

**EFFECTIVENESS OF PARAMPARAGAT KRISHI VIKAS YOJANA
FOR PROMOTING ORGANIC FARMING UNDER ATMA**

by,

Miss. Shwetalina Sahoo

(Reg. No. 017/199)



**DEPARTMENT OF AGRICULTURAL EXTENSION AND
COMMUNICATION**

COLLEGE OF AGRICULTURE, PUNE-411005

MAHATMA PHULE KRISHI VIDYAPEETH

RAHURI - 413 722, DIST- AHMEDNAGAR

MAHARASHTRA, INDIA.

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MAHARASHTRA, INDIA**

In partial fulfilment of the requirements for the degree

of

MASTER OF SCIENCE (AGRICULTURE)

in

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RAHURI - 413 722, DIST- AHMEDNAGAR

MAHARASHTRA, INDIA

2019

CANDIDATE'S DECLARATION

I hereby declare that this thesis or part
there of has not been submitted
by me or other person to any
other University or Institute
for a Degree or
Diploma.

Place : Pune

Date : / /2019

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CERTIFICATE

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The assistance and help received during the course of this investigation have been duly acknowledged.

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Date : / /2019

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Place : Pune

Date : / /2019

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ABBREVIATIONS USED

ATMA - Agricultural Technology Management Agency

AMC- ATMA Management Committee

BTT - Block Technology Team

DAC & FW- Department of Agriculture Cooperation and Farmers Welfare

GB- Governing Board

GoI- Government of India

FIG- Farmer Interest Group

ICAR- Indian Council of Agricultural Research

IDWG- Inter Departmental Working Group

KVK- Krishi Vigyan Kendra

MIDH- Mission for Integrated Development of Horticulture MIDH

NGO- Non Governmental Organization

NMOOP- National Mission on Oilseeds & Oil Palm

NMSA- National Mission for Sustainable Agriculture

PGS- Participatory Guarantee System

PKVY- Paramparagat Krishi Vikas Yojana

SHM- Soil Health Management

ABSTRACT

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Research Guide: Dr. S. S. Khandave**Department: Agricultural Extension and Communication, College of Agriculture,
Pune - 411005**

The present study entitled ‘Effectiveness of Paramparagat Krishi Vikas Yojana for promoting organic farming under ATMA’ had been initiated focusing on the promotion of commercial organic production through certified organic farming which will be pesticide residue free and will contribute to improve the health of consumer by raising farmer's income and creating potential market for traders. It had motivated the farmers for natural resource mobilization for input production. The present study was undertaken to study the farmer's profile, their extent of participation in PKVY activities, effectiveness of PKVY and the association between the profile characteristics and effectiveness of PKVY.

Pune district from Maharashtra state was selected purposively based on effective working of PKVY. As per the information PKVY is working more efficiently having the highest number of Farmer Interest Groups (FIGs) in Purandar tehsil. Purandar tehsil was selected purposively by considering the work of PKVY and based on the number of clusters (Farmer interest groups). Cluster wise list of farmers was obtained from the In-charge ATMA, State Department of Agriculture, Pune. It was observed from the list that farmers of selected tehsil were involved in performing organic practices in fruit crops viz; pomegranate, ber, custard apple of that tehsil. From selected tehsil total 8 FIGs involved in organic farming were selected purposively and from each FIG, 15 farmers were selected randomly comprising total 120 sample size.

Analysis of personal, social, economical, communicational and psychological characteristics of respondents indicates that, more than half (63.33 per cent) of the respondents were middle aged, more than one fourth (25.83 per cent) belonged to higher secondary level of education, majority (72.50 per cent) of them belong to joint family. 47.50 per cent of respondents had 8-12 years of farming experience, however (71.67 per cent) had medium level of social participation, equal (40.00 per cent) of them were belonged to small and marginal farmer. More than two fifth (41.67 per cent) were having annual income between ₹1,50,000 to 2,25,000. More than two third (70.00 per cent) of the respondent had medium level of mass media exposure, 60.00 per cent high level of economic motivation and 60.00 per cent had high level of innovativeness.

Data further revealed that majority (73.33 per cent) of farmers were actively participating in PKVY activities and it also showed that extent of participation of farmers is higher in the training programme, demonstration and farmer's discussion under PKVY activities with the involvement ATMA functionaries for promotion of organic farming.

More than two fifth (45.83 per cent) of the farmers were very advanced to adopt the cultural practices, more than one third (44.17 per cent) of the respondents were categorized under availing high level of economic benefits, more than half 58.33 per cent of the respondents were availed high level of technical benefits, and more than two third (85.83 per cent) of the respondents were categorized under high level of availing social benefits. It was also observed that more than two third (67.50 per cent) respondents had medium level of effectiveness followed 16.67 per cent and 15.83 per cent who had showed high and low level of effectiveness of PKVY respectively.

Findings of the association analysis revealed that variables viz. age, education, family type, farming experience, social participation, annual income, economic motivation, innovativeness were significantly associated with effectiveness of PKVY. However, land holding and mass media exposure were non-significantly associated with effectiveness of PKVY for promoting organic farming.

The respondents were in medium level of effectiveness in almost all variables. Thus, efforts should be made to strengthen the attributes of PKVY to help the organic farmers which will further lead to an increase in the effectiveness of PKVY by working on the loop holes present on the scheme.

1. INTRODUCTION

After the post green revolution in India, it lead to substantial increase in the production of food grains through the use of improved crop varieties and higher level of inputs *viz*; fertilizers and plant protection chemicals. These results in stagnation or even decline in production and productivity of major crops, receding ground water table in many areas, low diversity of production system, increasing production costs, leaving agriculture as an uneconomic and non-viable enterprise for resource poor farmers. The damage caused through agrochemical pollution to environment and human health is found to be irreparable (Thakur *et. al.*, 2003). As the natural resources of any country are the national treasure, we need proper planning to make best use of them. Therefore, suitable management practices are urgently needed to preserve the production potential of agricultural lands. Efficient management and maintenance of soil health/quality is the key to accomplish sustained high productivity, food security and environmental safety. Developing and adopting an ideal management system which can intact or improves the quality of natural resources is the urgent need of this era and “**Organic farming**’ plays a vital role as it promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity.

Organic farming is a production system which avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators, genetically modified organisms and livestock food additives. To the maximum extent possible organic farming system rely upon crop rotations, use of crop residues, animal manures, legumes, green manures, off farm organic wastes, biofertilizers, mechanical cultivation, mineral bearing rocks and aspects of biological control to maintain soil productivity and tilth to supply plant nutrients and to control insect, weeds and other pests. (Patel 2015). Organic farming produce an optimal condition in the soil for high yields and good quality of crops. It reduces the need for purchased inputs and helps to improve the soil chemical properties such as supply and retention of soil nutrients by promoting favourable chemical reactions. And helps to keep organically grown plants more resistant to diseases and insect.

As per documented evidence, organic agriculture in India started long back in 1900 by Sir Albert Howard, a British agronomist, in local village of North India. Since then, farmers in some parts of India are practicing it either by default or in the absence of resources. The commercial organic farming, as practiced today, is still at a nascent stage. According to a survey, India has about 5, 28,171 hectare area under organic agriculture (including certified and area under organic conversion) accounting for about 0.30 per cent of total agricultural land (Pandey and Singh, 2012). The total area under organic certification is 5.21 million hectare (APEDA,

2013). India accounts 11.00 per cent by quantity and 3.00 per cent by value of organic produce in the world market. The total Indian organic farming industry is currently estimated at around US\$ 20 million/Rs 100 crore. The Indian organic sector has already made inroads into the world organic market with certain commodities such as tea, coffee, spices, semi processed pineapple, dried banana, vegetables, desi cotton, basmati rice, dried nuts, sesame oil, pulses and sugarcane.

Organic farming has become very much popularized and practiced in Southern State of India. The farmers of this region have obtained spectacular results by intervening the scientific based traditional farming practices with organic farming practices. It has been recorded that about 70.00 per cent of cultivable area of Kerala, 20.00 per cent of Andhra Pradesh as well as 5.00 per cent each of Karnataka and Tamil Nadu have been under the certified organic spices. Since last decade, the organic farming has been getting a big push in Madhya Pradesh, Gujarat and Maharashtra too. Government is promoting organic farming through various schemes/ programmes under National Mission for Sustainable Agriculture (NMSA)/ Paramapragat Krishi Vikas Yojana (PKVY), Rashtriya Krishi Vikas Yojana (RKVY), Mission for Integrated Development of Horticulture (MIDH), National Mission on Oilseeds & Oil Palm (NMOOP), Network Project on Organic Farming of ICAR. From all the schemes “**Paramapragat Krishi Vikas Yojana**” is picking up in states like Sikkim (complete organic state), Tamil Nadu, Chhattisgarh, Karnataka, Kerala and Maharashtra. Since the year 2002-03 various central as well as state level schemes and missions in Maharashtra are promoting organic farming amongst which PKVY encouraged the farmers for organic cultivation and helped for getting organic certification. (Manual by DAC & FW, GoI).

Paramapragat Krishi Vikas Yojana launched in 2015 which is an elaborated component of Soil Health Management (SHM) of major project National Mission of Sustainable Agriculture (NMSA). Under PKVY Organic farming is promoted through adoption of organic village by cluster approach and PGS certification. PKVY aims at supporting and promoting organic farming, in turn resulting in improvement of soil health. The scheme promotes Participatory Guarantee System (PGS) For India (PGS- India) form of organic certification prescribed a conversion period of 36 months from conventional farm to organic, that is built on mutual trust, locally relevant and mandates the involvement of producers and consumers in the process of certification. PGS – India operates outside the framework of “Third Party Certification”. PGS Certification facilitates farmers to certify their organic produce, label and market their products domestically. The objective is to produce agricultural products free from chemicals and pesticides residues by adopting eco- friendly, low-cost technologies farmer's income and create potential market for traders by motivating farmers for natural resource mobilization for input production. Key Thrust areas of PKVY in promoting organic farming are

promotion of organic farming among rural youth/ farmers/ consumers/ traders, dissemination latest technologies in organic farming, Utilization of the services of experts from public agricultural research system in India and Organization of a minimum one cluster demonstration in a village.

In Maharashtra PKVY is implemented under ATMA programme. Maharashtra is the leading state where the number of farmer's group registered for organic certification, followed by U.P and Karnataka. Under this scheme total of ₹. 71420.65 lakhs were allocated for the 3 years period. Maharashtra being the first with highest budget allocation of ₹.8443 lakhs for 932 clusters followed by Madhya Pradesh, Uttarakhand and Rajasthan. ATMA is operating at district through convergence of various schemes. PKVY is implemented under around 23 ATMAs in the different districts of Maharashtra. (Manual by DAC & FW, GoI).

In Maharashtra ATMA programme is performing good in various schemes. ATMA functions under the guidance of a Governing Board [GB] that determines program priorities and assesses program impact. It also has a Management Committee [AMC] at the district level headed by the Project Director of ATMA which consists of all the representatives of the line departments concerning agriculture & allied sector, KVK, farmer's organizations and NGOs. The activities at district level are monitored by the ATMA Governing Board at periodic intervals while at the State level, the scheme is monitored through an Inter Departmental Working Group (IDWG) functioning under the Chairmanship of Agriculture Production Commissioner (APC) or the Principal Secretary (Agriculture) of the State. In addition to departmental monitoring, the scheme also envisages third party monitoring and evaluation by the respective states as well as centralized evaluation and impact assessment from time to time. (Rath 2016)

1.1 Statement of the Problem

For last 4 years, Paramapragat Krishi Vikas Yojana (PKVY) was an important centrally sponsored scheme for promotion of organic farming. As the number of organic farmers are gradually increasing in both rural and urban areas of India due to various centrally and state sponsored schemes viz; PKVY, MIDH, but there are a limited number of studies on such schemes related to organic farming, so it was decided to study on the "Effectiveness of Paramapragat Krishi Vikas Yojana for promoting organic farming under ATMA".

So, the present study is aimed at assessing the scheme's effectiveness on the target beneficiaries and in reforming the extension system in respect of various processes involved under the scheme and to make suitable recommendations for improving effectiveness of the new system. At the same time it is very important to ascertain the factors responsible for determining adoption of cultural practices, extent of participation, benefits availed by the organic farming followers under PKVY. Considering the above view in mind, study was carried out to know the

effectiveness of Paramparagat Krishi Vikas Yojana for promoting organic farming under ATMA with following specific objectives.

1.2 Objectives of the study

The present study was conducted with general objective of measuring effectiveness of PKVY for promoting organic farming followers of Pune district of Maharashtra. The specific objectives of the study are as under.

1. To study the personal, social, economical, communicational, and psychological characteristics of farmers practising organic farming of PKVY under ATMA.
2. To study the extent of participation of farmers in PKVY activities for promoting organic farming.
3. To study the effectiveness of PKVY for promoting organic farming under ATMA.
4. To study the association between the independent and dependent variable.

1.3 Scope of the study

The finding of the study will have immense practical utility. The findings will be helpful to policy makers, as well as to the public and private agencies engaged in organic farming based extension programmes. The study can contribute to the existing body of research on the integration of organic farming for agricultural development. The findings of this study related to the effectiveness of organic farming, extent of participation of farmers in extension activities, access to financial sources for credit and adoption of organic based cultural practices by the farmers, socio-economic impact that has occurred due to the availability of PKVY based activities which will have practical utility for the future projects.

1.4 Limitations of the study

Despite the utmost care, any human effort is not devoid of limitations. This research study is no exception to this truth. One of the obvious limitations is the resources and time available at the disposal of the scholar to conduct this research. The study was conducted on effectiveness of Paramparagat kishi vikas yojana on Pune district of Maharashtra state over 8 FIGS involved in organic farming of Purandar tehsil and the results were discussed in the specific context of the particular state. Hence generalization of the findings is a limitation. The objectivity of the study is confined to respondents' ability to recall and also to their honesty in providing the necessary information. These limitations, notwithstanding, much effort was put to make the study as objective and systematic as possible.

1.5 Layout of Study

This thesis has been divided into six chapters. The first chapter deals with brief introduction and objectives of the study. The second chapter devoted to review of literature related to research problem. The third chapter is concerned with details of methodology used

for conducting research. The fourth chapter deals with result and discussion. Finding of the study are presented in tabular form and described appropriately in this chapter. Fifth chapter is devoted to summary, conclusion and implications based upon the findings of the study. The sixth and the last chapter have consisted of literature cited for the study. Interview schedule and vitae are presented at the end of thesis.

2. REVIEW OF LITERATURE

A comprehensive review of literature is the part of any scientific investigation. Apart from determining the work done in the past, assisting in delineation of insight and procedures, it forms the basis for interpretation of findings and provides a basic theoretical framework. The literature related to the effectiveness of PKVY for promoting organic farming under ATMA is very limited yet an effort has been made to review the available literature having a direct or an indirect bearing on the study. The same has been presented in this chapter under the following objectives;

- 2.1. To study the personal, social, economical, communicational, and psychological characteristics of farmers practising organic farming of PKVY under ATMA.
- 2.2. To study the extent of participation of farmers in PKVY activities for promoting organic farming.
- 2.3. To study the effectiveness of PKVY for promoting organic farming under ATMA.
- 2.4. To study the association between the independent and dependent variable.

2.1 To study the personal, social, economical, communicational, and psychological characteristics of farmers practicing organic farming of PKVY under ATMA.

a) Personal characteristics

2.1.1 Age

Hasan *et al.* (2009) revealed that 38.00 per cent of the farmers following organic farming were found in middle age group, followed by young 32.00 per cent and old 30.00 per cent age group.

Pandya (2010) studied that more than half (59.00 per cent) of the organic farming followers were found in old age group, whereas 27.00 and 14.00 per cent of the respondents were belonged to middle and young age group, respectively.

Patel (2012) revealed that the majority (70.00 per cent) of the organic farming adopters were found in middle age group, while 25.00 and 05.00 per cent of the respondents were belonged to young and old age group, respectively.

Damor (2013) concluded that 43.34 per cent of the farmers from organic farming were found in middle age group, followed by 29.16 and 27.50 per cent of the respondents were found in old and young age group, respectively.

Patel *et al.* (2014) revealed that exactly half (50.00 per cent) of the farmers who adopted organic farming were belonged to middle age group, followed by 41.67 and 08.33 per cent of the respondents were belonged to old and young age group, respectively.

Sharma (2014) found that the majority (58.00 per cent) of trained adopters of organic farming were belonged to middle age group, followed by 21.11 and 20.00 per cent of the respondents were belonged to young and old age group, respectively.

2.1.2 Education

Darandale (2010) revealed that nearly one third (30.00 per cent) of the tribal maize growers who followed organic farming had possessed higher secondary level of education, followed by 26.67, 24.17 and 15.00 per cent of them had secondary, college and primary level of education, respectively. Only 4.17 per cent of them were illiterate.

Pandya (2010) revealed that 49.00 per cent of the organic farming followers had possessed college/post-graduation level of education, followed by 29.00, 17.00 and 5.00 per cent of them had high school, middle level and primary level of education, respectively.

Chanpaneri (2012) revealed that 43.33 per cent of the tribal adopters of organic farming had possessed high school level of education, followed by 32.50 and 16.67 per cent of them had possessed primary and higher secondary level education, respectively. Only 7.50 per cent of them were illiterate.

Patel (2012) found that nearly one third (30.00 per cent) of organic farming adopters had possessed college level education, followed by 26.00, 22.00, 18.00 and 08.00 per cent of them had secondary, higher secondary, post-graduation and primary level of education, respectively.

Damor (2013) found that 29.17 per cent of the organic farming followers had higher secondary level of education, followed by 24.18, 23.33 and 16.66 per cent of them had secondary, college and primary level of education, respectively. Only 6.66 per cent of them were illiterate.

Patel *et al.* (2014) concluded that 35.83 per cent of the organic farming followers had higher secondary level of education, followed by 27.50, 26.67, 07.50 and 6.66 per cent of them had primary, illiterate, higher secondary and college level of education, respectively.

Sharma (2014) found that 26.67 per cent of trained adopters of organic farming had possessed graduation level of education, followed by 22.22, 17.78, 17.78 and 15.55 per cent of them had secondary, higher secondary, primary and post-graduation level of education, respectively.

2.1.3 Family type

Kushwaha (1999) conducted a study to know the effectiveness of different communication channels in village and conclude that highest percentage of respondents (60.83 per cent) belonged to joint family followed by 39.18 per cent nuclear family.

Singh (2003) reported in a study to know the effectiveness of different communication channels that 50.33 per cent respondents were from joint family and 41.47 per cent respondents belongs to nuclear family.

Hingonekar (2011) reported that majority of the members of FIGs (54.00 per cent) belonged to joint family system and remaining of them (46.00 per cent) belonged to nuclear family system.

Sangamesh (2006) in a comparative profile analysis of rural Youth in rainfed and irrigated tracts of Bagalkot district reported that more than half of the rural youth (51.66per cent) in rainfed tract belonged to nuclear family and nearly half of respondents (48.33per cent) belonged to joint family. In irrigated tract more than half of the rural youth (53.33per cent) belonged to joint family whereas, more than one third of the rural youth (46.66per cent) belonged to nuclear family.

2.1.4 Farming experience

Arindam *et al.* (2013) concluded that majority (60.00 per cent) of farmers are primarily associated with farming and 51.67 per cent had 20-29 years of experience in farming.

Pandya (2010) presented in his report that majority of the FIG members of ATMA Bharuch (60.00 per cent) had lower level of farming experience and ATMA Dahod (60.00 per cent) had moderate level of farming experience followed by 25.50 and 20.50 per cent had moderate and lower level of farming experience and 14.50 and 24.50 per cent of them had higher level of farming experience respectively.

Yadev *et al.* (2013) revealed that the majority of the farmers had low (63.85per cent) farming experience followed by medium (20.48 per cent) and high (15.66per cent) farming experience. Maximum (36.14per cent) numbers of respondents were large farmers followed by medium (34.14per cent) and small (28.91per cent) farmers respectively.

b) Social Characteristics

2.1.5 Social Participation

Kamani (2007) found that the majority (72.15 per cent) of the organic farming adopters had medium level of social participation. Whereas 16.43 and 11.42 per cent of them had high and low level of social participation, respectively.

Darandale (2010) revealed that 40.00 per cent of the tribal maize growers who adopted organic farming had membership in one organization, followed by 27.50, 20.00 and 12.50 per cent of the respondents had no membership in any organization, membership in more than one organization and holding the position in organizations, respectively.

Chanpaneri (2012) observed from his study on organic farming that 40.00 per cent of the trained adopters of organic farming had membership in one organization, followed by 27.50, 20.00 and 12.50 per cent of them had no membership in any organization, membership in more than one organization and membership with holding position in organization, respectively.

Patel (2012) concluded from his study on organic farming and found that the majority (70.00 per cent) of the organic farming adopters had medium social participation, followed by 18.00 and 12.00 per cent of respondents had high and low social participation, respectively.

Damor (2013) observed from his study on organic farming that 44.16 per cent of the organic farming followers had membership in one organization, followed by 27.50, 10.84 and 17.50 per cent of the respondents had membership in more than one organization, no membership in any organization and holding the position in organizations, respectively.

Patel *et al.* (2014) revealed that more than half (53.33 per cent) of the organic farming followers had no membership in any organization, followed by 34.17, 08.33 and 04.17 per cent of the respondents had membership in one organization, membership in more than one organization and office bearer, respectively.

Sharma (2014) reported from his study on organic farming that the majority (61.11 per cent) of the trained adopters of organic farming had medium level of social participation. Whereas, 22.22 and 16.67 per cent of the respondents had high and low level of social participation, respectively.

c) Economic Characteristics

2.1.6 Land Holding

Kaur and Kalra (2006) concluded that 36.67 per cent of the organic farming adopters had medium size of land holding, while 33.33 and 30.00 per cent of the respondents had small and large size of land holding, respectively.

Rayanagoudar (2009) reported that the majority (61.00 per cent) of rural farm women who followed organic farming had large size of land holding, while 37.00 and 02.00 per cent of them had small and marginal size of land holding, respectively.

Chanpaneri (2012) concluded that 45.00 per cent of the tribal adopters of organic farming were marginal farmers, followed by 28.34 and 26.66 per cent per cent of the respondents were medium and big farmers with respect to land holding, respectively.

Patel (2012) revealed that 31.00 per cent of the organic farming adopters were medium farmers, followed by 24.00, 20.00, 16.00 and 9.00 per cent of the respondents were semi medium, small, big and marginal farmers with respect to land holding, respectively.

Damor (2013) revealed that exactly half (50.00 per cent) of the organic farming followers were found in small farmer category, followed by 22.50, 19.16 and 8.33 per cent of them had medium, large and marginal size of land holding, respectively.

Patel *et.al.* (2014) reported from his study on organic farming that majority (59.17 per cent) of the organic farming followers had possessed medium size of land holding, followed by 20.83, 15.83 and 04.17 per cent of the respondents had possessed big, small and marginal size of land holding, respectively.

Sharma (2014) revealed that 42.22 per cent of trained adopters of organic farming were large farmers, followed by 28.89, 20.00 and 8.89 per cent of the respondents were semi medium, small and marginal farmers with respect to land holding, respectively.

2.1.7 Annual Income

Darandale (2010) found that more than half (57.50 per cent) of the tribal maize growers who adopted organic farming had medium annual income. Whereas, 25.84 and 16.66 per cent of the respondents had high and low annual income, respectively.

Pandya (2010) conducted a study on organic farming and reported that the majority (76.00 per cent) of the organic farming followers had annual income above Rs. 2,00,000/-, followed by 10.00 and 07.00 per cent of the respondents had annual income between Rs 1,00,001 to 1,50,000 and Rs. 50,001 to 1,00,000, respectively.

Chanpaneri (2012) observed from his study on organic farming that the majority (65.84 per cent) of the trained adopters of organic farming had annual income between Rs. 48,001 to 94,000, followed by 17.50 and 16.66 per cent of them had annual income below Rs. 48,000 and above Rs.94, 000, respectively.

Patel (2012) concluded a study on organic farming and found that the majority (62.00 per cent) of organic farming adopters had annual income between Rs. 45,001 to 2,50,000, followed by 20.00 and 18.00 per cent of them had annual income above Rs.2,50,000, and below 45,000, respectively.

Damor (2013) studied that slightly more than half (51.66 per cent) of the organic farming followers had annual income between Rs.2,00,001 to 3,00,000, followed by 15.83 and 12.50 per cent of the respondents had annual income between Rs.3,00,001 to 4,00,000 and Rs.1,00,001 to 2,00,000, respectively.

Patel *et.al.* (2014) concluded from his study on organic farming that nearly half (49.17per cent) of the organic farming followers had annual income up to Rs 50,000/-, followed by 39.17, 07.50 and 03.33 per cent of the respondents had annual income between Rs.50,001 to 1,00,000, RS. 1, 00,001 to 1,50,000 and Rs. 1,50,001 to 2,00,000, respectively.

Sharma (2014) reported from his study on organic farming that the majority (64.45 per cent) of trained adopters of organic farming had medium annual income between Rs. 50,001 to 1,25,000, followed by 33.33 and 12.22 per cent had high annual income (above Rs.1,25,000) and low annual income (below 50,000), respectively.

d) Communicational Characteristics

2.1.8 Mass media exposure

Kaur and Kalra (2006) had carried out a study on organic farming and found that slightly less than half (46.76 per cent) of the organic farming followers had medium level of mass media exposure, followed by 31.67 and 21.66 per cent of the respondents had high and low level of mass media exposure, respectively.

Jaganathan *et al.* (2009) reported from their study that the majority (61.00 per cent) of the vegetable growers had medium level of mass media exposure, followed by 23.00 and 16.00 per cent of them had high and low level of mass media exposure, respectively.

Darandale (2010) reported that the majority (70.84 per cent) of tribal maize growers who followed organic farming had medium level of mass media exposure, followed by 16.66 and 12.50 per cent of the respondents had high and low level of mass media exposure, respectively.

Chanpaneri (2012) observed from his study on organic farming that slightly more than half (54.17 per cent) of the trained adopters of organic farming had medium level of mass media exposure, followed by 28.33 and 17.50 per cent of the respondents had low and high level of mass media exposure, respectively.

Patel (2012) concluded from his study on organic farming and found that the majority (68.00 per cent) of the organic farming adopters had medium source of information. Whereas, 20.00 and 12.00 per cent of the respondents had high and low source of information, respectively.

Damor (2013) conducted a study on organic farming followers and reported that 51.67 per cent of respondents had high level of mass media exposure, followed by 23.33, 10.83, 10.00 and 04.17 per cent of the respondents had very high, medium, low and very low level of mass media exposure, respectively.

Patel *et al.* (2014) reported from their study on organic farming that 46.67 per cent of the farmers had medium utilization of information sources for organic farming, followed by 28.33 and 25.00 per cent of the farmers had low and high utilization of information sources for organic farming, respectively.

Sharma (2014) reported from his study on organic farming that the majority (62.22 per cent) of the trained adopters of organic farming had medium level of mass media

exposure whereas, 23.33 and 14.45 per cent of the respondents had low and high level of mass media exposure, respectively.

e) Psychological Characteristics

2.1.9 Economic Motivation

Barodia (2005) concluded that maximum number of vegetable growers was having large size of land holding and high economic motivation.

Hingonekar (2011) reported that 45.00 per cent of the members of FIGs had medium level of economic motivation followed by 32.50 per cent had low level of economic motivation and 22.00 per cent of them had high level of economic motivation.

Patel *et al.* (2015) indicated that majority (62.00 per cent) of the farmers had medium level of economic motivation, followed by 20.00 per cent and 18.00 per cent had high and low economic motivation, respectively.

Thakare (2013) observed that, more than half (57.50 per cent) of floriculturists had medium level of economic motivation followed by 19.17 per cent and 23.33 per cent high and low level of economic motivation, respectively.

Sharma *et al.* (2014) revealed that higher percentage (50.00 per cent) of potato cultivators had medium level of economic motivation, 30.00 per cent of them had high level of economic motivation and only 20.00 per cent of the respondents had low level of economic motivation.

2.1.10 Innovativeness

Sidram (2008) observed from his study on organic farming in pigeon pea that 45.00 per cent of the pigeon pea growers belonged to medium innovativeness category, while 32.50 and 22.50 per cent of the pigeon pea growers belonged to low and high innovativeness category, respectively.

Jaganathan *et al.* (2009) concluded a study on organic farming in vegetable crops and found that 55.00 per cent of the vegetable growers had medium level of innovativeness, followed by 24.00 and 21.00 per cent had low and high level of innovativeness, respectively.

Damor (2013) revealed that slightly more than half (52.50 per cent) of the organic farming followers were highly innovative, followed by 38.34 and 09.16 per cent of them had medium and low level of innovativeness, respectively.

Patel *et al.* (2014) had designed and carried out a study on organic farming and concluded that the majority (76.66 per cent) of the farmers had medium level of innovativeness in organic farming, followed by 17.50 and 05.83 per cent of the farmers had high and low level of innovativeness in organic farming, respectively.

Sharma (2014) observed from his study on organic farming that 42.22 per cent of the trained adopters of organic farming had high level of innovativeness, followed by 32.22 and 25.56 per cent of the respondents had medium and low level of innovativeness, respectively.

2.2. To study the extent of participation of farmers in PKVY activities for promoting organic farming

Alex (1999) reported that only 23.00 per cent of the total participants took part in discussions, and participation of weaker sections was impressively high. Members of scheduled caste turned up more than those of scheduled tribes. The number ranged from as low as 15.00 per cent of the total attendance.

Mishra (2005) reported that the overall participation of the stakeholders was 52.00 per cent at three stages of the Institute Village Linkage Programme in Raipur block and maximum at the stage of execution of interventions (58.00 per cent) followed by management (51.00 per cent) and planning (46.00 per cent).

Ajaz-ul-Islam *et.al.* (2005) reported that level of participation of marginal farmers was low in the pre-implementation and implementation phases and medium in post implementation phase of the social forestry programme in Baramulla district of Jammu and Kashmir state whereas level of participation of large farmers was high; and level of participation of small and medium farmers was medium in all phases.

Wakle (2006) in her stated that, participatory approach plays a vital role in development of any village. For any development activity, there is a need to have active participation and local people for elevating socio-economic status, use of identifying natural resources.

Babu *et.al.* (2007) observed that in Kerala in the ICT programme Akshaya the degree of participation of the beneficiaries was high (82.5 per cent), post participation was low (47.5 per cent) whereas in Kissan Kerala programme both degree of participation (55 per cent) and post participation (37.5 per cent) were high.

Khandelwal *et.al.* (2007) reported that the maximum involvement of women was in the execution stage (69.90 per cent) followed by involvement in planning stage (55.30 per cent) in the conservation of natural resources programme in Udaipur district of Rajasthan.

Lenin *et.al.* (2009) revealed in the study of decision making by farmers in ATMA that fifty per cent of ATMA staff of Ahmednagar district of Maharashtra expressed that the farmers had a very high level of participation in decision making at various levels of implementation of the scheme, whereas fifty per cent in Dahod district expressed that farmers had very low level of participation in decision making.

Hence, the above review pointed out that people's participation was crucial to the success of any agricultural development programme. The extent of people's participation was generally low to medium level in planning and execution level of different programmes. So, there is a need to increase the participation of the beneficiaries in all the stages of planning and implementation of the programme.

Suradkar (2010) in his study found that about 54.00 per cent of Gram Panchayat members had 'medium' participation in village developmental activities. In case of Panchayat samiti, it was indicated more than half of the woman members (55.00 per cent) had 'medium' participation in village developmental activities and about Zilla Parishad members, it was observed that six out of every ten (60.00 per cent) of the Zilla Parishad members had 'medium' participation in village developmental activities. It was seen that significant percentage of the Gram Panchayat members (51.00 per cent) had 'medium' participation in religious and social activities, while more than half of the woman Panchayat Samiti members (57.50 per cent) had 'medium' participation in religious and social activities. An appreciable number (55.00 per cent) of the Zilla Parishad members had 'medium' participation in religious and social activities.

2.3. To study the effectiveness of PKVY for promoting organic farming under ATMA

Kumaran (1998) while studying effectiveness of agricultural extension services in an irrigation command area found out that nearly half of the respondents (51.67 per cent) were of the opinion that the effectiveness of agricultural extension services was of medium level and more than one third (34.14 per cent) rated it as low. Respondents having higher education, high irrigation status and high social participation expressed that the effectiveness of agricultural extension services was of higher level. Concomitantly, a significant proportion of farmers (34.00 per cent) who were resource poor rated the effectiveness of extension services as low.

Indian Institute of Management, Lucknow (2004) evaluated the performance of ATMA and found that in project districts during 1999 to 2003 area under horticulture increased from 12.00 to 16.00 per cent, area under oilseed increased from 3.00 to 11.00 per cent, area under herbs, medicinal and aromatic crops increased from 1.00 to 5.00 per cent and area under cereals (wheat and rice) declined from 55.00 to 47.00 per cent. The success of ITD-Component of NATP was the basis for launching extension reforms in 252 districts covering all the states during Tenth Five-Year Plan.

Arun and Vijayragavan (2007) study on the effectiveness of extension services provided by Tata Kissan Sansar (TKS) revealed that majority of farmers (86.25 per cent) found extension services provided by TKS as highly effective, about 14.00 per cent of the farmers had medium level of effectiveness for extension services and none of the farmers found it under low or very low or very high level of effectiveness.

Bharathi and Badiger (2008) in their study of impact of NATP on empowerment of women revealed that overall opinion index was very high *i.e* 99.50 per cent towards NATP project followed by enterprises of SHG members (85.50 per cent). Overall index towards opinion of the respondents for improved agricultural implements was 64.80 per cent. Study concluded with the remark that there was an appreciable increase in the personality traits of women and the NATP had brought many changes in life of rural women by empowering them in almost all field *i.e* economical, technical and social.

Singh and Narain (2008) studied the effectiveness of extension services provided by public and private extension system in Kanpur (UP) and revealed that public extension system still assumed the supremacy over private in ensuring supply of seed of the field crops whereas distribution of seeds of vegetables and planting material was largely in the hand of private. The supply of fertilizer, weedicides, fungicides and insecticides was also done by private agencies while services related to agro-based activities like mushroom production, bee keeping, poultry etc were perceived inadequate by farmers in respect to both public and private extension system.

Mukherjee and Kundu (2011) carried out a study on the effectiveness of SGSY in West Bengal. They revealed that scheme has made room for building synergies through linking SHG's and public programs. SHGs have been engaged in the midday meal scheme. Interacting with the people outside the domestic sector makes SHG members confident to take a minor venture like micro- enterprise. District rural development committee and state level development departments were helping SHGs marketing of products at district, state and national level through organizing exhibitions cum sale.

Kakkar *et.al.* (2014) find out the services availed by the farmers under National Food Security Mission in Ludhiana district. Majority of farmers availed subsidies on rotivator followed by seed cum fertilizer drill and appreciated assistance provided by the concerned authorities to complete documentation procedure. Majority of the farmers were very much satisfied regarding quality of inputs and amount of subsidy. Only few farmers had shown dissatisfaction regarding quantity of inputs. More than 37 per cent of the farmers received amount of subsidy in more than sixty days. Lengthy documentation procedure and delay in release of subsidies were the main problems faced by the farmers. To make the

subsidies more effective, farmers suggested that criteria for availing subsidies need improvement so that most of the small and marginal farmers get more benefit.

2.4. To study the association between the independent and dependent variable

Tripathi (2000) revealed a highly positive and significant relationship observed between utilization of mass media sources and productivity of milch animals. Highly positive and significant correlations were also found between milk productivity and overall information receiving behavior of rural women.

Okunade (2007) reported a positive and significant relationship existed between effectiveness of extension teaching methods and farming experience ($r=0.324$), age ($r=0.278$) and level of education ($r=0.235$). The result implied that age, farming experience and level of education had impact on effectiveness of extension teaching methods which by implication is a determinant of acquiring knowledge, skills and attitude. Therefore it becomes imperative that these significant variables determining factors to the effectiveness of the extension teaching methods in achieving the main tasks of extension service.

Sakib and Afrad (2013) reported that age, education, use of information sources, farm size, and fish farming area, annual family income, commercialization, social participation, innovativeness and knowledge on fish culture had positive and significant relationship with their overall mean adoption of modern aquaculture technology.

Yadav *et.al.* (2013) conducted study on techno economic changes among the farmers in relation to watershed development programme and revealed that the independent variables *viz.* educational qualification, size of land holding, social participation, extent of contact, innovativeness, economic motivation, information seeking behavior, infrastructure facilities, agriculture assets were found to have significant association with extent of techno-economic change. The age, caste, and size of family were found to have no significant association with their techno-economic change.

Baghel (2016) Reported that among different independent variable, age (-0.031) and operational land holdings (-0.056) were found to be negative and highly significant to the impact and participation in NFSM, while caste i.e. SC/ST (-0.343), OBC (-0.484) and others (-0.478) were also found to be negative but non-significant.

3. METHODOLOGY

This chapter precisely describes the methodology adopted for the study and tools employed in data collection, data analysis in conducting the investigation. The details pertaining to locale of the study, sampling procedure, operational definitions of the dependent and independent variables, their measurements and classification, analysis technique and statistical tools used for interpreting the results are presented under the following heads:

- 3.1 Research design
- 3.2 Locale of the study
- 3.3 Variables and their measurement
- 3.4 Sample and sampling procedure
- 3.5 Designing of interview schedule
- 3.6 Pretesting of interview schedule
- 3.7 Collection of data
- 3.8 Statistical analysis
- 3.9 Operationalization, scoring and categorization of variables

3.1 Research design

Ex post facto design of social research was used for the present study.

3.2 Locale of the study

The present study was carried out in Purandar tehsil of Pune. The Purandar tehsil was purposively selected for the study considering following reasons.

1. This tehsils is having highest number of farmer practising organic farming under fruit crops as compared to other tehsils under organic farming certification.
2. There were more number of FIGS practicing organic farming in that area.
3. Organic farmers of this district are keen to give their feedback to planners and agencies involved in the promotion of organic farming.

3.2.1 Geographical location

Pune district lies between 17⁰-54' and 19⁰-24' North latitude and 73⁰-19' and 75⁰-19' East longitude. Whereas, Purandari tehsil is one of the important tehsil in Pune. Pune District is surrounded on the North by Ahmednagar district, on the East by Ahmednagar and Solapur districts, on the South by Solapur and Satara districts and on the West by Raigad and Thane districts. Total geographical area of Pune district is 15642 sq. km. The landscape of Pune district is distributed triangularly in western Maharashtra at the foothills of the Sahyadri Mountains and is divided into three parts: "Ghatmatha", "Maval" and "Desh". Purandar lies towards the southern side of Pune district.

3.2.2 Population

The total population of Pune district according to 2011 census was 94.26 lakh. The density of population of Pune district is 603 per sq. km. and literacy rate is 87.2 per cent. Population of Purandar tehsil is 2.35 lakhs which is 2.49 per cent of Pune district.

3.2.3 Area, climate and rainfall

The total geographical of Purandar tehsil is 1101.65sq.km which constitutes 7.04 per cent of the Pune district.

The mean daily maximum and minimum temperatures of Pune district are 37⁰C and 23⁰C, respectively for the hottest month *i.e.* May. The evening breeze from west/north-west keeps the city summer nights at bearable levels. The maximum and minimum temperatures for coldest month *i.e.* December are 30⁰C and 12⁰C, respectively. The relative humidity ranges from 36 per cent in March to 81 per cent in August.

Pune receives rainfall from the South-West monsoon, which begins around middle of June and lasts till the end of September. Three fourth of the annual rainfall of 700 mm occurs in just four months from June to September. Purandar Tehsil has moderate rainfall intensity (500mm).

3.2.4 Soil type

The soils of the district broadly belong to three classes *viz.*, black, brown and red. The Western part of the district is having lighter soils while the eastern part having deep black fertile soils. In some places one class of soils blends in to other with varying properties and they modified by sand, gravel, lime, salts and other ingredients. The eastern sides of the district comprising of Purandar tehsil have deep black fertile soils.

3.2.5 Rivers

Bhima is the main river of the district. It rises in Sahyadri at Bhimashankar (Ambegaon Tehsil) in the west of the district and then enters in to Solapur district. The main tributaries of Bhima are Velu and Ghod on its left, Indryani, Mula and Mutha on its right. Karna, Kukadi, Pawana, Meena, Gunjawani, Pushpawati and Shivangana are the other rivers flowing in the district. Karha river provides water to Purandar tehsil.

3.2.6 Irrigation

One of the most important input for agricultural production is water *i.e.* irrigation. The cultivators of Pune district have natural gift of Bhima, Indrayani, Mula, Mutha and other small rivers. In Pune district, total area under irrigation is 62 per cent.

3.2.7 Forest Area

Purandar tehsil have 5.8 per cent forest area of the district geographical area.

3.2.8 Industries and Employment

Maharashtra is one of the advanced states in the country and Pune is one of the industrially developed districts in the state. There are number of small scale industries and small manufacturing units mainly situated throughout the district mainly at Indapur, Bhigwan, Loni-Deokar, Haveli, Purandar, Katewadi and Malegaon.

3.2.9 Other facilities

Education facilities are available through primary, secondary schools, technical and non-technical colleges throughout the district. Agriculture College situated in Pune district which provides education, research and provide knowledge to farmers about recommended practices for agriculture and allied sciences.

Medical facilities are also available through Primary Health Center and private practitioners. Credit facilities are available through branches of Pune District Central Cooperative Bank Ltd, nationalized banks and other commercial banks. Employment opportunities to the rural labours are available on different works of Employment Guarantee Scheme. Transport and communication facilities are quite adequate.

3.3 Variables and their measurement

A list of variables to be dealt within the present study was prepared on the basis of review of literature related to the objectives of the research.

The techniques of measurement for each of the selected dependent as well as independent variables are presented below:

Table 3.1 List of variables and their measurements

Sr. No.	I.Independent variables	Measurement
A	Personal characteristics	
1	Age	Chronological age the of respondent was considered.
2	Education	Formal education possessed by the respondent was considered.
3	Family Type	Scale developed by Mansingh was used (1993).
4	Farming Experience	Number of years since when respondent member is farming.
B	Social characteristics	
5	Social Participation	Participation in formal and informal organizations.
C	Economic characteristics	
6	Land Holding	Guidelines of Ministry of Rural Development circular, Government of India (1992) was used with due modification. .
7	Annual Income	Guidelines of National Council For Applied Economic Research (NCAER) was used with due

		modification.
D	Communicational characteristics	
8	Mass media exposure	Scale developed by Nirban (2004) was used with due modification.
E	Psychological characteristics	
9	Economic Motivation	Scale developed by Supe (1969) was used with due modification.
10	Innovativeness	Scale developed by Singh was used with due modification (1977).
	II. Dependent variable	Measurement
1	Effectiveness of PKVY	
1.1	Adoption of cultural practices	Structured schedule is developed
1.2	Benefits availed	Structured schedule is developed
1.2.1	Economic benefits	Structured schedule is developed
1.2.2	Technical benefits	Structured schedule is developed
1.2.3	Social benefits	Structured schedule is developed

3.4 Sampling procedure

3.4.1 Selection of district

As PKVY is being effectively implemented, farmers from Pune district are moved towards organic farming. Considering the work of PKVY, Pune district from Maharashtra state was purposively selected for the present study.

3.4.2 Selection of tehsil

As per the information PKVY is working more efficiently having a highest number of Farmer Interest Groups (FIGs) in Purandar tehsil. Considering the work of PKVY and based on the number of clusters (Farmer Interest Groups) of fruit growers brought under organic farming, certification, Purandar tehsil was selected purposively.

3.4.3 Selection of the respondents

Cluster wise list of farmers was obtained from the In charge ATMA, State department of agriculture, Pune. It was observed from the list that farmers of selected tehsil were involved in performing organic practices in fruit crops viz; pomegranate, ber, custard apple of that tehsil. From selected tehsil total 8 FIGs involved in organic farming were selected purposively and from each FIG 15 farmers were selected randomly comprising total 120 sample size. The details of selected FIGS and number of farmers selected from each FIG is given in Table 3.2

Table 3.2: FIGS and number of respondents selected from FIGS of Purandar tehsil

Sr. No.	Name of the selected FIGS	Number of respondents
1	Sant Sopankaka Sendriy Sheti Vikas Gat	15
2	Sanjivani Sendriy Sheti Vikas Gat	15
3	Bhumata Sendriy Sheti Vikas Gat	15
4	Purandar Natural Farming Group	15
5	Shivmalhar Sendriy Sheti Vikas Samuha	15
6	Jaymalhar Sendriy Sheti Vikas Samuha	15
7	Krishi Samrudh Shetkari Gat	15
8	Yamai Mata Sendriy Sheti Vikas Samuha	15
Total		120

3.5 Designing of interview schedule

An interview schedule, based on the selected objectives of the study was prepared in order to get accurate responses from the respondents. While preparing the interview schedule, due care was taken to avoid confusing questions, contradictory statements and the interview schedule was translated to local language *i.e.* in Marathi. The language of the questions was kept simple for easy understanding of the respondent.

3.6 Pre-testing of interview schedule

The pre-testing of interview schedule is necessary on the part of researcher. It identifies mistakes, ambiguities and shortfalls. It also helps in achieving clarity, reliability and validity of the interview schedule. Before finalizing the interview schedule, it was pre-tested outside the sample area for the accuracy by interviewing ten respondents. The data collected from these farmers were thoroughly studied to detect unfamiliar words, vagueness and complexity of questions included in the schedule. The interview schedule was modified in the light of the practical experience of pre-testing and it was finally used for data collection.

3.7 Collection of data and Compilation of data

The research worker personally interviewed the farmers included in the sample. Before starting the interview, rapport was established with farmers practicing organic farming to get proper, adequate and accurate response. The importance and objective of the study were clearly explained to all the farmers before interview. The respondents were interviewed during their leisure time. The information collected through interview was transferred from the questionnaire to primary tables, secondary tables and then to tertiary table. Whenever necessary, the information of qualitative nature was converted into quantitative form. In this way the collected information was tabulated and analyzed.

3.8 Statistical framework used for analysis of the data

3.8.1 Frequency

The number of individuals or observations in each class of attributes/variables is called frequency of that class of variable. The arrangement of Frequencies in different classes of variables is called the Frequency distribution of the variables.

3.8.2 Percentage

Percentage was used in the descriptive analysis for making simple comparisons. In order to calculate percentage, the frequency of a particular cell was divided by the total number of respondents in that particular category to which the cell belong and multiplied with 100. Percentages were calculated up to two places after a decimal point. This has been used in thesis and proved helpful in organizing the data clarity and precision.

3.8.3 Mean

Mean was calculated by summing all the score and dividing it by number of respondents.

$$\text{Mean} = \frac{X_1 + X_2 + X_3 + \dots + X_n}{N}$$

$$X = \frac{\sum X_i}{N}$$

Where,

$$\bar{X} = \text{Mean}$$

$$\sum X = \text{Sum of respondent score}$$

$$N = \text{Number of respondents}$$

3.8.4 Standard deviation

Standard Deviation is the most common and widely used measure of dispersion. It is the root mean square deviation from the arithmetic mean. The standard deviation of a set of variates values is defined to be the square root of the arithmetic mean of the sum squares of deviations of undivided values from their arithmetic mean.

$$SD = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

Where, SD = Standard deviation

\bar{X} = Mean

X = Score of each respondent

N = Total number of respondents

3.8.5 Chi- square test

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(O_{ij} - E_{ij})^2}{O_{ij}}$$

Where,

O_{ij} = Observed frequency in (ij)th cell

E_{ij} = Expected frequency in (ij)th cell

$$E_{ij} = \frac{(A_i)(B_j)}{N}$$

Where,

A_i = i^{th} row total

B_j = j^{th} column total

N = Total frequency

3.9 Operationalization, Scoring and Categorization of variables

The operational definitions, procedure adopted scoring and categorization of both independent and dependent variables are explained in the sub-section.

3.9.1 Independent Variables

Various independent variables under study were operationally defined and categorized below.

3.9.1.1. Age

It is operationally defined as the chronological age of the respondent farmer expressed in number of completed years at the time of interview. The respondent farmers were classified in the following three standard categories.

Sr. No.	Category	Age
1	Young age	Up to 35 years
2	Middle age	36 to 55 years
3	Old age	56 and above

3.9.1.2. Education

It is operationally defined as formal education obtained from school to the university degree by respondent farmers. Following standard categories were formed for classifying the respondent farmers on the basis of their educational qualification according to the norms laid down by the State Educational Board, Government of Maharashtra.

Sr. No.	Category	Level of Education	Score
1.	Primary Education	1 st to 5 th Std.	1
2.	Middle School	6 th to 8 th Std.	2
3.	Secondary Education	9 th to 10 th Std.	3
4.	Higher secondary Education	11 th to 12 th Std.	4
5.	Graduation		5
6.	Post-Graduation		6

3.9.1.3. Family type

Family type has been operationalized as single/nuclear or joint on the basis of number of members and either separate or common kitchen, respectively. A family is considered as nuclear or single when it consisted of husband, wife and unmarried children and have a separate kitchen. A joint family consisted of other blood relations and have common kitchen. Scale developed by Mansingh was used (1993).

Sr. No	Family type	Score
1	Nuclear family	1
2	Joint family	2

3.9.1.4 Farming experience

It is operationally defined as the number of years since when respondent member is practicing farming. This refers to total number of years of experience, possessed by an individual respondent involved in farming practices. Following the range method respondents were categorized into four groups with their respective assigned scores which is given below.

Sr. No	Category	Score
1	1-4 years	1
2	4-8 years	2
3	8-12 years	3
4	More than 12 years	4

3.9.1.5 Social participation

Social participation was operationally defined as the frequency of participation of the respondent in various social organization/s as a member or as an office bearer. Firstly, depending on the nature of membership, one score was assigned to a member and two score was assigned to an office bearer. Further, two, one and zero score was assigned, to a member for his regular, occasional and no participation in the social organization respectively. Individual social participation score was worked out by adding the products of

nature of membership and nature of participation of each individual against the social organization included in the schedule. On the basis of the total score obtained by the respondents, they were categorized into three categories on the basis of mean \pm SD.

Sr. No.	Categories	Score
1	Low	Less than 10
2	Medium	10 to 35
3	High	More than 35

Mean: 22.45

SD: 12.27

3.9.1.6 Land Holding

This variable was operationalized as the total land possessed in hectares by an individual for their agricultural production. This is an important variable which determines the economic as well as the social status of an individual. The land holding was measured as per the Guidelines of Ministry of Rural Development circular, Government of India (1992) with due modification. Information about actual hectares of land owned by respondents were calculated and classified into five categories.

Sr. No.	Land holding	Category	Score
1	Up to 1 ha	Marginal	1
2	1.01 to 2 ha	Small	2
3	2.01 to 4 ha	Semi-medium	3
4	4.01 to 10 ha	Medium	4
5	More than 10.01 ha	Large	5

3.9.1.7 Annual Income

Annual income is operationally defined as gross income of the family of the respondent farmer earned from all sources in year and measured in terms of rupees. The data in this regard were collected and score were assigned as suggested by Guidelines of National Council for Applied Economic Research (NCAER) with due modification. The respondents were classified into four groups. The total frequency on each category applicable to the respondents was calculated and converted into percentage.

Sr. No.	Annual income(₹)	Category	Score
1	Less than ₹ 75,000	Lower	1
2	₹ 75,000 to 1,50,000	Lower middle	2
3	₹ 1,50,000 to 2,25,000	Middle	3
4	Above ₹ 2,25,000	High	4

3.9.1.8 Mass media exposure

This referred to the frequency of reading newspaper, farm broadcasts and other literature like Farm periodicals, Technical bulletins and participating in the other activities related to agriculture as well as use of radio and television. This variable was quantified by assigning score as follows.

Sr. No.	Frequency of using mass media by participants	Score
1	Regular	3
2	Occasional	2
3	Never	1

Ranking was done by taking the average of scores assigned against each statement for all respondents (Assigned score/ total no. of respondent). And further on the basis of the total score obtained by the respondents they were grouped into three categories based on mean and standard deviation as mean \pm SD.

Sr. No.	Category	Score
1	Low mass media exposure	Less than 14
2	Medium mass media exposure	14 to 19
3	High mass media exposure	More than 19

Mean: 16.57

S.D: 2.25

3.9.1.9 Economic motivation

The economic motivation is defined as occupational success in terms of profit maximization and the relative value an individual places on economic ends. Economic motivation of the respondents was measured with the help of economic motivation scale worked out by Supe (1969) with slight modifications. The scale was consisted of total six positive statements; the responses of the farmers were obtained against each statement in terms of their agreement or disagreement on two point continuum. Two score was assigned for agreement and one score for disagreement. On the basis of the total score obtained by the respondents they were grouped into three categories based on mean and standard deviation as mean \pm SD.

Sr. No.	Category	Score
1	Low	Less than 10
2	Medium	10 to 12
3	High	More than 12

Mean=11.07

SD=1.29

3.9.1.10 Innovativeness

It refers to the degree to which an individual farmer is relatively earlier to adopt new ideas than other members of society. Scale developed by Singh (1977) was used to measure the innovativeness of the respondents with due modification. The scale consisted of five positive statements and the responses of the farmers were obtained against each statement in terms of their agreement or disagreement on a two point continuum shown below with their score. Two score was assigned for agreement and one score for disagreement. On the basis of the total score obtained by the respondents they were grouped into three categories based on mean and standard deviation as mean \pm SD.

Sr. No.	Category	Score
1	Low	Less than 8
2	Medium	8 to 10
3	High	More than 10

Mean=9.23 **SD=1.11**

3.9.2 Extent of participation

Extent of participation is the degree to which an individual participates in various activities of PKVY viz; training programme, farmer's field day, demonstration, exhibition, Exposure visit, group discussion regarding the organic farming operations. It was measured with the help of a structure schedule which consists of ten items. Respondents were asked to put (\surd) against the items in which they are participating. Responses were sought in three continuum *i.e.* always, sometimes and never with score three, two and one respectively.

Extent of participation	Score
Always	3
Sometimes	2
Never	1

Ranking was done by taking the average of scores assigned against each statement for all respondents (Assigned score/ total no. of respondent). And further on the basis of the total score obtained by the respondents they were grouped into three categories based on mean and standard deviation as mean \pm SD.

Sr. No.	Category	Score
1	Low	Less than 8
2	Medium	8 to 10
3	High	More than 10

Mean=9.23 **SD=1.11**

3.9.3 Dependent variable (Effectiveness of PKVY)

Effectiveness is an outcome of a scheme after its proper implementation. Effectiveness of PKVY was measured by considering the major components of the scheme *viz*; adoption of cultural practices of organic farming and benefits availed by the farmers. Benefit availed by the farmers was measured in the terms of economic benefits, technical benefits, social benefits obtained by the farmers through the PKVY activities.

3.9.3.1 Adoption of cultural practices

Adoption of cultural practices is a decision to make full use of new ideas given through PKVY activities as the best course of action available which is a process composed of learning, deciding, and acting over a period of time. A structured schedule consisting of six positive statements and the responses of the farmers were obtained against each statement in terms of their agreement or disagreement on a two point continuum. Two score was assigned for their agreement and one score for disagreement. On the basis of the total score obtained by the respondents they were grouped into three categories based on mean and standard deviation as mean \pm SD. And ranking of the adoption of cultural practices was done by taking the average of scores assigned against each statement for all respondents (Assigned score/ total no. of respondent).

Sr. No.	Category	Score
1	Low	Less than 10
2	Medium	10 to 12
3	High	More than 12

Mean=10.98

SD=1.18

3.9.3.2 Benefits availed

3.9.3.2.1 Economic benefits availed

Economic benefit is measured in terms of getting financial assistance to have economic independence or self-revealed income which was considered to be the major means of effectiveness of PKVY. A structured schedule consisting of seven positive statements were presented and the responses of the farmers were obtained against each statement in terms of their agreement or disagreement on a two point continuum. Two score was given for their agreement and one score for disagreement. On the basis of the total score obtained by the respondents they were grouped into three categories based on mean and standard deviation as mean \pm SD.

Sr. No.	Category	Score
1	Low	Less to 10
2	Medium	10 to 12
3	High	12 and above

Mean=12.50

SD=1.19

3.9.3.2.2 Technical benefits

Technical benefit is measured in terms of gain in technical knowledge, skill acquired etc. Through PKVY activities, farmers get acquainted of various practices *viz*; grading, packaging, branding etc. equipped with sufficient knowledge and skills to increase farm production. A structured schedule consisting of three positive statements were presented and the responses of the farmers were obtained against each statement in terms of their agreement or disagreement on a two point continuum. Two score was assigned for agreement and one score for disagreement. On the basis of the total score obtained by the respondents they were grouped into three categories based on mean and standard deviation as mean \pm SD.

Sr. No.	Category	Score
1	Low	Less than 5
2	Medium	5 to 6
3	High	More than 6

Mean=5.31

SD=0.61

3.9.3.2.3 Social benefits

Social benefit was measured in the degree of taking advantage of the various PKVY activities *viz*; training programme, group meetings, exhibition, demonstrations etc. to increase social participation outside the group members for upliftment in the social status which was considered to be the major means of effectiveness of PKVY. A structured schedule consisting of three positive statements were put in front of the farmers and the responses of the farmers were obtained against each statement in terms of their agreement or disagreement on a two point continuum. Two score was assigned for agreement and one score for disagreement. On the basis of the total score obtained by the respondents they were grouped into three categories based on mean and standard deviation as mean \pm SD.

Sr. No.	Category	Score
1	Low	Less than 5
2	Medium	5 to 6
3	High	More than 6

Mean=5.809

SD=0.409

3.9.3.2.4 Overall effectiveness of PKVY

It is the sum of average of, all components of the dependent variables *i.e.* adoption of cultural practices, benefits availed in the terms of economic benefits, technical benefits and social benefits. On the basis of the total score obtained by the respondents the overall effectiveness of PKVY was categorized into low, medium and high on basis of mean \pm SD.

Sr. No.	Category	Score
1	Low	Less than 18
2	Medium	18 to 20
3	High	More than 20

Mean= 18.90

SD= 1.244

4. RESULTS AND DISCUSSION

This chapter presents the objective wise findings of the study. Keeping in view the objectives of the study, information was collected from the respondents and it was classified, tabulated, analyzed and presented in a systematic way as per following heads.

4.1 Personal, social, economical, communicational, and psychological characteristics of farmers practising organic farming of PKVY under ATMA.

4.2 Extent of participation of farmers in PKVY activities for promoting organic farming.

4.3 Effectiveness of PKVY for promoting organic farming under ATMA.

4.4 Association between the independent and dependent variable.

4.1 Personal, social, economical, communicational, and psychological characteristics of farmers practising organic farming of PKVY under ATMA

To analyse the profile of the farmers practising organic farming was the first objective of the present study. On the basis of review of literature some of the important characteristics of the farmers like age, education, family type, farming experience, social participation, annual income, land holding, mass media exposure, economic motivation, and innovativeness were selected and studied. The findings have been tabulated, analysed and presented.

4.1.1 Age

Physical and psychological development of an individual is related to the age. Age plays a crucial role in shaping the effectiveness of PKVY according to each respondent.

Respondents were asked to indicate their age completed in years at the time of interview and the data regarding the age of the respondents were collected, analyzed and presented in Table 4.1 and depicted diagrammatically in Fig. 4.1

Table 4.1: Distribution of the respondents according to their Age group

Sr. No.	Category	Respondents (n=120)	
		Number	Percentage
1	Young (Up to 35 years)	39	32.50
2	Middle (36 to 55 years)	76	63.33
3	Old (56 years and above)	5	4.17
	Total	120	100.00

It could be noted from the Table 4.1 that, majority (63.33 per cent) of the respondents are middle aged followed by young aged 32.50 per cent and old aged 4.17 per cent. The table also states that the maximum number of respondents were from middle and young age category this might be due to that young and middle age group farmers are ready to accept the change in technology and this categories are considered as actively working age

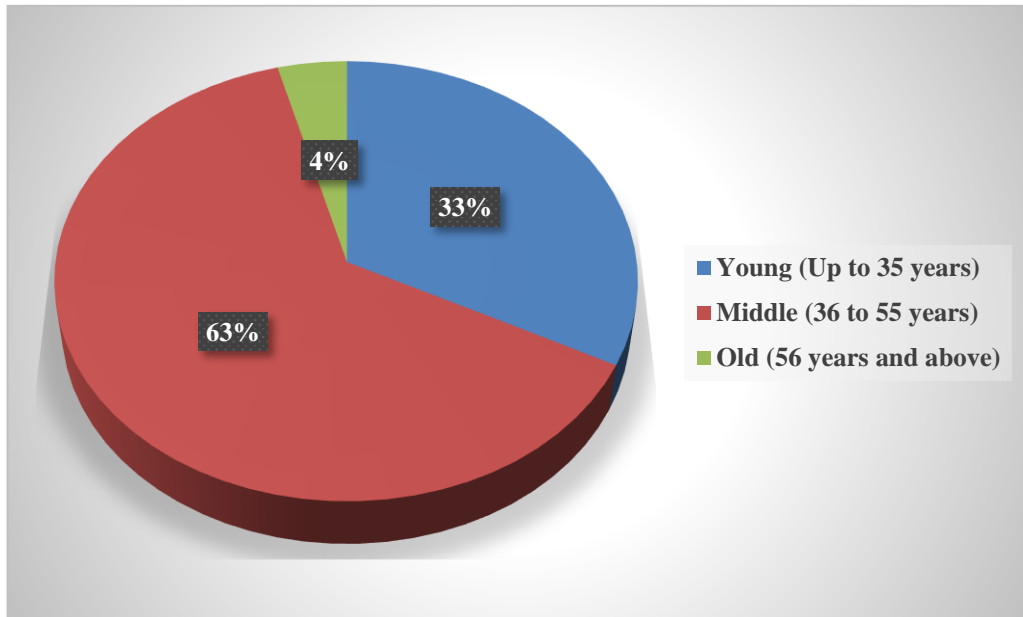


Fig 4.1: Distribution of age groups

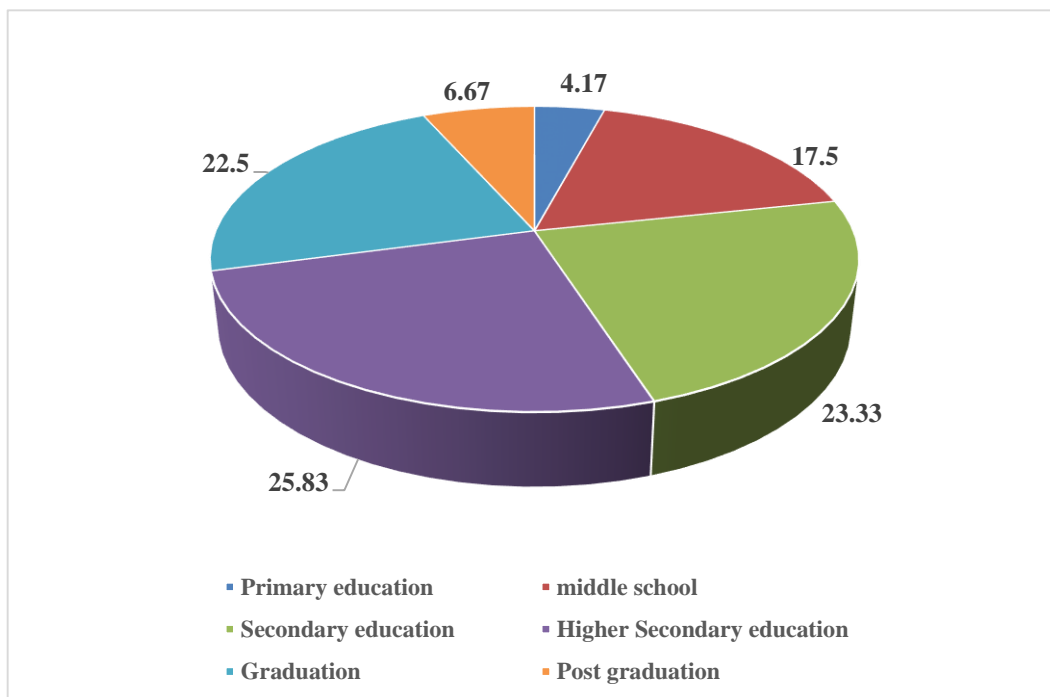


Fig 4.2: Distribution of level of education of respondents

groups. The results were in conformity with the studies done by Patel (2012) and Patel *et al.* (2014).

4.1.2 Education

It was assumed that education plays an important role accessing the outcome of a scheme after its proper implementation which helps to sustain and accelerate the overall effectiveness as it prepares and trains the individuals at all spheres of life. The information regarding formal education availed by the respondents were classified in to six categories. The data in this respect are presented in Table 4.2 and depicted diagrammatically in Fig 4.2.

Table 4.2: Distribution of the respondents according to their Level of education

Sr. No.	Education level	Respondents (n=120)	
		Number	Percentage
1	Primary Education	5	4.17
2	Middle School	21	17.50
3	Secondary Education	28	23.33
4	Higher secondary Education	31	25.83
5	Graduation	27	22.50
6	Post-graduation	8	6.67
	Total	120	100.00

From the Table 4.2 revealed that, one fourth (25.83 per cent) of farmers were having higher secondary education followed by 23.33 per cent Secondary level of education 22.50 per cent graduation level, 17.50 per cent middle school education, 6.67 per cent post-graduation and 4.17 per cent primary school education.

Nearly half of the respondents are belongs to secondary and higher secondary level of education due to availability of good educational facility. This findings were in same lines with Patel (2012), Damor (2013) and Patel *et al.* (2014).

4.1.3 Family type

The family plays an important role in regulating the labour requirement, accumulating and distributing the material goods produced or earned. It is understood that support from the family is required for better co-ordination in the activities for achieving a greater degree of effectiveness. Information of family type were collected on of the respondents were analyzed and presented in table 4.3 and depicted diagrammatically in Fig 4.3.

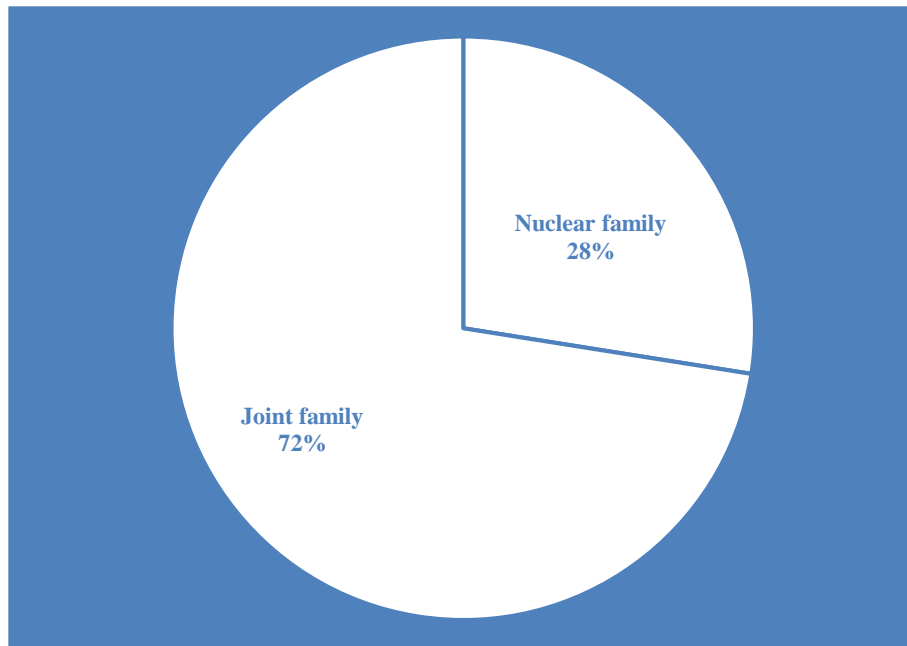


Fig 4.3: Distribution of family types of respondents

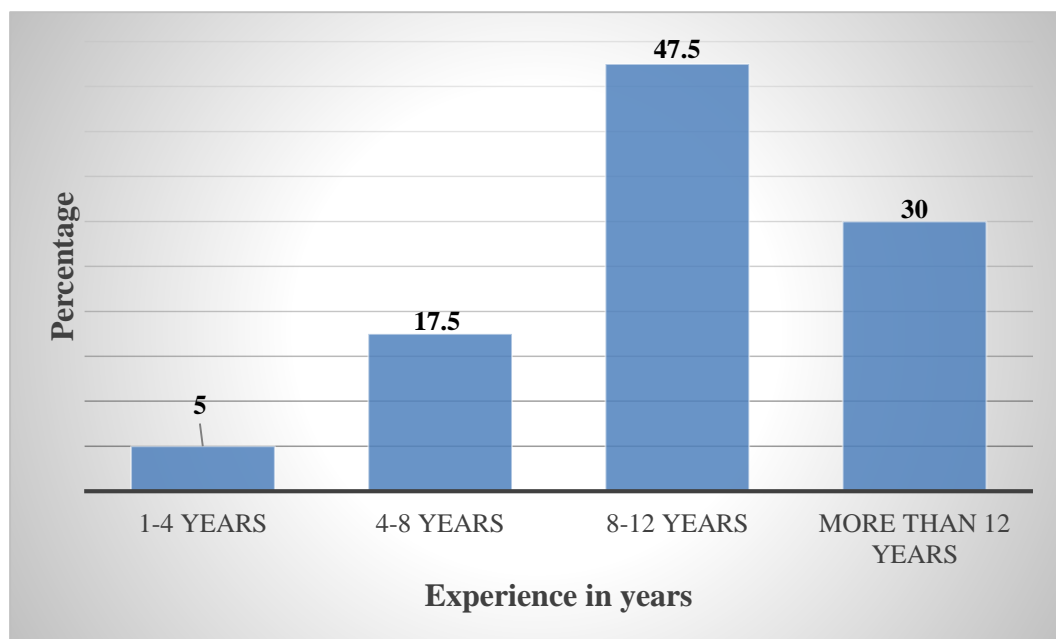


Fig 4.4: Distribution of farming experience of respondents

Table 4.3: Distribution of the respondents according to their type of family

Sr. No.	Type of family	Respondents (n=120)	
		Number	Percentage
1	Nuclear family	33	27.50
2	Joint family	87	72.50
	Total	120	100

It was found from the table 4.3 that majority (72.50 per cent) of the respondents belonged to joint family and remaining 27.50 per cent of them belonged to nuclear family. Nearly two third of the respondents belongs to joint family as the selected study area is an extended peri-urban area. The results were found to be in lines with studies done by Kushwaha (1999), Singh (2003) and Hingonekar (2011).

4.1.4 Farming experience

Farming experience helps an individual in adoption, utilization and skilful management of various practices and resources pertaining to any enterprise and provides a way for getting enhanced effectiveness from that practices. The data regarding the farming experience of the respondents were collected, analyzed and presented in table 4.4. and depicted diagrammatically in Fig 4.4.

Table 4.4: Distribution of the respondents according to their Farming experience

Sr. No.	Farming experience	Respondents (n=120)	
		Number	Percentage
1	1-4 years	6	5.00
2	4-8 years	21	17.50
3	8-12 years	57	47.50
4	More than 12 years	36	30.00
	Total	120	100.00

From the Table 4.4, it was observed that, nearly half (47.50 per cent) the of respondents were having 8-12 years of farming experience followed by 30.00 per are having more than 12 years and 17.50 per cent are having 4-8 years. Only 6 farmers were having 1-4 years of experience. As majority of the famers are belongs to middle age category so half the farmers are having a very good farming experience. The results were found to be in lines with study done by Yadev *et al.* (2013).

4.1.5 Social participation

Social participation in this study refers to the degree of involvement, of an individual in various formal and informal organizations, either as member or as an office bearer. It was measured in terms of membership or official status in any formal or informal organizations, along with the frequency of participation. The data regarding social participation of the respondents was obtained, analyzed and presented in Table 4.5 and depicted diagrammatically in Fig 4.5.

Table 4.5: Distribution of the respondents according to their Social participation

Sr. No.	Social participation (Score)	Respondents (n=120)	
		Number	Percentage
1	Low(Less than 10)	8	6.67
2	Medium(10 to 35)	86	71.67
3	High(More than 35)	26	21.67
	Total	120	100.00

Mean: 22.45

SD: 12.27

The Table 4.5 revealed that larger portion (71.67 per cent) of the respondents had medium level of social participation followed by high level of social participation 21.67 per cent and low level of social participation 6.67 per cent. As nearly half the farmers having a good farming experience and nearly half them have good level education so it made them aware about various formal/informal organizations. The results were found to be in lines with studies done by Kamani (2007), Patel (2012) and Sharma (2014).

4.1.6 Land holding

Land is a primary source of livelihood for all rural households. As the size of land is linked with the production and adoption of different agricultural practices, therefore, an attempt was made to investigate the average land area owned by an individual in the study area. The information collected, analyzed and reflected in table 4.6 and depicted diagrammatically in Fig 4.6.

Table 4.6: Distribution of the respondents according to land holding

Sr. No.	Land holding	Category	Respondents (n=120)	
			Number	Percentage
1	Up to 1 ha.	Marginal	48	40.00
2	1.01 to 2 ha.	Small	48	40.00
3	2.01 to 4 ha	Semi-medium	12	10.00
4	4.01 to 10 ha	Medium	8	5.83
5	More than 10.01 ha	Large	4	2.5
	Total		120	100.00

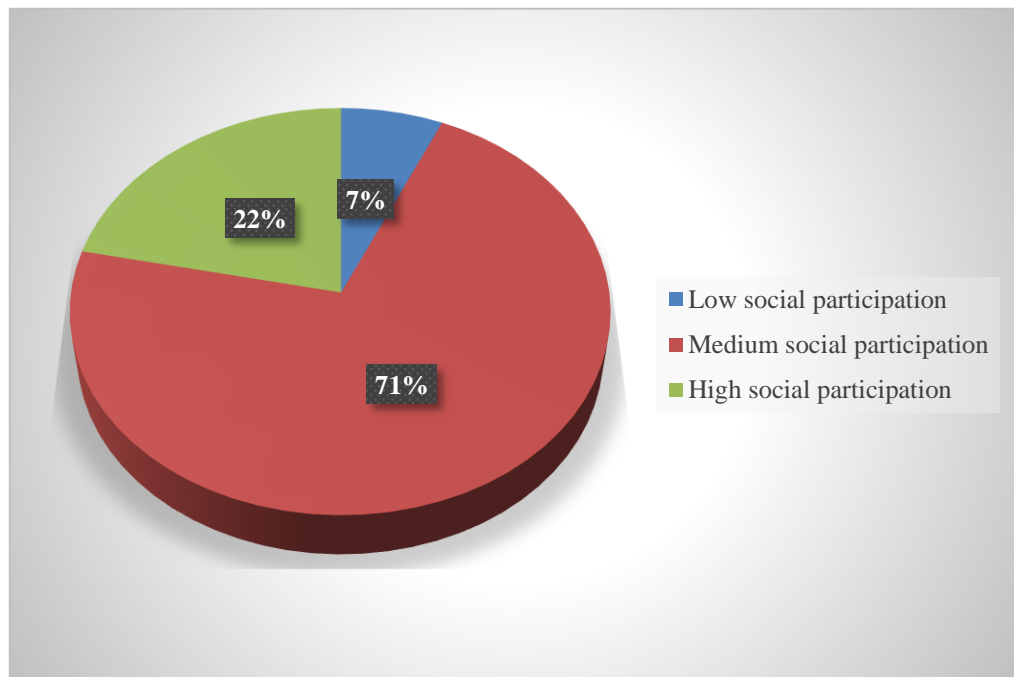


Fig 4.5: Distribution of social participation of respondents

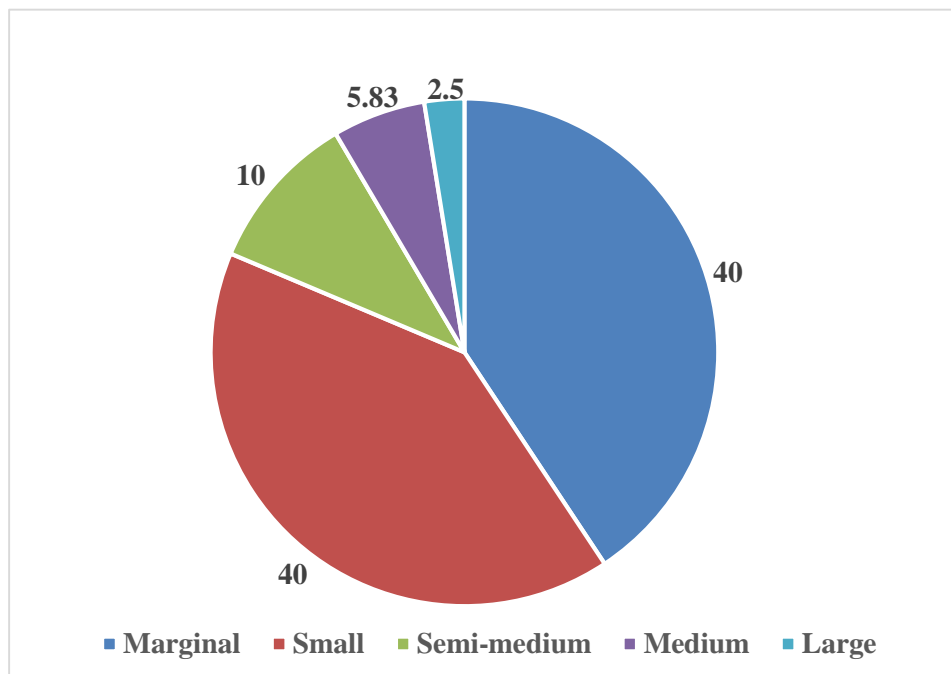


Fig 4.6: Distribution of land holdings of respondents

It was observed from the table 4.6 that, equal (40.00 percent) of the respondents were small and marginal farmers. About 10.00 percent respondents were Semi-medium farmers where as 5.83 percent farmers were found in medium category. Only 2.50 percent of respondents were big farmers having land holding more than 10.01 hectares. As the study area is an extended peri-urban area and partially irrigated area so most of farmers are selling their land for industrial expansion which are less suitable for cultivation. This might be the reason of having less land holding. The results were found to be in lines with studies done by Chanpaneri (2012) and Damor (2013).

4.1.7 Annual income

Annual income refers to the total income in a year of all the family members of the respondents from all the sources. Annual income of the family helps to project the overall economic position and is an indication of economic stability.

The data regarding total annual income of the respondents were obtained, analyzed and presented in Table 4.7 and depicted diagrammatically in Fig 4.7.

Table 4.7: Distribution of the respondents according to annual income

Sr. No.	Annual income (₹)	Respondents (n=120)	
		Number	Percentage
1	Lower(Less than ₹ 75,000)	18	15.00
2	Lower Middle (₹ 75,000 to 1,50,000)	28	23.33
3	Middle (₹ 1,50,000 to 2,25,000)	50	41.67
4	High (Above ₹ 2,25,000)	24	20.00
	Total	120	100.00

It was revealed from the table 4.7 that more than two fifth (41.67 per cent) of respondents had annual income of ₹ 1, 50,000 to 2, 25,000 whereas only 23.33 per cent of the respondents had annual income ₹ 75,000 to 1, 50,000. About 20.00 percent of respondents were found in upper income group *i.e.* from Above ₹ 2, 25,000. As the study area comes under a partially irrigated area so 3-4 months of summer season remains uncultivated or with less yield due to lack of irrigation facility which affects the annual income of the respondents. The results were found to be in line with study done by Darandale (2010).

4.1.8 Mass media exposure

Information sources play major role for dissemination of improved agricultural practices to the farming community. Now-a-days, farm information are changing very fast. Unless the individual is exposed to the latest development, progress can't be much experienced. The data regarding mass media exposure of the respondents were collected, analyzed and presented in table 4.8 and depicted diagrammatically in Fig 4.8.

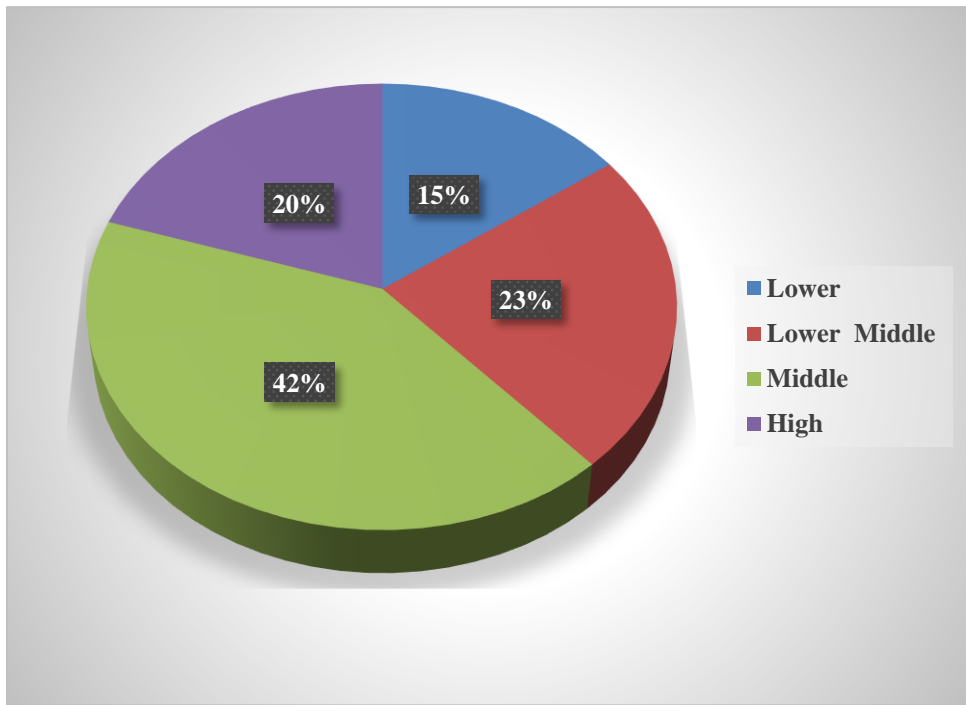


Fig4.7: Distribution of Annual income of respondents

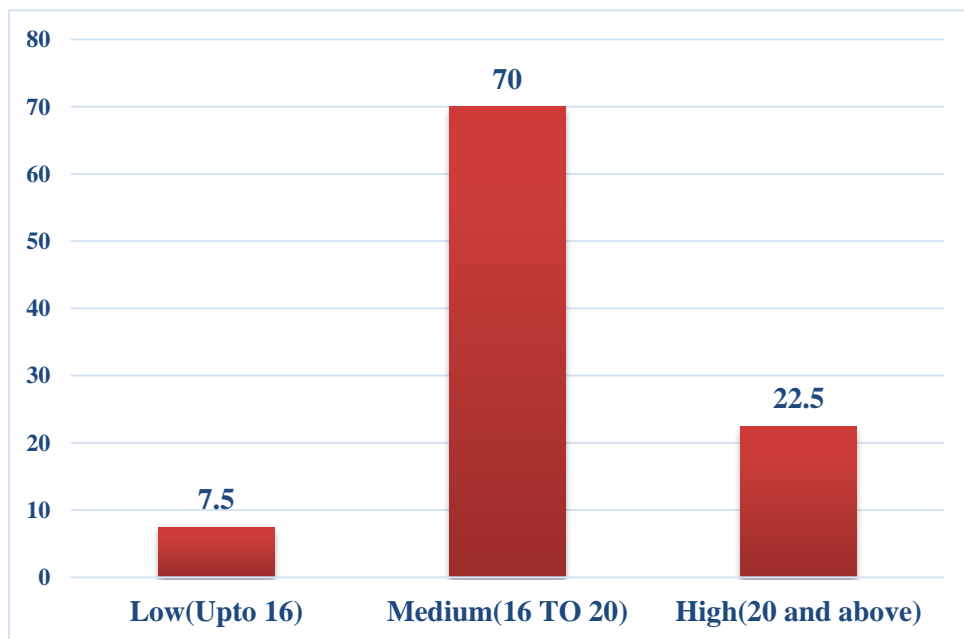


Fig4.8: Distribution of mass media exposure of respondents

Table 4.8: Distribution of the respondents according to mass media exposure

Sr. No.	Categories of mass media exposure	Respondents (n=120)	
		Number	Percentage
1	Low(Less than 14)	9	7.50
2	Medium(14 to 19)	84	70.00
3	High(More than 19)	27	22.50
	Total	120	100.00

Mean: 16.57**S.D: 2.25**

An examination of Figure 4.8 revealed that majority (70.00 per cent) of the respondents had medium level of mass media exposure followed by 22.50 per cent farmers with high and 7.50 per cent low level of mass media exposure. The data revealed that most of responds had very good exposure to mass media as nearly half of respondents have a good education level which exposed them to various mass media. The results were found to be in lines with studies done by Darandale (2010) and Patel (2012).

Table 4.8.1 Ranking of mass media according to exposure of respondents related to organic farming

Sr. No.	Mass media participation	Frequency of contact			Mean score	Rank
		Regular	Occasional	Never		
1.	Newspaper	77	26	17	2.500	I
2.	Farm Broadcast	62	28	30	2.267	VII
3.	Farm periodicals	73	26	24	2.408	III
4.	Technical bulletin	63	36	21	2.350	IV
5.	Exposure visit	61	37	22	2.325	V
6.	Exhibition	60	37	23	2.308	VI
7.	Training	70	30	20	2.417	II

An examination from table 4.8.1 revealed that larger portion of the respondents prefer to read Newspaper followed by they want to attain the training programmes, and prefer to go through the farm periodicals, Technical bulletin and prefer to attain the Exposure visit, Exhibition and prefer to read the farm broadcast published by ATMA functionaries for promoting organic farming.

4.1.9 Economic motivation

Economic motivation is an occupational success in terms of profit maximization and relative value an individual places on economic ends. In this regard, the data of economic motivation were collected analyzed and presented in Table 4.9 and depicted diagrammatically in Fig 4.9.

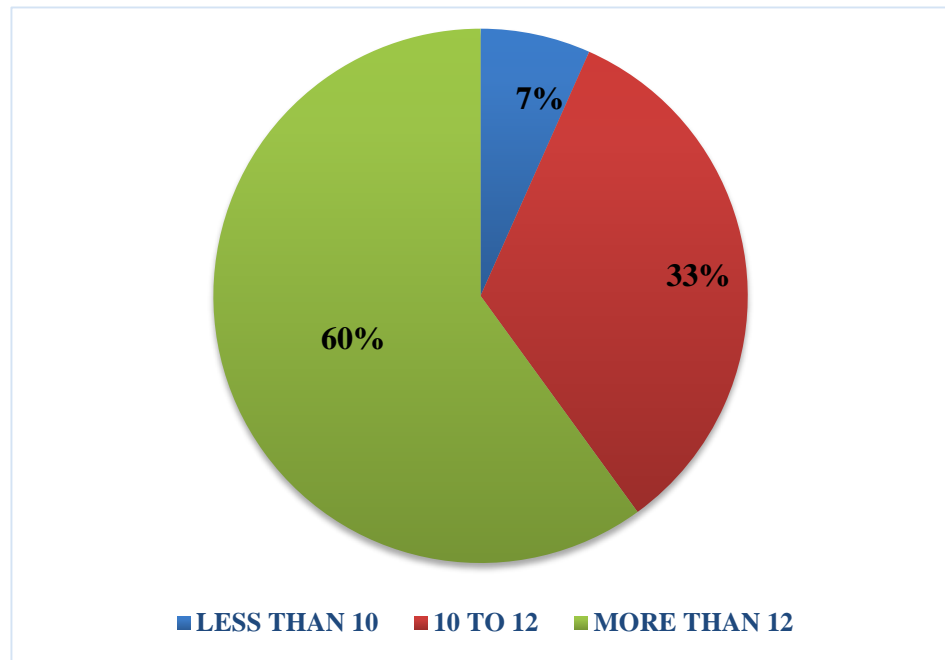


Fig 4.9: Distribution level of economic motivation of respondents

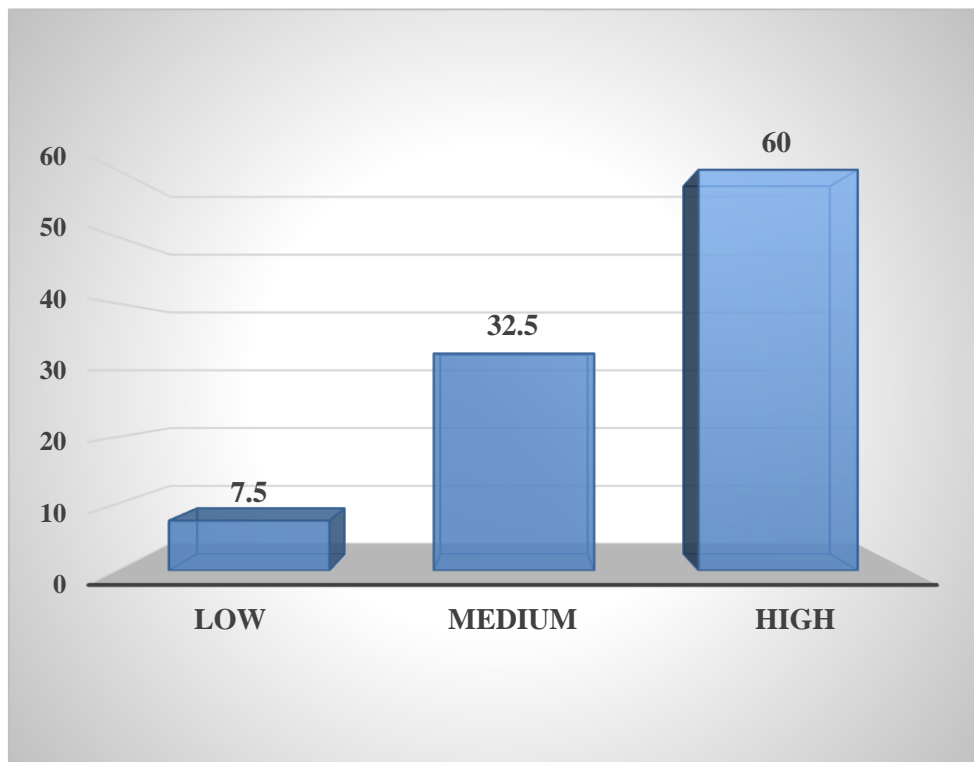


Fig 4.10: Distribution level of innovativeness of respondents

Table 4.9: Distribution of the respondents according to economic motivation

Sr. No	Categories	Respondents (n=120)	
		Frequency	Percentage
1	Low(Less than 10)	8	6.67
2	Medium(10 to 12)	40	33.33
3	High(More than 12)	72	60.00
	Total	120	100
Mean: 11.07		SD: 1.29	

The data pointed out that slightly more than half of (60.00 per cent) of the respondents had high degree of economic motivation, followed by 33.33 per cent respondents of medium and 6.67 per cent respondents of low degree of economic motivation respectively. It means that majority of the farmers have realized high level of remuneration from organic farming to reach high economic end. The results were found to be in line with study done by Barodia (2005).

4.1.10 Innovativeness

Innovativeness refers to the degree to which an individual farmer is relatively earlier to adopt new ideas than other members of society, which helps to accelerate the adoption process to get maximum overall effectiveness of a new programme. In this regard data based on the innovativeness of respondents were analyzed and presented in table 4.10 and depicted diagrammatically in Fig 4.10.

Table 4.10: Distribution of respondents according to innovativeness

Sr. No	Categories	Respondents (n=120)	
		Frequency	Percentage
1	Low(less than 8)	9	7.50
2	Medium(8 to 10)	39	32.50
3	High(more than 10)	72	60.00
	Total	120	100
Mean: 9.23		SD: 1.11	

The table 4.10 depicts that most of (60.00 percent) farmers were very innovative. About 32.50 percent of farmers were found in medium category of innovativeness whereas only 7.50 percent farmers were in low category of innovativeness.

More the half of the respondents were belong to high innovative category because of their exposure to newspaper, regular participation in training programmes and preference for various farm periodicals, bulletins published by ATMA functionaries for promotion of organic farming. The results were found to be in lines with studies done by Damor (2013) and Sharma (2014).

4.2 Extent of participation of farmers in PKVY activities for promoting organic farming

Extent of participation is very important for any group or an individual for its proper growth and development. Transfer of technology occurs through active participation of farmers in various group activities. Participation in various activities of PKVY is preferred to increase the knowledge level, technical competency. The data regarding the extent of participation of respondents were collected, analyzed and presented in table 4.11 and depicted diagrammatically in Fig 4.11.

Table 4.11: Distribution of respondent according to extent of participation in PKVY activities

Sr. No	Categories	Respondents (n=120)	
		Frequency	Percentage
1	Low(Less than 26)	13	10.83
2	Medium(26 to 30)	88	73.33
3	High(More than 30)	19	15.84
	Total	120	100
Mean: 27.79		SD: 2.007	

The table 4.11 depicts that majority (73.33 percent) of farmers were having medium extent of participation in PKVY activities followed by 15.84 percent of farmers were found in high extent of participation whereas in low extent of participation.

Nearly two third of the farmers have medium extent of participation due to better coordination of programmes by ATMA field level officers. The results were found to be in lines with study done by Suradkar (2010).

Table 4.11.1 Ranking of PKVY activities according to extent of participation of respondents

Sr. No.	PKVY activities	Frequency of contact			Mean score	Rank
		Regular	Occasional	Never		
1.	Farmer meetings	108	8	4	2.86	III
2.	Training programme	112	4	4	2.9	I
3.	Group discussion	101	18	1	2.83	IV
4.	Demonstration	110	7	3	2.89	II
5.	Exposure visit	103	8	9	2.78	V
6.	Field visit	91	19	10	2.675	VIII
7.	Field trials	92	18	10	2.68	VII
8.	Exhibition	101	9	10	2.75	VI
9.	Farmer's fair	90	18	12	2.65	IX
10.	Others (Farmer's day celebration, Farmer's talk)	88	19	13	2.62	X

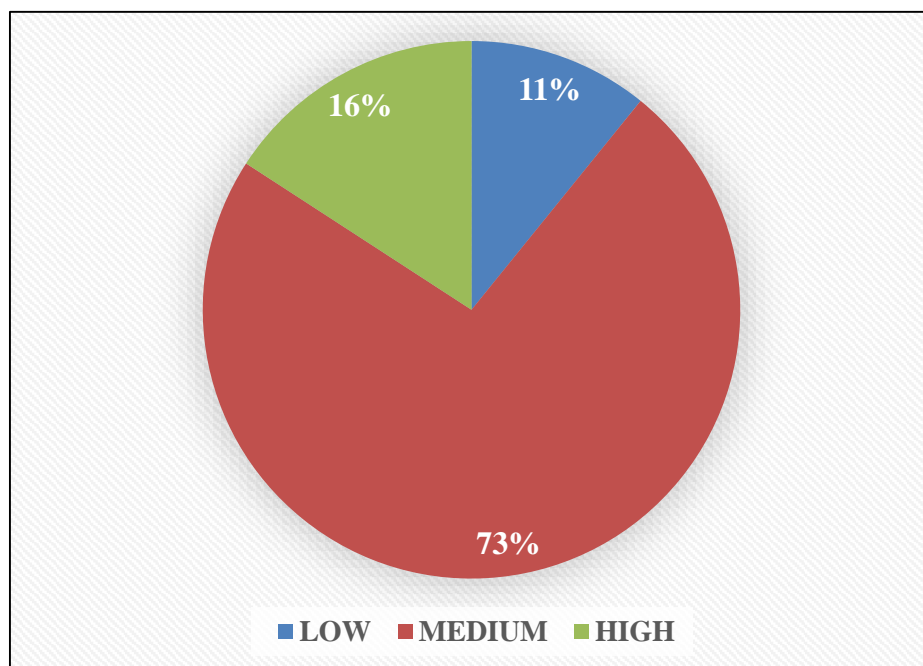


Fig 4.11: Distribution extent of participation of respondents in PKVY activities

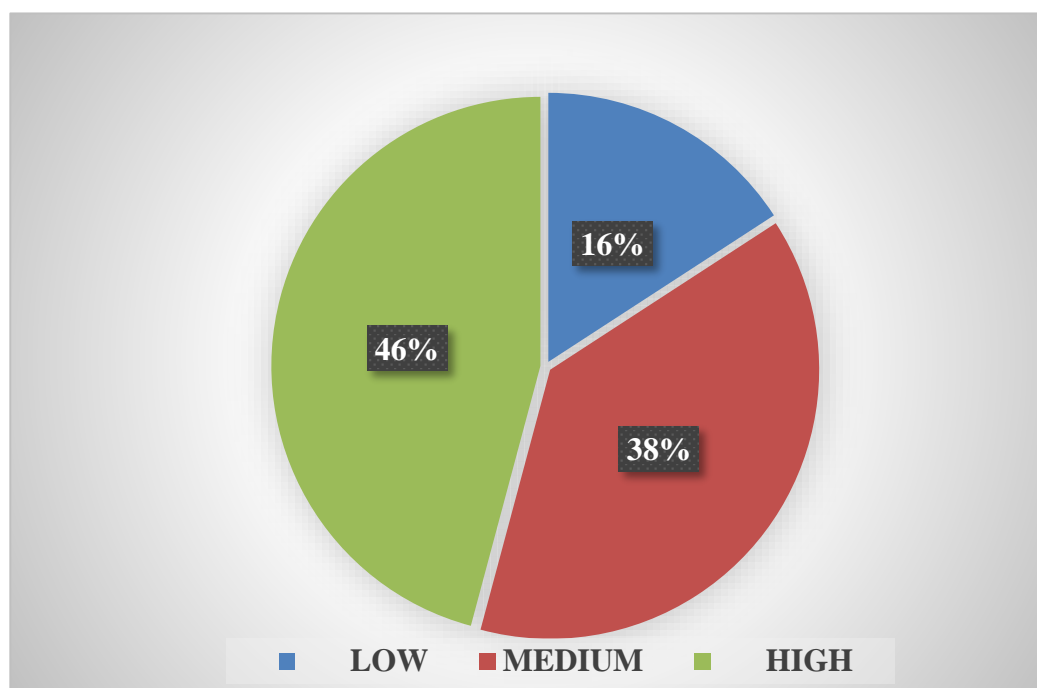


Fig 4.12: Distribution adoption of cultural practices among respondents

An examination from table 4.11.1 revealed that the extent of participation of farmers is higher in the training programme followed by in the demonstration, farmer's discussion, group discussion, Exposure visit, Exhibition, Field trials, Field visit, Farmer's fair, and other various activities *viz*; Farmer's day celebration, Farmer's talk which was held under PKVY activities with the involvement of ATMA functionaries for promotion of organic farming.

4.3 Effectiveness of PKVY for promoting organic farming under ATMA

Effectiveness of any scheme is determined by the degree to which it realizes its goals. Here effectiveness of PKVY was measured by considering the major components of the *yojana viz*; adoption of cultural practices of organic farming and benefits availed by the farmers. Benefit availed by the farmers was measured in terms of economic benefits, technical benefits, social benefits obtained by the farmers through the PKVY activities.

4.3.1. Adoption of cultural practices

Adoption of cultural practices is measured in terms of the use of new ideas given through PKVY activities *viz.* preparation of vermicompost, jeevamrut, bijamrut, application of bio pesticides, bio herbicides, application of neem formulation, green mulching etc. for promoting organic farming in the selected area. The data regarding adoption of cultural practices by the respondents were obtained and they were analyzed and presented in Table 4.12. It is also depicted diagrammatically in Fig 4.12.

Table 4.12 Distribution of respondents according to adoption of cultural practices

Sr. No	Category	Respondents (n=120)	
		Frequency	Percentage
1	Low(less than 10)	19	15.83
2	Middle(10 to 12)	46	38.33
3	High (more than 12)	55	45.83
	Total	120	100
Mean: 10.98		SD: 1.18	

The table 4.12 depicts that more than one third (45.83 percent) of farmers were very advanced to adopt the cultural practices. About 38.33 percent of farmers were found in medium category of adopting cultural practices. Only 15.83 percent farmers were in low category. Nearly half of the respondent were very advanced to adopt the cultural practices due to better organization and co-ordination of training programmes by ATMA field level officers.

Table 4.12.1 Ranking cultural practices according to the adoption by the respondents

Sr. No.	Cultural Practices	Mean score	Rank
1.	Usage of biofertilizers (Azactobactor)	1.78	V
2.	Preparation and Usage of Organic manures	1.86	I
a.	Vermi-compost	0.319	I(a)
b.	Farm yard manure	0.308	I(b)

c.	Jeevamrut	0.308	I(b)
d.	Green manuring	0.307	I(c)
e.	Biodynamic preparation	0.308	I(b)
f.	Neem formulations	0.308	I(b)
3.	Application of biopesticides (Neem oil)	1.840	III
4.	Application of beejamrut for seed treatment	1.85	II
5.	Water conservation and soil conservation measures	1.85	II
a.	Green mulching		
6.	Application of bioherbicides(mycoherbicides)	1.80	IV

An examination from table 4.12.1 revealed that respondents are highly preferring to adopt preparation and usage of organic manures in the form of Vermi compost, Farm yard manure, Jeevamrut, biodynamic preparation and green manuring. After that they are preferring to apply beejamrut for seed treatment and Water conservation and soil conservation measures by applying green mulching followed by prefer to apply biopesticides (neem oil), application of bioherbicides (mycoherbicides) and usage of biofertilizers.

4.3.2 Benefits availed

Benefits availed were measured in the degree of taking advantage of the facilities, financial assistance, training programmes provided through various activities of PKVY to meet the demands in the selected areas for organic production, adaptability to new technology and flexibility within the society, which measured through various parameters like, economical, technical and social benefits.

4.3.2.1 Economic benefits

Economic benefits were measured in the degree of taking advantage of the financial assistance to get economic independence or self-revealed income *viz*; financial assistance in getting registration under PKVY, getting organic certification, subsidized storage facility, transportation etc. which was considered to be the major means of achieving effectiveness of PKVY. The data regarding economic benefits availed by the respondents were obtained and they were they were analyzed and presented in Table 4.13 and depicted diagrammatically in Fig 4.13.

Table 4.13: Distribution of respondents according economic benefits availed

Sr. No	Category	Respondents (n=120)	
		Frequency	Percentage
1	Low(less than 10)	9	7.50
2	Medium(10 to 12)	58	48.33
3	High (more than 12)	53	44.17
	Total	120	100
Mean: 12.50		SD: 1.19	

The above table 4.13 represents the economic benefits availed by the respondents. According to results 48.33 percent of the respondents were categorized under medium level of availing economic benefits, followed by 44.17 percent under high level and 7.50 percent under low level of economic benefits availed categories. This indicates that economic benefits availed by the farmers were satisfactory. This might be due to availability of proper marketing, transportation facility, due time subsidy in each and every step of PKVY. The results were found to be in line with study done by Kakkar *et al.* (2014).

4.3.2.2 Technical benefits

Technological benefits is measured through an approach that identifies the technology, or technological advancement, as the central causal element in processes of social change. Through PKVY activities farmers practiced the application of various technologies *viz*; grading, packaging, branding etc. by themselves, equipped with sufficient knowledge and skills to increase farm production. The respondent's data were collected and presented after analysis in Table 4.14 and depicted diagrammatically in Fig 4.14.

Table 4.14: Distribution of respondents according technical benefits availed

Sr. No	Category	Respondents (n=120)	
		Frequency	Percentage
1	Low(Less than 5)	6	5.00
2	Medium (5 to 6)	44	36.67
3	High(More than 6)	70	58.33
	Total	120	100
Mean: 5.31		SD: 0.61	

The above table 4.14 represents the technical benefits availed by the respondents. According to results 58.33 percent of the respondents were categorized under high level of availing technical benefits, followed by 36.67 percent under medium level and 5.00 percent under low level of technical benefits availed categories. This indicates that technical benefits availed by the farmers were satisfactory. This might be due to the proper training and skill development training practices with storage and transportation facilities given by PKVY.

4.3.2.3 Social benefits

Social benefit was measured in the degree of taking advantage of the various PKVY activities *viz*; training programme, group meetings, exhibition, demonstrations etc. to increase social participation outside the group members. The data regarding social benefits availed by the respondents were obtained, analyzed and presented in Table 4.15 and depicted diagrammatically in Fig 4.15.

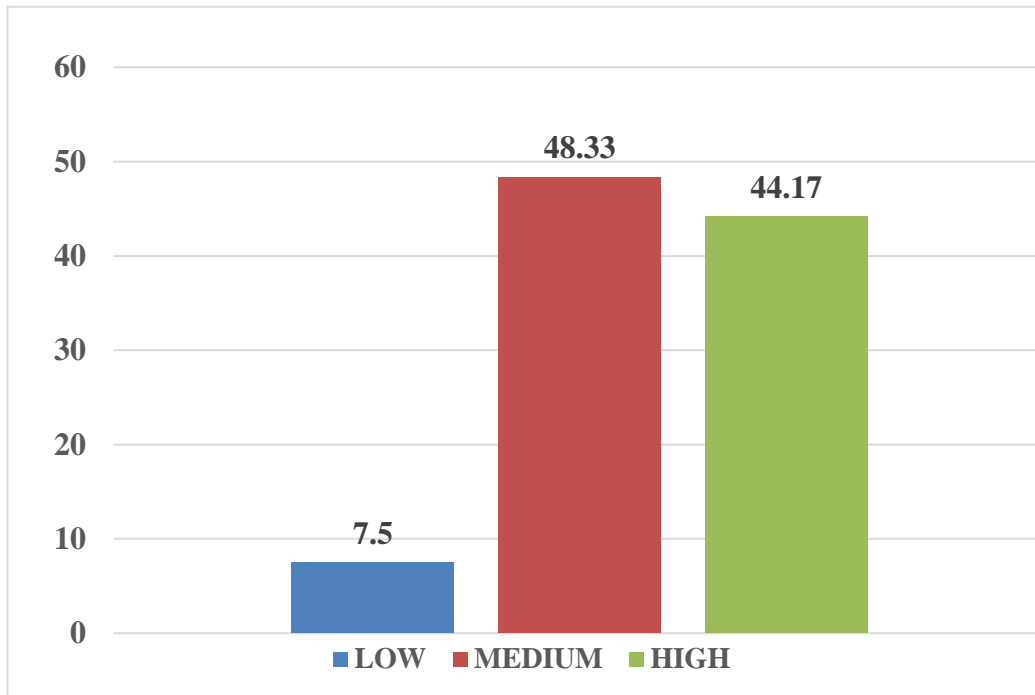


Fig 4.13: Distribution respondents according to economic benefits availed by them

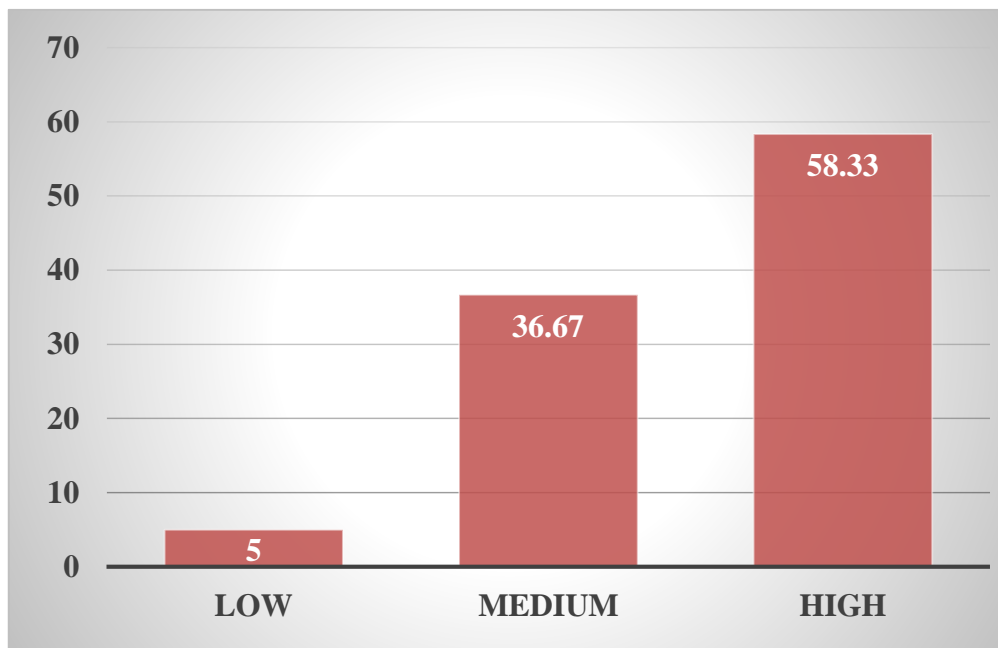


Fig 4.14: Distribution respondents according to technical benefits availed by them

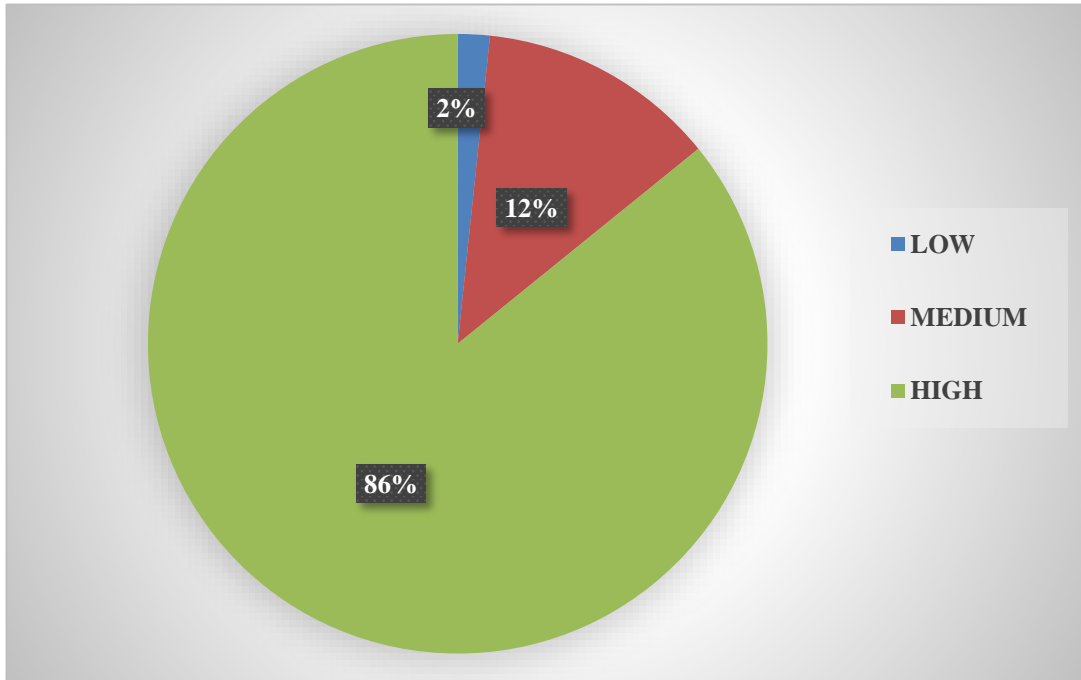


Fig 4.15: Distribution respondents according to social benefits availed by them

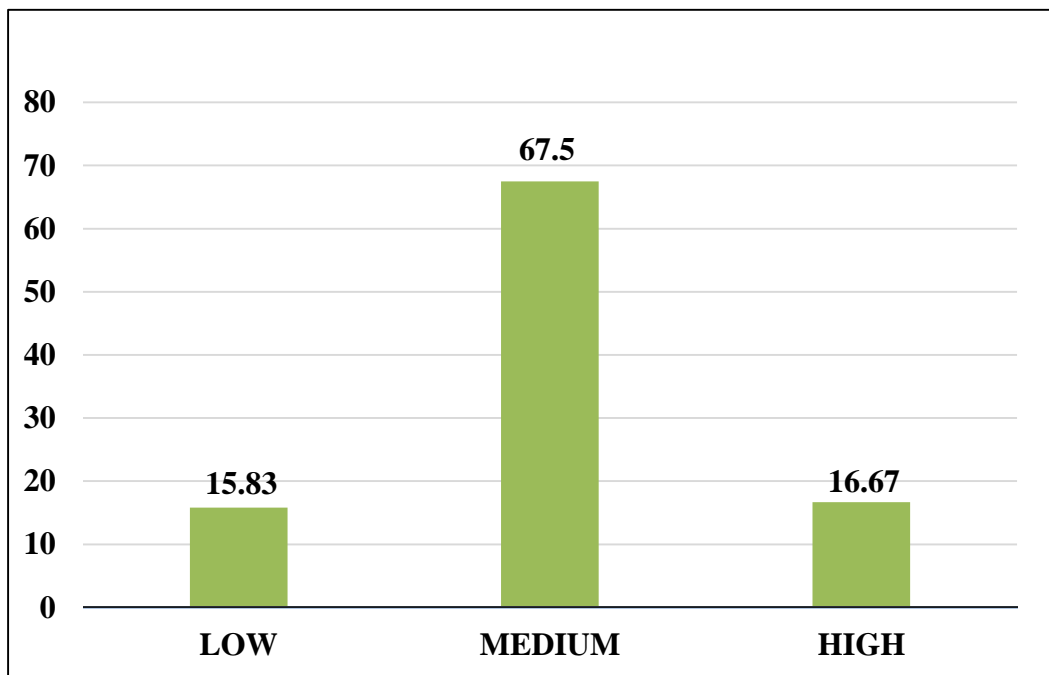


Fig 4.16: Distribution respondents according to Overall effectiveness

Table 4.15 Distribution of respondents according to social benefits availed

Sr. No	Category	Respondents (n=120)	
		Frequency	Percentage
1	Low(Less than 5)	2	1.67
2	Medium(5 to 6)	15	12.50
3	High(More than 6)	103	85.83
Total		120	100
Mean: 5.809		SD: 0.409	

The above table 4.15 represents the social benefits availed by the respondents. According to results 85.83 percent of the respondents were categorized under high level of availing social benefits, followed by 12.50 percent under medium level and 1.67 percent under low level of social benefits availed category. This indicates that social benefits availed by the farmers were satisfactory. This might be due to the regular participation in the farmers meeting, exhibition, training programme, exposure visit, farmer's fair arranged under the activities of PKVY.

Table 4.15.1 Ranking of economical, technical and social benefits availed by the respondents

Sr. No.	Statement	Mean	Rank
Economical benefits			
1.	PKVY helped me in increasing my annual income.	1.950	I
2.	PKVY helped me in boosting the production and productivity of my crop.	1.658	VIII
3.	Subsidized farming reduced my burden on income based farming.	1.775	VII
4.	PKVY helped me to reduce my expenditure over high priced insecticides and pesticides.	1.858	IV
5.	Subsidized transportation cost helped me to save a little more.	1.625	X
6.	PKVY helped me to get the farm inputs easily.	1.833	V
7.	PKVY helped me to avail storage facility easily.	1.808	VI
Technical benefits			
8.	PKVY enabled me to register under organic certification easily	1.833	V
9.	PKVY helped me to get organic certification.	1.833	V
10.	PKVY helped me in getting guidance about various postharvest practice like Grading Packaging, Branding.	1.650	IX
Social benefits			
11.	PKVY helped me to increase my social participation.	1.942	II
12.	PKVY helped me to improve my social status.	1.917	III
13.	PKVY helped me to increase my social relationship with members outside the farmers group.	1.950	I

4.3.2.4 Overall Effectiveness

Table 4.16 Distribution of respondents according to the overall effectiveness of PKVY

Sr. No	Categories	Respondents (n=120)	
		Frequency	Percentage
1	Low(Less than 18)	19	15.83
2	Medium(18 to 20)	81	67.50
3	High(More than 20)	20	16.67
	Total	120	100
Mean: 18.90		SD: 1.244	

It is observed from table 4.16 that about more than two third (67.50 per cent) respondents had medium level of overall effectiveness followed 16.67 per cent and 15.83 per cent who had high and low level of overall effectiveness of PKVY for promoting organic farming respectively. The results were found to be in lines with studies done by Kumaran (1998) and Singh and Narain (2008).

Hence it is inferred that majority of organic farmers under PKVY had medium effectiveness from the PKVY activities. This effectiveness of PKVY for promoting organic farming can be attributed to fact that selected families in the village were informed and awared about different activities involved in PKVY and most of them were enthusiastic in adopting new practices.

4.4 Association between characteristics of the respondents and Overall effectiveness of PKVY

In order to ascertain association between personal, social, economical, communicational and psychological characteristics of the respondents and effectiveness of PKVY, the Chi-square test was worked out. The data so obtained is presented in Table 4.17 and onwards.

4.4.1 Association between Age of the respondents and Overall effectiveness of PKVY

Table 4.17: Association between Age and Overall effectiveness of PKVY

Sr. No.	Age group	Effectiveness of PKVY				Total (n=120)
		Low	Medium	High	Sub Total	
1	Young (Up to 35 years)	10 (25.64)	22 (56.41)	7 (17.96)	39 (100.00)	39 (32.50)
2	Middle (36 to 55 years)	6 (7.90)	58 (76.31)	12 (15.79)	76 (100.00)	76 (63.33)
3	Old (56 years and above)	3 (60.00)	1 (20.00)	1 (20.00)	5 (100.00)	5 (4.17)
Total		19(15.83)	81(67.50)	20(16.67)		120 (100.00)
X²(cal.) = 14.91						D.F. =4

*(Figures in parenthesis indicates percentage to total value of corresponding category of independent variable)

Result: Significant at 5.00 per cent level of significance.

The 'Chi – Square value' is found to be statistically significant at 0.05 level of significance. The data in the table indicates that there is significant association between age of the respondents and overall effectiveness of PKVY activities.

From the table 4.17 it was indicated that 56.41 per cent of respondents belonged to young age group had medium level of effectiveness followed by 25.64 per cent of respondents had low and 17.96 per cent of respondents had high overall effectiveness from PKVY activities.

Similarly, it was indicated that 76.31 per cent of respondents who belonged to middle age group were having medium level of effectiveness followed by 15.79 per cent of respondents had high and 7.90 per cent of respondents had low overall effectiveness from PKVY activities respectively.

It is further seen that the respondents from the old age group 60.00 per cent respondents had low level of effectiveness, followed equal 20.00 per cent in medium and high overall effectiveness from PKVY activities.

It can be said that middle aged farmers who were practicing organic farming showed medium level of overall effectiveness than old and young age farmers as these farmers are dynamic, energetic, enthusiastic, result oriented, prompt and pragmatic decision maker, believer in science and always keen to exploit resources for betterment of life which in turn reflected in to development of high level of effectiveness. The findings are supported by Okunade (2007) and Sakib and Afrad (2013).

4.4.2 Association between Education of the respondents and Overall effectiveness of PKVY

Table 4.18: Association between Education of the respondents and Overall effectiveness of PKVY

Sr. No.	Education	Effectiveness of PKVY				Total (n=120)
		Low	Medium	High	Sub Total	
1	Primary Education	1 (20.00)	3 (60.00)	1 (20.00)	5 (100)	5 (4.17)
2	Middle School	3 (14.28)	14 (66.67)	4 (19.05)	21 (100)	21 (17.50)
3	Secondary Education	8 (28.57)	14 (50.00)	6 (21.43)	28 (100)	28 (23.33)
4	Higher secondary Education	1 (3.23)	26 (83.87)	4 (12.90)	31 (100)	31 (25.83)
5	Graduation	5 (18.52)	21 (77.78)	1 (3.70)	27 (100)	27 (22.50)

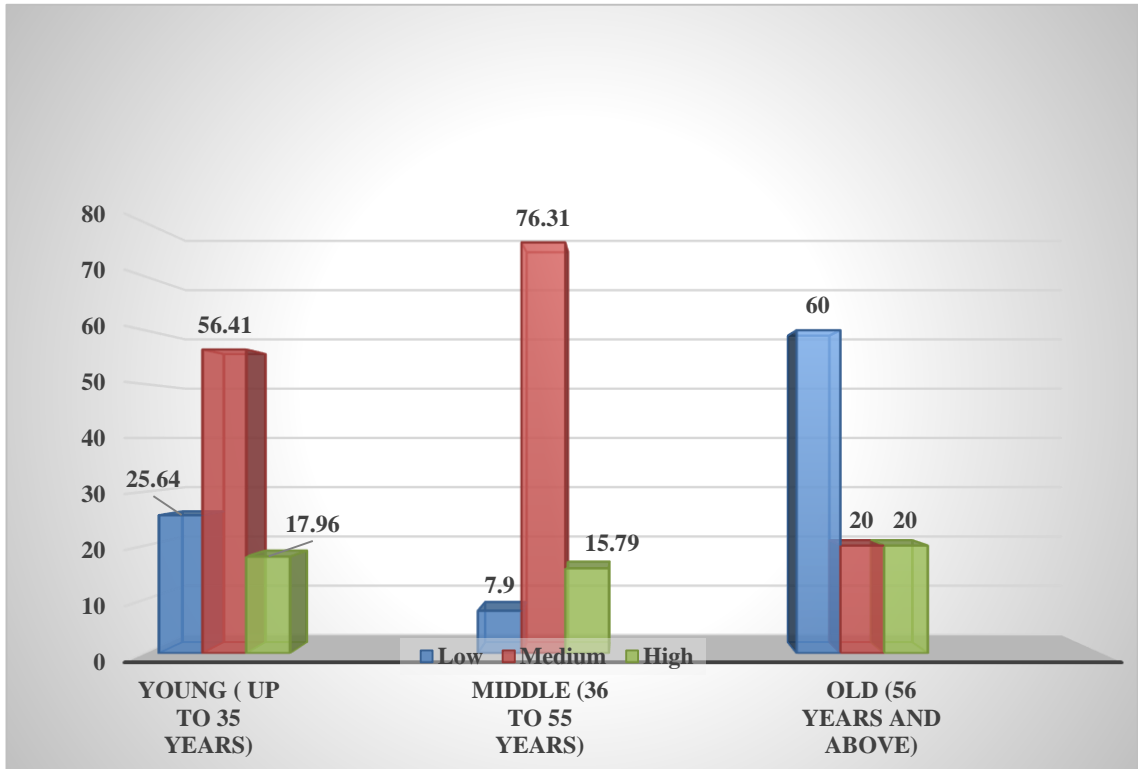


Fig 4.17 Association between Age and Overall effectiveness of PKVY

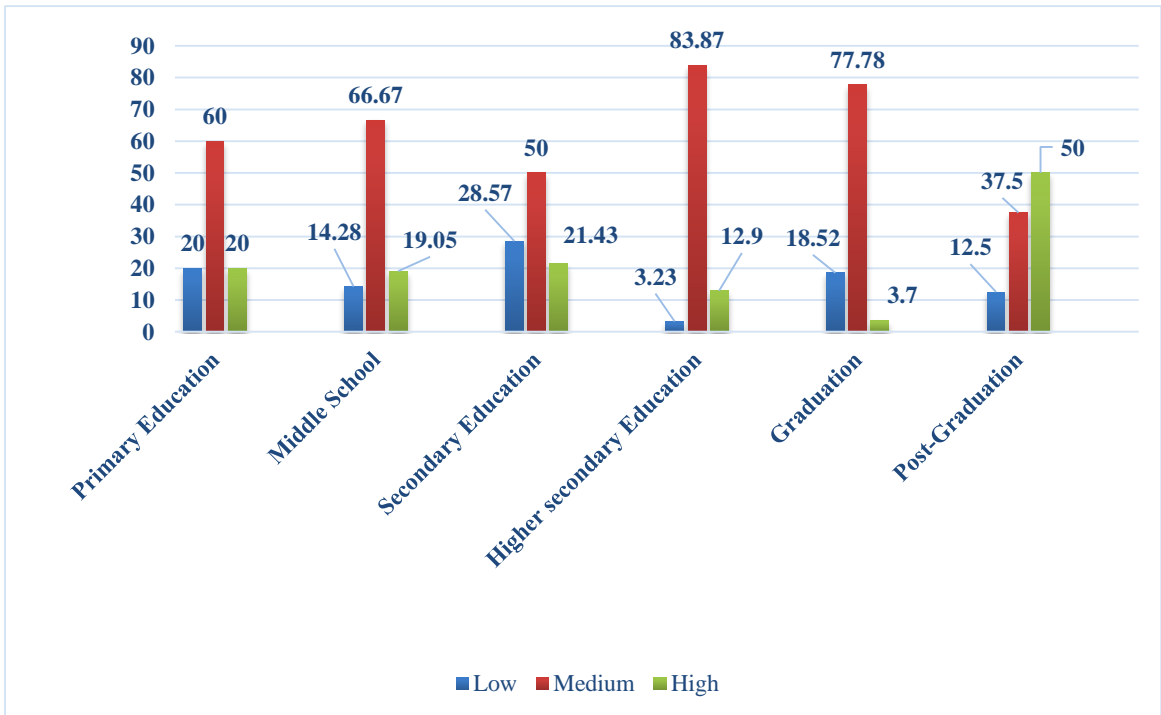


Fig 4.18 Association between Education and Overall effectiveness of PKVY

6	Post- Graduation	1 (12.50)	3 (37.50)	4 (50.00)	8 (100)	8 (6.67)
Total		19(15.83)	81(67.50)	20(16.67)		120(100.00)
X²(cal.) = 23.33						D.F. =10

*(Figures in parenthesis indicates percentage to total value of corresponding category of independent variable.

Result: Significant at 5.00 per cent level of significance.

The 'Chi - square ' value was found to be statistically significant at five per cent level of significance. This indicates that, there was a significant association between level of education of the respondents and overall effectiveness of PKVY activities.

From table 4.18 it is indicated that the respondents who had primary level education 60.00 per cent had medium overall effectiveness followed by equal 20.0 per had high and low overall effectiveness.

Similarly, out of the respondents who had secondary level of education, 50.00 per cent showed medium overall effectiveness followed by 28.57 per cent showing low overall effectiveness and 21.43 per cent showing high overall effectiveness. The respondents who had middle school education, 66.67 per cent showed medium overall effectiveness followed by 19.05 per cent showing high overall effectiveness and 14.28 per cent showed low overall effectiveness.

In case of respondents who had higher secondary level of education, 83.87 per cent showed medium overall effectiveness followed by 12.90 per cent and 3.23 per cent respondents showing high and low overall effectiveness respectively.

In case of respondents who had graduation level of education, 77.28 per cent showed medium overall effectiveness followed by 18.52 per cent and 3.70 per cent respondents showing low and high overall effectiveness. In case of respondents who had post-graduation level of education, 50.00 per cent showed high overall effectiveness followed by 37.50 per cent and 12.50 per cent respondents showing low and high overall effectiveness.

The reason might due to education which opens up thinking process and knowledge for an individual which in turn reduces exploitation and gives scope and provides direction to the thinking process of the individual. Education exposes them to more innovation, they have more efficiency and more interest which resulted in high overall effectiveness. The findings were in conformity with Sakib and Afrad (2013).

4.4.3 Association between Family type of the respondents and Overall effectiveness of PKVY

Table 4.19: Association between Family type of the respondents and Overall effectiveness of PKVY

Sr. No.	Family type	Effectiveness of PKVY				Total (n=120)
		Low	Medium	High	Sub Total	
1	Nuclear family	7 (21.21)	12 (36.36)	14 (42.43)	33 (100.00)	33 (27.50)
2	Joint family	12 (13.79)	69 (79.31)	6 (6.90)	87 (100.00)	87 (72.50)
Total		19(15.83)	81(67.50)	20(16.67)		120(100.00)
X²(cal.): 25.48						D.F.: 2

*(Figures in parenthesis indicates percentage to total value of corresponding category of independent variable)

Result: Significant at 5.00 per cent level of significance

The 'Chi - square ' value was found to be statistically significant at five per cent level of significance. This indicates that, there was a significant association between family type of the respondents and the overall effectiveness of PKVY activities.

Amongst the respondents having joint family, 79.31 per cent respondents showed medium overall effectiveness, followed by 13.79 per cent respondents showing low and 6.90 per cent respondent shows high overall effectiveness.

And from the nuclear families 42.43 per cent of respondents showed high overall effectiveness, followed by 36.36 per cent showing medium overall effectiveness and 21.21 per cent showing low overall effectiveness. The findings suggest that maximum no. of respondents having joint family with medium overall effectiveness due to support from their family and might have adopted having better co- ordination in activities.

4.4.4 Association between Farming experience of the respondents and Overall effectiveness of PKVY

Table 4.20: Association between Farming experience of the respondents and Overall effectiveness of PKVY

Sr. No.	Farming Experience	Effectiveness of PKVY				Total (n=120)
		Low	Medium	High	Sub Total	
1	1-4 years	1 (16.67)	2 (33.33)	3 (50.00)	6 (100.00)	6 (5.00)
2	4-8 years	3 (14.29)	13 (61.90)	5 (23.81)	21 (100.00)	21 (17.50)
3	8-12 years	4 (7.01)	48 (84.21)	5 (8.78)	57 (100.00)	57 (47.50)
4	More than 12 years	11 (30.56)	18 (50.00)	7 (19.44)	36 (100)	36 (30.00)
Total		19(15.83)	81(67.50)	20(16.67)		120(100)
X²(cal.): 19.82						D.F.: 6

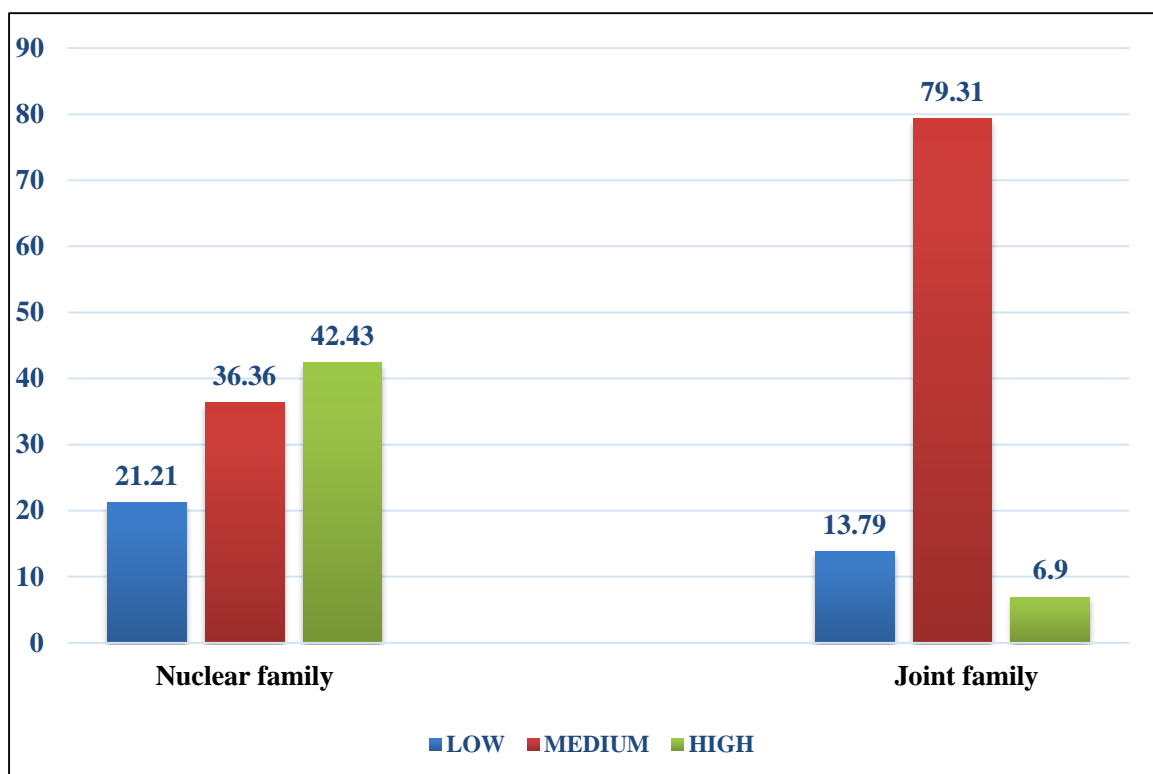


Fig 4.19 Association between Family type and Overall effectiveness of PKVY

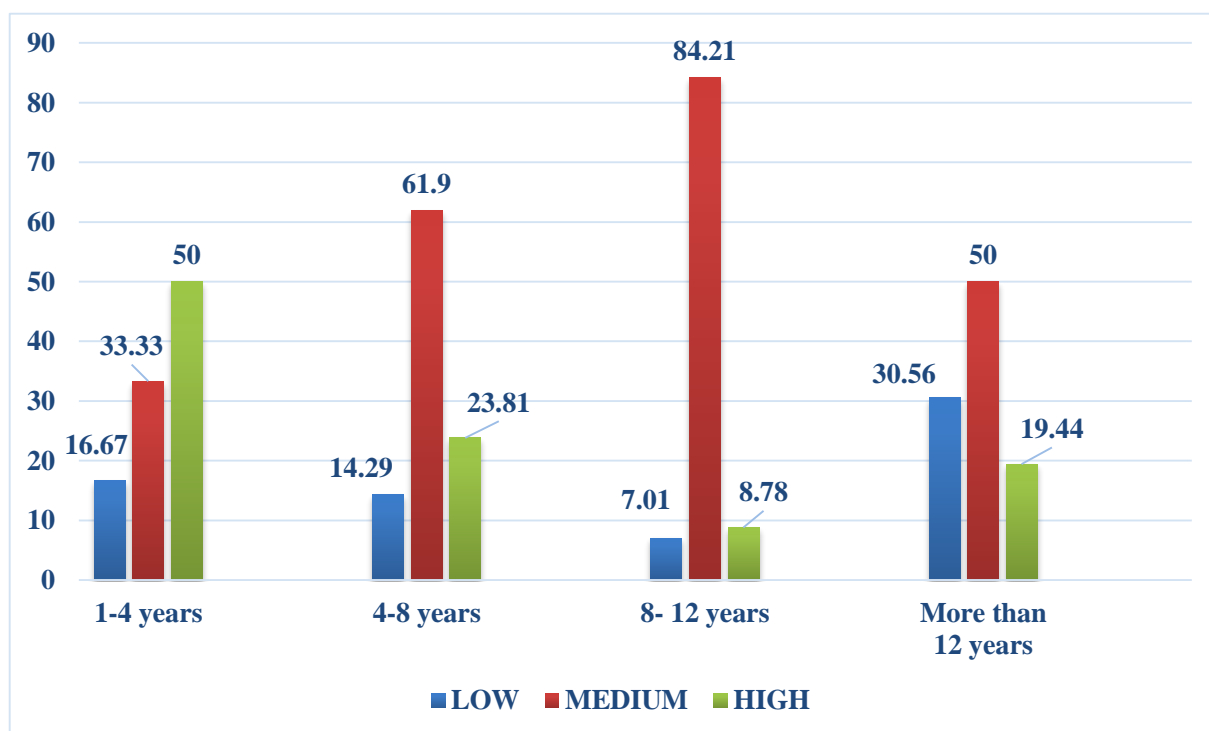


Fig 4.20 Association between Farming experience and Overall effectiveness of PKVY

*(Figures in parenthesis indicates percentage to total value of corresponding category of independent variable).

Result: Significant at 5.00 per cent level of significance.

'Chi - square ' value was found to be statistically significant at five per cent level of significance. This indicates that, there was a significant association between farming experience of the respondents and overall effectiveness of PKVY activities.

Among the respondents having farming experience more than 12 years, 50.00 per cent showed medium overall effectiveness, followed by 30.56 per cent showing low overall effectiveness and 19.44 per cent showing high overall effectiveness.

Among the respondents having farming experience 8-12 years, 84.21 per cent showed medium overall effectiveness, followed by 8.78 per cent showing high overall effectiveness and 7.01 per cent showing low overall effectiveness.

The findings suggest that maximum respondents had 8-12 years farming experience with medium overall effectiveness as their farming experience helped them to adopt previously used some cultural practices more effectively and proper management of resources. The results are in line with findings of Okunade (2007).

4.4.5 Association between social participation of the respondents and Overall effectiveness of PKVY

Table 4.21: Association between social participation of the respondents and Overall effectiveness of PKVY

Sr. No.	Social participation	Effectiveness of PKVY				Total (n=120)
		Low	Medium	High	Sub Total	
1	Low	1 (12.50)	6 (75.00)	1 (12.50)	8 (100.00)	8 (6.67)
2	Medium	16 (18.60)	67 (77.91)	3 (3.49)	86 (100.00)	86 (71.67)
3	High	2 (7.69)	8 (30.77)	16 (61.54)	26 (100.00)	26 (21.66)
Total		19(15.83)	81(67.50)	20(16.67)		120(100.00)
X²(cal.): 14.91						D.F.: 4

*(Figures in parenthesis indicates percentage to total value of corresponding category of independent variable).

Result: Significant at 5.00 per cent level of significance

The 'Chi - square ' value was found to be statistically significant at five per cent level of significance. This indicates that, there was a significant association between social participation of the respondents and overall effectiveness of PKVY activities.

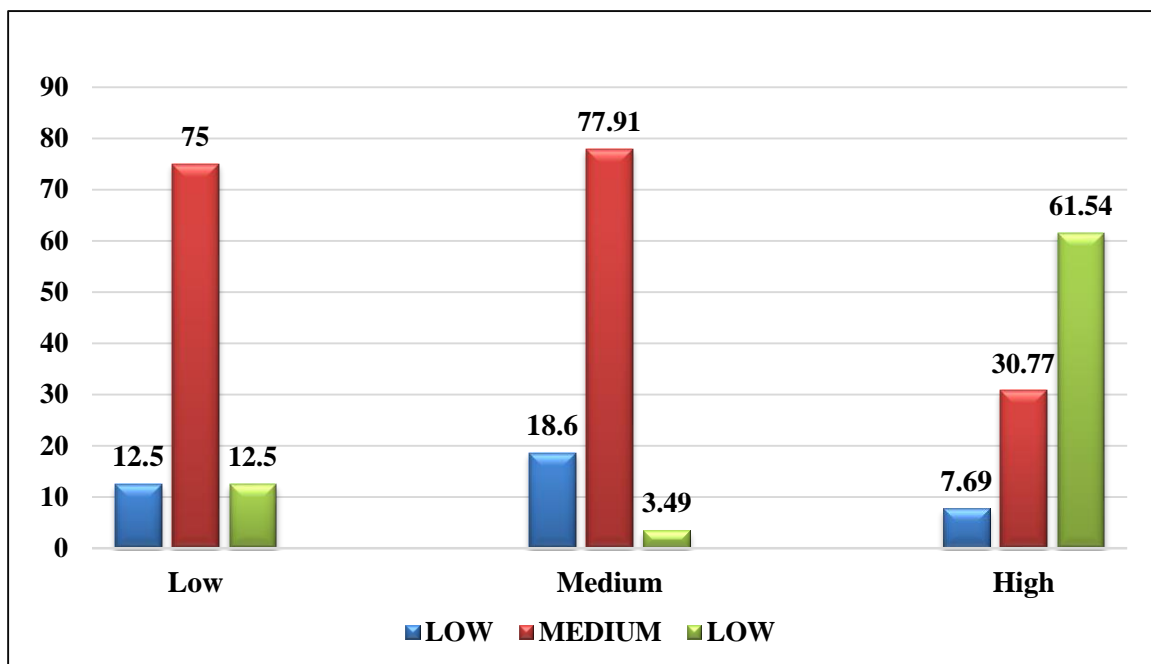


Fig 4.21 Association between social participation and Overall effectiveness of PKVY

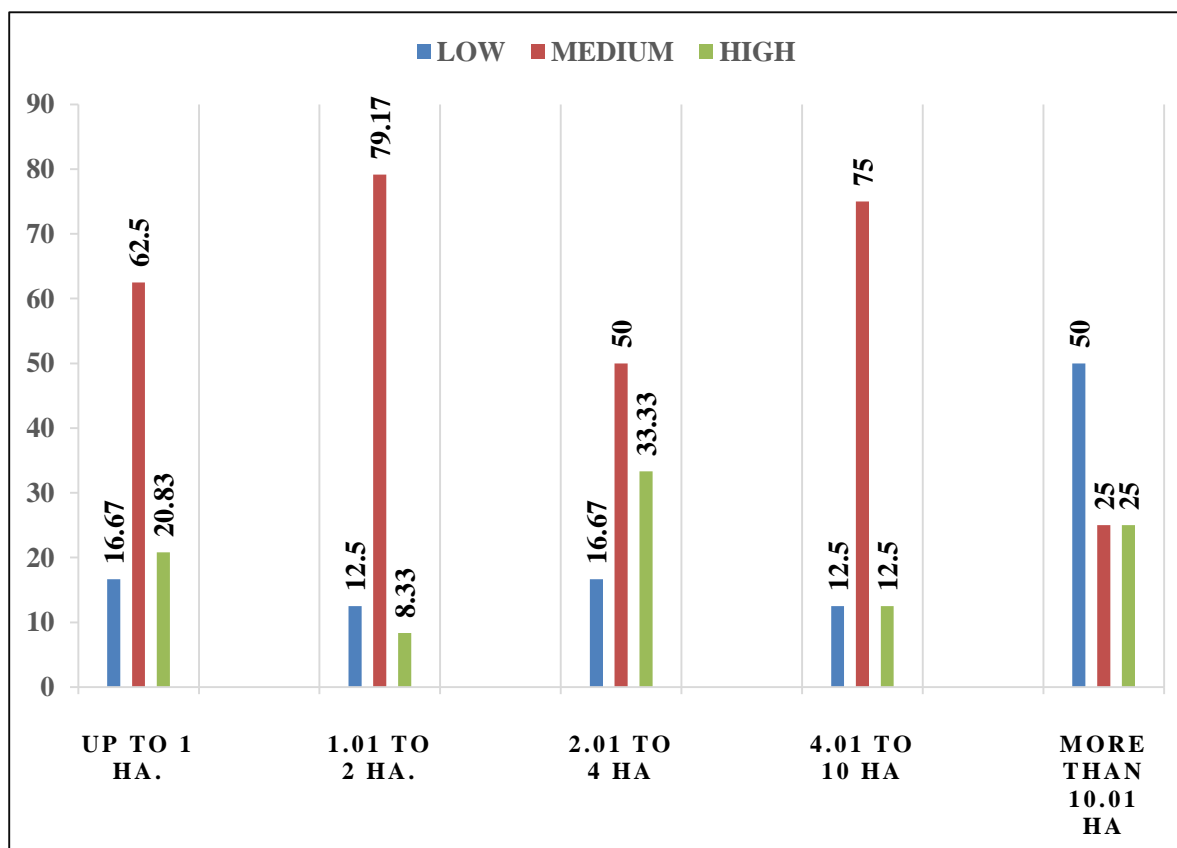


Fig 4.22 Association between Land holding and Overall effectiveness of PKVY

Among the respondents having low social participation, 75.00 per cent showed medium overall effectiveness followed by equal 12.50 per cent showed low and high overall effectiveness respectively.

The respondents having medium social participation, 77.91 per cent showed medium overall effectiveness followed by 18.60 per cent showing low overall effectiveness and 3.49 per cent showing high overall effectiveness.

Among the respondents with high social participation, 61.54 per cent showed high overall effectiveness followed by 30.77 per cent showing medium and 7.69 per cent showing low overall effectiveness. Findings showed that maximum number of respondents had medium social participation with medium overall effectiveness due better adoption of cultural practices and made aware about various organizations by leveraging their social benefits. Results were in conformity with Sakib and Afrad (2013) and Yadav *et al.* (2013).

4.4.6 Association between Land holding of the respondents and Overall effectiveness of PKVY

Table 4.22: Association between Land holding of the respondents and Overall effectiveness of PKVY

Sr. No.	Land holding	Effectiveness of PKVY				Total (n=120)
		Low	Medium	High	Sub Total	
1	Up to 1 ha.	8 (16.67)	30 (62.50)	10 (20.83)	48 (100.00)	48 (40.00)
2	1.01 to 2 ha.	6 (12.50)	38 (79.17)	4 (8.33)	48 (100.00)	48 (40.00)
3	2.01 to 4 ha	2 (16.67)	6 (50.00)	4 (33.33)	12 (100.00)	12 (10.00)
4	4.01 to 10 ha	1 (12.50)	6 (75.00)	1 (12.50)	8 (100.00)	8 (6.67)
5	More than 10.01 ha	2 (50.00)	1 (25.00)	1 (25.00)	4 (100.00)	4 (3.33)
Total		19(15.83)	81(67.50)	20(16.67)		120(100.00)

$$X^2(\text{cal.}) = 10.94$$

$$D.F. = 8$$

*(Figures in parenthesis indicates percentage to total value of corresponding category of independent variable).

Result: Non-Significant at 5.00 per cent level of significance

The 'Chi - square ' value was found to be statistically non -significant at five per cent level of significance. This indicates that, there was not a significant association between land holding of the respondents and overall effectiveness of PKVY activities.

Among the respondents having land holding up to 1ha, 62.50 per cent showed medium overall effectiveness followed by 20.83 per cent showed high overall effectiveness and 16.67 percent showed low overall effectiveness. Out of the respondents having land holding from 1.01ha to 2ha, 79.17 per cent showed medium overall effectiveness followed

by 12.50 per cent showed low overall effectiveness and 8.33 per cent showed high overall effectiveness.

Among the respondents having land holding from 2.01ha to 4ha, 50.00 per cent showed medium overall effectiveness followed by 33.33 per cent showed high overall effectiveness and 16.67 percent showed high overall effectiveness.

The findings suggest that maximum respondents had 1.01-2 ha of land with medium overall effectiveness and it was showing non-significant relationship with overall effectiveness as a fixed portion of land used to be selected by the ATMA functionaries for providing organic certification at every phase of certification programme.

4.4.7 Association between Annual income of the respondents and Overall effectiveness of PKVY

Table 4.23: Association between Annual income of the respondents and Overall effectiveness of PKVY

Sr. No.	Annual income	Effectiveness of PKVY				Total (n=120)
		Low	Medium	High	Sub Total	
1	Lower (Less than ₹ 75,000)	5 (27.78)	6 (33.33)	7 (38.89)	18 (100.00)	18 (15.00)
2	Lower Middle (₹75,000 to 1,50,000)	9 (32.14)	13 (46.43)	6 (21.43)	28 (100.00)	28 (23.33)
3	Middle (₹1,50,000 to 2,25,000)	3 (6.00)	43 (86.00)	4 (8.00)	50 (100.00)	50 (41.67)
4	High (Above ₹ 2,25,000)	2 (8.33)	19 (79.17)	3 (12.50)	24 (100.00)	24 (20.00)
Total		19(15.83)	81(67.50)	20(16.67)		120(100)

$$X^2(\text{cal.}) = 26.42$$

$$D.F. = 6$$

*(Figures in parenthesis indicates percentage to total value of corresponding category of independent variable).

Result: Significant at 5.00 per cent level of significance

The 'Chi - square ' value was found to be statistically significant at five per cent level of significance. This indicates that, there was a significant association between annual income of the respondents and overall effectiveness of PKVY.

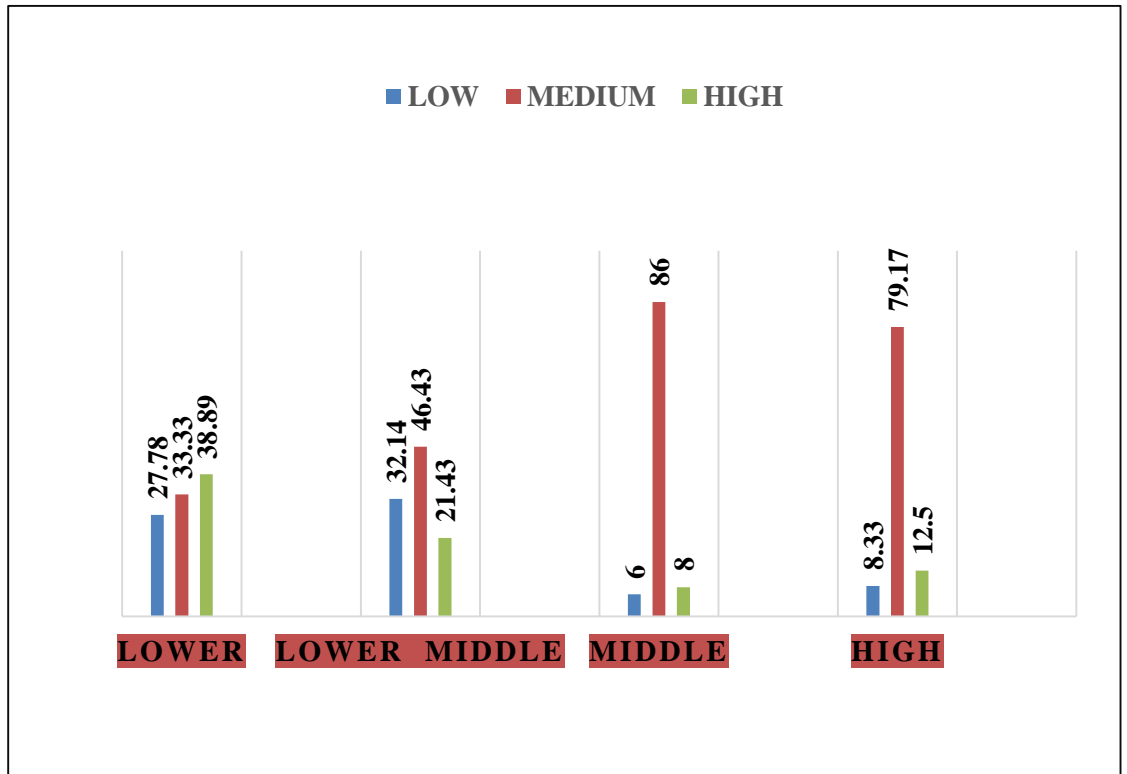


Fig 4.23 Association between Annual income and Overall effectiveness of PKVY

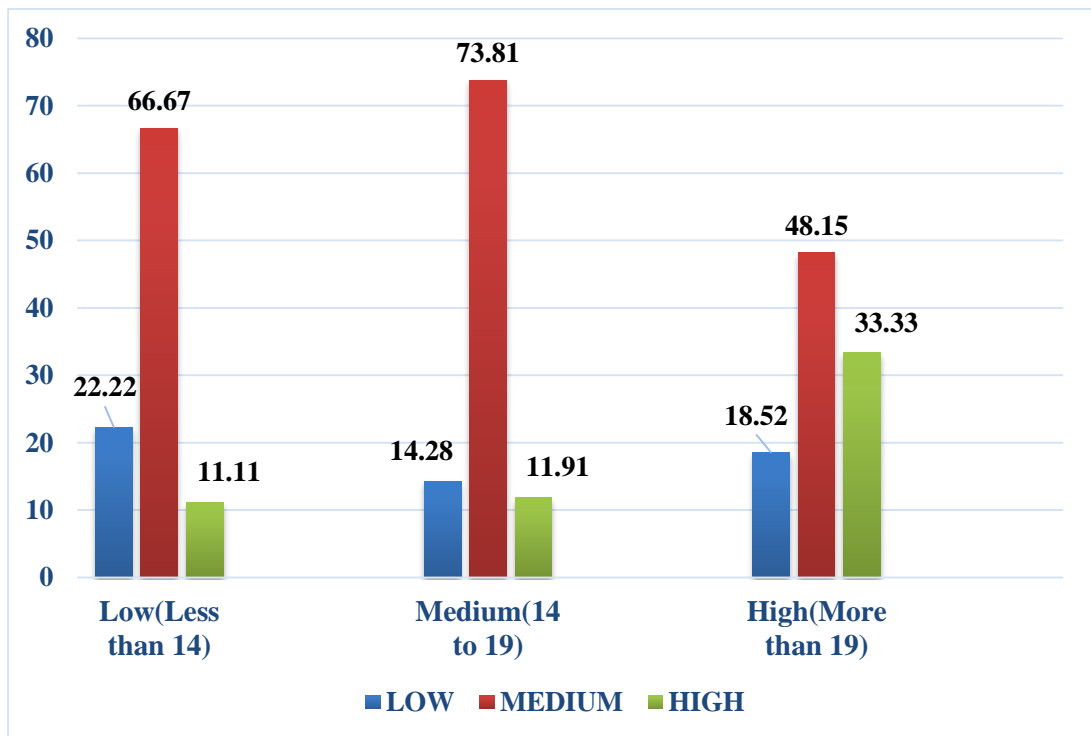


Fig 4.24 Association between Mass media exposure and Overall effectiveness of PKVY

Among the respondents having lower annual income, 38.39 per cent showed high overall effectiveness, followed by 33.33 per cent showed medium overall effectiveness and 27.78 per cent respondents showed low overall effectiveness. The respondents having lower medium annual income, 46.43 per cent showed medium overall effectiveness followed by 32.14 per cent showed low and 21.43 per cent showed high overall effectiveness respectively.

Among the respondents with middle annual income, 86.00 per cent showed medium overall effectiveness followed by 8.00 per cent high and 6.00 per cent low overall effectiveness respectively. Among the respondents with high annual income, 79.17 per cent showed medium overall effectiveness followed by 12.50 per cent high and 8.33 per cent low overall effectiveness respectively.

Results showed maximum respondents had medium annual income and medium overall effectiveness and it was showing a significant relationship with overall effectiveness, this means PKVY activities helped the farmers to get an improvement in their annual income through financial assistance, proving subsidy and farm inputs. The results were found to be in concurrence with Sakib and Afrad (2013).

4.4.8 Association between degree mass media exposure of the respondents and Overall effectiveness of PKVY

Table 4.24: Association between degree mass media exposure of the respondents and Overall effectiveness of PKVY

Sr. No.	Mass media exposure	Effectiveness of PKVY				Total (n=120)
		Low	Medium	High	Sub Total	
1	Low (Less than 14)	2 (22.22)	6 (66.67)	1 (11.11)	9 (100.00)	9 (7.50)
2	Medium (14 to 19)	12 (14.28)	62 (73.81)	10 (11.91)	84 (100.00)	84 (70.00)
3	High (More than 19)	5 (18.52)	13 (48.15)	9 (33.33)	27 (100.00)	27 (22.50)
Total		19(15.83)	81(67.50)	20(16.67)		120(100)
X²(cal.) = 0.9596						D.F. =4

*(Figures in parenthesis indicates percentage to total value of corresponding category of independent variable).

Result: Non-Significant at 5.00 per cent level of significance

The 'Chi - square ' value was found to be statistically non-significant at five per cent level of significance. This indicates that, there was a significant association between mass media exposure of the respondents and overall effectiveness of PKVY.

Among the respondents having lower mass media exposure, 66.67 per cent showed medium overall effectiveness, followed by 22.22 per cent showed low and 11.11 per cent showed high overall effectiveness respectively.

Among the respondents with medium mass media exposure, 73.81 per cent showed medium overall effectiveness followed by 14.28 per cent showed low and 11.91 per cent showed high overall effectiveness respectively. Among the respondents with high mass media exposure, 48.15 per cent showed medium overall effectiveness followed by 33.33 per cent showed high and 18.52 per cent showed high overall effectiveness respectively.

Results showed that maximum respondents with medium mass media exposure and medium overall effectiveness. And it was showing a non-significant relationship with the overall effectiveness as two third of the farmers had active participation in the PKVY activities to get information and training for various cultural practices related organic farming, so they didn't feel exposure to mass media can bring significant change in the overall effectiveness.

4.4.9 Association between Economic motivation of the respondents and Overall effectiveness of PKVY

Table 4.25: Association between Economic motivation of the respondents and Overall effectiveness of PKVY

Sr. No.	Economic motivation	Effectiveness of PKVY				Total (n=120)
		Low	Medium	High	Sub Total	
1	Low(Less than 10)	4 (50.00)	3 (37.50)	1 (12.50)	8 (100.00)	8 (6.67)
2	Medium(10 to 12)	9 (22.50)	25 (62.50)	6 (15.00)	40 (100.00)	40 (33.33)
3	High(More than 12)	6 (8.33)	53 (73.61)	13 (18.06)	72 (100.00)	72 (60.00)
Total		19(15.83)	81(67.50)	20(16.67)		120(100)
X²(cal.) = 48.65						D.F. =4

*(Figures in parenthesis indicates percentage to total value of corresponding category of independent variable).

Result: Significant at 5.00 per cent level of significance.

The 'Chi - square ' value was found to be statistically significant at five per cent level of significance. This indicates that, there was a significant association between economic motivation of the respondents and overall effectiveness of PKVY activities.

Among the respondents having low economic motivation, 50.00 per cent showed low overall effectiveness followed by 37.50 per cent showed medium overall effectiveness and 12.50 per cent showed high overall effectiveness.

The respondents having medium economic motivation showed, 62.50 per cent showed medium overall effectiveness followed by 22.50 per cent showing low overall effectiveness and 15.00 per cent showing high overall effectiveness.

Among the respondents with high economic motivation, 73.61 per cent showed medium overall effectiveness followed by 18.06 per cent showing high and 8.33 percent showing low overall effectiveness.

Findings showed that maximum number of respondents had high economic motivation with medium overall effectiveness and it was showing a significant relationship with overall effectiveness as PKVY which helped the farmers to add an extra amount of annual income with subsidized storage and transportation facility and good quality organic product which has a demand in the nearby areas. Results were in conformity with Sakib and Afrad (2013) and Yadav *et al.* (2013).

4.4.10 Association between Innovativeness of the respondents and Overall effectiveness of PKVY

Table 4.26: Association between Innovativeness of the respondents and Overall effectiveness of PKVY

Sr. No.	Innovativeness	Effectiveness of PKVY				Total (n=120)
		Low	Medium	High	Sub Total	
1	Low(less than 8)	4 (44.45)	4 (44.45)	1 (11.10)	9 (100.00)	9 (7.50)
2	Medium(8 to 10)	9 (23.07)	24 (61.54)	6 (15.39)	39 (100.00)	39 (32.50)
3	High(more than 10)	6 (8.33)	53 (73.61)	13 (18.06)	72 (100.00)	72 (60.00)
Total		19(15.83)	81(67.50)	20(16.67)		120(100)
X²(cal.) = 10.10						D.F. = 4

*(Figures in parenthesis indicates percentage to total value of corresponding category of independent variable).

Result: Significant at 5.00 per cent level of significance.

The 'Chi - square ' value was found to be statistically significant at five per cent level of significance. This indicates that, there was a significant association between innovativeness of the respondents and overall effectiveness of PKVY activities.

Among the respondents having low innovativeness, equal 44.45 percent respondents showed both low and medium overall effectiveness respectively followed by 11.10 per cent showed high overall effectiveness.

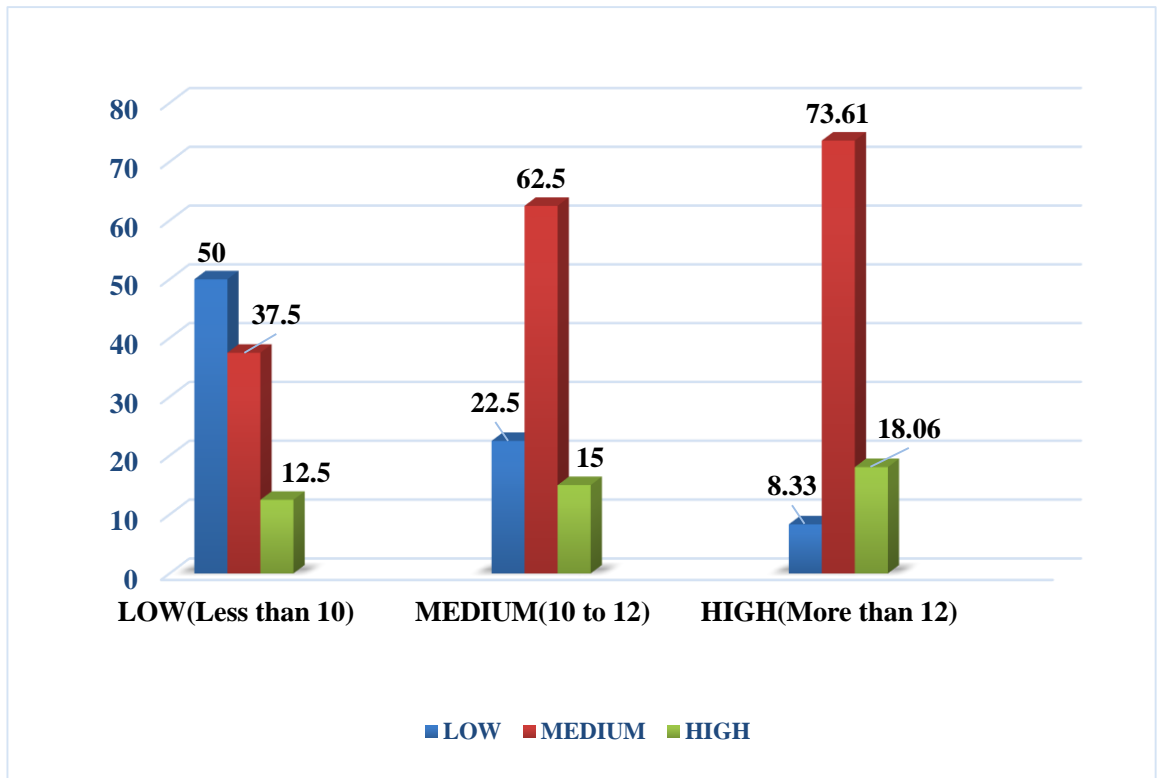


Fig 4.26 Association between Economic motivation and Overall effectiveness of PKVY

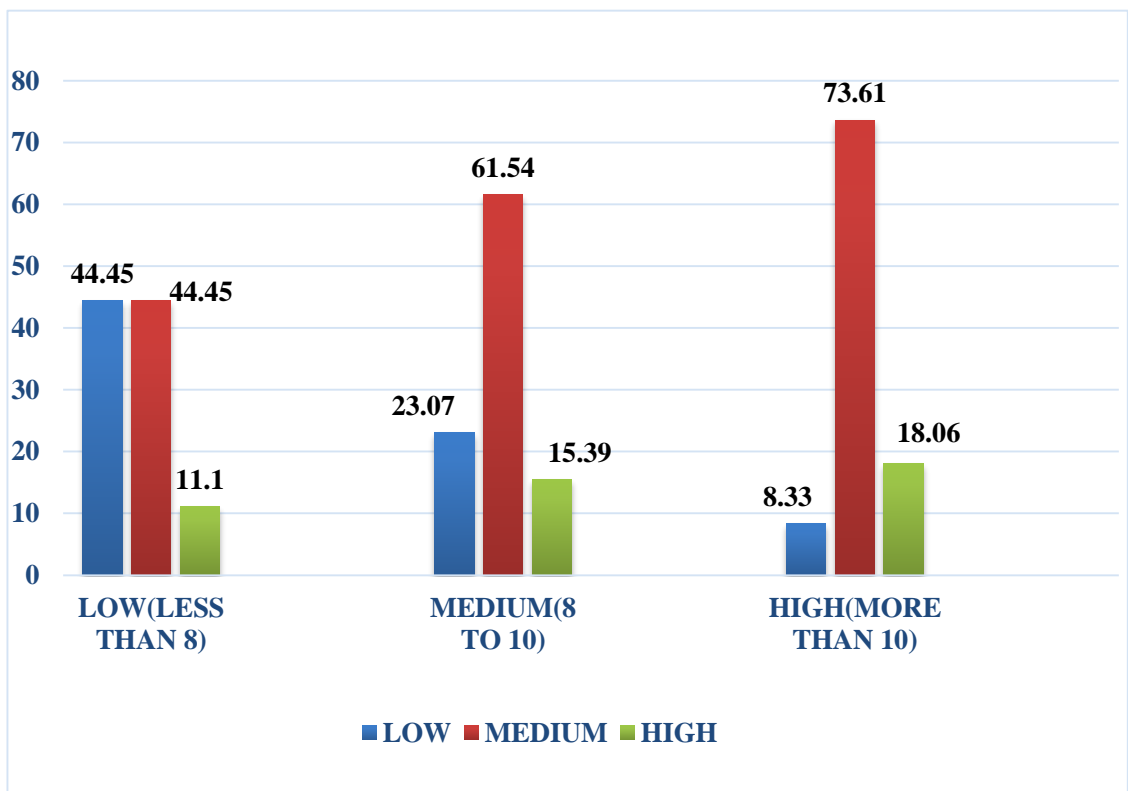


Fig 4.26 Association between Innovativeness and Overall effectiveness of PKVY

The respondents having medium innovativeness showed 61.54 per cent showed medium overall effectiveness followed by 23.07 per cent showing low overall effectiveness and 15.39 per cent showing high overall effectiveness.

Among the respondents with high innovativeness, 73.61 per cent showed medium overall effectiveness followed by 18.06 per cent showing high and 8.33 percent showing low overall effectiveness.

Findings showed that maximum number of respondents had high innovativeness with medium overall effectiveness and it was showing a significant relationship with overall effectiveness as PKVY as it helped the farmers to develop their reception of mind for obtaining high quality product through various training programmes and use previously adopted cultural practices in an innovative way. Results were in conformity with Yadav *et.al.* (2013).

Table 4.27: Association between profile of respondents and Overall effectiveness of PKVY

Sr. No.	Independent variables	Calculated Chi-square value
1	Age	14.91*
2	Education	23.33*
3	Family type	25.48*
4	Farming experience	19.82*
5	Social participation	14.91*
6	Land holding	10.94NS
7	Annual income	26.42*
8	Mass media exposure	0.9596NS
9	Economic motivation	48.65*
10	Innovativeness	10.10*

* = Significant at 5.00 per cent level

NS = Non- significant

From the aforesaid discussion, it can be concluded that age, education, family type, farming experience, social participation, annual income, economic motivation and innovativeness were important variables affecting the effectiveness of PKVY as well as responsible for psychological development of an individual for adopting the cultural practices given under PKVY and increase the extent participation in ATMA activities which leads for economic growth and leverages their social status. While land holding and mass media exposure may have not influenced the effectiveness of PKVY.

5. SUMMARY, CONCLUSIONS AND IMPLICATIONS

Summary and conclusion is the final phase of research study. This provides a deep insight about the study. So this chapter is a nutshell description of the present study in respect of summary of findings and implications for the future line of action and research.

Organic farming has become very much popularized and practiced in India. The farmers of various regions have obtained spectacular results by intervening the scientific based traditional farming practices with organic farming practices. It has been recorded that about 70.00 per cent of cultivable area of Kerala, 20.00 per cent of Andhra Pradesh as well as 5.00 per cent each of Karnataka and Tamil Nadu have been under the certified organic spices. Since last decade, the organic farming has been getting a big push in Madhya Pradesh, Gujarat and Maharashtra too. Government is promoting organic farming through various schemes/ programmes under National Mission for Sustainable Agriculture (NMSA)/ Paramapragat Krishi Vikas Yojana (PKVY), Rashtriya Krishi Vikas Yojana (RKVY), Mission for Integrated Development of Horticulture (MIDH), National Mission on Oilseeds & Oil Palm (NMOOP), Network Project on Organic Farming of ICAR. For last 4 years, Paramapragat Krishi Vikas Yojana (PKVY) was an important centrally sponsored scheme for promotion of organic farming. As the number of organic farmers are gradually increasing in both rural and urban areas of India due to the various centrally and state sponsored schemes, but there are a limited number of studies on such schemes related to organic farming and Maharashtra is the leading state in adopting organic farming since the year 2002-03 and PKVY in Maharashtra helped farmers for getting organic certification.

Therefore the present study entitled, Effectiveness of Paramapragat Krishi Vikas Yojana for promoting organic farming under ATMA was undertaken by following objectives:

5.1 Objectives of the Study

- 1) To study the personal, social, economical, communicational, and psychological characteristics of farmers practising organic farming of PKVY under ATMA.
- 2) To study the extent of participation of farmers in PKVY activities for promoting organic farming.
- 3) To study the effectiveness of PKVY for promoting organic farming under ATMA.
- 4) To study the association between the independent and dependent variable.

The present study was conducted in Purandar tehsil of Pune district of Maharashtra during 2018-2019. As PKVY is being effectively implemented, farmers from Pune district are moved towards organic farming. Considering the work of PKVY, Pune district from Maharashtra state was purposively selected for the present study. As per the information

PKVY is working more efficiently having a highest number of Farmer interest groups (FIGs) in Purandar tehsil, so Purandar tehsil was selected purposively. Considering the work of PKVY and based on the number of clusters (Farmer interest groups) of fruit growers brought under organic farming, certification, Purandar tehsil was selected purposively. Cluster wise list of farmers was obtained from the In-charge ATMA, State department of agriculture, Pune. It was observed from the list that farmers of selected tehsil were involved in performing organic practices in fruit crops viz; pomegranate, ber, custard apple of that tehsil. From selected tehsil total 8 FIGs involved in organic farming were selected purposively and from each FIG 15 farmers were selected randomly comprising total 120 sample size. Datas were collected from respondents by conducting personal interview schedule which was pre tested before using it for the collection of data. The qualitative data were converted into quantitative form. The independent and dependent variables were measured by assigning score. Keeping in a view of objectives under study, the data were tabulated and analyzed using appropriate statistical measures such as frequency, percentage, mean, standard deviation and association.

5.2 Summary:

The salient findings of the study are summarized in the following heads.

5.2.1 Personal, Social, economical, communicational and Psychological Characteristics of Farmer

1. More than half (63.33 per cent) of the respondents were found in middle age group between 36 to 55 years.
2. It was observed that more than one fourth (25.83 per cent) of respondent farmers had higher secondary level of education.
3. It was revealed that more the two third (72.50 per cent) of respondents had joint family.
4. It was observed that nearly half (47.50 per cent) of the farmers had a farming experience of 8-12 years.
5. It was found that more than two third (71.67 per cent) of respondent farmers had medium social participation.
6. It was found from the data that nearly half (40.00 per cent) of the farmers belongs to each small and marginal farmer group.
7. It was revealed that more than two fifth (41.67 per cent) of respondents had middle annual income up to ₹.1, 50,000 to 2, 25,000.
8. It was observed that more than two third (70.00 per cent) of respondents had medium level of mass media exposure and larger portion of the respondents prefer to read Newspaper.

9. It was observed that more than half (60.00 per cent) of respondents had high level of economic motivation.

10. It was observed that more than half (60.00 per cent) of respondents had high level of innovativeness.

5.2.2 Extent of participation in PKVY activities

It was observed that majority (73.33 percent) of farmers were actively participating in PKVY activities. About 15.84 percent of farmers were found in high category of participation whereas only 10.83 percent of farmers were in low extent of participation and it also revealed that extent of participation of farmers is higher in the training programme followed by in the demonstration, in farmer's discussion, group discussion, Exposure visit, Exhibition, Field trials, Field visit, Farmer's fair, and other various activities *viz*; Farmer's day celebration, Farmer's talk which was held under PKVY activities with the involvement of ATMA functionaries for promotion of organic farming.

5.2.3 Effectiveness of PKVY

5.2.3.1 It was observed that 45.83 percent farmers were very advanced to adopt the cultural practices.

5.2.3.2 It was observed that more than two fifth (44.17 percent) of the respondents were categorized under high level of availing economic benefits.

5.2.3.3 It was found that more than half (58.33 percent) of the respondents were categorized under high level of availing technical benefits.

5.2.3.4 It was revealed that more than two third (85.83 percent) of the respondents were categorized under high level of availing social benefits.

5.2.3.5 It was found that 67.50 per cent respondents had medium level of effectiveness followed 16.67 per cent and 15.83 per cent who had showed high and low level of effectiveness of PKVY for promoting organic farming respectively.

5.2.4 Association between profile Characteristics of the respondents and the effectiveness of PKVY

Findings of the association analysis revealed that variables *viz.* age, education, Family type, Farming experience, Social participation, annual income, economic motivation, innovativeness were significantly associated with effectiveness of PKVY. However land holding and mass media exposure were non-significantly associated with effectiveness of PKVY for promoting organic farming.

5.3 Conclusions

Majority of the respondents farmers belonged to the middle age group, most of them had received higher secondary level education, belongs to joint family, had farming experience of 8-12 years and were from middle income group, small and marginal farmers, had medium social participation , medium mass media exposure and had high level of economic motivation and innovativeness.

Nearly two third of the respondents had shown active participation in various PKVY activities and further data revealed that extent of participation of farmers is higher in the training programme followed by in the demonstration and farmer's discussion with the involvement of ATMA functionaries for promotion of organic farming.

It was seen that majority the respondents had medium to high level of effectiveness from PKVY for promoting organic farming.

5.4 Implications of the study

1. The study facilitates to know the characteristics of the respondents which would serve as a guideline for the planners and developmental agencies in planning and implementing programmes related to organic farming.
2. The results of the study showed that PKVY created awareness among the farmers about the organic farming and promoted the adoption of organic cultural practices to maintain sustainability and environmental conservation.
3. There is a need to make co-ordinated efforts by the private agencies, NGOs, marketing board to provide assured platform for marketing of organic products.
4. The findings of the study can be utilized in developing a better understanding of the reasons for the effectiveness of a particular programme based on organic farming through availability of various benefits and extent of participation.
5. The findings of study may serve as bench mark for planning and conducting researches of such and similar nature in future.

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8. VITAE

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MASTER OF SCIENCE (AGRICULTURE)
IN
AGRICULTURAL EXTENSION

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