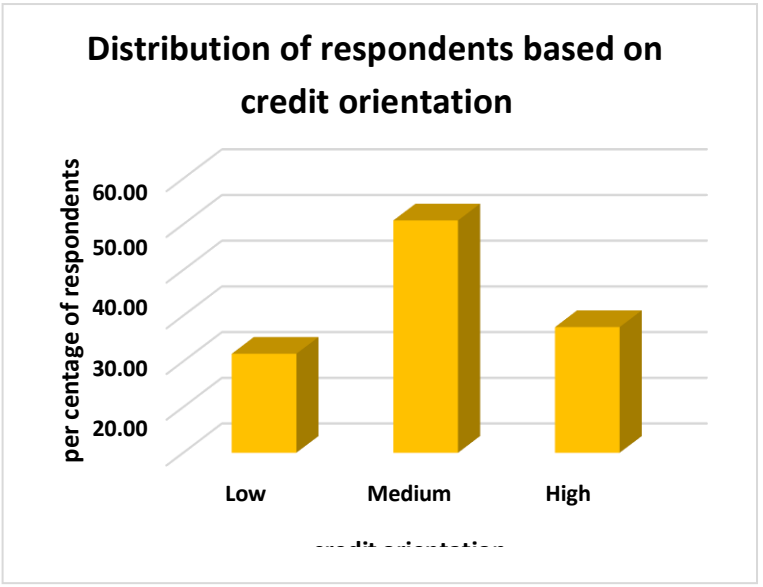


Fig 6: Distribution of respondents based on credit orientation

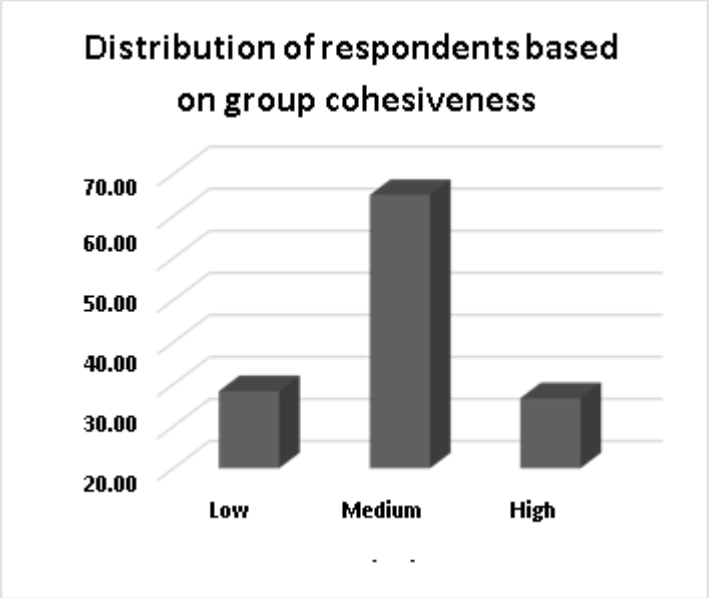


Fig 7: Distribution of respondents based on group cohesiveness

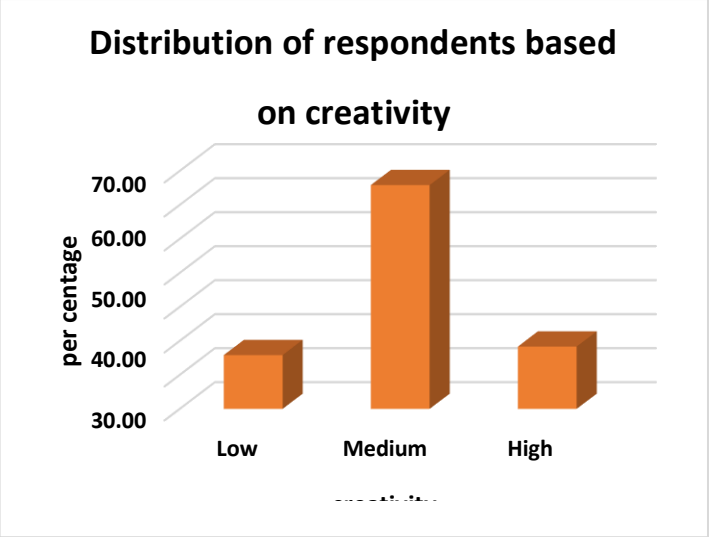


Fig 8: Distribution of respondents based on creativity

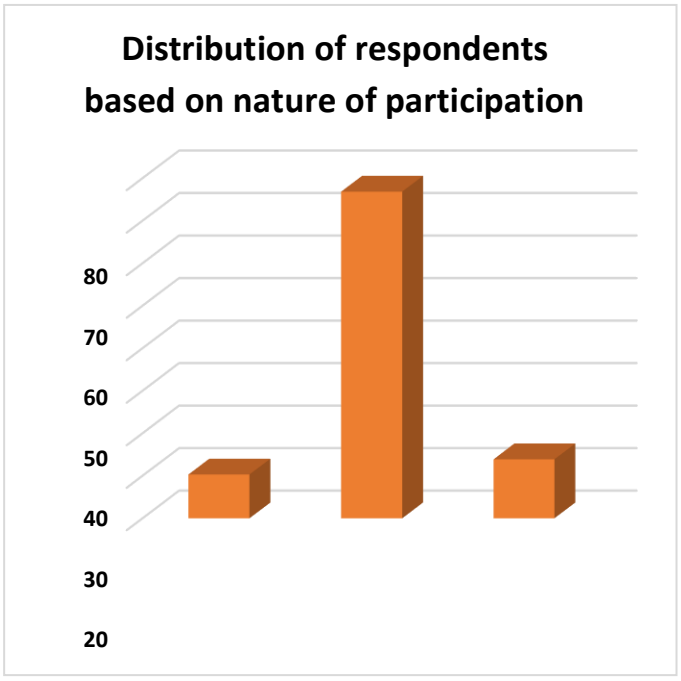


Fig 9: Distribution of respondents based on nature of participation

(social participation)

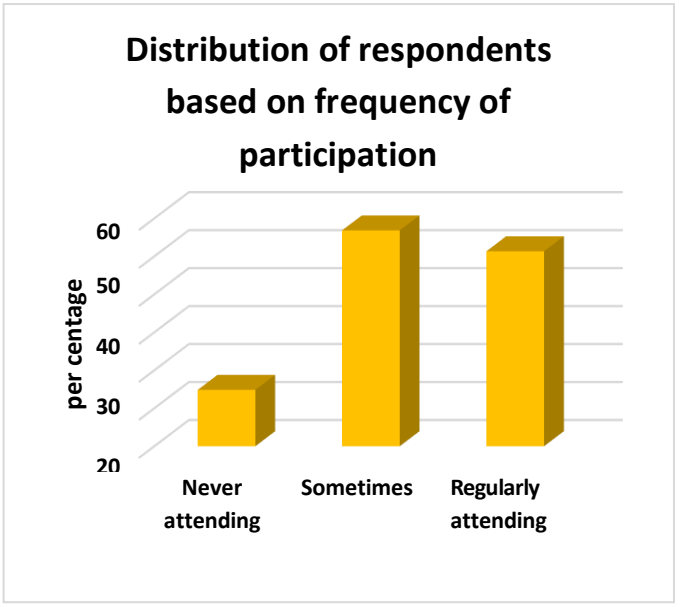


Fig 10: Distribution of respondents based on frequency of participation

(social participation)

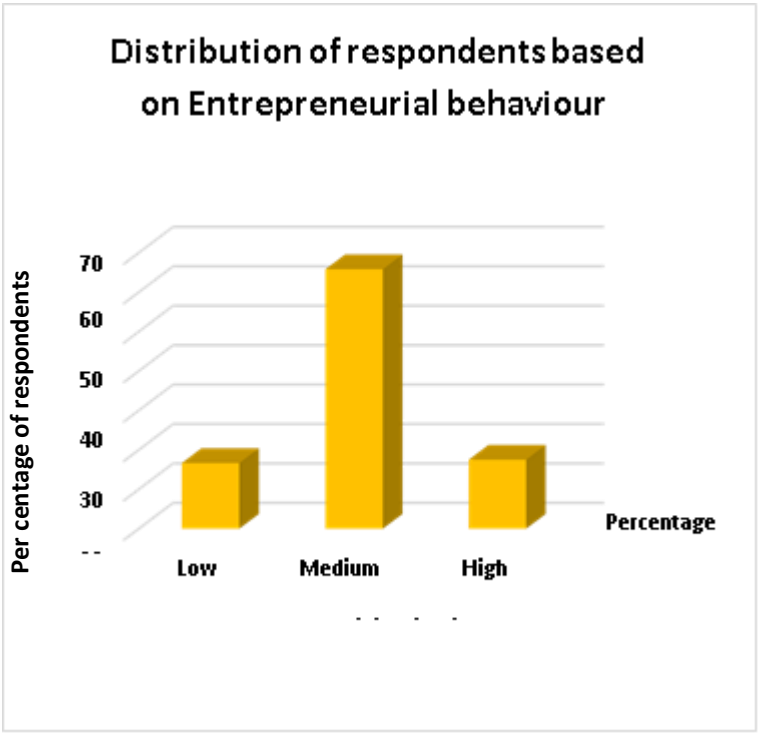


Fig11: Distribution of respondents based on Entrepreneurial Behaviour

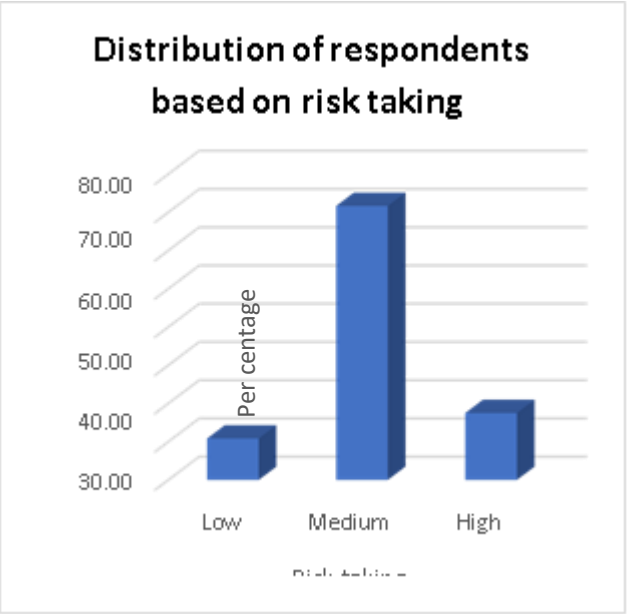


Fig 12: Distribution of respondents based on risk taking

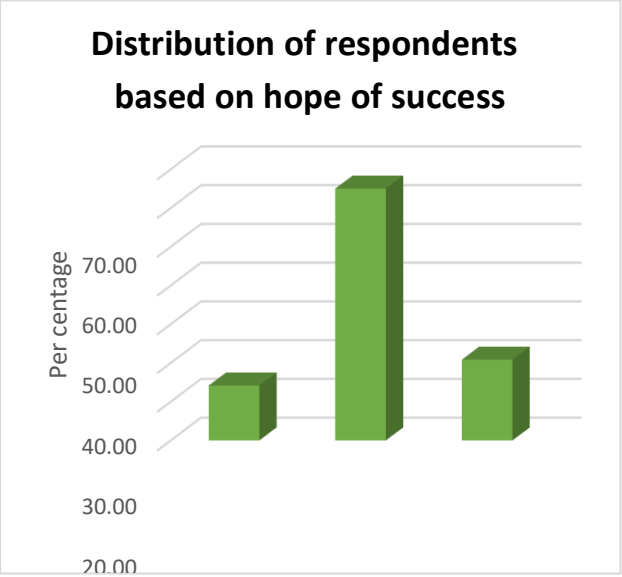


Fig 13: Distribution of respondents based on hope of success

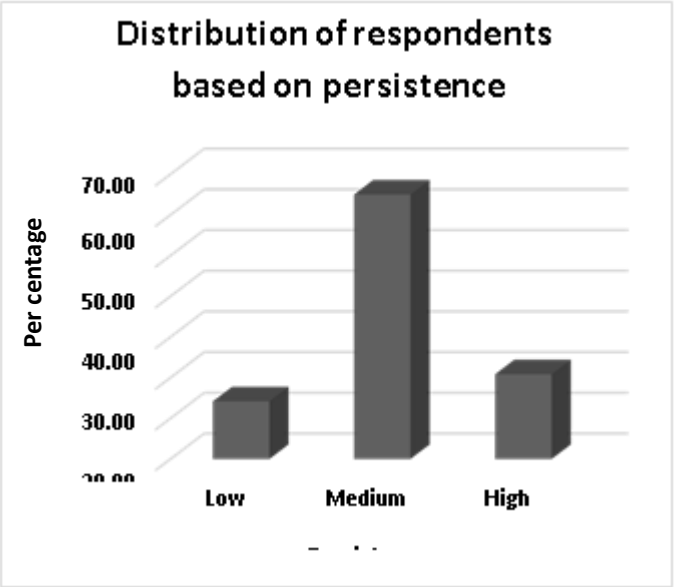


Fig 14: Distribution of respondents based on persistence

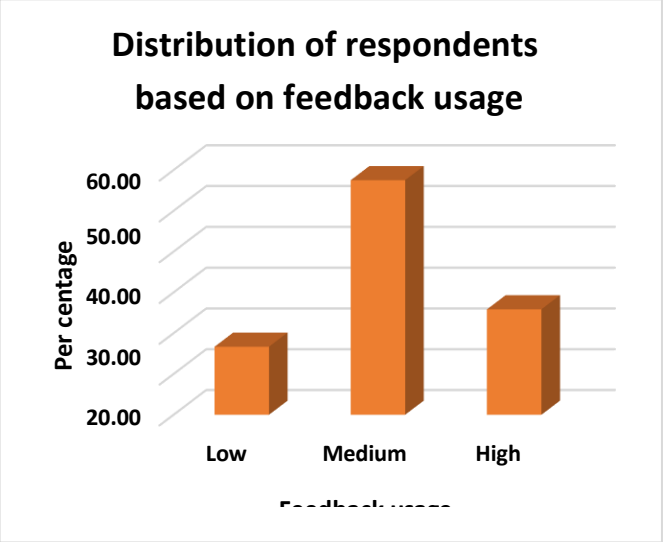


Fig 15: Distribution of respondents based on feedback usage

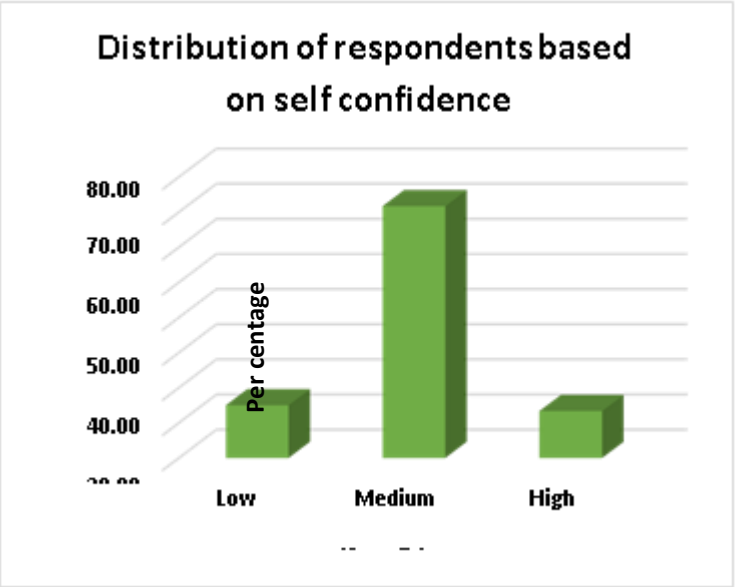


Fig 16: Distribution of respondents based on self confidence

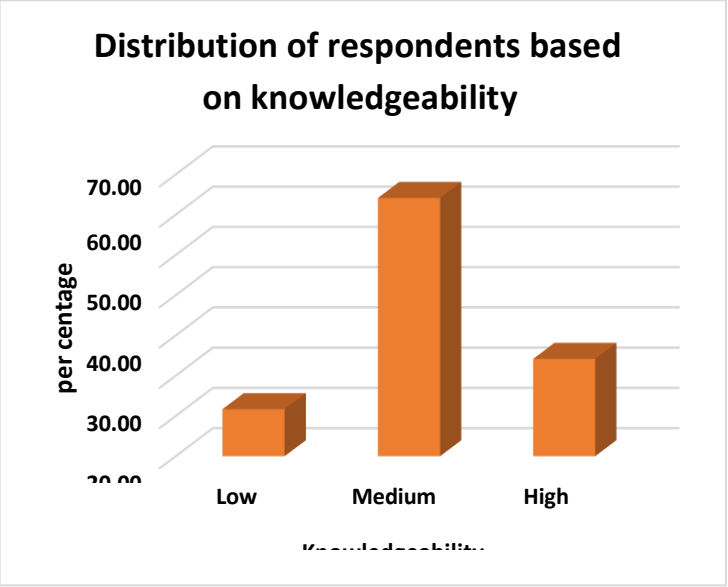


Fig 17: Distribution of respondents based on knowledgeability

# *SUMMARY*

## 3. SUMMARY

Agriculture plays a major role in reducing poverty and achieving livelihood security as farm resources for livelihood are generally dominant in rural areas. According to Frankerberger (1998), livelihood comprises of both on-farm and off-farm activities which together provide a variety of procurement strategies for food and cash. However, out of the total farming population in India, 85 percent are small and marginal holdings and 44 percent of the total land is under cultivation. The major problems faced by the small scale farmers are fragmented and heterogeneous landholding, limited production, lack of capital, credit facilities, quality inputs clubbed with frequent crop failures and low marketing efficiency.

Various initiatives are being taken up by the government inorder to increase the income of farmers at farm level. The most important among these include collectivization of producers, especially small and marginal farmers, into Producer Organizations (PO). Producer Organization (PO) includes the primary producers like farmers, milk producers, fishermen, weavers, rural artisans, craftsmen. It is an organization of the producers, for the producers and by the producers. Farmer Producer Organization is a means to bring together the small and marginal farmers and other small producers to build their own business enterprise that will be managed by professionals. FPO increases the bargaining power of small farmers which helps them to participate in the market more effectively.

Presently, around 5000 FPOs (including FPCs) are registered in the country, which were formed under various initiatives of the Govt. of India like NABARD, SFAC, State Governments and other organizations. Out of these, around 3200 FPOs are registered as Producer Companies (NABARD, 2015). 100 FPOs are present in Kerala, which were formed under the initiative of NABARD. Maximum number of FPOs are present in Idukki with 13 FPOs and minimum number in Kollam with 3 FPOs.

Majority of these FPOs are in the nascent stage of their operations. The major reason for the failure of Farmers organization is the lack of entrepreneurial and management skills of the farmer members due to their low education status. Various studies have been conducted regarding the personal traits and behaviour of entrepreneurs of farmers and Self Help Groups. But intensive research is required in the field of entrepreneurship inorder to attain deep insight into psychological methods for quantitative measurement of entrepreneurship. The available knowledge represents only the tip of the iceberg with both agreements and debate. This situation brought a commence to the present study on "Entrepreneurial behaviour of FPO members for livelihood security". The objective of the study is to assess the entrepreneurial behaviour of members of FPOs in enhancing the livelihood security and to study the socio-psychological constructs and perceived economic variables affecting the functioning along with the constraints experienced by the members of the FPOs.

Wayanad district from Northern Kerala, Idukki district from Central Kerala and Trivandrum district from Southern Kerala were purposively selected for the study as they have highest number of FPOs in the state. Two functioning FPOs each were selected from Wayanad, Idukki and Trivandrum based on the discussion with NABARD, SFAC and KVK. Wayanad Agriculture Spices Producer Company and Bana Agro. & Allied Producer Company were selected from Wayanad, Neyyasseri Agro. Producer Company and Thodupuzha Farmer Agro. Producer Company were selected from Idukki and Sangamaithri Farmer Producer Organization and Sabarmati Agro. & Livestock Farmer Producer Company were selected from Trivandrum. From each selected FPO, 20 members were randomly selected. A total of 40 farmers were surveyed from each district thus making a total of 120 farmers from six FPOs located at three districts. Ex-post facto research design was usedbecause the study aims at measuring the phenomenon which has already occurred and is continuing. Interview schedule was used for data collection which was prepared after discussion with experts inorder to meet the objective of the study. Data collection was carried out through structured interview.

The personal and socio-economic variables (independent variables) selected through judges rating were age, education, annual income, scientific orientation,

number of trainings attended, social participation, scientific orientation, cosmopoliteness, group cohesion, credit orientation, institutional intervention and creativity. Entrepreneurial Behaviour and livelihood security was selected as dependent variable.

Components of entrepreneurial behaviour were risk taking, innovativeness, manageability, self-confidence, knowledgeability, persistence, feedback usage, persuasibility, hope of success and achievement motivation. Components of livelihood security were food security, habitat security, educational security, health security, social security and occupational security.

## 5.1 Salient Findings of the study

1. More than half of the respondents (52.50%) belonged to middle age group. 40.83 percent of the respondents belonged to old age group followed by 6.67 percent of the respondents belonged to young age group. This result is an indication that young farmers are more interested in commercialized agriculture.

2. One third (35%) of the respondents had education upto high school, 25 percent of the respondents had education upto middle school, 19.17 percent of respondents had education upto college level, 16.67 percent had education upto primary school followed by students with professional degree (4.17%). 4.17 percent of the respondents who had professional degree are the Board of Director members (BODs) and CEOs of the FPOs.

3. Almost half (42.50%) of the respondents had medium level of income (Rs.60,000 – Rs 2,00,000), 39.17 percent of the respondents had low level of income (below Rs.60,000), 18.33 percent of the respondents had high level of income (above Rs.2,00,000). Majority of farmers in Kerala belonged to middle class in the economic status of the society.

4. Majority of the respondents (60.83%) had medium level of scientific orientation followed by respondents with high scientific orientation (24.17%) and low (15%) respectively. This clearly reflects the increasing interest of farmers towards

scientific methods of farming which may lead to increasing production and thereby income.

5. Almost half (42.50%) of respondents had attended two trainings followed by three or more and one training by 40.83% and 16.67% of the respondents respectively. FPO members are exposed to trainings which help them to increase their professional knowledge in marketing and enhance their business skills.

6. Half of respondents (50.83%) had medium level of credit orientation followed by high and low credit orientation for 27.50 percent and 21.67 percent of respondents respectively. It shows that the membership in FPOs increases the extend of availability of credit to the farmers.

7. Majority of the respondents (65%) had medium group cohesiveness. 18.33 percent of respondents had low group cohesiveness followed by 16.67 percent of respondents with high group cohesiveness. Since FPO consist of group of farmers who themselves manages all the activities, group cohesiveness is an important component of entrepreneurial success.

8. Majority of the respondents (65.83%) had medium creativity followed by 18.33 percent of respondents with high creativity and 15.83 percent of respondents with low creativity. Creativity is an important component of entrepreneurial behaviour which aims to increase the capability of the farmer to offer products that are unique in the market space.

9. NABARD and SFAC are the major institutions that provide support to FPO. Small Farmers' Agribusiness Consortium (SFAC) is a designated agency of Department of Agriculture and Cooperation (DAC) to act as a single-window for technical support, training needs, research and knowledge management and to create linkages to the markets (DAC, 2013). The functioning of these FPOs are supervised by NABARD through a series of evaluation through POPI (Producer Organizations Promoting Institute).

10. Almost two third of the respondents (65.83%) had medium entrepreneurial behaviour followed by 17.50 and 16.67 percent of respondents with high and low entrepreneurial behaviour respectively.

11. Majority of respondents (71.67%) had medium risk- taking ability followed by 17.50 percent and 10.83 percent of respondents with high and low risk taking ability respectively. Trainings increased the self confidence which thereby enhanced the risk taking ability.

12. Majority of respondents (65%) had medium hope of success followed by 20.83 percent and 14.17 percent of respondents with high and low hope of success respectively. FPOs received financial and technical support from NABARD and SFAC which increased the self confidence of the members of the FPO which thereby increased the hope of success.

13. Majority of respondents (65%) had medium persistence followed by 20.83 percent and 14.17 percent of respondents with high and low persistence respectively due to medium creativity and self confidence.

14. Majority of respondents (57.50%) had medium feedback usage followed by 25.83 percent and 16.67 percent of respondents with high and low feedback usage respectively. Achievement motivation for majority of respondents created a need in them to improve the quality of their product by collecting feedback and use it for further improvement which further helped them to fetch higher price for the product.

15. Majority of respondents (71.67%) had medium self- confidence followed by 15.00 percent and 13.33 percent of respondents with high and low self-confidence respectively. Group cohesiveness and Training increased their knowledge about scientific methods of farming, latest technology and skill to manage the activities of FPO which further increased their self- confidence.

16. Majority of respondents (71.67%) had medium knowledgeability followed by 15.00 percent and 13.33 percent of respondents with high and low knowledgeability respectively. They were given training on crop production,

protection and value addition aspects of agriculture. Board of Director members and CEOs were given training on professional business skills.

17. Majority of respondents (57.50%) had medium persuasibility followed by 22.50 percent and 20 percent of respondents with high and low persuasibility respectively. This is due to medium social participation and group cohesiveness.

18. Majority of respondents (69.17%) had medium manageability followed by 18.33 percent and 12.50 percent of respondents with high and low manageability respectively. Farmers face complex situations with little or sometimes no resemblance with past conditions such as climate change and price fluctuation. These interactions improved the managerial capacity of farmers.

19. Majority of respondents (76.67%) had medium innovativeness followed by 12.50 percent and 10.83 percent of respondents with high and low innovativeness respectively. The possible reason might be that, majority of FPO members belong to medium creativity and annual income level.

20. majority of respondents (72.50%) had medium achievement motivation followed by 15.00 percent and 12.50 percent of respondents with high and low achievement motivation respectively. Achievement motivation helped the individual to aspire for higher level of earning and living.

21. Almost two third of the respondents (65.83%) had medium secure livelihood followed by 8.33 and 15.83 per cent of respondents with high and less secure livelihood respectively.

22. Entrepreneurial behaviour shows positive and significant correlation with food security, habitat security, educational security, social security, occupational security and livelihood security. Health security shows a non significant correlation with entrepreneurial behaviour. Kerala is facing a health crisis of increase in specific diseases like cancer, kidney, liver diseases among its people. This situation had a significant influence with the increasing wealth, changes in life style, new food habits, pesticide residues in food products, obesity and rising incidence of diabetes.

Entrepreneurial behavior shows positive and significant correlation with education, income, training, scientific orientation, group cohesiveness and creativity. It shows negative and non-significant correlation with age and credit orientation. Creativity and training attended by the respondents were found to be crucial to have better entrepreneurial behaviour.

23. Marketing channels used by the FPOs are given below,

a) Producer – Farmer Producer Organization – Retailer –Consumer

b) Producer- FPO- Commission agent- Retailer- Consumer

c) Producer- Farmer Producer Organization- Consumer

24. The major constraints faced by FPO members were marketing challenge (78.25), lack of professional business skill (61.73), lack of training on packaging (59.74), lack of funds(54.07), competition from branded products (51.98), less membership in FPO (50.74), seasonality of products (47.66), lack of awareness about the FPO (36.40) and frequent change of CEO (31.43).

## 5.2 Future line of research

1. Similar studies can be replicated in other districts and states of the country.

2. Training Need Assessment of CEOs and BODs can be studied inorder to increase the effectiveness of the FPOs.

3. Role of FPOs in doubling farmers income can be studied.

4. Economic analysis on the performance of the FPOs can be studied.

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# ENTREPRENEURIAL BEHAVIOUR OF FARMER PRODUCER ORGANIZATION (FPO) MEMBERS FOR LIVELIHOOD SECURITY

**by**

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**ABSTRACT**

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**DEPARTMENT OF AGRICULTURAL EXTENSION**

**COLLEGE OF AGRICULTURE**

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**KERALA, INDIA**

**2020**

## ABSTRACT

The study entitled “Farmer Producer Organizations in Kerala: A constraint analysis” was designed to assess constraints faced by the members of FPOs. Wayanad district from Northern Kerala, Idukki district from Central Kerala and Trivandrum district from Southern Kerala were purposively selected for the study as they have highest number of FPOs in the state. Two functioning FPOs each were selected from Wayanad, Idukki and Trivandrum based on the discussion with NABARD, SFAC and KVK. From each selected FPO, 20 members were randomly selected. A total of 40 farmers were surveyed from each district thus making a total of 120 farmers. Expost facto research design was used for the study. Constraints statements were provided to the respondents and were asked to rank the constraints. Garrett ranking technique was used to rank the constraints according to their order of preference from major constraint to minor constraint. major constraints faced by FPO members were marketing challenge, lack of professional business skill, lack of training on packaging, lack of funds, competition from branded products, less membership in FPO, seasonality of products, lack of awareness about the FPO and frequent change in CEO.

Entrepreneurial Behaviour and livelihood security were selected as dependent variables. Entrepreneurial Behaviour and livelihood security were assessed using Entrepreneurial Behaviour Index and Livelihood Security Index developed by Wankhade et al. (2005) and Baby (2005) respectively. Components of entrepreneurial behaviour were risk taking, innovativeness, manageability, selfconfidence, knowledgeability, persistence, feedback usage, persuasibility, hope of success and achievement motivation. Components of livelihood security were food security, habitat security, educational security, health security, social security and occupational security. The personal and socio-economic variables selected through judges rating were age, education, annual income, scientific orientation, number of trainings attended, social participation, scientific orientation, group cohesiveness, credit orientation, institutional intervention and creativity. Two third of the respondents (65.83%) had medium entrepreneurial behaviour. 71.67per cent of the respondents had medium risk-taking ability, 65 per cent had medium hope of success and

persistence, 57.50 per cent had medium feedback usage, 71.67 per cent had medium selfconfidence and knowledgeability, 57.50 per cent had medium persuasibility,69.17 per cent had medium manageability, 76.67 per cent had medium innovativeness and 72.50 per cent had medium achievement motivation. 65.83 per cent of the respondents had medium secure livelihood followed by 18.33 and 15.83 per cent of respondents with high and less secure livelihood respectively.

More than half of the respondents (52.50%) belonged to middle age group, 35 per cent of the respondents had education up to high school and 42.50 per cent had medium level of income (Rs.60,000 – Rs 2,00,000). 60.83 per cent had medium level of scientific orientation, 50.83 per cent had medium level of credit orientation. 65 per cent had medium group cohesiveness and 65.83 per cent had medium creativity.

Entrepreneurial behavior had positive and significant correlation with education, income, training, scientific orientation, group cohesiveness and creativity. It had negative and non-significant correlation with age and credit orientation. Entrepreneurial behaviour had positive and significant correlation with food security, habitat security, educational security, social security, occupational security and livelihood security. Health security had a non- significant correlation with entrepreneurial behaviour.

The major constraint identified was the marketing challenge faced by the FPO members. Suggestive measures recommended were the installation of cold storage facilities for the FPOs dealing with perishable commodities, providing trainings on improving the quality of the product which helps in export and increasing publicity by displaying their products in exhibitions.

Majority of the FPO members had medium entrepreneurial behaviour and livelihood security. Also, entrepreneurial behaviour was found to have positive and significant correlation with livelihood security. Therefore, it can be concluded that entrepreneurial behaviour plays a major role in securing the livelihood of FPO.

# *Appendix*

## APPENDX-I

## ENTREPRENEURIAL BEHAVIOUR OF FARMER PRODUCER ORGANIZATION (FPO) MEMBERS FOR LIVELIHOOD SECURITY

### OBJECTIVES OF THE STUDY

To study the perception of farmers about the feasibility, utility and the constraints of integrated farming systems of Kuttanad. Seasonal employment pattern, employment profile and involvement of family members will be assessed and the components of integrated farming systems will be inventorised.

**Table showing variables taken for the study**

***Variables are given in bold cases and their respective meaning is explained for easy understanding of intended meaning. You may please rate the statement with a tick mark in the appropriate column against the statement with special reference to its importance to meet the objectives of the study.***

| Sl no. | Independent Variable | Operational definition | Relevancy rating (R-relevant ) | | | | |
|---|---|---|---|---|---|---|---|
| | | | Most R | More R | R | Less R | Least R |
| 1. | **Age** | Refers to the number of years completed by the respondents at the time of interview. | | | | | |
| 2. | **Education** | This refers to the highest academic qualification achieved by the respondents through formal and informal learning. | | | | | |
| 3. | **Family Education** | Refers to the highest academic level qualification | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | possessed by each of the family member. | | | | | |
| 4. | **Main Occupation** | Main occupation is operationalised as the primary activity in which the respondents spend majority of the time and attention for the livelihood. | | | | | |
| 5. | **Subsid iary Occup ation** | This refers to other activities carried out by the respondent to support his living. | | | | | |
| 6. | **Family Composition** | Refers to the number of males, females and children in the family. | | | | | |
| 7. | **Annual Income** | Refers to the sum total of the earnings of all the members of the family. | | | | | |
| 8. | **Income from Farming** | This refers to that part of the annual income of the respondent which is contributed by farming. | | | | | |
| 9. | **Land holdings** | Land holding is operationally defined as the total farm area in hectare owned or leased by the respondent for the practice of Integrated farming. | | | | | |
| 10. | **Economic Motivation** | This refers to the extent to which the respondent is oriented to obtain profit and the relative value placed on economic ends so that it influences further adoption or sustenance related to agriculture. | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 11. | **Information seeking behaviour** | It refers to the extent to which an IFS farmer is seeking information from different communication sources. | | | | | |
| 12. | **Social participation** | It refers to the participation of IFS farmer in various formal and informal organisations either as members or office bearers. | | | | | |
| 13. | **Level of aspiration** | It is operationally defined as the future level achievements in his job which he is expecting based on the knowledge about the level of past performance. | | | | | |
| 14. | **Trainings undergone** | This refers to the number of trainings undergone by the respondent in various activities related to integrated farming. | | | | | |
| 15. | **Self confidence** | Self confidence is defined as the extent of feeling about one's own powers, abilities and resourcefulness to perform any activity which the respondent desires to undertake through creation of new ventures.. | | | | | |
| 29. | **Family labour utilization** | This refers to the extent of efficient utilization of the family members by the respondent to carry outvarious activities in his field. | | | | | |
| 30. | **Competition Orientation** | It is defined as the degree to which an IFS farmer is oriented to place | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | himself in a competitive situation in relation to other individuals for projecting his excellence. | | | | | |
| 31. | **Additional farm assets** | This is defined as the farm implements and other farm machineries owned by the farmer. | | | | | |
| 32. | **Innovativeness** | It is defined as the degree to which an IFS farmer is relatively earlier in adopting new ideas. | | | | | |
| 33. | **Decision making ability** | It is defined as the degree to which an IFS farmer justifies the selection of most effective means from among the available alternatives on the basis of scientific criteria for achieving maximum economic profit. | | | | | |
| 34. | **Risk taking ability** | It is defined as the degree to which farmers are oriented towards risk and uncertainity and have courage to take up IFS. | | | | | |
| 35. | **Achievement motivation** | It is defined as the desire for excellence of an IFS farmer to attain a sense of personal accomplishment. | | | | | |
| 36. | **Others if any, please specify:** | | | | | | |

**APPENDIX- II**

**KERALA AGRICULTURAL UNIVERSITY**

**COLLEGE OF AGRICULTURE, VELLAYANI, TRIVANDRUM**
**DEPARTMENT OF AGRICULTURAL EXTENSION**

## INTERVIEW SCHEDULE FOR FARMERS

**"Entrepreneurial behavior of Farmer Producer Organization (FPO) members for livelihood security"**

No. Date:

Name of Block:

Name of panchayat:

Name of the FPO:

Name and address of the respondent:

1. Age: Ph.no:

2. Educational Status:

| Sl. No. | Category | Tick |
|---|---|---|
| 1 | Illiterate | |
| 2. | Primary school | |
| 3. | Middle school | |
| 4. | High school | |
| 5. | College | |

| | | |
|---|---|---|
| 6. | Professional degree | |

3. Annual Income:

4. Number of members in the family:

1. Scientific orientation:

| Sl.No | Statements | SA(5) | A(4) | UD(3) | DA(2) | SDA(1) |
|---|---|---|---|---|---|---|
| 1. | New methods of farming gives better results to a farmers than old methods | | | | | |
| 2. | The way of farming by forefathers is still the best way of farming. | | | | | |
| 3. | Even a farmer with a lot of experience should use new methods in farming. | | | | | |
| 4. | A good farmer experiments with new ideas in farming. | | | | | |
| 5. | Though it takes time for a farmer to learn new methods in farming its worth the efforts. | | | | | |
| 6. | The traditional methods in farming have to be changed in order to raise the standard of living of a farmer. | | | | | |

2. Number of trainings attended – One/Two/Three or more

3. Social participation –

| | Not membe r | a Membe r | Office bearer | Never | Sometimes | Regularly |
|---|---|---|---|---|---|---|
| 1. Panchayat | | | | | | |
| 2. Co-operative Society | | | | | | |
| 3. Farmers Club | | | | | | |
| 4. Socio- cultural organization | | | | | | |

9. Group cohesiveness

| Sl.No. | Statements | True (2) | Somewhat true (1) | Not true(0) |
|---|---|---|---|---|
| 1. | I feel dissatisfied and want to quit from the group. (N) | | | |
| 2. | Everyone tries to help if the members problems in completing the task. | | | |
| 3. | We all take the responsibility for any ones mistake. | | | |
| 4. | When a task is assigned, group members leaves entire burden on the leader. (N) | | | |
| 5. | All group members trust and support each other in times of crisis. | | | |
| 6. | Whenever someone in the group face any finanacial crisis, we come together, provide financial support and later recover from the member. | | | |

9. Credit orientation

| Sl.No | Statements | Yes | No |
|---|---|---|---|
| 1. | Making an effort to borrow money, but could not borrow due to several reasons. | | |
| 2. | Eligible to take credit by saving consistently but not repaying the previous credit. | | |
| 3. | Borrowing money only from private money lenders and not from banks | | |
| 4. | Borrowing money but delaying in repayment and re- borrowing in some form | | |
| 5. | Borrowing and re-borrowing from banks after making timely repayment | | |
| 6. | Borrowing money from banks repaying it after borrowing money from some other institution and continuing the action involving several other sources. | | |
| 7. | Borrowing money from the local institution like cooperative society as interest free loans and not from commercial banks. | | |

10. Institutional intervention:

a. Name of the institution that support your FPO:
b. Type of the institution - Governmental / Non governmental / Others
c. Type of support supply - Technical / Financial / Marketing / Extension / Input

12. Creativity

| Sl. No | Statements | Always (5) | Very often (4) | Sometimes(3) | Rarely(2) | Never(1) |
|---|---|---|---|---|---|---|
| 1. | I devise novel methods to improve the quality of work. | | | | | |
| 2. | I can develop alternative ways of doing work. | | | | | |
| 3. | I can improvise ways to get things done if planned arrangements fail. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4. | I think of new ways of solving problems. | | | | | |
| 5. | I visualize unforeseen deviations in planned course of action. | | | | | |
| 6. | I use humour to get out of difficult situations. | | | | | |

13. Risk taking

| Sl. No. | STATEMENTS | SA | A | UD | DA | SDA |
|---|---|---|---|---|---|---|
| 1. | I don't fear investing my money on a venture whose dividends I have calculated. | | | | | |
| 2. | I will consider a risk worth taking if the probability for success is 40-60%. | | | | | |
| 3. | I don't mind working under conditions of uncertainty as long as there is a reasonable probability of gains from it for me. | | | | | |
| 4. | I will consider a risk worth taking only if probability for success is 60-100%. | | | | | |
| 5. | I don't care if the profit is small so long as it is assured and constant. | | | | | |

14. Hope of success

| Sl. No. | STATEMENTS | SA | A | UD | DA | SDA |
|---|---|---|---|---|---|---|
| 1. | I believe problems and barriers can be turned to opportunities that can be explored | | | | | |
| 2. | I am unprepared for the outcome of my actions. | | | | | |
| 3. | I don't think of negative consequences of decisions that I make | | | | | |
| 4. | I cannot see the future as bright and promising. | | | | | |
| 5. | I meet and solve problems as they are. | | | | | |

| Sl. No. | STATEMENTS | SA | A | UD | D A | SD A |
|---|---|---|---|---|---|---|
| 1. | I don't allow failures to discourage me. | | | | | |
| 2. | Once I have started a task I usually carry it to its completion. | | | | | |
| 3. | I find myself working harder under stress. | | | | | |
| 4. | I work just as hard as most people I know. | | | | | |
| 5. | When I fill in a goal , I immediately turn my attention to another goal. | | | | | |

Usage

| Sl. No. | STATEMENTS | SA | A | U D | D A | SD A |
|---|---|---|---|---|---|---|
| 1. | I don't get upset when given negative feedback about the way I perform. | | | | | |
| 2. | I try to know more about the life stories of successful businessmen. | | | | | |
| 3. | Mistakes and failures overwhelm me so much that I cannot learn from them. | | | | | |
| 4. | I am unwilling to charge my mind, once it is made up even in the face of new development. | | | | | |

18. Knowledgeability

| Sl. No | STATEMENTS | SA | A | UD | DA | SDA |
|---|---|---|---|---|---|---|
| 1. | The knowledge experience and training I have on my proposed business is good enough. | | | | | |
| 2. | My competence is better than that of the ordinary man inmy community. | | | | | |
| 3. | I want to have good knowledge of my market before I start m business. | | | | | |
| 4. | I need not waste time and money on "market research" if th product sells, I will go on producing. | | | | | |
| 5. | I don't see the importance of reading the newspaper everyday. | | | | | |

18. Manageability

| Sl. No. | STATEMENTS | SA | A | UD | DA | SDA |
|---|---|---|---|---|---|---|
| 1. | I find nothing wrong in consulting expert advice regarding how I must manage my business. | | | | | |
| 2. | As an entrepreneur I need to practice basic managerial skills so that my business need not be a one man show for a concerted effort of myself and those who work for me. | | | | | |
| 3. | It is not necessary to be scientific and rational labour management as long as one has the will to do what he wants to do. | | | | | |
| 4. | I cannot be away too long from my business because no one else can manage its activities. | | | | | |
| 5. | I believe the sole proprietorship is the best form ownership for a business to succeed. | | | | | |

19. Innovativeness

| Sl. No. | STATEMENTS | SA | A | UD | DA | SD A |
|---|---|---|---|---|---|---|
| 1. | While my product or service may not entirely be new. I am thinking of new and better ways to make it competitive. | | | | | |
| 2. | While others see nothing unusual in the surrounding. I am able to perceive in it new opportunities for business. | | | | | |
| 3. | I avoid changing the way things are done. | | | | | |
| 4. | I have never tried introducing new products to the market and I don't think I want to try. | | | | | |
| 5. | Do you want to earn more money by starting new economic activity. | | | | | |

20. Achievement motivation

| | | | | | | |
|---|---|---|---|---|---|---|
| 1. | I take pleasure in taking challenges make me work harder. | | | | | |
| 2. | In business I am more concerned with growth ( being successful) rather than with profit. | | | | | |
| 3. | I want to earn only as much as to attain a comfortable way to live. | | | | | |
| 4. | I do not mind taking unchallenging work on a routine basis if the pay is good. | | | | | |
| 5. | I like people on the basis of friendship and other relations ( for their loyalty) rather than on the basis of competence. | | | | | |

18. a) Food security

| Sl. No | Statements | FT(3) | PT(2) | NT(1 |
|---|---|---|---|---|
| 1. | Food in any kind is available throughout the year. | | | |
| 2. | Quality of food available is good. | | | |
| 3. | Sufficient quantity of food is available for my family. | | | |
| 4. | A balanced food to all family members is affordable with existing income. | | | |
| 5. | A need to reduce expenditure of food in order to meet other family needs. | | | |

18. Habitat security

| Sl. No | Questions | YES (1) | NO (0) |
|---|---|---|---|
| 1. | Toilet facility in the house | | |
| 2. | Electric supply to house | | |

| | | | |
|---|---|---|---|
| 3. | Water supply to house | | |
| 4. | Transport facilities to house | | |

18. Educational security

| Sl. No | Statements | YES(1) | NO(0 |
|---|---|---|---|
| 1. | Have access to information regarding education opportunities for children | | |
| 2. | Send children to public/convent/English medium schools | | |
| 3. | Any child got college education | | |
| 4. | Children send to town or cities for education | | |
| 5. | Adult from your family participation in functional literacy programme. | | |
| 6. | Did any of your children had to stop their studies as you cannot afford | | |

18. Health Security

| Sl. No | Statements | Agree (1) | Disagree(0) |
|---|---|---|---|
| 1. | We depend on local hospital for most of our health problems. | | |
| 2. | In order to get better health service we travel outside town. | | |
| 3. | We can't afford health care facilities available. | | |

19. Social security

| Sl.No. | Statements | Tick your response |
|---|---|---|
| 1. | Is there any social organization in the society | |
| 2. | Are you a member of any social organisation | Yes / No |
| 3. | Do you actively participate in the social organisation | Very much /Sometimes /Rarely |
| 4. | The social status of the family helps us to improve our livelihood | Agree / Disagree |

18. Occupational security

| Sl.No. | Statements | Tick the response |
|---|---|---|
| 1. | Employment | Regular / Seasonal |
| 2. | Do you have an occupation according to your qualification? | Yes / No |
| 3. | Is your income adequate to meet your expenditure? | Yes / No |
| 4. | Does your family get employment round the year? | Yes / No |

19. Marketing channel-

20. Major constraints faced:

| Constraints | Rank |
|---|---|

| | |
|---|---|
| 1. Marketing challenge | |
| 2. Lack of awareness about the FPO | |
| 3. Frequent change in CEO | |
| 4. Lack of training on packaging | |
| 5. Lack of professional business skills | |
| 6. Less number of members in FPO | |
| 7. Competition from branded products | |
| 8. Seasonality of products | |
| 9. Lack of funds | |

21. Income generating activities of the FPO


Plate 1: Bana Agro and Allied Producer Company


Plate 2: Sabarmati Farmer Producer Company

Plate 3: Chopping tapioca in Neyyasseri Agro. Producer Company

Plate 4: Tapioca products in Neyyasseri Agro. Producer Company

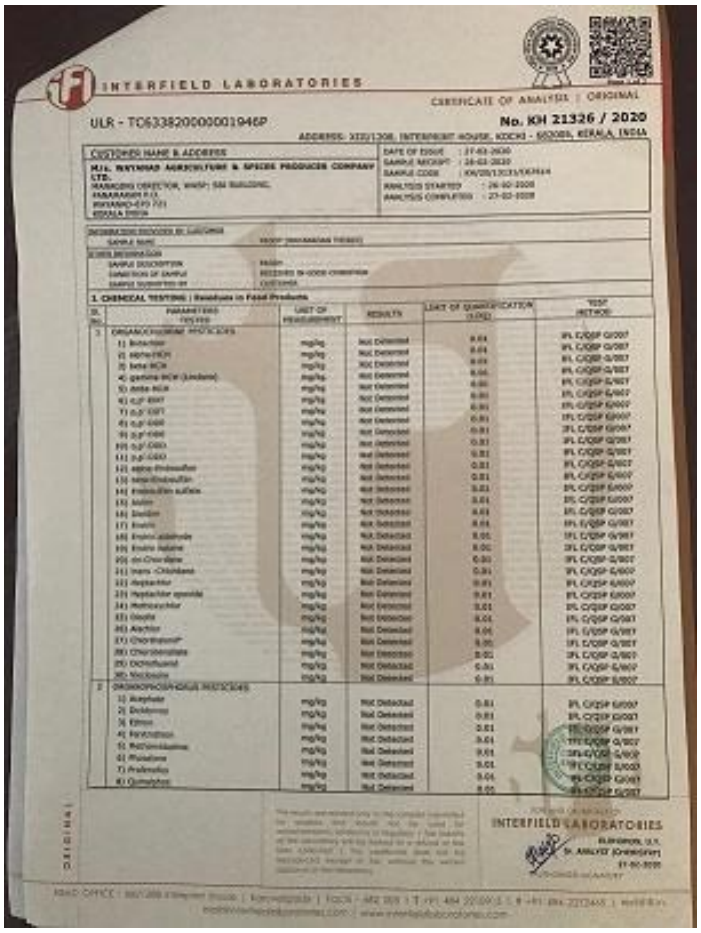
Plate 3: Mini- cold storage facility in Neyyasseri Agro. Producer Company

Plate 4: Partially processed jack fruit in mini- cold storage facility in Neyyasseri Agro. Producer

Plate 5: Products of  Thodupuzha Agro. Producer Company

Plate 6: Packed Coconut oil of Thodupuzha Argo. Producer Company

Plate 7: Packed Products of WASP



INTERFIELD LABORATORIES

CERTIFICATE OF ANALYSIS | ORIGINAL

ULR - TC633820000001946P

No. KH 21326 / 2020

ADDRESS: XIII/1308, INTERFLIGHT HOUSE, KOCHI - 682005, KERALA, INDIA

CUSTOMERS NAME & ADDRESS

M/s. NAYANAR AGRICULTURE & SPICES PRODUCERS COMPANY LTD.

MANAGING DIRECTOR, WASP, SM BUILDING,
AMARAVATI P.O.
PAYANNUR (VIA) 721
KERALA INDIA

DATE OF ISSUE : 27-02-2020
SAMPLE RECEIPT : 26-02-2020
SAMPLE CODE : KK/20/1303/KKN44
ANALYSIS STARTED : 26-02-2020
ANALYSIS COMPLETED : 27-02-2020

INFORMATION PROVIDED BY CUSTOMER

SAMPLE NAME : WASP NAYANAR TURMERIC

SAMPLE RECEIVED

SAMPLE DESCRIPTION : PASTE
CONDITION OF SAMPLE : RECEIVED IN GOOD CONDITION
SAMPLE SUBMITTED BY : CUSTOMER

1. CHEMICAL TESTING | Residues in Food Products

| Sl. No. | PARAMETERS TESTED | UNIT OF MEASUREMENT | RESULTS | LIMIT OF QUANTIFICATION (LOQ) | TEST METHOD |
|---|---|---|---|---|---|
| 1 | ORGANOCHLORINE PESTICIDES | | | | |
| | 1) Aldrin | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 2) Alpha HCH | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 3) Beta HCH | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 4) gamma HCH (Lindane) | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 5) delta HCH | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 6) o,p'-DDT | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 7) p,p'-DDT | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 8) o,p'-DDE | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 9) p,p'-DDE | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 10) o,p'-DDD | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 11) p,p'-DDD | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 12) alpha Endosulfan | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 13) beta Endosulfan | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 14) Endosulfan sulfate | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 15) Endrin | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 16) Dieldrin | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 17) Endrin | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 18) Endrin aldehyde | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 19) Endrin ketone | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 20) cis Chlordane | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 21) trans Chlordane | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 22) Heptachlor | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 23) Heptachlor epoxide | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 24) Methoxychlor | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 25) Oxadia | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 26) Alachlor | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 27) Chlorthalonil* | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 28) Chlorneb/alpha | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 29) Dichofluanid | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 30) Vinclozolin | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| 2 | ORGANOPHOSPHORUS PESTICIDES | | | | |
| | 1) Acephate | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 2) Dichlorvos | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 3) Ethion | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 4) Fenitrothion | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 5) Methamidophos | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 6) Phosalone | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 7) Profenofos | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |
| | 8) Quinalphos | mg/kg | Not Detected | 0.01 | IFL C/QSP Q/007 |

INTERFIELD LABORATORIES

Dr. ANILOY (Chemistry)

ORIGINAL

Plate 8: Certification for pesticide free products of WASP

te 9: Machines and equipments in  Bana Agro. & allied

Producer Company for ice cream preparation

Plate 10: Equipments in Bana Agro. & allied PC

for dairy products preparation

Plate 11: Discussion with Neyyasseri Agro Producer Company member

Plate12: Annual meeting of Neyyasseri Agro. Producer Company

Plate13: Discussion with Bana Agro. and allied Producer Company members

Plate 14: Discussion with member of Sanghamaitri (Producer Organization)