

# **“Participation of Farm women In Agricultural Activities In Tikamgarh District (M.P.)”**

**THESIS**

Submitted to the

**Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur**  
In partial fulfillment of the requirements for  
the Degree of

**MASTER OF SCIENCE**

*In*

**AGRICULTURE**

**(EXTENSION EDUCATION)**

*by*

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2018

## CERTIFICATE - I

This is to certify that the thesis entitled “**Participation of Farm women In Agricultural Activities In Tikamgarh District (M.P.)**” submitted in partial fulfillment of the requirement for the degree of **MASTER OF SCIENCE (Ag.)** in **AGRICULTURE EXTENSION EDUCATION** of Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur is a record of the bonafide research work carried out by **Kajal Kumari Chauhan**, I.D. No. 16011005 under my guidance and supervision. The subject of the thesis has been approved by the Student’s Advisory Committee and the Director of Instruction.

All the assistance and help received during the course of the investigation has been acknowledged by him.

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**Place: Jabalpur**

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**Date :**

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## INTRODUCTION

In India, agriculture is the main occupation of rural people. It is the important source of livelihood for majority of the Indian people. Agriculture is not merely the means of subsistence, but also plays an important role in economic development of the country. Women constitute crucial status in our country's population. Despite the legal and constitutional provisions for equal status, they have been traditionally put in weaker position in Indian society and have a subordinate role to play. In spite of this fact, women share most of the family responsibilities and perform wide range of duties on farm and in home.

The rural women also exercise considerable influence in the socio-economic activities of the family. As a life partner of the farmer the rural women shoulders the responsibilities of her family regarding catering the children and adults, providing services to the members of family, and looking after the welfare of the family. At the same time, she become the active working and mobilizing manpower in the field operations right from the preparation of land till the harvesting, processing and storage of farm produce. Not only she takes careful decisions in the absence of family head at right time however, the role of the rural women is not duly recognized. The amount of energy, excelled by her in the whole day's work may be equal or more to that of man's energy, still her place in the family is that of a subordinate.

The rural women work hard in agriculture than their counterparts. They participate in most of the agricultural operations like application of manures, land preparation, seed grading, sowing, dibbling, planting, transplanting, weeding, hoeing, irrigation, fertilizer application, plant protection, harvesting, threshing, shelling, hulling, winnowing, cleaning, storing food grains and seed, feeding the cattle, looking after milch animals and poultry, kitchen gardening etc. They have to spend more time on household chores, picking firewood, cooking, child care besides their contribution to agricultural production, animal husbandry and other related activities of the household for which the economic work of their labour is not valued.

The nature and extent of women's involvement in agriculture and other work varies from region to region. For example, in Tamilnadu, men uproot rice seedlings and women transplant, while in Kerala both operations are primarily and sometimes exclusively performed by women. Similarly, women labour and management roles in agriculture vary considerably by geographical area, the nature of agriculture and crops grown and also by class or caste. Throughout the country, high caste women, who are generally from land owing households do not engage in field work, although they are involved in the post harvest phases within the homestead.

Women make essential contributions to the agricultural and rural economies in all developing countries. Their roles vary considerably between and within regions and are changing rapidly in many parts of the world, where economic and social forces are transforming the agricultural sector. Rural women often manage complex households and pursue multiple livelihood strategies. Their activities typically include producing agricultural crops, tending animals, processing and preparing food, working for wages in agricultural or other rural enterprises. Many of these activities are not defined as "economically active employment" in national accounts but they are essential to the well-being of rural household

The picture of rural women is that of a submissive, illiterate, ignorant, asset less female, who has been trapped in web of traditions and customs.

Farm women are considered as 'invisible work force' in agriculture, even though they participate in most of the agricultural operations. They constitute significant part of working woman population in our country. So, fuller understanding of their contribution becomes necessary. Their participation in agriculture is substantial, but till now it has remained under-counted and under-valued. Further, comparative analysis of farm women participation from the different regions has not been made so far. Hence, keeping this in view, the study was undertaken to study the "Participation of farm women in agricultural activities with the following specific objectives :

## **Objectives**

1. To study the personal and socio-economic characteristics of the farm women.
2. To study the extent of participation of the farm women in different activities related to agriculture.
3. To find out the relationship between personal and socio-economic characteristics of the farm women with participation in agricultural activities.
4. To know the constraints experienced by the farm women in participating in agricultural activities.

## **Scope of the study**

The study highlights the role of the invisible working hands of women in the field of agriculture, who are working side by side with the farmers and contributing a lot towards agricultural development. In addition, to the acknowledgement of the greater participation of rural women in agriculture activities. The study also brings the hidden talents of rural women to limelight and signifies the potentials of rural women for proper harnessing and the resultant improvement in farm income and productivity.

## **Limitations of the study:**

1. The investigation was conducted in a limited time with the restricted size of sample.
2. The main basis for data are the responses of the respondents. However, all possible efforts were made to extract information from the respondents on the basis of structured interview schedule.
3. The data were based on the recall ability of the respondents in reporting factual information.

## REVIEW OF LITERATURE

This chapter presents the findings of the past research works related to the present problem by going through the professional research journals, articles, documents, approved theses, books and magazines in order to keep up-to-date information which are presented in following sub heads:

1. To study the personal and socio-economic characteristics of the farm women.
2. To study the extent of participation of the farm women in different activities related to agriculture.
3. To find out the relationship between personal and socio-economic characteristics of the farm women with participation in agricultural activities.
4. To know the constraints experienced by the farm women in participating in agricultural activities.

### **2.1 Personal and socio-economic characteristics of the farm women:**

#### **Age**

Narmatha et al. (2001) revealed that higher percentage (40%) of farm women belonged to young and middle age group and only 20 per cent were old age group.

Warkade (2010) reported that higher percentage of (47.80%) tribal farm women were of middle age group.

Rathod *et al.* (2011) found that higher percentage of respondents (51.36%) belonged to middle age.

Chouhan (2013) reported that majority of the respondents (69.17%) belonged to middle age group.

Sharma (2015) reported that nearly half of the total farm women (48.7%) belonged to middle age group.

Singh (2017) found that higher percentage (42.50%) of the respondents belonged to middle age group.

### **Education**

Tripathi (2007) reported that higher percentage of rural women (51.70%) had up to primary level of education.

Wahane (2010) found that higher percentage (51.43%) of respondents were educated up to primary level.

Rai (2011) found that maximum (29.33%) farm women were educated up to primary level.

Singh (2011) observed that higher percentage of respondents(49.00%) were educated up to primary level.

Rathod and Damodhar (2015) reported that maximum respondents (39.4%) were educated up to primary education level.

### **Caste:**

Dubey (2007) reported that more than half of the total farm women (53%) belonged to other backward caste.

Rai (2011) observed that maximum (34.17%) farm women were educated up to primary level.

Chayal et al. (2013) higher percentage of the respondents (42.50%) were from other backward castes followed by schedule tribe (35.00%), schedule caste (16.67%) were and general (5.83%).

Sharma (2015) reported that maximum farm women (39.50%) belonged to other backward caste.

Panwar (2016) reported that higher percentage of the rural women (43.85%) per cent found to other back ward caste followed by general caste 35.80 per cent and sc/st 18.40 per cent respectively.

Singh (2017) reported that higher percentage of rural women (43.33%) belonged to other backward caste.

### **Family type:**

Mohod (2000) found that more than two third 68.00 per cent of the respondents (farm women) were having independent family, whereas nearly one third 26.66 per cent of the respondent's (farm women) belonged to joint family.

Wahane (2010) found that majority farm women (74.28%) belonged to nuclear family 74.28

Chayal et al. (2013) found that majority (65.83%) of respondents were belonged to nuclear family and followed by (34.17%) were from joint family.

Rathod and Damodhar (2015) reported that majority of rural women (63.7%) were belong to nuclear family.

Pal and Haldar (2016) revealed that majority of respondents (67.00%) were belong to nuclear family.

### **Family size:**

Khorate (2000) observed that majority 71.82 per cent of the DWCRA beneficiaries had medium size families, whereas, 19.09 per cent had small size families and nearly one tenth 9.09 per cent had large size families. The average, family size of the beneficiaries was 4.40 members.

Rai (2011) found that maximum (44.17%) rural women belonged to medium family size.

Chouhan (2013) found that higher percentage of farm women (59.16%) were medium size families.

Sharma (2015) reported that higher percentage of farm women (51.67%) belonged medium size families.

### **Land holding-**

Jain (2007) reported that higher percentage of respondents (51.7%) were having small size of land holding.

Warkade (2010) reported that maximum tribal farm women (38.76%) were having small size of land holding.

Sharma (2015) found that higher percentage of rural women (46.67%) had small size of land holding.

### **Farming experience**

Tripathi (2007) reported that higher percentage of farm women (51.36%) were having medium farming experience.

Sikarwar (2009) reported that maximum of the farm women (34.56%) were having 5-10 year of farming experience.

Singh (2011) found that higher percentage of farm women (48.73%) were having medium farming experience.

Mishra (2013) reported that most of the farm women (46.60%) were having medium farming experience. .

### **Occupation:-**

Devalatha (2005) reported that more than 60 per cent of them were dependent on agriculture for their livelihood.

Sushma (2007) in their study found that that higher percentage of 59.24 per cent of the trained women entrepreneurs family were dependent on non agricultural activities like job and business, whereas,30.00 per cent of the women entrepreneurs families engaged in both agricultural and non agricultural activities .remaining 10.76 per cent of the respondents families were dependent on agriculture sector.

Jaiswal (2009) reported that majority of farm women 75 percent of them had agriculture as their primary occupation.

Dhanotiya (2012) reported that maximum numbers of women (29.87%) were found to agriculture group of family occupation followed by labour and others.

Rathod and Damodhar (2015) reported that higher percentage of rural women (46.3%) had agriculture as their primary occupation.

### **Annual income**

Jaiswal (2009) reported that higher percentage of rural women 45 per cent of them had medium level of family income.

Samdaria (2011) reported that higher percentage of farm women (45.45%) had medium annual income.

Dhanotiya (2012) reported that maximum numbers of farm women (31.00%) were found to medium family income followed by high and low.

Singh (2017) observed that maximum farm women (44.17%) belonged to medium annual income.

### **Knowledge about agriculture**

Tripathi (2007) concluded that higher percentage of respondents (41.50%) medium knowledge had about agriculture activities.

Singh (2011) found that maximum rural women had (35.87%) medium to low knowledge about agriculture activities.

Mishra (2013) reported that most of the farm women (45.83%) were found to medium knowledge level.

### **Social participation:**

Jain (2007) reported that majority of the farm women (64.16%) had medium social participation.

Wahane (2010) observed that higher percentage of farm women (44.76%) belonged to medium social participation .

Samdaria (2011) reported that majority of farm women (60.90%) had medium social participation.

Sharma (2015) found that the maximum number of respondents (39.17%) had medium level of social participation.

### **Extension participation-**

Jain (2007) reported that majority of the farm women (64.16%) had medium extension participation.

Daver (2009) reported that majority of the respondents (61.3%) were belonged to medium category of extension participation.

Rana (2010) reported that higher percentage of the respondents (41.17%) had low extension participation.

Chouhan (2013) revealed that majority of farm women (80.33%) had medium extension participation.

Supriya (2016) found that 45.56 per cent of farm women belonged to medium level of work participation in management of coffee plantation Education, economic orientation, extension contact.

## **2.2 Extent of participation of the farm women in different activities related to agriculture:**

Humera *et al.* (2009) observed that majority of the farm women participated in threshing, preparation of land, sowing, weeding, harvesting, whereas farm women contribution was higher in seed cleaning and picking of vegetables.

Baig (2010) reported that women actively and extensively participate in the production of major crops and other farming operations. They contribute to household income through farm and non-farm activities.

Rathod *et al.* (2011) reported that role & participation of rural women in dairy farming. The study revealed that women participation was maximum in caring of pregnant animals (91.66%) followed by taking animals for pregnancy diagnosis (90.83 %). The study revealed that 90% of women involved in milking process.

Mishra (2013) reported that most of the farm women (62.50%) were having medium participation in agricultural activities.

Bhairve (2013) reported that most of the farm women (35.00%) were having medium level of participation in agricultural activities .

Tharani *et al.* (2016) revealed that 60% of women from rural areas were involved in farming, especially in the selection of crops and varieties for planting and livestock rearing.

Yadav *et al.* (2018) reported that the majority 62.5 per cent of the total rural women were from medium level of participation in agricultural activities.

It was followed by 21.67 per cent rural women with high level of participation in agricultural activities, while 15.83 per cent rural women were reported under the category of low level of participation in agricultural activities.

### **2.3 Relationship between personal and socio economic characteristics of farm women with participation in agriculture activities:**

#### **Age**

Tharani *et al.* (2016) revealed that age was negatively correlated with the participation of women.

Barau and Oladeji (2017) found that age had non significant association with participation of women.

#### **Education**

Khare (2007) found that between education has significant relation with participation of farm women in agricultural activities .

Sharma (2008) reported that the association between education and participation in agriculture operation was found highly significant.

Pal and Haldar (2016) revealed that Education has significant relation with participation of farm women in agricultural activities.

Dudi And Meena (2017) revealed that Education has significant relation with participation of farm women in agricultural activities

### **Caste**

Samdaria (2011) found that caste has significant relation with participation of farm women in agricultural activities.

Bhairve (2013) reported that caste was significant association between and participation of farm women in agricultural activities.

### **Family Type**

Bhairve (2013) reported that family type was significant association with participation of farm women in agricultural activities.

### **Family Size**

Samdaria (2011) found that family size has significant association with participation of farm women in agricultural activities

Dudi And Meena (2017) revealed that family size has significant relation with participation of farm women in agricultural activities.

### **Land holding**

Sharma (2008) reported that the association between land holding and participation in agriculture operation was found highly significant.

Dudi And Meena (2017) revealed that land holding has significant relation with participation of farm women in agricultural activities.

### **Farming experience**

Mishra (2013) reported that Farming experience was significant relation with participation of farm women in agricultural activities.

Chandravadia (2017) revealed that Farming experience has significant association with participation of farm women in agricultural activities.

### **Occupation**

Sharma (2008) reported that the association between occupation and participation in agriculture was found highly significant.

Bhairve (2013) reported that occupation has significant association with participation of farm women in agricultural activities.

### **Annual income**

Dubey (2007) found that significant association between annual income and participation of farm women in agricultural activities.

Sharma (2008) reported that the association between annual income and participation in agriculture operation was found highly significant.

Warkade (2010) found that there was non significant association between annual income and participation of farm women in agricultural activities.

Barau and Oladeji (2017) found that annual income had significant association with participation of women.

### **Knowledge level**

Mishra (2013) reported that relationship between Knowledge level and participation of farm women in agricultural activities was significant.

### **Social participation**

Bhairve (2013) reported that social participation has significant relation with participation of farm women in agricultural activities.

Dudi And Meena (2017) revealed that social participation has significant relation with participation of farm women in agricultural activities.

## **Extension participation**

Mishra (2013) reported that relationship between extension participation and participation of farm women in agricultural activities was significant.

Dudi And Meena (2017) revealed that extension participation has significant relation with participation of farm women in agricultural activities.

### **2.4 Constraints experienced by farm women in participating in agricultural activities:**

Singh and Sharma (2001) reported that some of the major handicaps in overall development of women are low of literacy, economic dependency, inadequate technical, competency and limited exposure are the major barriers of rural women.

Singh *et al.* (2007) stated that the major constraints take account which limits the adoption of modern package of practices for its cultivation and ultimately the yield. The incidence of pest and disease on plants non availability of quality seed material and non-availability of inputs based setback in the expected production

Tamilselvi and Kumar (2009) examined the problems perceived by the women entrepreneurs in mushroom cultivation were lack of a regular market, losses due to perishability, lack of storage facilities, lack of knowledge on value addition, difficult procedure of spawn production and lack of awareness about nutritional value of mushroom. In vegetable processing, the problems viz., lack of single window service, lack of knowledge on modern technology, high competition, high cost of inputs, difficulty in preservation, tedious procedure for getting credit, delayed payment from buyers and lack of storage facilities were perceived by the respondents. The constraints faced by the women entrepreneurs in coir product making were lack of skilled workers, high competition, high cost and poor quality of raw material, excessive stress and challenge, and limited opportunities for direct marketing.

Singh (2011) reported that some of the major constraints faced by rural women during participation of agriculture activities viz, lack of awareness, high cost of critical inputs, lack of regular market, lack of storage, lack of credit and capital.

Tharani et al. (2016) revealed that obstacles for the women in participation in agricultural activities were reported as lack of knowledge and training in agriculture field, family burden, cultural and social barriers and physical constraints.

## MATERIAL AND METHODS

This chapter deals with the methods and procedures used for the study. This chapter involves various steps applied to the study of the problem. Thus, the material is described into following sub heads:

- 3.1 Sampling techniques used,
  - 1) Locale of the study,
  - 2) Selection of block,
  - 3) Selection of villages,
  - 4) Selection of the respondents,
- 3.2 Selection of variables, measurements, and operationalization,
- 3.3 Sources, Instruments and Methods of data collection,
- 3.4 Processing and statistical analysis of data,
- 3.5 Derivation of hypotheses.

### **3.1 Sampling techniques use**

#### **1. Location of study:**

The investigation was conducted in Tikamgarh district of Madhya Pradesh. Tikamgarh district lies between latitude  $24^{\circ}26'$  and  $25^{\circ}34'$  north and longitude  $78^{\circ}26'$  and  $79^{\circ}21'$  East. The district population is 1,445,166 (2011 census). The average density of the population is 286/sq. km. The total geographical area of the district is 5048 sq. km. The district is surrounded by Chhatarpur in East, and by Sagar in South, by Lalitpur in west and by Jhansi of Uttar Pradesh state in the North.

There are two important agriculture season viz kharif and rabi. The main crops grown in the district are soybean, wheat, gram sesame and groundnut [statistical office, Tikamgarh, (2009-10)]. The district has been divided into 9

tehsils, namely Tikamgarh, Baldeogarh, Palera, Niwari, Prithvipur, Jatara, Mohangarh, Orcha and Khargapur and 6 blocks namely, Tikamgarh, Baldevgarh, Palera, Niwari ,Prithvipur and Jatara.

The population of Tikamgarh block is 3,01,714 which consist of 1,58,357 male and 1,43,357 female. Block consist of 171 villages.

## 2. Selection of block:

The Tikamgarh district comprises of 6 blocks, namely, Niwari, Prithvipur, Jatara, Tikamgarh, Baldevgarh and Palera out of which only one block, namely, Tikamgarh was selected purposively on account of the maximum number of rural women.

**Table3.1: Block wise distribution of rural women.**

<b>Name of blocks</b>	Niwari	Jatara	Tikamgarh	Prithvipur	Baldeogarh	Palera
<b>Rural women</b>	81636	96265	<b>121321</b>	72151	101284	93159

(Census: 2011, Tikamgarh).

## 3. Selection of villages;

Tikamgarh block comprises of 171 villages. A list of villages which contain large farm women was prepared with the help of RAEO of the block. out of which 6 villages, namely, Manjra, Manakpura, Mahrajpura, Pahari, Nayakhera and Khusipura were selected randomly.

## 4. Selection of respondents:

A list of farm women of each selected village was prepared with the help of RAEO's and Aanganwari workers. Out of which 20 farm women (an equal number) from each village were randomly selected for the study. Thus, total of

120 respondents were selected were selected and considered in a research study.

**Table3.2: Name of selected villages and number of respondents of Tikamgarh block of Tikamgarh district.**

Village	Total No. of rural women	No. of selected farm women
Manjra	218	20
Manakpura	539	20
Mahrajpura	1282	20
Pahari	732	20
Nayakhera	756	20
Khusipura	776	20

(Aanganwari: 2017-18).

### 3.2 Selection of variables, measurements, and operationalization:

#### Variables their operationalization and measurement

S.N.	Variables	Measurement
A	Independent variable	
1	Age	Actual chronological age( in year)
2	Education	number of classes
3	Caste	self scoring
4	Family type & size	self scoring
5	Size of land holding	In hectare
6	Farming Experience	In year
7	Occupation	self scoring
8	Annual income	In rupees
9	Social participation	self scoring
10	knowledge level	self scoring
10	Extension participation	Siddarramaiah and Jalihal (1983)
B	Dependent variable	
	Extent of participation of farm women in agriculture activities.	Self scoring

### 3.2. Operationalization of the variables:

#### 3.2.1. Independent variables-

##### 1. Age:

Age refers to the number of years an individual has lived since his birth at the time of interview. Age of respondent was measured as per actual chronological age. The categorization was made as follows.

S no.	Categories	Scores
1	Young age	Below 35 years
2	Middle age	35 – 55 years
3	Old age	Above 55 years

##### 2. Education:

It refers the number of year of formal education acquired by the respondent at the time of enquiry. The scores were assigned to following category of education viz. primary school, middle school, high school and higher secondary. The categorization was as follows:

S no.	Categories	score
1	Illiterate	0
2	Up to primary	1
3	Up to middle	2
4	High school	3
5	Higher secondary	4

##### 3. Caste:

Caste is a status of an individual which acquires by birth. Caste has been theoretically defined as hereditary indigenous group and a particular position in the hierarchy. The caste was divided into 3 categories as follows.

<b>S no.</b>	<b>Categories</b>	<b>Score</b>
1	Scheduled caste Scheduled tribes	1
2	Other backward class	2
3	General	3

#### **4. Family Type:**

Type of family refers to the number of generation in a family living together under one roof and having common mode of cooking and eating. Two group of family type was made for measurement purpose. Type of family of farm women was classified and scored as follows:

<b>S.No.</b>	<b>Categories</b>	<b>Score</b>
1	Nuclear family	1
2	Joint family	2

#### **Size of family:-**

Size of family refers to the number of members in a family living together under one roof and having common mode of cooking and eating. The family size was categorized in three groups as follows:

<b>S.No.</b>	<b>Categories</b>	<b>Characteristics</b>	<b>Score</b>
1	Small	Up to 4 members	1
2	Medium	5 - 8 members	2
3	Large	above 8 Members	3

## 5. Land holding-

It refers to an area (in hectare) of total land possessed by an individual. For cultivation the variable was classified as. marginal, small, medium and large land holding.

S no.	Categories	Characteristics	Score
1	Marginal	Up to 1.00 ha	1
2	Small	1.01 to 2 ha	2
3	Medium	2.01 to 4 ha	3
4	Large	Above 4 ha	4

## 6. Farming experience-

Experience refers to the knowledge or skill possessed by the farm women in numbers of years of farming activity and categories as follows:

S no.	Categories	Years	Score
1	Low	Up to 5 years	1
2	Medium	5 – 10	2
3	High	Above 10 years	3

## 7. Occupation:-

Occupation refers to engagement or involvement of an individual in different occupation for earning purpose and categories as follows:

S no.	Categories	Score
1	Farming + Labour	1
2	Farming + Shop	2
3	Farming+Other occupation	3

### 8. Annual income:

It refers to the total amount an individual earns annually from various sources viz. Agriculture, labour, shops, poultry ,dairy etc. This was calculated by summing up the income carried from various sources (in Rupees).The basis of data collected the income was classified into three categories as under:

S no.	Categories	Characteristics	Score
1	Low	Less than Rs 50,000 /	1
2	Medium	Rs 50,0001 -1,00,000 /	2
3	High	More than Rs 1,00,0001 /	3

### 9. Knowledge level :

Knowledge refers to the “information possessed by a rural women regarding scientific cultivation of crops. All the important operations for a crop cultivation were listed. A total of 12 common recommended agricultural activities were selected with consultation of specialists and agriculture literature. The response was collected on three continuum i.e. “complete knowledge”, “partially knowledge” and “No knowledge”. The weightage of ‘2’, ‘1’, and ‘0’, respectively were given respectively and following categories was made .

S no.	Categories	Characteristics	Score
1	Low	1 to 8	1
2	Medium	9 – 16	2
3	High	17 -24	3

### 10. Social participation:

It refers to the involvement of an individual in different activities of any social organization. Participation was measured on four point continuum as often, always, sometimes and never and scores of three, two, one and zero were given respectively .A respondent can obtain a minimum of 0 and a

maximum of 18 scores .On the basis of range of scores the respondents were placed in four categories, namely no participation, low, medium and high participation.

<b>S no.</b>	<b>Categories</b>	<b>Characteristics</b>	<b>Score</b>
1	Low	1 to 6	1
2	Medium	7 – 12	2
3	High	13 – 18	3

**11. Extension participation:**

Extension participation refers to the extent of involvement by the respondent in different extension activities conducted by the different extension agencies. The extension participation was measured with the help of scale developed by Siddarmaiah and Jolihal (1983) with slight modifications. On the basis of range of scores the respondents were categorized into no, low, medium and high extension participation.

<b>S no.</b>	<b>Categories</b>	<b>Characteristics</b>	<b>Score</b>
1	No participation	0	0
2	Low	1 – 4	1
3	Medium	5 – 8	2
4	High	9 – 12	3

## **Dependent variable-**

### **Extent of Participation of farm women in activities related to agriculture :**

Participation of farm women in agricultural activities refers to the involvement of farm women in different agricultural activities. The responses of respondents were obtained on 3 points continuum namely never, some time and always. The scoring was assigned in the order of 0, 1 and 2 respectively.

On the basis of total score obtained the categorization was made as low, medium and high as follows:

<b>S no.</b>	<b>Categories</b>	<b>characteristics</b>	<b>Score</b>
1	Low	1 to 8	1
2	Medium	9 – 16	2
3	High	17 – 24	3

## **3.3 Sources, instruments and methods of data collection**

### **1. Sources of data collection**

#### **3.3.1.1: Primary data:**

The respondents of the selected villages were the primary source of data collection. The primary data was collected personally by the researcher interviewing the selected respondents with the help of structured and pre-tested interview schedule.

#### **3.3.1.2: Secondary data:**

The secondary data were obtained from various government offices like District Agriculture office, Block development offices, Magazines, Journals, and Publications etc.

### **3.3.2: Instruments and Methods of data collection:**

The interview schedule was designed for collecting the relevant information of selected variables. The questions in interview schedule framed were simple, clear and directly related to the purpose of the study and were arranged in logical sequence. The data were collected personally with the help of a pre-tested interview schedule from respondents in Tikamgarh block, in order to be sure of the correctness in response. The respondents were personally contacted. They were assured that the information given by them would be kept confidential and it would only be used for the academic purposes.

The relevance of each question in the context of the objectives of the study, their logical order and working of question etc. were carefully checked. Practically, all the respondents had answered the questions fully, which was indicative of the fact that good rapport could be established between the investigator and the respondents.

### **3.4: Processing and statistical analysis of data:**

Data were collected qualitative as well as quantitative. Qualitative data were converted in quantitative data. The quantitative data were tabulated on the basis of logical categorization method as described earlier. The following statistical techniques were used in the study.

1. Percentage
2. Mean
3. Rank order
4. Chi-Square

#### **Percentage:**

The term 'percentage' means a fraction whose denomination is 100 and the numeration of the fraction is called Percentage. For calculating percentage, frequency was multiplied by 100 and divided by total respondents.

$$P = \frac{X}{N} \times 100$$

**Where,**

P = Percentage

X = Frequency of respondents

N = Total number of respondents%

**Mean:**

Mean is obtained by dividing the sum of the scores by the total number of cases involves. The formula for determining mean is:

$$\bar{X} = \frac{\sum_{i=1}^n Xi}{N} [i = 1,2,3,\dots,n]$$

Where,

X = Mean

$\sum X$  = Sum of all the pairs in a distribution

N = Total number of items involved.

**independent variables will be studied by using chi square test as follows:**

Test to determine whether two attributes are independent by comparison of observed frequencies related to expected frequencies.

$$\chi^2 = \frac{\sum(Oi - Ei)^2}{Ei}$$

With d.f. (r-1) (c-1)

Where,

O<sub>i</sub> = Observed frequency of respondents

E<sub>i</sub> = Expected frequency of the same respondents

$\Sigma$  = = Summation taken overall respondent

$\chi^2$  = Is based on (c-1) (r-1) degree of freedom and significantly tested at 5% level and 1% level.

r = No. of rows

c = No. of column

The expected frequency  $X_{ij}$  on any cell falling the  $i^{\text{th}}$  and  $j^{\text{th}}$  column on the assumption of the independence of the classifications and constant marginal totals will be as given below:

$$X_{ij} = \frac{R_i \cdot C_j}{N}$$

Where;

$X_{ij}$  = Expected frequency of any cell falling in the  $i^{\text{th}}$  row and  $j^{\text{th}}$  column

$R_i$  = Total of the corresponding row

$C_j$  = Total of the corresponding column

Calculated  $\chi^2$  value were noted with on the contingency table reference to the  $\chi^2$  value at 5% level of probability appropriate degree of freedom.

**Note:** In the r x c contingency table, only when cell frequency was less than 5, then to maintain the continuity property of  $X^2$  distribution, the pooling method of nearby cell frequency (either through row or through Column) was applied, but in case of 2x2 contingency table to maintain the same continuity property, Yates's Correction method was the only alternative and the degree of freedom was modified accordingly.

Yates correction:

$$\chi^2 = \frac{[ (ad-bc) \frac{N^2}{2} ]}{R_1 R_2 C_1 C_2}$$

### 3.5 Derivation of hypotheses:

Relevant hypotheses were formulated on the basis of objectives of the study and were tested in the null form. These were –

**General hypothesis:** There will be no association between personal-socio-economic characteristics of farm women and extent of participation of farm women in different activities related to agriculture.

**Specific hypothesis:** Relevant hypothesis were formulated on the basis of the study and was tested in the null form, as follows:

1. There is no significant association between age of the farm women and their extent of participation in agricultural activities.
2. There is no significant association between level of education of the farm women and their extent of participation in agricultural activities.
3. There is no significant association between caste of farm women and their extent of participation in agricultural activities.
4. There is no significant association between family type and size of the farm women and their extent of participation in agricultural activities.
5. There is no significant association between size of land holding of the farm women and their extent of participation in agricultural activities.
6. There is no significant association between farming experience of the farm women and their extent of participation in agricultural activities.
7. There is no significant association between occupation of the farm women and their extent of participation in agricultural activities.

8. There is no significant association between annual income of the farm women and their extent participation in agricultural activities.
9. There is no significant association between Knowledge level of the farm women and their extent participation in agricultural activities.
10. There is no significant association between social participation of the farm women and their extent of participation in agricultural activities.
11. There is no significant association between extension participation of the farm women and their extent of participation in agricultural activities.

## RESULTS

This chapter deals with the analysis and interpretation of collected data, which were collected from the sample of 120 farm women. The data were processed keeping in view of the following objectives as:-

1. To study the personal and socio-economic characteristics of the farm women.
2. To study the extent of participation of the farm women in different activities related to agriculture.
3. To find out the relationship between personal and socio-economic characteristics of the farm women with participation in agricultural activities.
4. To know the constraints experienced by the farm women in participating in agricultural activities.

### (A) Independent variables:

#### **Personal and socio-economic characteristics of the farm women:**

The variables selected and studied as independent variables were age, education, caste, family type and size, land holding, farming experience, occupation, knowledge level, annual income, social participation and extension participation of farm women are presented here.

#### 1) Age:

**Table 4.1: Distribution of farm women according to age**

S.No.	Categories	Frequency	Percentage
1	Young (up to 35 years)	42	35.00
2	Middle(36 – 55 years)	58	48.33
3	Old (Above 55 years)	20	16.67
<b>Total</b>		120	100.00

The data of the table 4.1 reveals that out of the total farm women, 48.33 percent belonged to middle age group, followed by 35 per cent belonged to young age group and 16.67 per cent belonged to old age group.

Thus, it may be concluded that nearly 50.00 per cent of farm women (48.33%) were of middle age group.

**2) Education:**

**Table 4.2 Distribution of farm women according to education**

<b>S.No.</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
1	Illiterate	31	25.84
2	Up to primary	46	38.33
3	Up to middle	21	17.50
4	High school	15	12.50
5	Higher secondary	07	5.83
<b>Total</b>		120	100.00

The data of the Table 4.2 reveals that out of the total farm women, 38.33 per cent of the respondents received education up to primary level, followed by 25.84 per cent were illiterate, 17.50 per cent up to middle, 12.50 per cent up to high school level and 5.83 per cent were having education up to higher secondary level.

Thus, it can be concluded that the majority of farm women (74.16%) were having formal education, (25.84%) respondent were illiterate.

### 3. Caste

**Table 4.3: Distribution of farm women according to caste.**

S no.	Categories	Frequency	Percentage
1	Scheduled caste/ Scheduled tribes	36	30.00
2	Other backward classes	50	41.67
3	General	34	28.33
	<b>Total</b>	120	100.00

The data of the Table 4.3 reveals that out of the total farm women, 41.67 percent belonged to OBC category, followed by 30.00 per cent belonged to SC/ST categories and 28.33 percent belonged to general category.

Thus, it may be concluded that higher percentage of farm women (41.67%) were having Other Backward class Category.

#### 4. (a) Family Type:

**Table 4.4: Distribution of farm women according to family type.**

S.No.	Categories	Frequency	Percentage
1	Nuclear family	67	58.83
2	Joint family	53	41.17
	<b>Total</b>	120	100.00

The data of the Table 4.4 reveals that out of the total farm women, 58.83 percent belonged to nuclear family and followed by 41.17 per cent belonged to Joint family.

Thus, it may be concluded that higher percentage of farm women (58.33%) were having nuclear family.

**(b) Size of family :**

**Table 4.5: Distribution of farm women according to family size**

<b>S.No.</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
1	Small (Up to 4 members)	32	26.67
2	Medium (5-8 members)	48	40.00
3	Large (above 8 Members)	40	33.33
<b>Total</b>		120	100.00

The data of the Table 4.5 reveals that out of the total farm women, 40.00 per cent farm women were having medium size of family, followed by 33.33 per cent were having large size of family, and 26.67per cent were having small size of family.

Thus, it may be concluded that higher percentage of farm women (40%) were having medium size of family.

**5. Land holding:**

**Table 4.6: Distribution of farm women according to size of land Holding.**

<b>S no.</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
1	Marginal farmers ( up to1 ha)	32	26.67
2	Small farmers ( 1.01 - 2 ha)	55	45.83
3	Medium farmers ( 2.1 - 4 ha)	20	16.67
4	Large farmers ( above 4 ha)	13	10.83
<b>Total</b>		120	100.00

The data of the Table 4.6 reveals that out of the total farm women, 45.83 percent farm women were having small land holding, followed by 26.67 per cent

were having marginal land holding, 16.67 per cent were having medium size of land holding and 10.83 per cent were having large size of land holding.

Thus, it may be concluded that higher percentage of farm women (45.83%) were having small size of land holding.

## 6. Farming experience

**Table 4.7: Distribution of farm women according to farming experience**

S no.	Categories	Frequency	Percentage
1	Low (Up to 5 years)	33	27.50
2	Medium (5 – 10 years)	55	45.83
3	High (Above 10 years)	32	26.67
<b>Total</b>		120	100.00

The data of the Table 4.7 reveals that out of the total 120 farm women, 45.83 per cent of farm women were having medium experience followed by low experience (27.50%) and only 26.67 per cent of were having high farming experience.

Thus, it may be concluded that higher percentage of farm women (45.83%) were having medium experience.

## 7. Occupation:

**Table 4.8: Distribution of farm women according to occupation.**

S no.	Categories	Frequency	Percentage
1	Solely Farming	45	37.51
2	Farming + Labour	40	33.33
3	Farming+ Shop	13	10.83
4	Farming + caste occupation	22	18.33
<b>Total</b>		120	100.00

The data of the Table 4.8 reveals that out of the total 120 farm women, 37.51 per cent were solely depend on farming as their main occupation. As regard to other subsidiary occupations were concerned, 33.33 per cent followed by Farming +Labour, 18.33per cent were farming + other (caste occupation), 10.83 per cent were Farming+ Shop group.

Thus, it may be concluded hat the higher percentage of farm women (37.51%) were solely engaged in farming as their main occupation.

## 8. Annual income:

**Table 4.9- Distribution of the respondents to annual income**

S no.	Categories	Frequency	Percentage
1	Low ( Less than Rs. 50,000 /)	33	27.50
2	Medium (Rs. 50,0001/ - 1,00,000/)	65	54.17
3	High (More than Rs. 1,00,0001 /)	22	18.33
<b>Total</b>		120	100.00

The data of Table 4.9 reveals that out of the total 120 farm women, 54.17 per cent had medium annual income (Rs. 50,0001/-1,00,000/), followed by 27.50 per cent had low annual income (Rs. 50,000/) and only 18.33 per cent had high annual income (Rs.1,00,0001/).

Thus, it may be concluded that out of the total farm women, more than 50 per cent ( 54.17%) were in medium annual income.

## 9. Knowledge level:

**Table 4.10: Distribution of farm women according to Knowledge level**

S no.	Categories	Frequency	Percentage
1	Low ( 1 to 8 score)	35	29.17
2	Medium( 9 – 16 score )	58	48.33
3	High (17 – 24 score)	27	22.50
<b>Total</b>		120	100.00

The data of the Table 4.10 reveals that out of the total 120 rural women, 48.33 per cent of the farm women had medium knowledge level, followed by 29.17 per cent low knowledge level and only 22.50 per cent were found level of knowledge level about agricultural activities.

Thus, It may be concluded that nearly 50 per cent of farm women (48.33%) had medium level knowledge.

## 10. Social participation:

**Table 4.11: Distribution of farm women according to social participation**

S no.	Categories	Frequency	Percentage
1	Low (1 to 6 score)	32	26.67
2	Medium (7 – 12 score)	45	37.50
3	High (13 -18 score)	43	35.83
<b>Total</b>		120	100.00

The data of the Table 4.11 reveals that out of the total 120 farm I women, 37.50 per cent had medium social participation, followed by 35.83 per cent had high social participation group and only 26.67 per cent had low social participation.

Thus, it may be concluded that higher percentage of farm women (37.50%) were having medium social participation group.

**11. Extension participation:**

**Table 4.12: Distribution of farm women according to extension participation**

<b>S no.</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
1	No participation	00	00.00
2	Low (1 to 2 score )	40	33.33
3	Medium ( 3 – 4 score)	45	37.50
4	High ( 5 – 6 score)	35	29.17
<b>Total</b>		120	100.00

The data of the Table 4.12 reveals that out of the total 120 farm women, 37.50 per cent had medium extension participation. followed by 29.17 per cent had high extension participation and 33.33 per cent had low extension participation.

Thus, it may be concluded that higher percentage of farm women (37.50%) were having medium extension participation.

**(B) Dependent variable:**

**4.2 Extent of participation of the farm women in different activities related to agriculture:**

Farm women play a pivotal role in farming enterprise. They are actively participating in all range of activities related to agricultural activities. farm women remain busy from dawn to dusk in various agricultural activities including pre-harvest, post-harvest process. Their participation is well dispersed but less perceived, because of insufficient data to show their active involvement in various agricultural activities. Keeping in view these facts, the present study had been designed to explore the extent of their participation in various

agricultural activities. The detail about extent of participation of farm women in different agricultural activities was presented in table 4.13.

**4.13: Distribution of farm women according to extent of participation in different activities related to agriculture**

S no.	Categories	Frequency	Percentage
1	Low (1 to 8 score)	27	22.50
2	Medium( 9 – 16 score)	78	65.00
3	High(17 – 24 score)	15	12.50
<b>Total</b>		120	100.00

The data in Table 4.13 shows that out of the total 120 rural women, 65.00 per cent had medium extent of participation in agricultural activities, 12.50 per cent had high and 22.50 per cent had low role in extent participation in agricultural activities.

Thus, it can be concluded that higher percentage of (65.00%) respondent had medium extent of participation in agricultural activities.

**Table 4.14: Distribution of farm women according to extent of participation in agricultural activities.**

S no.	Area of activities	Regular	Sometime	Never	Mean score	Rank
1	Field preparation	9	14	97	0.26	IX
2	Selection of seed	35	25	60	0.79	IV
3	Seed treatment	6	7	107	0.15	X
4	Sowing time of seed	35	25	60	0.79	IV
5	Manure and fertilizer application	30	30	60	0.75	V
6	Irrigation	20	30	70	0.58	VII
7	Weeding	84	17	19	1.54	I
8	Plant protection measures	27	28	65	0.68	VI
9	Harvesting	79	18	23	1.47	II
10	Winnowing process	32	38	50	0.85	III
11	Storage	6	23	91	0.29	VIII
12	Marketing	9	14	97	0.26	IX

The data of the table 4.14 shows the distribution of farm women according to their extent participation in different agricultural activities with their mean and rank order.

The farm activities in which farm women participated at high level were weeding (mean score 1.54) followed by harvesting (mean scores 1.47),Winnowing (mean score 0.85),seed selection (mean score 0.79 ), Sowing time of seed (mean score 0.79 each) manure and fertilizer application (mean score 0.75),Plant protection (mean score 0.68), Irrigation (mean score 0.58), Storage (mean score 0.29), preparatory of land and marketing (mean score 0.26each) and seed treatment (mean score 0.15) respectively.

Thus, it may be concluded that the farm women over all participated medium level among the all agricultural activities. The farm activities in which farm women participated in first foremost agriculture activities were weeding followed by harvesting, winnowing, selection of seed , Manure and fertilizer application etc. The least performance activities were preparatory of land, marketing and seed treatment.

#### **4.3 Association between socio-economic characteristics of farm women and extent of participation in agricultural activities:**

In detail the overall association between socio-economic characteristics of farm women and extent of participation in different agricultural activities was presented in following tables

## 1. Age

**Table 4.15: Association between age of farm women and extent of participation in agricultural activities:-**

Age	Extent of participation			Total
	Low	Medium	High	
Young (Below 35 years)	12 (28.57)	25 (59.53)	05 (11.90)	42  (100.00)
Middle(36 – 55 years)	10 (17.24)	43 (74.13)	0 5 (8.63)	58  (100.00)
Old (Above 55 years)	0 5 (25.00)	10 (50.00)	05 (25.00)	20  (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120  (100.00)

(Figures in parentheses indicate percentage)

$\chi^2 = 6.2978$ , Non Significant at 0.05 level of probability with 4 d .f. Table value is 9.49

Table 4.15 shows the association between age of farm women and their extent of participation of farm women in agricultural activities. It is clear from the above data that out of the total 42 young age farm women, 28.57 per cent had low, 59.53 per cent medium and had 11.90 per cent high extent of participation of farm women in agricultural activities. Whereas in middle age group of farm women, 17.24 per cent had low, 74.13 per cent had medium and 8.63 per cent had high extent of participation of farm women in agricultural activities. In case of old age group, 25.00 per cent had low, 50.00 per cent medium and had 25.00 per cent high extent of participation of farm women in agricultural activities.

The chi-square value was found 6.2978 non significant at 0.05 level of probability with 4 degree of freedom . Hence, it can be concluded that there was

no significant association between age of the farm women and extent of participation in agricultural activities.

## 2. Education:

**Table 4.16 Association between education of farm women and their extent of participation in agricultural activities:**

Education	Extent of participation			Total
	Low	Medium	High	
<b>Illiterate</b>	15 (48.38)	11 (35.48)	05 (16.14)	31 (100.00)
<b>Primary school</b>	07 (15.92)	34 (73.92)	05 (10.86)	46 (100.00)
<b>Middle school</b>	05 (23.82)	13 (61.90)	03 (14.28)	21 (100.00)
<b>High school</b>	00 (00.00)	14 (93.93)	01 (6.07)	15 (100.00)
<b>Higher secondary</b>	00 (00.00)	06 (85.72)	01 (14.28)	7 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate per cent)

As the cell frequencies were less than five, therefore, it was pooled for the purpose of calculating chi-square test and table be as follows.

Education	Extent of participation			Total
	Low	Medium	High	
<b>Illiterate</b>	15 (48.38)	11 (35.48)	05 (16.14)	20 (100.00)
<b>Primary school</b>	07 (15.92)	34 (73.92)	05 (10.86)	51 (100.00)
<b>Middle school+ High School + Higher secondary</b>	05 (23.82)	33 (66.04)	05 (10.14)	49 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

$\chi^2 = 17.0002$ , significant at 0.05 level of probability 12.50 with 4 d. f. table value is 9.49

Table 4.16 reveals that out of 31 farm women who were illiterate 48.38 per cent had low, 35.48 per cent had medium and 16.14 per cent had with high participation of farm women in agricultural activities. Out of 46 farm women who were educated up to primary level, 15.92 per cent had low ,73.92 per cent had medium and 10.86 per cent had high participation of farm women in agricultural activities. Whereas out of 21 farm women who were educated up to middle school level, 23.82 per cent had low, 61.90 per cent had medium and 14.28 per cent had high participation of farm women in agricultural activities. Out of 15 farm women who were educated up to high school, 00.00 per cent had low, 93.93 per cent had medium and 06.07 per cent high participation of farm women in agricultural activities. while out of 7 farm women who were educated up to higher secondary level, 00.00 per cent had low, 85.72 per cent had medium and 14.28 per cent was found in high participation of farm women in agricultural activities.

The chi-square value was found 17.0002 significant at 0.05 level of probability with 4 degree of freedom. Thus it can be concluded that there was significant association between education level of farm women and their extent participation in agricultural activities.

### 3. Caste:

**Table 4.17: Association between caste of farm women and extent of participation in agricultural activities.**

Caste	Extent of participation			Total
	Low	Medium	High	
Scheduled caste/ Scheduled tribes	15 (41.67)	16 (44.44)	05 (13.89)	36 (100.00)
Other backward class	07 (14.00)	38 (76.00)	05 (10.00)	50 (100.00)
General	05 (14.70)	24 (70.60)	05 (14.70)	34 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate percent)

$\chi^2 = 13.3236$ , significant at 0.05 level of probability with 4 d. f. table value is .9.49.

Table 4.17 shows the association between caste of farm women and their extent of participation of farm women in agricultural activities .It is clear from the data of the table that out of 36 farm women having Scheduled caste/ Scheduled tribes , 41.67 per cent had low, 44.44 per cent had medium and 13.89 per cent had high role in participation of farm women in agricultural activities. While out of 50 farm women having Other backward class, 14.00 per cent had low, 76.00 per cent had medium, and 10.00 per cent had high role in participation of farm women in agricultural activities. Whereas out of 34 farm women having General, 14.70 per cent had low,70.60 per cent had medium and 14.70 per cent had high extent of participation of farm women in agricultural activities.

The chi-square value was found 13.3236 significant at 0.05 level of probability with 4 degree of freedom. Thus it can be concluded that there was significant association between caste of farm women and their extent of participation in agricultural activities.

#### 4. (a) Family type:

**Table 4.18: Association between family type of farm women and extent of participation in agricultural activities.**

Family type	Extent of participation			Total
	Low	Medium	High	
Nuclear family	20 (29.85)	37 (55.22)	10 (14.93)	67 (100.00)
Joint family	07 (13.22)	41 (77.35)	05 (09.43)	53 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate percent)

$\chi^2 = 6.5874$ , significant at 0.05 level of probability with 2 d. f. table value is 5.99

Table 4.18 shows the association between family type of farm women and their extent of participation of farm women in agricultural activities .It is clear from the data of the table that out of 67 farm women having nuclear family type, 29.85 per cent had low, 55.22 per cent had medium and 14.93 per cent had high role in participation of farm women in agricultural activities. While out of 53 farm women having joint family type, 13.22 per cent had low, 77.35 per cent had medium, and 09.43 per cent had high role in participation of farm women in agricultural activities.

The chi-square value was found 6.5874 significant at 0.05 level of probability with 2 degree of freedom. Thus it can be concluded that there was significant association between family type of farm women and their extent of participation in agricultural activities.

#### 4. Family size:

**Table 4.19: Association between family size of farm women and extent participation in agricultural activities.**

Family size	Extent of participation			Total
	Low	Medium	High	
Small (Up to 4 members)	17 (53.12)	10 (31.26)	05 (15.62)	32 (100.00)
Medium (5-8 members)	05 (10.41)	35 (72.92)	08 (16.67)	48 (100.00)
Large (above 8 Members)	05 (12.50)	33 ( 82.50 )	02 (5.00)	40 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate percent)

As the cell frequencies were less than five, therefore, it was pooled for the purpose of calculating chi-square test and table be as follows.

Family size	Extent of participation			Total
	Low	Medium	High	
Small (Up to 4 members)	17 (53.12)	10 (31.26)	05 (15.62)	32 (100.00)
Medium (5-8 members) + Large (above 8 Members)	10 (11.23 )	68 (77.07)	10 (14.70)	88 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

$\chi^2 = 26.2$  significant at 0.05 level of probability with 2 d. f. table value is 5.99

Table 4.19 shows the association between family size of farm women and their extent of participation of farm women in agricultural activities .It is clear from the data of the table that out of 32 farm women having small family size, 53.12per cent had low, 31.26 per cent had medium and 15.62 per cent had high role in participation of farm women in agricultural activities. While out of 48 farm women having medium family size, 10.41 per cent had low, 72.92 per cent had medium, and 16.67 per cent had high role in participation of farm women in agricultural activities. Whereas out of 40 farm women having large family size, 12.50 per cent had low,82.50 per cent had medium and 05.00 per cent had high extent of participation of farm women in agricultural activities.

The chi-square value was found 26.2 significant at 0.05 level of probability with 2 degree of freedom. Thus it can be concluded that there was significant association between family size of farm women and their extent of participation in agricultural activities.

5. **Size of land holding:**

**Table 4.20 : Association between size of land holding of farm women and extent of participation in agricultural activities.**

Size of land holding	Extent of participation			Total
	Low	Medium	High	
Marginal (Up to1 ha)	12 (37.5)	15 ( 46.87 )	05 (15.63)	32 (10.000)
Small (1.1 - 2.0 ha)	07 (12.72)	43 (78.18 )	05 (9.10)	55 (100.00)
Medium( 2.1 - 5.0 ha)	05 ( 25.00 )	12 (60.00)	03 (15.00)	20 (100.00)
Large (Above 5.0 ha)	03 (23.17)	0 8 ( 61.53)	02 (15.30)	13 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate percentage)

As the cell frequencies were less than five, therefore, it was pooled for the purpose of calculating chi-square test and table be as follows.

Size of land holding	Extent of participation			Total
	Low	Medium	High	
Marginal (Up to1 ha)	12 (37.51)	15 ( 46.87 )	05 (15.62)	32 (100.00)
Small (1.1 – 2.0 ha)	07 (12.72)	43 (78.18 )	05 (9.20)	55 (100.00)
Medium + large	08 ( 24.2)	20 (60.60)	05 (15.20)	33 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate percent)

$\chi^2 = 9.7117$ , significant at 0.05 level of probability with 4 d. f. table value is 9.49

Table 4.20 reveals that out of 32 farm women having marginal land holding, 37.51 per cent had low, 46.87 per cent had medium and 15.62 per cent had high extent of participation of farm women in agricultural activities. While out of 55 farm women having small land holding, 12.72 per cent had low, 78.18 per cent had medium and 09.20 per cent had high extent of participation of farm women in agricultural activities. Whereas out of 20 farm women having medium land holding, 25.00 per cent had low, 60.00 per cent had medium and 15.00 per cent had high extent of participation of farm women in agricultural activities. Out of 13 farm women having large land holding, 23.17 per cent had low, 61.53 per cent had medium and 15.30 per cent had high extent of participation of farm women in agricultural activities

The chi-square value was found 9.7117 significant at 0.05 level of probability with 4 degree of freedom. Thus it can be concluded that there was significant association between size of land holding of farm women and their extent of participation in agricultural activities.

## 6. Farming Experience:

**Table 4.21: Association between farming experience of farm women and extent participation in agricultural activities**

Farming experience	Extent of participation			Total
	Low	Medium	High	
Young (Up to 5 years)	14 ( 42.42 )	14 (42.42)	05 (15.16)	33 (100.00)
Middle (5 – 10 years)	07 (12.72)	43 (78.18)	05 (9.10)	55 (100.00)
Old (Above 10 years)	06 (18.75)	21 (65.62)	05 (15.63)	32 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate percent)

$\chi^2 = 13.3636$ , Significant at 0.05 level of probability with 4 d .f. Table value is 9.49

Table 4.21 shows the association between Farming experience of farm women and their extent of participation of farm women in agricultural activities .It is clear from the data of the table that out of 33 farm women having low Farming experience, 42.42per cent had low, 42.42 per cent had medium and 15.16per cent had high role in participation of farm women in agricultural activities. While out of 55 farm women having medium Farming experience, 12.12 per cent had low, 78.18 per cent had medium, and 09.10 per cent had high role in participation of farm women in agricultural activities. Whereas out of 32 farm women having high Farming experience, 18.75 per cent had low,65.62 per cent had medium and 12.50 per cent had high extent of participation of farm women in agricultural activities.

The chi-square value was found 13.3636 significant at 0.05 level of probability with 4 degree of freedom. Hence, it can be concluded that there was significant association between farming experience of the farm women and extent of participation of farm women in agricultural activities.

## 7. Occupation:

**Table 4.22: Association between occupation of farm women and extent participation of farm women in agricultural activities.**

Occupation	Extent of participation			Total
	Low	Medium	High	
Solely Farming	17 (37.77)	23 (51.12)	05 (11.11)	45 (100.00)
Farming +labour	05 (12.50)	30 (75.00)	0 5 (12.50)	40 (100.00)
Farming +Shop	05 (38.46)	03 (23.08)	0 5 (38.46)	13 (100.00)
Farming + caste occupation	00 (00.00)	22 (100.00)	00 (00.00)	22 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate percent)

As the cell frequencies were less than five, therefore, it was pooled for the purpose of calculating chi-square test and table be as follows.

Occupation	Extent of participation			Total
	Low	Medium	High	
Solely Farming	17 (37.77)	23 (51.12)	05 (11.11)	45 (100.00)
Farming + Labour	05 (12.50)	30 (75.00)	05 (12.50)	40 (100.00)
(Farming +shop) + (Farming + caste occupation)	05 (14.28)	25 (71.44)	05 (14.28)	35 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

$\chi^2 = 9.8277$  Significant at 0.05 level of probability with 4 d .f. Table value is 9.49

Table 4.22 shows the association between occupation of farm women and extent of participation of farm women in agricultural activities. It is clear from the above data that out of total farm women who were dependent upon only farming as their main occupation, 37.77 per cent had low, 51.12 per cent had medium and 11.11 per cent had high extent of participation of farm women in agricultural activities. Whereas the out of total farm women who were dependent upon farming and labour as their occupation, 12.50 per cent had low, 75.00 per cent had medium and 12.50 had high role in participation of farm women in agricultural activities. Out of total who were dependent upon farming and shop as their occupation, 38.46 percent had low, 23.08 per cent had medium and 38.46 per cent had low extent participation of farm women in agricultural activities. The out of total farm women who were depend upon farming and other (caste) occupation.

The chi-square value was found to 9.8277 significant at 0.05 level of probability with 4 degree of freedom. Hence, it can be concluded that there is significant association between occupation of the farm women and their extent of participation of farm women in agricultural activities.

**8. Annual income:**

**Table 4.23: Association between Annual Income of farm women and extent of participation of farm women in agricultural activities.**

Annual income:	Extent of participation			Total
	Low	Medium	High	
Low (Less than Rs. 50,000 /)	15 ( 45.45)	13 (39.39)	0 5 (15.16)	33 (100.00)
Medium (Rs. 50,0001 -1,00,000/)	0 7 ( 10.78 )	48 (73.84)	10 (15.38)	65 (100.00)
High ( More than Rs. 1,00,0001 /)	0 5 (22.73)	17 (77.27)	00 (00.00)	22 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate percent)

As the cell frequencies were less than five, therefore, it was pooled for the purpose of calculating chi-square test and table be as follows.

Annual income	Extent of participation			Total
	Low	Medium	High	
Low (Less than Rs. 50,000)	15 ( 45.45)	13 (39.39)	0 5 (15.15)	33 (100.00)
Medium (Rs.50,0001 -1,00,000/) + High (More than Rs. 1,00,000 /)	12 (13.79 )	65 (74.72)	10 (11.49)	87 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

$\chi^2 = 15.5068$ , significant at 0.05 level of probability with 2 d. f .,table value is 5.99.

Table 4.23 shows the association between annual income of farm women and their extent of participation of farm women in agricultural activities .It is clear from the data of the table that out of 33 low income farm women, 45.45per cent had low, 39.39 per cent had medium income and 15.16per cent ha high role in participation of farm women in agricultural activities. While out of 65 medium income farm women, 10.78 per cent had low, 73.84 per cent had medium, and 15.38 per cent had high role in participation of farm women in agricultural activities. Whereas out of 22 farm women having high income, 22.73 per cent had low,77.27 per cent had medium and 00.00 per cent had high extent of participation of farm women in agricultural activities.

The chi-square value was found 15.5068 significant at 0.05 level of probability with 2 degree of freedom hence, it can be concluded that there was significant association between annual income of the farm women and extent of participation of farm women in agricultural activities.

## 9. Knowledge level :

**Table 4.24: Association between of farm women Knowledge level and extent participation in agricultural activities.**

Knowledge level	Extent of participation			Total
	Low	Medium	High	
Low ( 1 to 8 score )	10 (28.58)	20 (57.14)	0 5 (14.28)	35 (100.00)
Medium( 9 – 16 score )	0 7 (12.06)	46 (79.32)	05 (8.62)	58 (100.00)
High (17 – 24 score )	10 (37.07)	12 (44.43)	05 (18.50)	27 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate percent)

$\chi^2 = 11.3989$ , significant at 0.05 level of probability with 4 d. f .,table value is 9.49

Table 4.24 shows the association between Knowledge level of farm women and their extent of participation of farm women in agricultural activities.

It is clear from the data of the table that out of 35 farm women, who were having low knowledge level followed by 28.58 per cent had low extent of participation of farm women in agricultural activities, 57.14 per cent medium and 14.28 per cent had high extent of participation of farm women in agricultural activities. While, out of 58 farm women who were having medium knowledge level, followed by 12.06 per cent had low extent of participation of farm women in agricultural activities, 79.32 per cent medium and 8.62 per cent had high extent of participation of farm women in agricultural activities. Whereas out of 27 farm women who had high knowledge level, 37.07 per cent had low farm women, 44.43 per cent had medium extent of participation of farm women in agricultural activities. and 12.50 per cent had high extent of participation of farm women in agricultural activities.

The chi-square value was found 11.3989 significant at 0.05 level of probability with 4 degree of freedom. Hence, it can be concluded that there was significant association between knowledge level of the farm women and extent of participation of farm women in agricultural activities.

#### 10. Social participation:

**Table 4.25: Association between social participation of farm women and extent participation of farm women in agricultural activities.**

Social participation	Extent of participation			Total
	Low	Medium	High	
Low ( 1 to 6)	14 (43.75)	13 (40.62)	05 (15.63)	32 (100.00)
Medium ( 7 – 12)	07 (15.55)	34 (75.56)	04 (8.89)	45 (100.00)
High (13 -18)	06 (13.95)	31 (72.20)	06 (13.95)	43 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate percentage)

As the cell frequencies were less than five, therefore, it was pooled for the purpose of calculating chi-square test and table be as follows

Social participation	Extent of participation			Total
	Low	Medium	High	
Low ( 1 to 6)	14 (43.75)	13 (40.62)	05 (15.62)	32 (100.00)
Medium ( 7 – 12)+ High(13 -18)	13 (14.78)	65 (73.86)	10 (11.36)	88 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

$\chi^2 = 13.0871$ , significant at 0.05 level of probability with 2 d. f. table value is 5.99.

Table 4.25 shows the association between Social participation of farm women and their extent of participation of farm women in agricultural activities. It is clear from the data of the table that out of 32 farm women who had low social participation, 43.75 per cent had low extent of participation of farm women in agricultural activities. followed by 40.62 per cent medium and 15.63 per cent had high extent of participation of farm women in agricultural activities. While out of 45 farm women who had medium social participatio15.55 per cent had low,75.56 had medium and 08.89 had high extent of participation of farm women in agricultural activities. Whereas out of 43 farm women who had high social participation, 13.95 per cent had low,72.20 per cent had medium and 13.95 per cent had high extent of participation of farm women in agricultural activities.

The chi-square value was found 13.0871 significant at 0.05 level of probability with 2 degree of freedom. Hence, it can be concluded that there was significant association between social participation of the farm women and extent of participation of farm women in agricultural activities.

11. Extension participation:

**Table 4.26: Association between extension participation of farm women and participation in agricultural activities.**

Extension participation	Extent of participation			Total
	Low	Medium	High	
No participation	00 (00.00)	00 (00.00)	00 (00.00)	00 (00.00)
Low (1 to 4 score)	16 (40.00)	19 (47.50)	05 (12.50)	40 (100.00)
Medium( 5 – 8 score)	06 (13.33)	36 (80.10)	03 (06.67)	45 (100.00)
High(9 – 12 score)	05 (14.28)	23 (65.71)	07 (20.01)	35 (100.00)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

(Figures in parentheses indicate percentage)

As the cell frequencies were less than five, therefore, it was pooled for the purpose of calculating chi-square test and table be as follows.

Extension participation	Extent of participation			Total
	Low	Medium	High	
No participation +Low (1 to 2 )	16 (40.00)	19 (47.50)	05 (12.50)	40 (100)
Medium( 2 - 4)+ High(4 - 6)	11 (13.33)	59 (80.10)	10 (06.67)	80 (100)
<b>Total</b>	27 (22.50)	78 (65.00)	15 (12.50)	120 (100.00)

$\chi^2 = 10.9936$ , significant at 0.05 level of probability with 2 d.f. table value is 5.99

Table 4.26 shows the association between extension participation of farm women and their extent of participation of farm women in agricultural activities. It is clear from the data of the table that out of 40 farm women who had low extension participation, 40.00 per cent had low extent of participation of farm women in agricultural activities. Followed by 47.50 per cent medium and 12.50 per cent had high extent of participation of farm women in agricultural activities. While out of 45 farm women who had medium extension participation 13.33 per cent had low, 80.10 had medium and 06.67 had high extent of participation of farm women in agricultural activities. whereas out of 35 farm women who had high extension participation, 14.28 per cent had low, 65.71 per cent had medium and 20.01 per cent had high extent of participation of farm women in agricultural activities.

The chi-square value was found 10.9936 significant at 0.05 level of probability with 2 degree of freedom. Hence, it can be concluded that there was significant association between extension participation of the farm women and extent of participation of farm women in agricultural activities.

#### **4.4 Constraints experienced by the farm women in participating in Agricultural activities:**

The importance of participation of farm women in agricultural activities need not to recognize. But due to some socio economic and other factors the farm women are not able to performed their activities and In detail, the data about to constraint expressed by the farm women with regard to participation in agricultural activities.

The constraint reported by the farm women in respect of participation indicated that the constraints are of varied type and in various intensity also. The details of constraints were listed in table.

**Table 4.27: Constraints experienced by farm women in participating in agricultural activities.**

<b>S no.</b>	<b>Constraints</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Rank</b>
1	Lack of confidence	69	57.50	I
2	Lack of proper guidance	58	48.33	IV
3	Lack of family support	60	50.00	III
4	Higher time consumption for Households work.	65	54.17	II
5	Lack of education	45	37.50	VIII
6	Lack of awareness	50	41.67	VI
7	Lack of marketing facilities	54	45.00	V
9	Lack of knowledge about improved Technology	45	37.50	VIII
10	High cost of farm material	47	39.17	VII
11	Lack of credit and capital	54	45.00	V

Table 4.27 shows the constraints perceived by the farm women in participation in agricultural activities. it is clear from the data that the farm women reported Lack of confidence (57.50), Higher time consumption for Households work (54.17), Lack of family support(50.00), Lack of proper guidance(48.33), Lack of credit and capital, Lack of marketing facilities(45.00), Lack of awareness(41.67), High cost of farm material(39.17) and Lack of knowledge about improved Technology, Lack of education (37.50).

## DISCUSSION

The main findings of the investigation have been discussed in this chapter to draw generalization. The discussion has been presented under the following sub-heads:-

1. To study the personal and socio-economic characteristics of the farm women.
2. To study the extent of participation of the farm women in different activities related to agriculture.
3. To find out the relationship between personal and socio-economic characteristics of the farm women with participation in agricultural activities.
4. To know the constraints experienced by the farm women in participating in agricultural activities.

### **5.1 To Study the personal and socio-economic characteristics of the farm women:**

The result of the present study showed that the higher percentage of farm women (48.33%) belonged to middle age group (36 to 55 years). This might be due to that the farm women of this age group were more involved in agricultural activities. The finding finds support with the work of Narmatha *et al.* (2001), Warkade (2010), Rathod *et al.* (2011), Chouhan (2013), Sharma (2015) and Singh (2017).

As regard to level of education, 38.33 per cent of farm were educated up to primary level. The finding finds support with the work of Tripathi (2007), Wahane (2010), Rai (2011), Singh (2011) and Rathod and Damodhar(2015).

As regard to caste of farm women, higher percentage of farm woman (41.67%) were having other backward class. This finding finds support with the work of Dubey (2007), Rai (2011), Chayal *et al.* (2013), Sharma (2015), Panwar (2016) and Singh (2017).

The result of the present study showed that higher percentage of farm woman (58.83%) were having nuclear type. This finding finds support with the work of Mohod (2000), Wahane(2010), Chayal et al. (2013),Rathod and Damodhor (2015), Pal and Halder (2016).

The result of the present study showed that higher percentage of farm woman (40%) had medium family size. This finding finds support with the work of More (2000), Khorate (2000), Rai (2011), Chouhan (2013) and Sharma (2015).

The result of the present study showed that higher percentage of farm woman (45.83%) had small land holding.This findings finds support with the work of Jain (2007), Warkade (2010) and Sharma (2015) .

The study further revealed that higher percentage of farm women (45.83 %) were having medium farming experience. This finding finds support with the work of Tripathi (2007), Sikarwar (2009), Singh (2011), and Mishra (2013).

The result of the present study showed that higher percentage of farm women (37.51%) were having solely engaged in farming as their main occupation. This findings finds support with the work of Devlatha (2005), Sushma (2007), jaiswal (2009), Dhanotiya (2012) and Rathod and Damodhar (2015).

The study further revealed that more than half of the total respondents (54.17%) were having medium annual income. This finding finds support with the work of Jaiswal (2009), Samdaria (2011), Dhanotiya (2012) and Singh (2017).

The result of the present study showed that higher percentage of farm woman(48.33%) had medium knowledge level.This findings finds support with the work of Tripathi (2007) ,Singh (2011) and Mishra (2013) .

The result of the present study showed that higher percentage of farm woman (37.50%) had medium social participation.This findings finds support

with the work of Jain (2007), Wahane (2010), Samdaria (2011) and Sharma (2015).

The result of the present study showed that higher percentage of farm woman (37.50%) had medium extension participation. This findings finds support with the work of Jain (2007), Daver (2009), Rana (2010) and Chouhan (2013).

## **5.2 Extent of participation of the farm women in different activities related to agriculture:**

The study showed that majority of the farm women (65.00) had medium participation in agricultural activities. This findings is supported by Prasad (2007), Humera et al. (2009), Baig (2010), Rathod et al., Bhairve (2013) and Mishra (2013), Tharani et al. (2016) and Yadav et al. (2018).

## **5.3 Relationship between personal and socio-economic characteristics of the farm women with participation in agricultural activities:**

The relationship between various characteristics of farm women like personal and socio-economic with the participation in agricultural activities worked out, which showed that age was found to be non-significantly associated with participation in agricultural activities, whereas education, caste, family type, family size , size of land holding, farming experience, occupation, annual income, knowledge level, social participation and extension participation were found to be significantly associated with extent participation of farm women in agricultural activities.

The age of farm women had non significant association with the extent of participation of farm women in agricultural activities. This leads to the acceptance of hypothesis Ho-1. The work of Tharani et al. (2016) and Barau and Oladeji (2017) are in line with the study.

The education level of farm women showed significant association with extent of participation of farm women in agricultural activities. Thus, the

hypothesis Ho-2 is rejected. This finding finds support from Khare (2007), Sharma (2008), Pal and Halder (2016) and Dudi and Meena (2017).

The caste of farm women had shown significant association with extent of participation in agricultural activities. As such hypothesis Ho-3 is rejected. This finding finds support from Samdaria (2011) and Bhairve (2013).

The family type and size of farm women had shown significant association with extent of participation in agricultural activities. As such hypothesis Ho-4 is rejected. This finding finds support from finding of Samdaria (2011), Bhairve (2013) and Dudi and Meena (2017).

The size of land holding had shown significant association with the extent of participation of farm women in agricultural activities. As such hypothesis Ho-5 is rejected. This finding finds support from finding of Sharma (2008) and Dudi and Meena (2017).

The farming experience had shown significant association with the extent of participation of farm women in agricultural activities. As a result of this, Ho-6 is rejected. This finding finds support from finding of Mishra (2013) and Chandravadia (2017).

Occupation of farm women had shown significant association with extent of participation in agricultural activities. As a result of this, Ho-7 is rejected. This finding finds support with Sharma (2008) and Bhairve (2013).

Annual income of farm women showed significant association with extent of participation in agricultural activities. In view of the finding, the hypothesis Ho-8 is rejected. The farm women belonging to medium annual income group. The finding is supported by the work of Dubey (2007), Sharma (2008), Warkade (2010) and Barau and Oladeji (2017).

Knowledge level of farm women had shown significant association with extent of participation in agricultural activities. In view of the finding, the hypothesis Ho-9 is rejected. This finding is supported by the work of Mishra (2013).

Social participation of farm women had shown significant association

With extent of participation in agricultural activities. In view of the finding, the hypothesis Ho-10 is rejected. This finding is supported by the work of Bhairve (2013) and Dudi and Meena (2017).

Extension participation of farm had shown significant association with extent of participation in agricultural activities. In view of the finding, the hypothesis Ho-11 is rejected. This finding is supported by the work of Mishra (2013) and Dudi and Meena (2017).

#### **5.4 Constraints experienced by the farm women in participating in agricultural activities:**

The major constraints perceived by the farm women in participation in agricultural activities. it is clear from the data that the farm women reported major constraints like lack of confidence(57.50%), higher time consumption for households work (54.17%), lack of family support (50.00%), lack of proper guidance (48.33%), lack of credit and capital, lack of marketing facilities (45.00%), lack of awareness(41.67%), high cost of farm material(39.17%),lack of knowledge about improved technology and lack of education (37.50%). The findings find support with the work of Singh and Sharma (2001), Singh *et al.* (2007), Tamilselvi and Kumar (2009), Singh (2011) and Tharani et al. (2016).

## **SUMMARY, CONCLUSIONS AND SUGGESTIONS**

### **FOR FURTHER WORK**

#### **6.1 Summary:**

In Indian society, women have a multi dimensional role. The largest number of women in India are engaged in farming operations either as cultivators or as supervisors or as agricultural laborers. They are the main decision makers and participants in various agricultural operations like seed sowing, transplanting, weeding, harvesting, threshing, application of manure, storage of seeds and food grains and post harvest home level processing. Apart from all these they also involve in bringing fodder from field, chaff cutting, feeding and cleaning of cattle, maintaining cattle shed, compost making etc. In view of all these things, woman is recognized as a partner of man in agriculture and try to make efforts of bringing new technology to the farmers because of intimate involvement in agriculture as a manager, decision maker and labourer. The status of farm women is improving day by day.

Their involvement in agricultural operations is besides their usual domestic work. Most of the contributions made by women to the farm sector also go unaccounted as they are not directly paid. The contribution of female labour is towards agricultural production is always more than the male labour in all types of landholding size. The participation of women greatly helps to supplement the family income but the dual role they play as income generator as well as homemaker.

Therefore, the farm women play a significant role in agriculture activities such as seeding, transplanting, weeding fertilizer application, plant protection, harvesting, processing, storage etc. Several of these operations are carried out by women only. Their involvement in agriculture varies from region to region and also among different ecological zones, farming system, caste, class and socio-economic status of families. For this purpose present should on “

Participation of farm women in agricultural activities in Tikamgarh District (M.P.)” has been conducted with the following objectives:

**Objectives of the study:**

1. To study the personal and socio-economic characteristics of the farm women.
2. To study the extent of participation of the farm women in different activities related to agriculture.
3. To find out the relationship between personal and socio-economic characteristics of the farm women with participation in agricultural activities.
4. To know the constraints experienced by the farm women in participating in agricultural activities.

The investigation was conducted in Tikamgarh block of Tikamgarh district which was selected purposively on account of the maximum number of rural women as compared to other blocks. Six villages were taken on random basis after preparation of list of villages and 20 farm women from each village were selected on random basis. Thus, a total of 120 respondents were considered for the study. The study was focused to know extent participation of farm women in agricultural activities in relation to personal and socio-economic variables like age, education, cast, family type, land holding, farming experience, occupation, annual Income, knowledge level, social participation, extension participation were taken as independent variable while extent of participation of women in agricultural activities were taken as dependent variables. The data were obtained through pre-tested structured schedule with the help of interview. The qualitative data were converted into quantitative form by giving suitable scores. The collected data were quantified, classified, tabulated and presented on the basis of frequencies and percentages. In order

to ascertain association between independent and dependent variables, the chi-square test was worked out.

## **6.2 Conclusions:**

The conclusions of the present study are presented here on the basis of objectives.

### **6.2.1 Personal and socio- economic characteristics of farm women:**

- Most of the farm women (48.33%) were in middle age group.
- The higher percentage of the farm women (38.33%) were educated up to primary level.
- The higher percentage of the farm women (41.67%) were other backward class category.
- More than half of the total respondents (58.33%) were from nuclear family group followed by joint family group.
- Most of the farm women (40.00%) were medium size of family group followed by large and small size of family group.
- Most of the farm women (45.83%) had small size of land holding.
- The higher percentage of the farm women (45.83%) were medium farming experience (5 – 10 years) group followed by high and low farming experience group.
- The higher percentage of the farm women (37.51%) had in solely farming occupation category.
- The higher percentage of the farm women (54.17%) had medium annual income group.
- The higher percentage of the farm women (48.33%) had medium knowledge level.

- The higher percentage of the farm women (37.50%) had medium social participation group.
- The higher percentage of the farm women (37.50%) had medium extension participation .

### **6.2.2 Extent of participation of the farm women in different activities related to agriculture:**

It may be concluded that higher percentage of (65%) farm women had medium extent of participation in agricultural activities. The farm activities in which farm women participated at high level were weeding (mean score 1.54) followed by harvesting (mean score 1.47),Winnowing (mean score 0.85),seed selection (mean score 0.79 ), Sowing time of seed (mean score 0.79 each) manure and fertilizer application (mean score 0.75),Plant protection (mean score 0.68), Irrigation (mean score 0.58), Storage (mean score 0.29), preparatory of land and marketing (mean score 0.26each) and seed treatment (mean score 0.15).

### **6.2.3 Relationship between personal and socio-economic characteristics of the farm women with participation in agricultural activities:**

Age had non-significant association with extent of participation of farm women in agricultural activities. Whereas education ,caste, family type, size of land holding, farming experience, occupation, annual income ,knowledge level ,social participation and extension participation had significant association with extent of participation of farm women in agricultural activities.

### **6.2.4 Constraints experienced by the farm women in participating in agricultural activities:**

The major constraints perceived by the farm women in participation in agricultural activities were lack of confidence(57.50), higher time consumption for households work (54.17), lack of family support(50.00), lack of proper guidance(48.33), lack of credit and capital, lack of marketing facilities(45.00),

lack of awareness(41.67), high cost of farm material(39.17) lack of knowledge about improved technology and lack of education (37.50).

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## CURRICULLUM VITAE

The author of this thesis **Kajal Kumari Chauhan D/o Shri Udal Singh Chauhan** as born on 4<sup>th</sup> Dec, 1994 at Tikamgarh, Dist. Tikamgarh (M.P.). She passed the High School Examination in the year 2010 with 76.4 percent marks and Higher Secondary Examination in the year 2012 acquiring 88.4 percent marks.



Then joined JNKVV, Jabalpur University at Faculty of Agriculture had completed her B.Sc. (Ag.) from Tikamgarh, (M.P.) during the year 2016 with 7.6 OGPA out of 10.00 point scale.

After completing graduation, She took admission for M.Sc.(Ag.) in College of Agriculture, Jabalpur in the year 2016 specialization in Extension Education. She has successfully completed all the courses requirement for master's degree from Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur (MP) 482004 during the year 2018 with... per cent OGPA out of 10.00 scale.

For the fulfillment of the master's degree programme she was allotted with a research problem entitled "**Participation of farm women in agricultural activities in Tikamgarh district (M.P.)**" This is duly completed by her and presented in the form of this thesis.



**Data Collection**



**Data Collection**

मध्यप्रदेश के टीकमगढ़ जिले के टीकमगढ़ विकासखण्ड में कृषक महिलाओं का  
कृषि कार्यों में योगदान का अध्ययन।

साक्षात्कार अनुसूची

खण्ड - 'अ'

मार्गदर्शक

डॉ. ए.के. पाण्डे

प्राध्यापक

विस्तार शिक्षा विभाग

ज.ने.कृ.वि.वि., जबलपुर

शोधकर्ता का नाम

काजल कुमारी चौहान

एम.एस.सी. (कृषि)

विस्तार शिक्षा विभाग

ज.ने.कृ.वि.वि., जबलपुर

गांव का नाम:.....

कृषक महिला का नाम:.....

विकासखण्ड का नाम: .....

जिला का नाम:.....

1. उम्र .....वर्ष में

2. शिक्षा -

क्रं.	शैक्षणिक स्तर	
(i)	अशिक्षित	
(ii)	केवल पढ़ सकते हैं।	
(iii)	केवल पढ़ और लिख सकते हैं।	
(iv)	प्राथमरी स्तर तक	
(v)	मिडिल स्तर तक	
(vi)	हाई स्कूल स्तर	
(vii)	हायर सेकेण्डरी स्तर	
(viii)	स्नातक / स्नाकोत्तर	

3. कृषया अपनी जाति वर्ग के बारे में बताइए।

क्रं.	कथन	
(i)	अनू. जनजाति	
(ii)	अनू. जाति	
(iii)	अन्य पिछड़ा वर्ग	
(iv)	सामान्य	

4. परिवार का आकार किस प्रकार का है? बताये

अ.

1. एकांकी परिवार .....

2. संयुक्त परिवार .....

ब. परिवार में सदस्यों की संख्या बताये।  
 पुरुष..... वयस्क ..... अवयस्क.....  
 महिला.....वयस्क ..... अवयस्क.....  
 कुल..... वयस्क..... अवयस्क.....

5. भूमि का रकबा : (आपके पास स्वयं की खेती योग्य कितनी भूमि है ?)

- (i) खेती योग्य कुल भूमि (हे.) .....
- (ii) सिंचित भूमि(हे.) .....
- (iii) असिंचित भूमि (हे.) .....
- (iv) पड़ती भूमि (हे.) .....

6. कृपया आप अपनी कृषि कार्यों के अनुभव के बारे में बताइए।

- (i) 5 वर्ष से कम
- (ii) 5.1-10 वर्ष से कम
- (iii) 10 वर्ष से अधिक

7. कृपया आप बताइए आपका द्वितीयक व्यवसाय क्या है।

क्र.	स्रोत	आय रुपये में
1	मजदूरी	
2	दुकान	
3	अन्य	
	1.....	
	2.....	
	3.....	

8. वार्षिक आय :- कृपया आप बताइए की विभिन्न स्रोतों द्वारा आपकी कितनी वार्षिक आय हो जाती है।

क्र.	स्रोत	आय रुपये में
1	कृषि कार्य द्वारा	
2	मजदूरी द्वारा	
3	स्वयं के व्यवसाय द्वारा	
4	ग्रामीण हस्तकला द्वारा	
5	अन्य	

9. कृपया कृषि गतिविधियों की जानकारियों के बारे में बताइए।

क्र.	कथन	जानकारी का स्तर		
		पूर्ण	अपूर्ण	नही
(i)	भूमि की जुताई में जानकारी			
(ii)	बीज के चुनाव में जानकारी			
(iii)	बीज उपचार में जानकारी			
(iv)	बुवाई में जानकारी			
(v)	खाद एवं उर्वरकों में जानकारी			
(vi)	सिंचाई में जानकारी			
(vii)	निंदाई एवं गुड़ाई में जानकारी			
(viii)	पौध संरक्षण में जानकारी			
(ix)	फसल की कटाई में जानकारी			
(x)	गहाई जानकारी			
(xi)	फसलों के भण्डारण में जानकारी			
(xii)	फसलों की ब्रिकी में जानकारी			

10. सामाजिक भागीदारी - क्या आप ग्रामीण संस्था या संगठन के सदस्य या पदाधिकारी हैं। बताइये।

क्र.	संस्था का नाम	बैठकों में भागीदारी				
		सदस्य /पद	अत्यधिक	हमेशा	कभी-कभी	कभी-नही
(i)	ग्राम पंचायत					
(ii)	सहकारिता संस्था					
(iii)	महिला मंडल					
(iv)	ग्राम विकास समिति					
(v)	शाला विकास समिति					
(vi)	अन्य 1. 2. 3.					

विस्तार गतिविधियाँ :-

11. कृषया आप अपनी कृषि विस्तार गतिविधियों में सहभागिता बताइए।

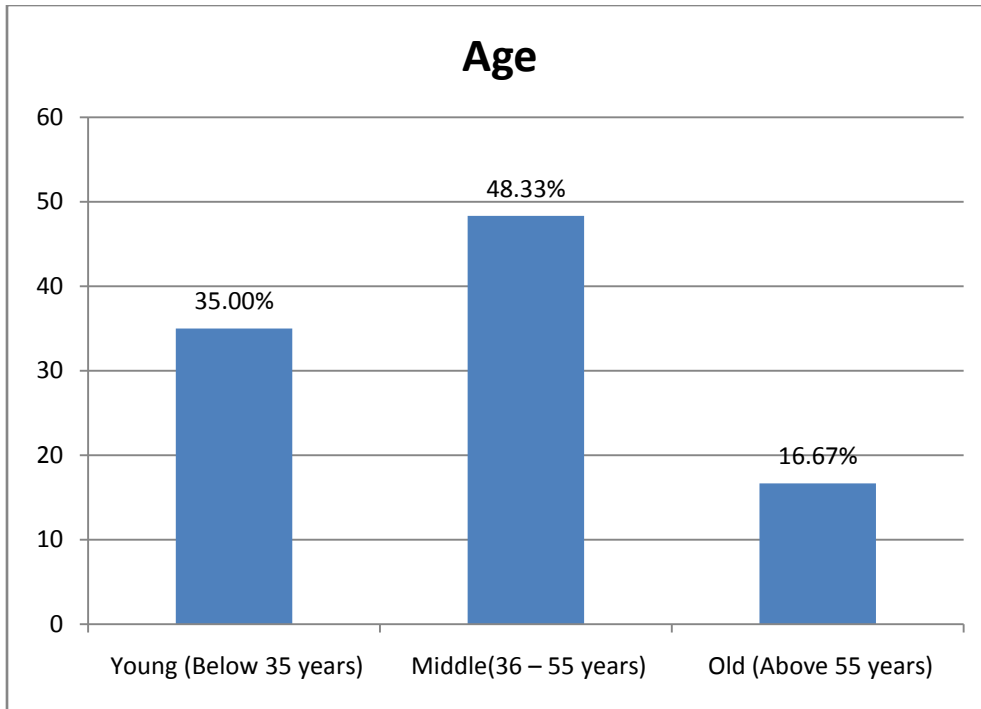
क्र.	कथन	सहभागिता की दर		
		हमेशा	कभी-कभी	कभी नहीं
(i)	क्या आपके खेत पर कोई प्रदर्शन डाला गया है।			
(ii)	क्या आप कृषि विस्तार अधिकारी से सीधे चर्चा करते हैं।			
(iii)	क्या आप प्रसार बैठकों में भाग लेते हैं।			
(iv)	क्या आपने किसान मेला में भाग लिया है।			
(v)	क्या आपने कृषि प्रदर्शनी देखी है।			
(vi)	क्या आप कृषि संबंधी लेख पढ़ते हैं।			

12. कृषक महिलाओं की कृषि क्रियाओं में सहभागिता।

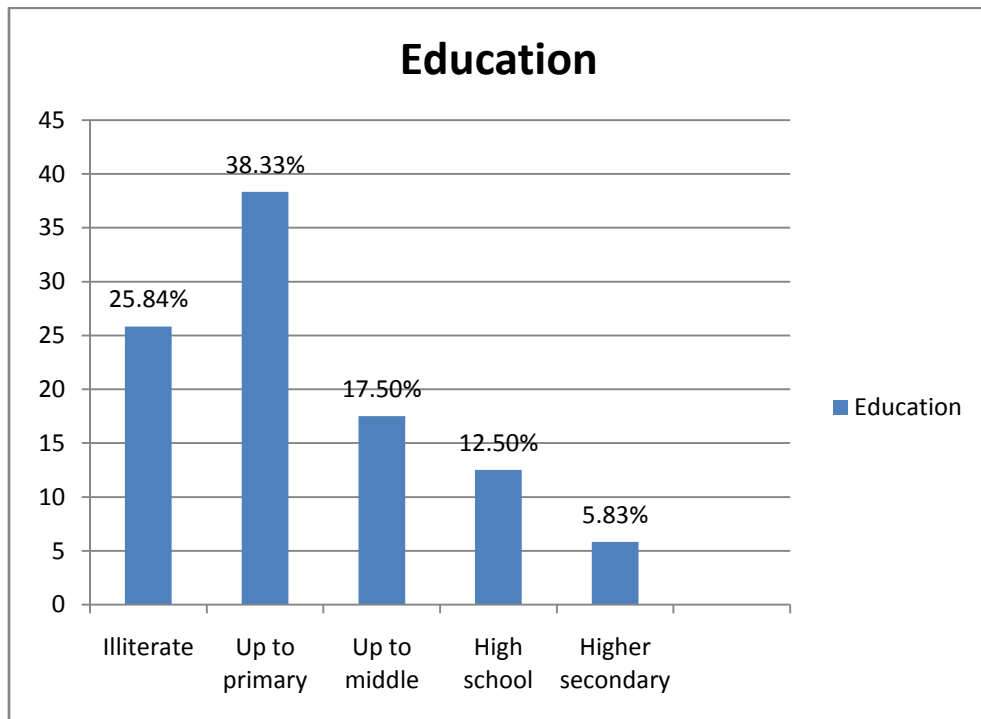
क्र.	कथन	सहभागिता की दर		
		हमेशा	कभी-कभी	कभी नहीं
(i)	भूमि की जुताई में			
(ii)	बीज के चुनाव में			
(iii)	बीज उपचार में			
(iv)	बुवाई में			
(v)	खाद एवं उर्वरकों में			
(vi)	सिंचाई में			
(vii)	निंदाई एवं गुड़ाई में			
(viii)	पौध संरक्षण में			
(ix)	फसल की कटाई में			
(x)	गहाई			
(xi)	फसलों के भण्डारण में			
(xii)	फसलों की ब्रिकी में			

13. कृषक महिलाओं की कृषि क्रियाओं में सहभागिता में आने वाली बाधाएँ।

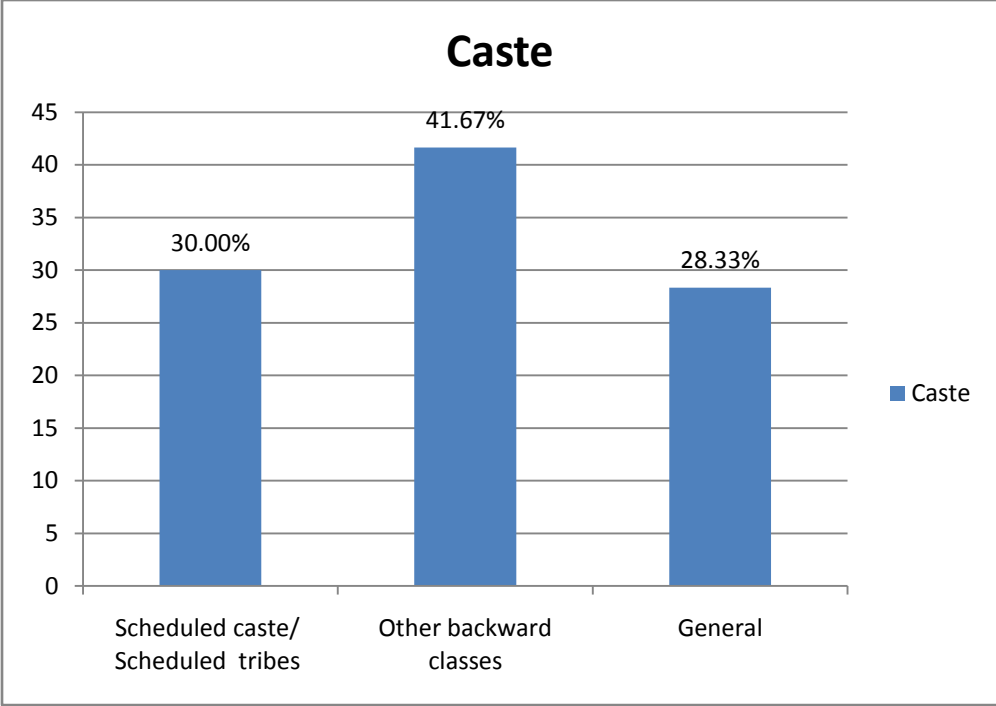
क्र.	कथन	समस्याएँ
(i)	भूमि की जुताई में	1. 2. 3.
(ii)	बीज के चुनाव में	1. 2. 3.
(iii)	बीज उपचार में	1. 2. 3.
(iv)	बुवाई में	1. 2. 3.
(v)	खाद एवं उर्वरकों में	1. 2. 3.
(vi)	सिंचाई में	1. 2. 3.
(vii)	निंदाई एवं गुड़ाई में	1. 2. 3.
(viii)	पौध संरक्षण में	1. 2. 3.
(ix)	फसल की कटाई में	1. 2. 3.
(x)	गहाई	1. 2. 3.
(xi)	फसलों के भण्डारण में	1. 2. 3.
(xii)	फसलों की ब्रिकी में	1. 2.



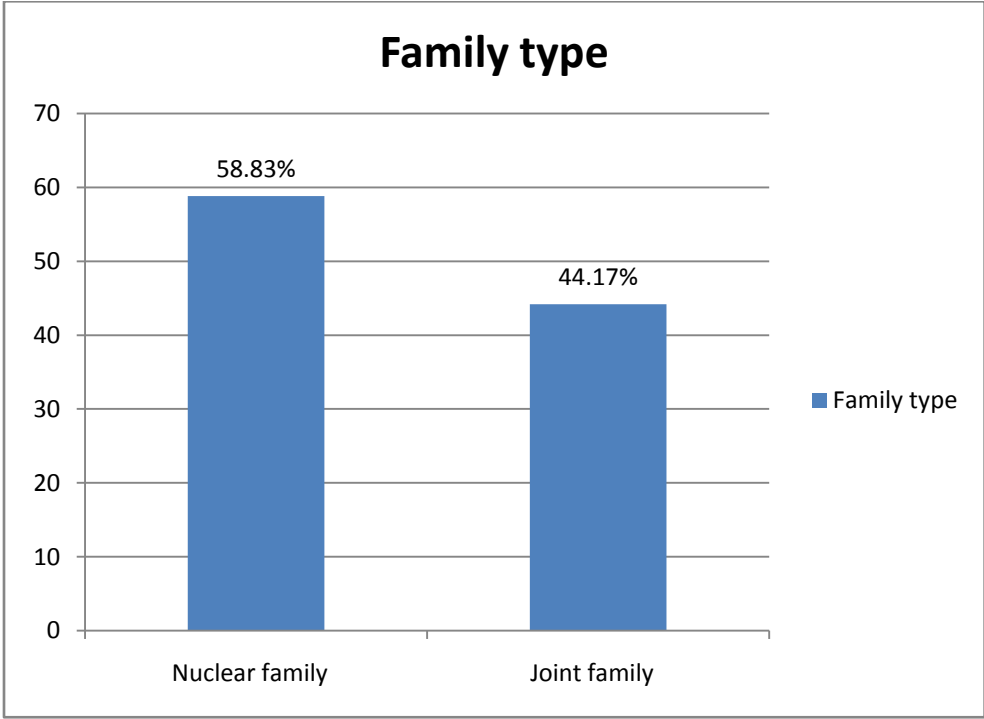
**Fig. No.4.1: Distribution of farm women according to their age.**



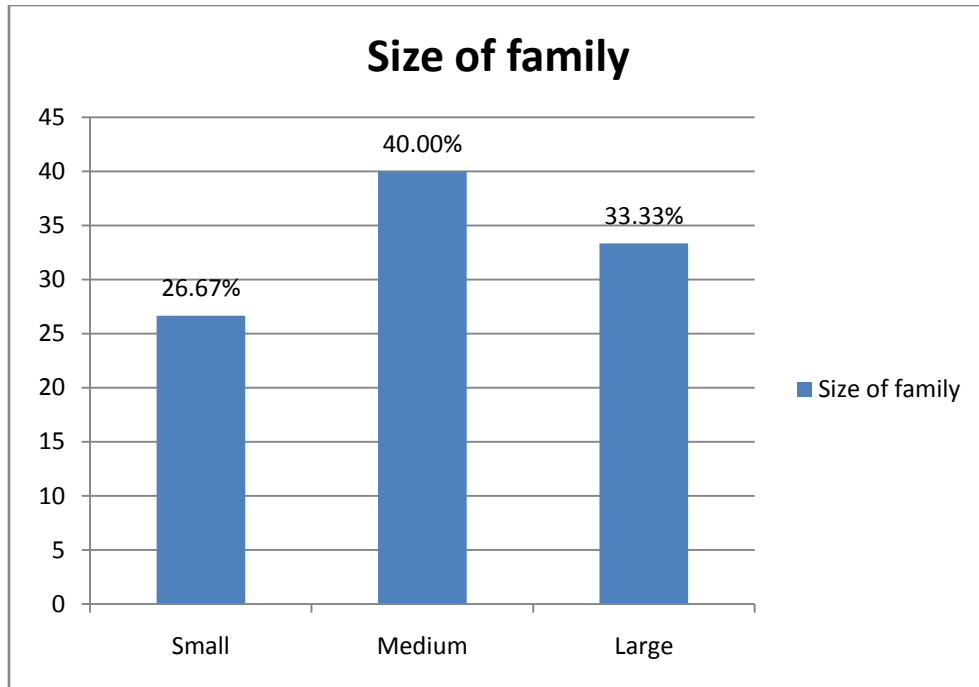
**Fig.No.4.2: Distribution of farm women according to their Education:**



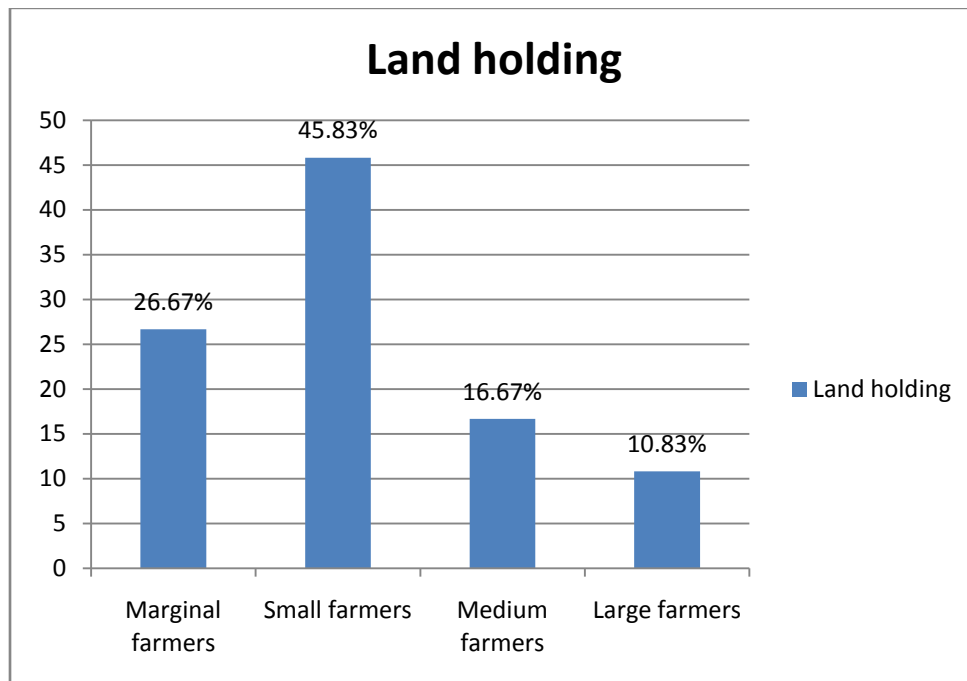
**Fig.No.4.3: Distribution of farm women according to their caste.**



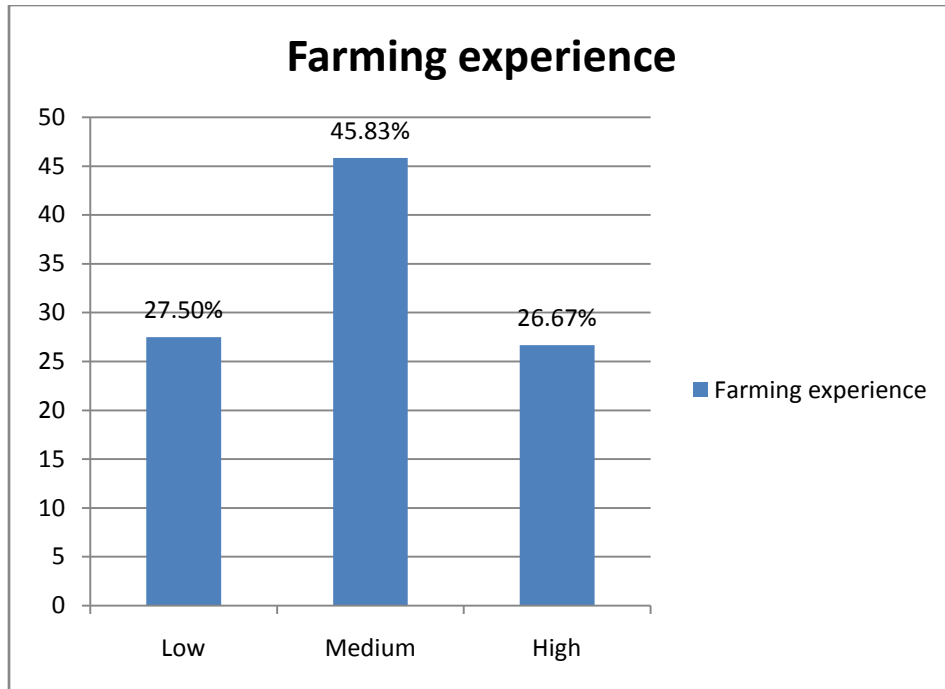
**Fig.No.4.4: Distribution of farm women according to their Family type.**



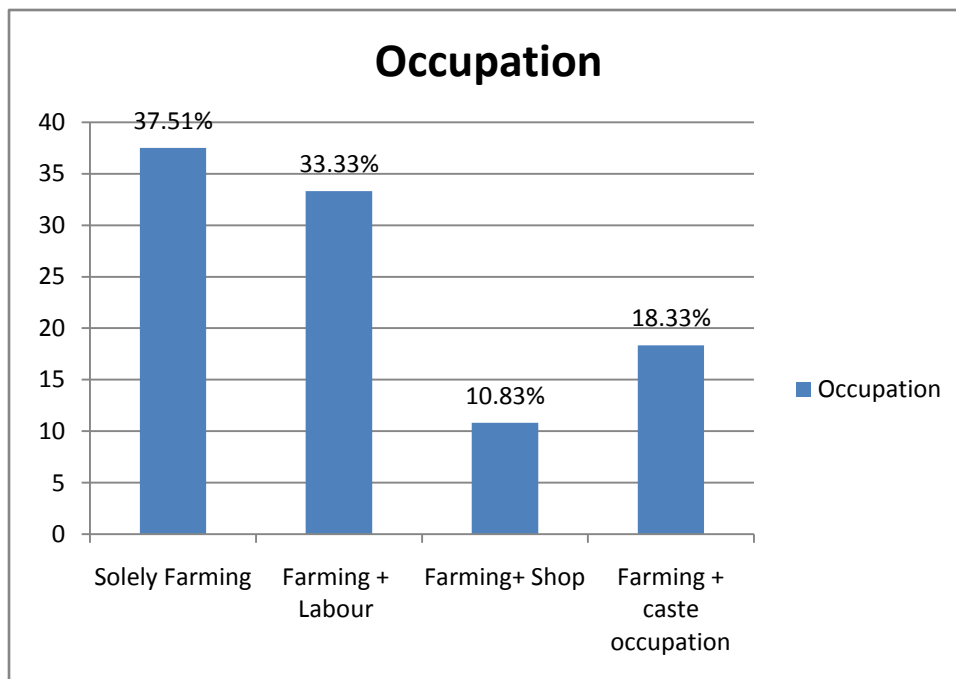
**Fig .No.4.5 : Distribution of farm women according to their Size of family.**



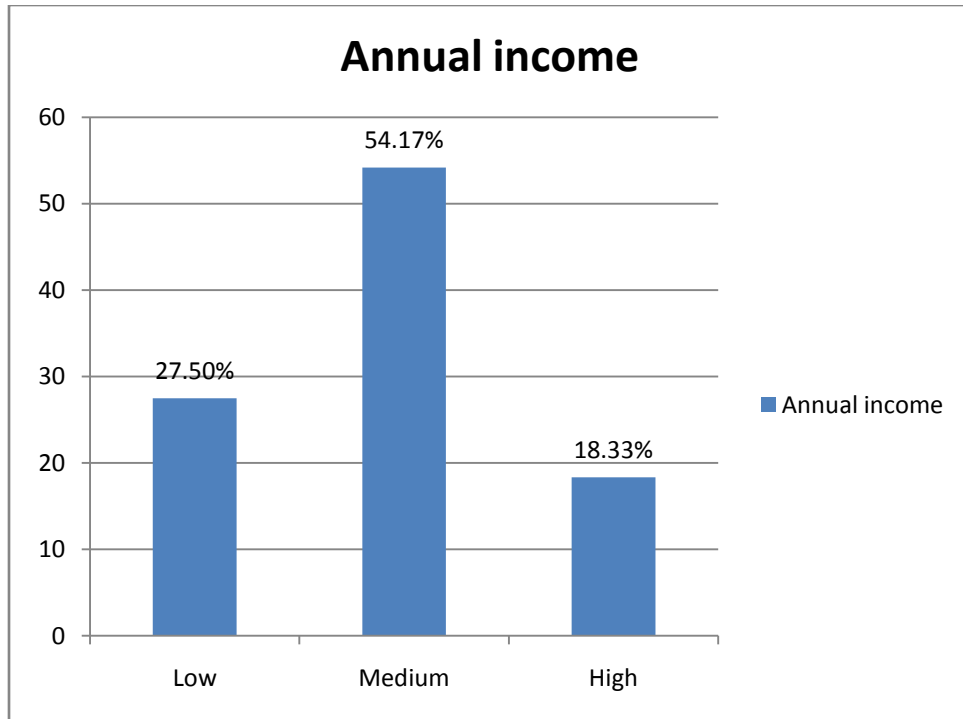
**Fig. No.4.6 Distribution of farm women according to their size of land holding.**



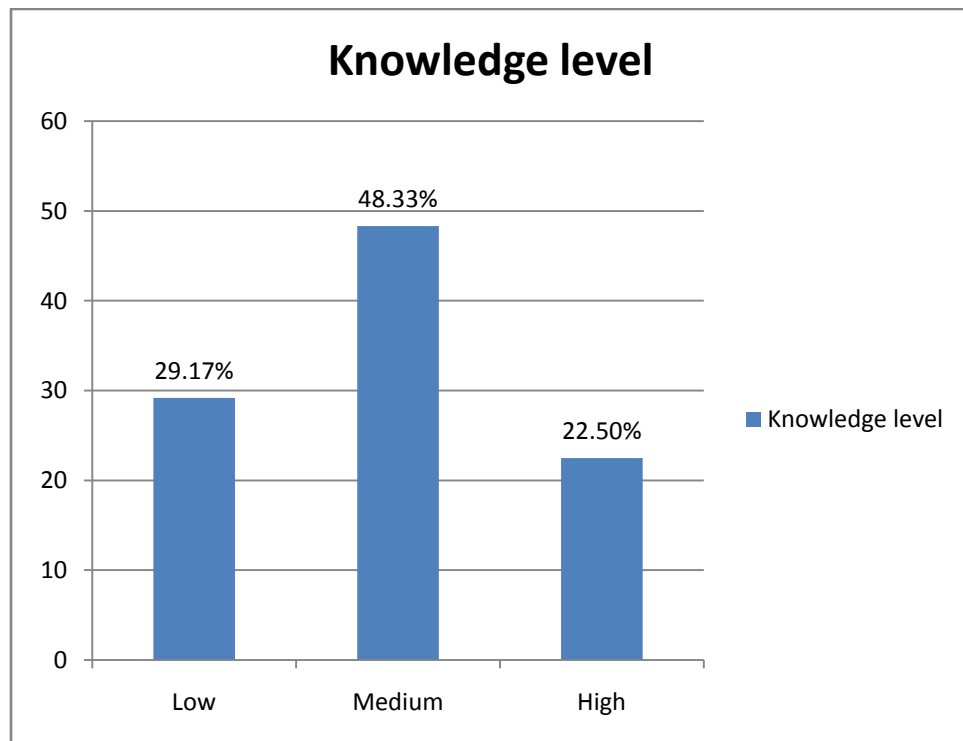
**Fig No.4.7: Distribution of farm women according to their Farming experience.**



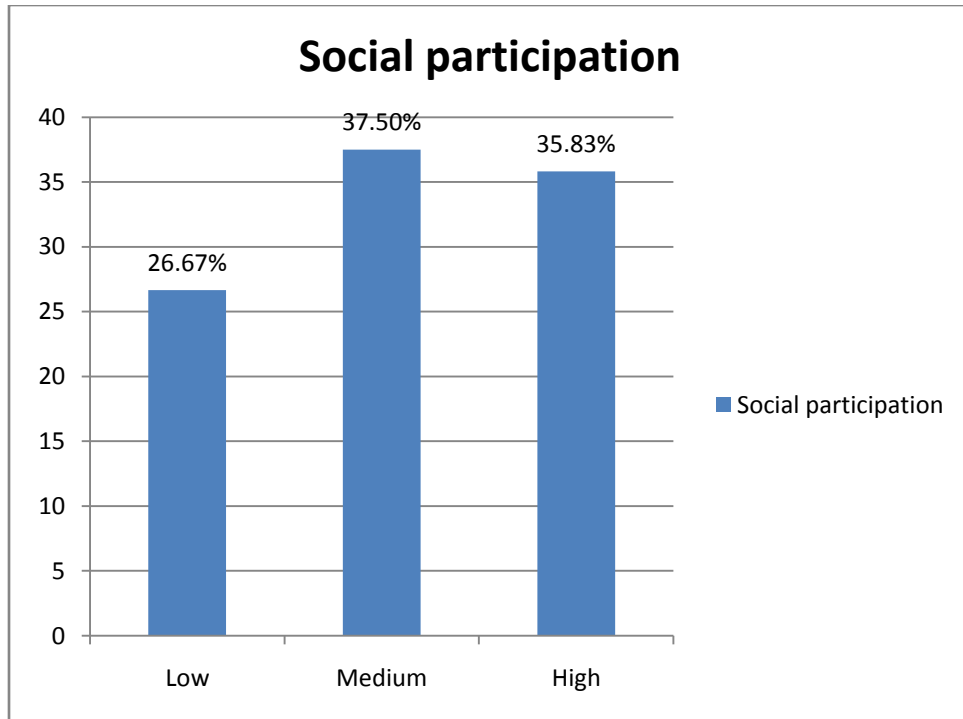
**Fig. No.4. 8: Distribution of farm women according to their Occupation.**



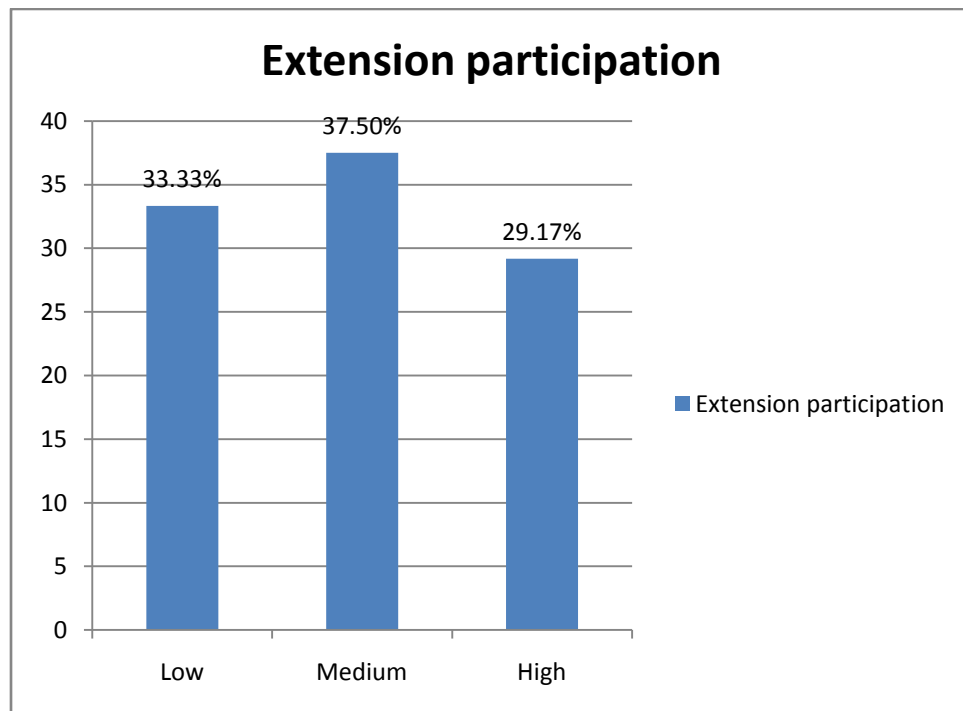
**Fig. No.4. 9: Distribution of farm women according to their annual income.**



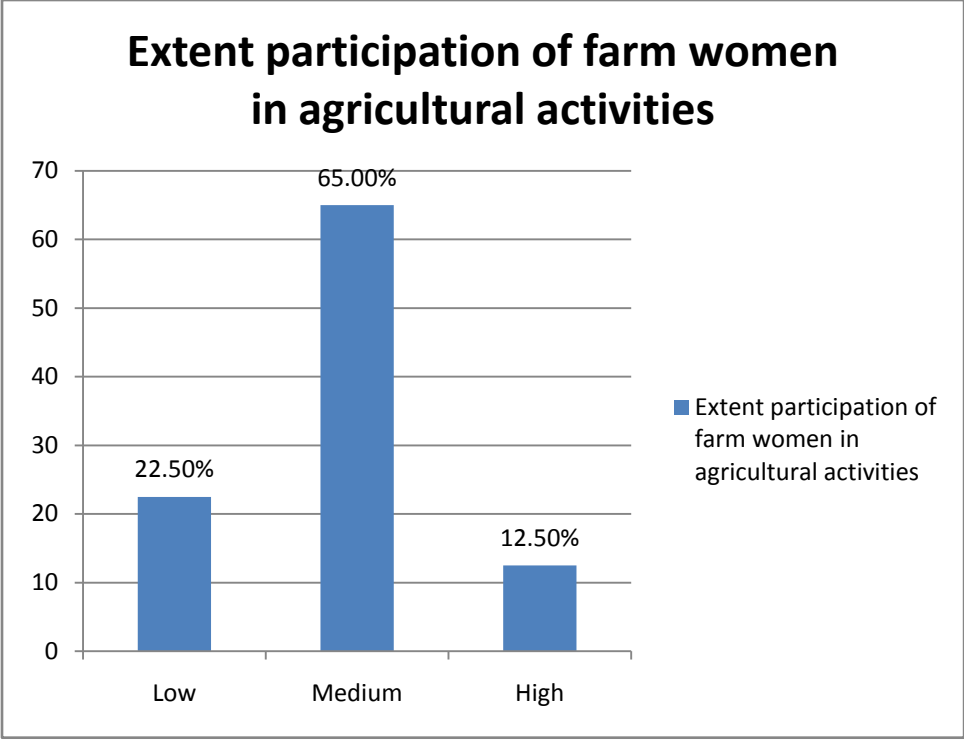
**Fig No.4.10 : Distribution of farm women according to their knowledge level.**



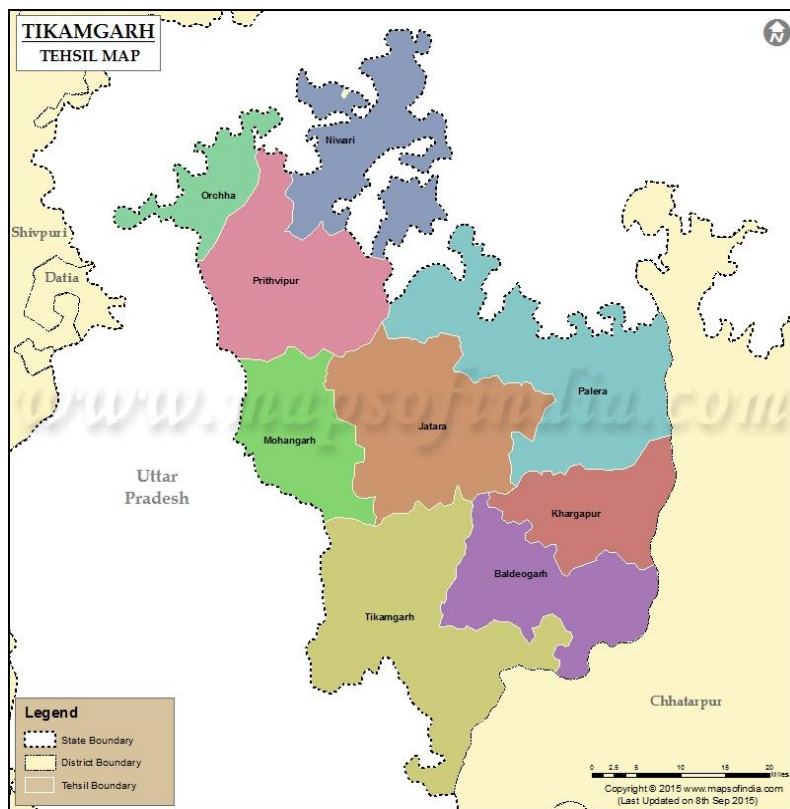
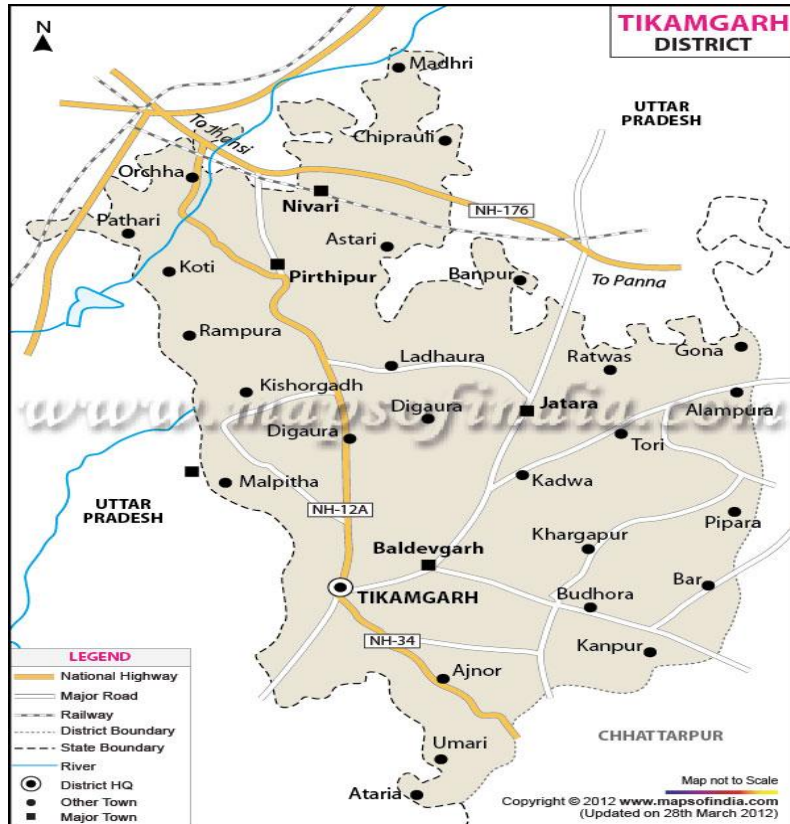
**Fig No.4.11: Distribution of farm women according to their social participation.**



**Fig No.4.12: Distribution of farm women according to their extension participation.**



**Fig.4.13: Distribution of farm women according to extent of participation in different activities related to agriculture.**



**Map of Tikamgarh district (M.P.)**

## PART I OF ABSTRACT

1. Title of the thesis : “Participation of Farm women In Agricultural Activities In Tikamgarh District (M.P.).”
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10. Number of words in the abstract :

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## **ABSTRACT**

The present study entitled “Participation of Farm women In Agricultural Activities In Tikamgarh District (M.P.)” was focused to know the participation of farm women in agricultural activities. The total sample size consists of 120 farm women selected from 6 villages of Tikamgarh block of Tikamgarh district. The primary data were collected from the respondents through survey and personal interview method.

The study reveals that higher percentage of the farm women were belonged to middle age group, acquired primary school education, belonged to other backward class, belonged to nuclear family, belonged to medium family size, having small size of land holding, having medium farming experience, belonged to farming group, having medium annual income, having medium knowledge level, medium social participation ,medium extension participation and medium extent of participation in agricultural activities.

The variables like education level, caste , family type and size, size of land holding, farming experience, occupation, annual income, knowledge level, social participation, extension participation, were found to have significant association with extent of participation in agricultural activities. While the variables like age were found to have non-significant association with extent of participation in agricultural activities. The major constraints perceived by farm women were lack of confidence, higher time consumption for house hold work and lack of family support.

**Name and signature of the student  
advisor**

**Name and signature of the**