

# **ENTREPRENEURIAL BEHAVIOUR OF TURMERIC GROWERS IN HINGOLI DISTRICT**

**BY**

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PARBHANI – 431 402 (M.S.), INDIA.**

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COLLEGE OF AGRICULTURE,  
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PARBHANI - 431 402 (M.S.), INDIA.**

**2019**

## CANDIDATE'S DECLARATION

*I hereby declare that the dissertation  
Or part thereof has not been  
Previously submitted by me  
For a degree of any  
University or  
Institute*

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## **CERTIFICATE I**

This is to certify that the dissertation entitled **“ENTREPRENEURIAL BEHAVIOUR OF TURMERIC GROWERS IN HINGOLI DISTRICT”** submitted by **Mr. SHENDE SANTOSH SUBHASH** to the Vasantao Naik Marathwada Krishi Vidyapeeth, Parbhani in partial fulfillment of the requirements for the degree of **MASTER OF SCIENCE (Agriculture)** in the subject of **EXTENSION EDUCATION** is record of original and bonafide research work carried out by him under my guidance and supervision. It is of sufficiently high standard to warrant its presentation for the award of the said degree.

I also certify that the dissertation or part thereof has not been previously submitted by him for a degree of any university.

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Research Guide and

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## **CERTIFICATE II**

This is to certify that the dissertation entitled **“ENTREPRENEURIAL BEHAVIOUR OF TURMERIC GROWERS IN HINGOLI DISTRICT”** submitted by **Mr. SHENDE SANTOSH SUBHASH** to the Vasantao Naik Marathwada Krishi Vidyapeeth, Parbhani in partial fulfillment of the requirement for the degree of **MASTER OF SCIENCE (Agriculture)** in the subject of **EXTENSION EDUCATION** has been approved by the Student’s Advisory Committee after viva voice examination in collaboration with the External Examiner.

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*Place : Parbhani*

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*Shende S.S.*

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# INTRODUCTION

## CHAPTER-I

### INTRODUCTION

Turmeric (*Curcuma longa* L), the ancient and sacred spice of India known as ‘Indian saffron’ is an important commercial spice crop grown in India. The word “turmeric” is derived from the Latin word “*terra merita*” which means “meritorious earth” referring to the colour of ground turmeric. Turmeric is popular in different names in different local languages in India. “Haldi”, a word derived from Sanskrit word “Haridra”, is commonly used in North India for turmeric. In South India, it is known in the name of “Manjal”, a word obtained from ancient Tamil literatures

Turmeric (*Curcuma longa* L.) is a well-known medicinal plant of family *Zingiberaceae*. It is used in diversified forms as a condiment, flavouring and coloring agent and as a principal ingredient in Indian kitchen as a curry powder. It has anti cancer and anti viral activities and hence finds use in the drug industry and cosmetic industry. 'Kum-kum', popular with every house wife, is also a by-product of turmeric. It finds a place in offerings on religious and ceremonial occasions.. India is the largest producer of turmeric in the whole world. The use of turmeric in India was dated 4000 years back as evident from Vedic culture. It might have reached to China in 700AD, then to East Africa by 800AD and later to West Africa.

India, the land of spices, had a pre-eminent position in the production of condiments and accounted for about 35.00 per cent of global trade. The annual production of horticulture crop 2017-2018 in India was 311714.220 thousand MT. while area was about 25431.405 thousand ha the annual production of spices during 2017-2018 in India was 8124 thousand MT. while area was about 3878 thousand ha. (Indian National Horticulture Board) and Area Production of turmeric during 2018-2019 (1<sup>st</sup> Advance Estimate) area 248 thousand ha and production is 1149 thousand MT.

Among the spices, turmeric is one of the most important and ancient spices of India and traditional item of export. India is the largest producer and exporter country of turmeric crop out of the total production of the world. Principle states Andra Pradesh, Karnataka, Orissa, Tamilnadu, Kerala and Maharashtra. Out of annual production, 93.00 per cent is consumed within country and remaining 7.00 per

cent is exported.

In Maharashtra the turmeric is mainly grown in districts Sangli, Satara Kolhapur, Hingoli, Parbhani and Nanded.

Among spices, turmeric is ranked second in export earning in India. Turmeric from India is mostly exported as fresh and dried whole root (rhizome), in powdered form, and processed form, such as oil and oleoresin, mainly to UK, USA, Japan, the Netherland, Iran, UAE, Bangladesh, France and South Africa. India has monopoly in turmeric trade at world level.

Before turmeric can be used, the turmeric rhizomes must be processed. Rhizomes are boiled or steamed to remove the raw odor, gelatinize the starch, and produce a more uniformly colored product. In the traditional Indian process, rhizomes were placed in pans or earthenware filled with water and then covered with leaves and a layer of cow dung. The ammonia in the cow dung reacted with the turmeric to give the final product. For hygienic reasons, this method has been discouraged. In present-day processing, rhizomes are placed in shallow pans in large iron vats containing 0.05–0.1% alkaline water (e.g., solution of sodium bicarbonate). The rhizomes are then boiled for between 40–45 minutes (in India) or 6 hours depending on the variety. The rhizomes are removed from the water and dried in the sun immediately to prevent overcooking. The final moisture content should be between 8 per cent and 10 per cent (wet basis). When finger tapping of the rhizome produces a metallic sound, it is sufficiently dry. The dried rhizomes are polished to remove the rough surface. The powder maintains its coloring properties indefinitely, although the flavor may diminish over time. Protecting the turmeric powder from sunlight retards the rate of deterioration.

Processing of farm products leads to enhanced form-utility. Processing helps in the marketing of farm products by making them more edible, palatable and attractive. In addition, it adds to convenience in use, storage and transit. It helps extend the availability of the product over a longer period of time. The government is encouraging the processing industry by providing tax exemptions on processed products, subsidies on packing costs, assured supply of power and by the creation of 'Processing Parks' where all infrastructural requirements are provided by the government at a subsidized cost. Turmeric, after harvest, undergoes the following

processing operations: **Cleaning:** Harvested turmeric rhizomes (75-80%) are cleaned by fresh water under pressure for removal of soil and other foreign matter.

**Curing:** Cleaned rhizomes are submerged in hot water in tins and boiled uniformly. Cured rhizomes are then poured to a bamboo basket to drain the water and dried in yards. This process gives attractive colour and characteristic aroma to turmeric.

**Boiling** kill the growth of fresh rhizomes, eliminates the odor, reduces the time of drying, ensures even distribution of colour and gives better quality product by gelatinization of starch in rhizomes.

**Drying:** Sun drying takes 12-15 days, till it becomes thoroughly hard and brittle, and can be broken with finger pressure with a metallic sound. The moisture content of the dried turmeric is kept at 8%-10% for better storage. Artificial mechanical drying using cross flow heated air dryers at 65 degrees centigrade is also used and found to provide best products, particularly for sliced turmeric, giving a brighter coloured product than the sun dried material.

**Polishing:** Polishing of rhizomes is done by rubbing with hand under several folds of gunny cloth or using a polishing drum.

**Colouring:** To impart uniform bright yellow colour to the turmeric, the polished rhizomes are treated with an emulsion or mixture of turmeric powder and alum under continuous shaking in a basket.

**Grading:** Grading refers to the process of 'sorting of products into different lots on the basis of similar quality'. Turmeric is graded into bulbs and fingers in different fractions, based on their size. It is done either manually, which is time consuming or using a mechanical reciprocating type grader. Grading for both rhizomes and turmeric powder is performed as per India's Agmark Standards.

**Milling:** Usually, turmeric is milled on home scale in flour mills. Milling is done in two stages; namely breaking into small pieces and powdering them to the desired fineness.

**Packaging:** Packaging is defined by Acharya and Agarwal as the 'putting of content in the market in a size and pack which are convenient for the buyers'. Well cured turmeric is kept in double burlap new gunny bags which are

properly fumigated prior to packaging. Turmeric powder is packed in fibre board drums, multi wall bags and tin containers.

**Storage:** Cured turmeric bags are stored in a pit made on a raised ground with sides and the bottom padded with a thick layer of paddy straw.

**Marketing:** Turmeric is marketed through terminal markets located in producing states and other major markets.

In order to ascertain all these things present investigation was carried out with following specific objectives;

1. To study the profile of the turmeric growers
2. To study the entrepreneurial behavior of the turmeric growers
3. To study the relationship between profile and entrepreneurial behavior of turmeric growers
4. To study the constraints faced by turmeric growers
5. To ascertain the suggestions to overcome the constraints of turmeric growers

### **Scope of study**

In today's changing scenario, skills in entrepreneurial development have transformed and have become important. Entrepreneurship is most needed component for the agriculture development. Entrepreneurship is the central force driving economic activity and prime catalyst in socio economic development. Hence, it is necessary component for the development of nation .Development considering these facts it felt necessary to conduct the study on entrepreneurial behavior of turmeric growers. Many entrepreneurial opportunities are emerging in various fields such as computers, electronics, fashion, medicine, agriculture food technology etc.

During 1970's entrepreneurship was recognized as a vehicle for economic growth and industrial development and a potential solution to problems of underemployment and unemployment.

Chatterjee (1992) define an entrepreneur as one who create something new, undertakes risk, organized production and handle the economic uncertainty. He termed entrepreneurship as mission and entrepreneur as missionary.

The findings of this study may help the government and policy makers to know the entrepreneurial behavior of farmers, the relationship between socio-economic characteristics with entrepreneurial behavior and reasons for cultivating turmeric this study is use full for turmeric growers.

As the present study was confined to only 150 turmeric growers selected from 10 villages of Basmat and Aundha tahsil of Hingoli district in Maharashtra state. Its findings would have limited implications. The findings of the study might be applicable to the localities having environmental, ecological and social environment as that of Hingoli district.

Therefore, for more generalization similar studies at different localities with larger sample size needed to be undertaken. In short the present investigation has been exploratory nature and needs to be replicated for wider adaptability and generalization of the findings.

### **Limitations of the study**

The study was based on the responses of the turmeric growers, which may not be free from bias, despite of the efforts taken by the researcher, to get objective responses as possible. The present study was conducted in Hingoli district of Marathwada region of Maharashtra state. Therefore generalization is based on limited area of sample.

As the researcher has to depend up on the recalled memory for information given by farmers, the reliability of information given by the respondents has also a limitation of the study. Application of results in another area will however, depend up on the similarity of ecological system, socio- economic and environmental condition of farmers.

### **Organization of the study**

This dissertation has been divided into seven chapters. The first chapter deals with a brief introduction, objectives and limitations of the study. The second chapter is concerned with review of literature. Third chapter related with methodology. Results and discussion are given in fourth chapter and fifth chapter contain summary and conclusion. Sixth chapter is devoted to implications

# REVIEW OF LITERATURE



## CHAPTER-II

### REVIEW OF LITERATURE

The review of literature is an essential aspect which helps the researcher to get acquaintance with the subject matter and channelized his efforts in desirable direction. The review of literature is always necessary to compare the findings of the study undertaken by the previous research workers and to take the decisions on his own findings for drawing proper inferences.

The references having direct, indirect or derived application with the subject of the present study have been reviewed and presented in this chapter under the following heads.

1. To study the profile of the turmeric growers
2. To study the entrepreneurial behavior of the turmeric growers.
3. To study the relationship between profile and entrepreneurial behavior of turmeric growers.
4. To study the constraints faced by turmeric growers.
5. To ascertain the suggestions to overcome the constraints of turmeric growers.

#### **1. Profile of the turmeric growers**

##### **1.1 Age**

Palve (2003) studied the entrepreneurial behaviour of the nursery owners in and around Pune city and reported less than half of the nursery owners (41.66%) belonged to middle age group ranging from 36 to 59 yrs.

Pandeti (2005) studied the entrepreneurial behaviour of farmers Raichur district of Karnataka and reported that majority (46.67%) of farmers belongs to middle age group.

Ravi (2007) conducted a study on entrepreneurial behavioural characteristics of SC and ST farmers of Gulbarga district and reported 43.12 per cent of SC and ST farmers belonged to middle age group, where as 32.51 per cent of them belonged to young age group. Thus, only 24.37 per cent of SC and ST farmers belonged to old age group.

Sasane *et al.* (2010) reported that 38.18 per cent of respondent were belonging to middle age group followed by old age group 34.55 per cent.

Kumar (2011) conducted a study on entrepreneurial qualities and adoption behaviour of banana growers in Gulbarga district of Karnataka and reported Majority (60.83%) of banana growing farmers belonged to middle age group.

Sasane *et al.* (2011) reported that 50.00 per cent of the farmers belonged to the age group up to 35 years, while 31.67 per cent of the farmers belonged to age group 36 to 55 years. Only 18.33 per cent of them were more than 56 years age.

Kanwat (2011) reported that majority 53.33 per cent of the respondents where in 'middle' age group, while 33.33 per cent of the respondents where in 'old' age group and remaining 13.34 per cent of them where in 'young' age group.

Kaushalkumar (2012) studied entrepreneurial behaviour of pineapple growers and he reported majority 54.17 per cent of the respondents belong to middle age group, where as 04.70 per cent belong to young and 11.66 per cent old age group respectively.

Thakare (2013) studied entrepreneurial behaviour of floriculturists and he reported less than half of the nursery owners 46.67 per cent belonged to middle age group ranging from 36 to 50 yrs.

Tekale and Gavit (2013) depicted that majority of the respondents 64.00 per cent belonged to middle age group (36 to 50 years).

Soni *et al.* (2014) reported that the majority of farmers 61.00 per cent where in middle age group followed by 26.00 per cent of farmers belonging old age group and 13.00 per cent where under young age group.

Vaidya *et al.* (2014) reported that 50.00 per cent of the respondents where from middle age group followed by 29.41 per cent of the farmers where from old age group (above 50 yrs.) and 20.29 per cent young group (up to 35 years).

Ahire and Kapse (2015) indicate that 61.67 per cent of the respondents where found in middle age group. Where as 21.68 and 16.67 per cent of the respondent where in old age and young age group respectively.

Kamble *et al.* (2015) reported that 70 per cent of participant farmers belong to middle age group followed by young age and old age 16.66 and 13.34 per cent respectively. Whereas, it was 70.00 per cent of non- participant farmers belong to middle age group followed by young age and old age (23.34 per cent and 6.66 per cent), respectively

Shevale (2017) reported that the majority 50.00 per cent of respondents belonged to the middle age category group, followed by young age group 22.22 per cent and old age group 27.78 per cent respectively.

Chikane (2018) reported that, 56.66 per cent per cent respondents belonged to the middle age category whereas, 23.34 per cent of respondents belonged to young age category and 20.00 per cent belongs to old age category.

## **1.2 Education**

Palve (2003) reported that, half (50.00%) of the nursery owners where educated in highly literate category.

Pandeti (2005) studied Entrepreneurial behaviour of farmers Raichur district of Karnataka and observed that majority 21.66 per cent of the farmers educated upto primary school.

Nagesh (2006) observed that, the relationship between education and entrepreneur behaviour was positive and highly significant.

Todmal and Kadam (2009) reported that majority 41.66 per cent of the respondent where educated up to primary school, while 36.67 per cent of respondent where illiterate.

Kaushalkumar (2012) studied entrepreneurial behaviour of pineapple growers and he reported that 15.00 per cent respondents where educated up to middle school, where as 05.83 per cent high school and 37.50 per cent primary school. The education up to graduation was also noticed among 08.33 per cent respondents. But, 41.67 per cent respondents where illiterate.

Thakare (2013) reported that, less than one third 30.00 per cent of the nursery owners where educated in high school category.

Shete (2014) showed that 41.66 per cent of the respondents where educated up to secondary school level. Where as 34.16 per cent respondents had educated up to higher secondary, remaining 10.83 per cent of respondents where educated up to college level and 08.33 per cent respondents had received primary education and only 05.00 per cent of respondents where illiterate.

Shinde (2014) shows that 32.50 per cent of the soybean seed growers where educated up to high school level, 23.34 per cent of the soybean seed growers where college level, 18.33 per cent of them have middle school level of education, 15.83 per cent educated up to primary school level, 09.17 per cent of them where can

read and write only while, 00.83 per cent of the soybean seed growers were non educated.

Ahire and Kapse (2015) it was observed that 33.33 per cent of respondent had education up to secondary school level. Where 21.67 per cent of respondent had education up to higher secondary and college level and 20.00 per cent of respondent where education up to primary school level and only 3.33 per cent respondents where illiterate.

Kamble *et al.* (2015) With respect to formal education, all participant farmers where illiterate. Whereas, 06.67 per cent and 10.00 per cent of participant farmers had education up to primary, middle school, high school and collegiate respectively. Regarding non participant farmers, 10.00 per cent, 33.34 per cent, 36.66 per cent, 10.00 per cent and 03.34 per cent found in category of can read and write, primary, middle school, high school and collegiate.

Potsangbam (2017) reported that majority respondents had higher school education 40.83 per cent while 35.00 per cent of the respondents had high school education, followed by 15.83 per cent of the respondents where studied up to graduation. The other respondents where educated up to secondary school 05.00 per cent and primary school 03.34 per cent. Thus, it is concluded that majority of the respondents where educated up to higher school.

Ekhande (2016) reported that only 8.34 per cent of farmers had educated up to post graduate level whereas, 14.16 per cent of farmers had educated up to graduate level and 35.00 per cent of farmers had educated up to higher secondary school level, while 23.33 per cent of farmers had high school level education and 15 per cent farmers had middle school level education. While 01.67 per cent farmer had educated up to primary school and 02.50 per cent farmers were illiterate.

Shevale (2017) reported that majority 42.23 per cent of respondents were educated up to college level, were as one third 25.55 per cent up to secondary level. About 21.11 per cent respondents educated up to higher secondary level and very few 08.88 per cent was found in primary were as 02.22 per cent of the respondents are illiterate.

Chikane (2018) reported that, 33.43 per cent of members had education up to higher secondary school level , 25.61 per cent of members had primary school level education, 20.03 per cent of members had education up to high school, 13.43 per

cent of members had education up to graduate level were as, 07.50 per cent members where illiterate.

### **1.3 Family size**

Mundhwa and Padheria (1998) reported that majority of dairy entrepreneurs 64.89 per cent had medium size of family, where as 19.56 per cent of dairy entrepreneurs had small family, followed by large size family 15.55 per cent

Gour (2002) reported milk producer had nuclear and medium size of family. Further, he also derived that average earner, dependent and total member of family of dairy farmers group were 2, 4 and 6 respectively.

Wadear *et al.*, (2003) reported that small dairy farmers, had large family size (7 members), followed by medium farmers (6 members) and small farmers (5 members).

Khattra *et al.* (2004) reported average family size of landless dairy farmers was 6.19 and holder dairy farmers were 06.62.

Khin Mar Oo (2005) reported that 76.30 per cent of the dairy women had medium size of family, whereas 20.00 per cent of them had big size family, followed by small size family 12.50 per cent.

Chaudhari (2006) reported 62.00 per cent of the dairy women had medium size of family, whereas 22.00 per cent of them had small size family, followed by large size family 16.00 per cent

Hipparkar (2015) reported that majority more than half of the pomegranate grower 58.33 per cent had medium family size whereas, 29.17 per cent of pomegranate grower belonged to small family size and 12.50 per cent of pomegranate growers belonged to large family size.

Chikane (2018) reported that, the majority 59.17 per cent of members belonged to medium family size followed by 24.17 per cent of the members had small family size whereas, 16.66 per cent of members belonged to large family size.

Shevale (2017) reported that, the majority of nursery owners 50.00 per cent living in medium size family followed by 38.88 per cent living in small size family and remaining of them 11.12 per cent living in big family size.

#### **1.4 Experience in turmeric production**

Rao *et al.* (2001) reported that, the experience in farming along with other variable have total indirect effect on entrepreneurial behaviour of the vegetable growers.

Bhagyalaxmi *et al.* (2003) reported that the, majority of the dairy farmers 51.67 per cent had medium entrepreneurial experience, followed by low entrepreneurial experience 36.67 per cent, while only 11.67 per cent of dairy farmers had high entrepreneurial experience of managing the dairy enterprise.

Palve (2003) reported that the, majority nursery owners 43.33 per cent belonged to booming class ranging from 11 to 17 yrs.

Khin Mar Oo (2005) found that, majority of the dairy women 74.16 per cent had low dairying experience i.e., up to 10 years. Whereas, 15.00 per cent of the dairy women had medium experience i.e., 10 to 20 years, followed by 10.83 per cent dairy women, who had high dairying experience i.e., (above 20 years).

Sonawane *et al.* (2009) indicated that more than half of the respondents 54.67 per cent had an experience strawberry farming between 10 to 14 years, while 26.67 per cent having an experience of more than 15 years.

Kumar (2011) conducted a study on entrepreneurial qualities and adoption behaviour of banana growers in Gulbarga district of Karnataka and reported more than half 56.67 per cent of farmers had more than 21 years of farming experience.

Kaushalkumar (2012) studied entrepreneurial behaviour of pineapple growers and he reported 65 per cent of the respondents had medium experience followed by 21.67 per cent and 13.33 per cent low and high experience respectively.

Andhari and Sonawane (2012) reported that, the majority of the respondents 59.33 per cent found to have 3 to 5 years of farming experience.

Lad (2014) reported that majority of the respondents 58.00 per cent had medium experience in farming, followed by low and high level of farming experience i.e. 24.00 per cent and 18.00 per cent, respectively

Hipparkar (2015) reported that majority of farmers 61.67 per cent had medium farming experience whereas, 23.33 per cent of farmers had low and only 15.00 per cent farmers had high farming experience

Ekhande (2016) reported that majority of farmers majority of farmers 58.34 per cent had medium farming experience whereas, 25 per cent of farmers had low farming experience and only 16.66 per cent farmers had high farming experience.

Shevale (2017) reported that majority 50.00 per cent of the nursery owners had medium experience in nursery business for a period ranging between 8 to 24 years., followed by one third 33.33 per cent of respondents had low experience in the nursery business for a period ranges up to 7 years., The 16.67 per cent of the respondents had high experience in the nursery business for a period ranging between 25 and above years

### **1.5 Source of irrigation**

Patil *et al.* (1999) stated that though the number of irrigation projects increased in Vidarbha and Maharashtra they were mostly incomplete and hence the irrigation potential could not be exploited.

Gavade (2013) observed that relatively higher percentage 81.00 per cent of the respondents had well/ tube well as their source of irrigation. While 11.00 per cent had possessed river as a source of irrigation and 8.00 per cent had canal.

Thakare (2013) observed that relatively higher percentage of the respondents 72.50 had well and tube well.

Ghube (2014) reported that relatively higher percentage of the respondents 66.67 per cent had well or tube well as their source of irrigation, followed by 25.83 per cent possessed river, while only few 7.5 per cent possessed canal as their source of irrigation.

Shweta Dutonde (2014) reported that, the relatively major 81.00 per cent of the respondents had well/ tube well as their source of irrigation. While 11.00 per cent of the respondents had possessed river as a source of irrigation and 8.00 per cent had canal.

Amle (2016) observed that majority 80.00 per cent of the respondents where having well and tube well as source of irrigation.

Potsangbam (2017) reported that nearly cent percent 96.66 per cent of the respondents had well or tube well as their source of irrigation and remaining 03.34 per cent of the respondents had river as their source of irrigation. Thus, the study concluded that maximum number of the respondents had well or tube well as their source of irrigation

## 1.6 Land holding

NomeshKumar and Narayanaswamy (2000) found that, farmer with big holdings had higher entrepreneurial behavior index compared to those with smaller holdings.

Palve (2003) reported that, more than one fourth 28.33 per cent of the nursery owners belonged to medium land holding categories.

Khin Mar Oo (2005) reported that, the 33.33 per cent of dairy women possessed marginal and small size of land, followed by medium size of land 29.17 per cent, whereas only 04.16 per cent dairy women possessed big size of land.

Andhari and Sonawane (2012) reported that, 41.66 per cent tomato growers had small land holding, followed by 32.67 per cent of them had marginal land holding, a majority 55.33 per cent of respondents had medium size of area under tomato. However, 37.64 per cent and 07.33 per cent of them had small and large size of land under tomato cultivation respectively.

Thakare (2013) found that, less than half of the nursery owners 44.17 per cent belonged to semi medium land holding categories.

Mohanty *et al.* (2013) observed that the highest percentage of farmers 40.00 per cent were small farmers followed by medium farmers 30.83 per cent and marginal farmers 22.66 per cent in addition to a meager percentage of 07.6 per cent under large farmers.

Pandya *et al.* (2013) reported that equal proportion 44.00 per cent of the respondents possessed (0.01–1.00 ha.) and (1.01–2.00 ha.) of land followed by 07.00 per cent, 4.00 per cent and 1.00 per cent of the respondents possessed (2.01–4.00 ha.), (4.01–10.00 ha.) and (above 10 ha.) of land respectively in Adopted villages while, majority 40.00 percent of the respondents possessed (0.01–1.00 ha.) of land followed by 33.00 per cent, 20.00 per cent and 07.00 per cent of the respondents possessed (1.01–2.00 ha.), (2.01–4.00 ha.) and (4.01–10.00) respectively whereas, none of them possessed (above 10 ha.) of land in Non-Adopted villages

Soni *et al.* (2013) observed that majority 63.12 per cent of farmers where from big land holding (above 4 ha.), 16.31 per cent from small (1.01 to 2.0 ha.) land holding followed by 14.90 per cent and 05.67 per cent of respondents from medium land holding (2.01 to 4.0 ha.) and marginal (up to 1 ha.) land holding, respectively.

Deshmukh (2014) as regard land holding of the farmers it is observed that 49.17 per cent of farmers where medium farmers (4.1 to 10 ha.) followed by 25.83 per cent of farmers where semi medium farmers (2.1 to 4 ha.), 13.33 per cent of the farmers were from small farmers (1.1 to 2 ha.), followed by 09.17 per cent of the farmers where big farmers from big farmers (10.1 ha. and above) and 2.50 per cent of the marginal farmers (up to 1 ha.).

Shete (2014) reported that majority 40.00 per cent of the respondents had semi-medium size of land holding, followed by 34.16 per cent had small size of land holding, 14.66 per cent had medium land holding, 10.00 per cent had marginal land holding and 01.66 per cent had large size of land holding, respectively.

Shinde (2014) reported that higher percentage 38.35 per cent of soybean seed growers were found in medium land holding category, 28.33 per cent were in semi medium land holding category and 20.83 per cent and 06.66 per cent of them from small and marginal land holding category, respectively. Only, 05.83 per cent of the soybean seed growers were found in big land holding category.

Hipparkar (2015) reported that 72.5 per cent of the farmers possessed big land holding and 16.66 per cent farmers possessed medium land holding, followed by 7.5 per cent and 3.34 per cent farmers' possessed marginal and small land holding respectively.

Ahire and Kapse (2015) reported that 73.33 per cent of the respondents were having small size of land holding ranging from 1 to 2 ha, followed by 21.67 per cent of the respondent were having medium land holding and 3.33 and 01.67 per cent of the respondent were having semi-medium and marginal land holding, respectively.

Ahire *et al.* (2015) reported 66.25 per cent of respondents was having small land holding, followed by medium category 17.5 per cent, large category 16.25 per cent.

Ekhande (2016) reported that 60.00 per cent of the farmers possessed medium land holding and 24.16 per cent farmers possessed small land holding, followed by 15.84 per cent farmers possessed big land holding.

Shevale (2017) reported that 46.66 per cent of the nursery owners belonged to category of small land holding between 1.01 to 2.00 ha. Followed by 22.23 per cent of respondents who belonged to category of semi-medium land holding possessing land between 2.01 to 4.00 ha. 16.66 per cent of the respondents belonged to marginal land holding category up to 01.00 ha. 14.45 per cent respondents

belonged to medium category between 04.00 to 10.00 ha. And nobody was found in big land holding category which is above 10.01 hectares. It is concluded that maximum percentage of the nursery owners were found in small land holding category.

### **1.7 Annual income**

Kaushalkumar (2012) studied entrepreneurial behavior of pineapple growers and he reported majority 71.11 per cent of the respondents had medium annual income, followed by 15.56 and 13.33 low and high annual income, respectively.

Thakare (2013) found that, less than one third of the nursery owners 30.83 had annual income of Rs.75001/- to Rs.150000 categories.

Shete (2014) observed that, majority 89.16 per cent of the respondents had medium level of annual income followed by considerable proportion of drip users i.e. 10.83 had high level of annual income and nil in low level of annual income.

Vaidya *et al.* (2014) reported that more than half 55.88 per cent of the farmers had income Rs. 1, 00,000 to 5, 00,000 where as 32.35 per cent of the farmers has income up to Rs. 1, 00,000 and 11.76 per cent of the farmers had income above Rs.5, 00,000.

Ahire and Kapse (2015) reported that 88.33 per cent of the respondent were in medium income group (Rs.1.78 to 8.59 lakh), 08.34 per cent of the respondents were having high income i.e. above Rs.8.60 lakh and only 3.33 per cent of the respondent were having low income.

Ahire *et al.* (2015) reported that, the 55.63 per cent of the respondents had the medium level of annual income category that is i.e. Rs. 27,435/- to 1, 31,075/- followed by 24.37 per cent respondents had above Rs.1,31075/- annual income, However 2. Per cent respondents were having upto Rs. 27,434/- annual income.

Hipparkar (2015) reported that, the 77.50 per cent respondent had medium level of annual income followed by 13.33 per cent of farmers categorized under low level of annual income and 09.17 per cent of fanners had high level of annual income

Ekhande (2016) reported that, the 74.16 per cent farmers had medium level of annual income whereas, 12.50 per cent of farmers categorized under low level of annual income and 13.34 per cent of farmers had high level of annual income.

Kamble *et al.* (2015) reported that the 83.34 per cent of participant and 50.00 per cent non-participant farmers belong to medium annual income category.

Participant farmers had 10.00 per cent low and high 6.66 per cent annual income. Whereas, 46.66 per cent and 03.34 per cent of non-participant farmers belongs to low and high annual income category, respectively.

Potsangbam (2017) reported majority of the respondents 45.00 per cent (%) had annual income of Rs. 1,00,001 to Rs. 1,50,000, while 22.50 per cent had annual income of Rs. 1,50,001 to Rs. 2,00,000, followed by 20.83 per cent of the respondent had annual income of above Rs. 2,00,000 and only 11.66 per cent had annual income of Rs. 50,001 to Rs. 1,00,000.

Shevale (2017) reported that majority more than half 62.23 per cent of respondents had medium annual income. The high annual income respondents were 28.88 per cent whereas, 08.89 per cent had low annual income respectively.

Chikane (2018) reported that, 73.33 per cent of members categorized under medium level of annual income followed by 19.16 per cent of members had low level of annual income and 07.51 per cent members had high level of annual income.

## **1.8 Sources of Information:**

Sonawane *et al.* (2009) reported that majority 46.00 per cent of the respondents had 'medium' sources of information followed by low 32.67 per cent and high 21.33 per cent level of information sources.

Waman (2010) reported majority 88.25 per cent of the respondent beneficiaries had medium use of sources of information; whereas 07.62 per cent and 04.13 per cent of the respondent beneficiaries had low and high use of sources of information respectively.

Chahande (2012) reported that majority 43.33 per cent of respondents had medium, whereas, 37.50 per cent of respondents had low sources of information followed by 19.17 per cent of the respondents were having high level sources of information.

Ghintala and Singh (2013) reported that majority of the farmers 75.00 per cent utilized medium sources of information followed by 14.17 per cent and 10.83 per cent who utilized low and high sources of information, respectively.

Jadhav (2013) observed that majority 70.00 per cent of the rabi groundnut growers used medium sources of information while, 19.17 per cent high and 10.83 per cent low use of sources of information category.

Lad (2013) observed that more than two third 70.00 per cent of the green gram growers used medium sources of information while, 15.83 per cent high and 14.17 per cent low use of sources of information category.

Ambavane (2014) reported more than two third 71.67 per cent of the respondents used medium sources of information while, 16.67 per cent low and 11.67 per cent high use of sources of information category.

Deshmukh (2014) observed that majority 59.16 per cent of farmers had medium, whereas 21.66 per cent of farmers had low sources of information followed by 19.16 per cent of the farmers were having high level of sources of information.

Shinde (2014) reported that, the more than half 56.67 per cent of the soybean seed growers used medium sources of information while, 23.33 per cent high and 20.00 per cent low sources of information category.

Ahire and Kapse (2015) reported that 70.00 per cent of the respondents were using medium sources of information. Whereas, 16.67 and 13.33 of the respondent were using low and high information sources respectively.

Shevale (2017) reported that majority 57.78 per cent of respondents uses medium sources of information followed by, high 25.56 per cent and low category of sources of information 16.66 per cent respectively

## **1.9 Social participation**

Bondarwad (2009) reported that significant percentage 54.17 per cent of the respondents were having medium level of social participation followed by low level of social participation 40.83 per cent while, 05.00 per cent of the respondents were having higher level of social participation.

Bhatt *et al.* (2011) reported 24.37 per cent of the respondents were having membership in (above 2 org.) and 05.63 per cent no membership.

Katke (2011) observed that majority of the respondents 73.34 per cent were having low social participation and equal per cent of the respondents were having medium social participation and high social participation i.e. 13.33 per cent.

Jamadar (2012) reported that the most of the sugarcane growers 70.84 per cent had medium social participation. While, 15.83 per cent of the growers had low social participation and 13.33 per cent of them were found in high social participation category.

Sable (2012) reported that majority 62.51 per cent of respondents were having low level of social participation followed by medium level of social

participation 31.06 per cent, while 05.83 per cent of the respondents were having high level of social participation.

Ghintala and Singh (2013) reported that majority 60.00 per cent of the farmers were having membership in more than one organization followed by 25.00 per cent of them had membership in one organization and 08.33 per cent had not taken part in any social organization, whereas, only 06.67 per cent were no membership.

Kumar *et al.* (2013) reported that 40.83 per cent of the respondents were having membership in (up to 1 org.), 30.00 per cent of the respondents were having membership in (above 2 org.), 27.50 per cent no membership in any organization and only 01.67 per cent of the respondents on holding position.

Deshmukh (2014) reported that higher proportion of farmers 47.50 per cent were having low level of social participation followed by medium level of social participation 45.00 per cent, only 07.50 per cent of the farmers were having high level of social participation.

Shete (2014) reported that majority 54.16 per cent of the respondent had medium social participation; while 31.66 per cent of the respondent had low social participation and 14.16 per cent of them had high social participation.

Hipparkar (2015) reported that majority 77.50 per cent respondents had medium social participation while, 12.50 per cent of the respondents having low social participation and 10.00 per cent of the respondents were found in high category of social participation.

Ahire and Kapse (2015) observed that 61.67 per cent of the respondents were in medium level of social participation, whereas 26.68 per cent and 11.67 per cent of the respondent were in high and low level of social participation.

Kamble *et al.* (2015) reported that the majority of participant farmers 52.50 per cent belong to high and followed by 40.00 per cent medium level of social participation. Whereas, majority of non-participant farmers 73.34 per cent belong to medium level of social participation, followed by low and high 20.00 and 06.66 per cent respectively.

Shevale (2017) reported that majority 53.33 per cent of the nursery owners had medium social participation, while, 31.11 per cent of nursery owners were having low level of social participation. Only, 15.56 per cent of them had high social participation.

Chikane (2018) reported that 64.17 per cent of the respondents having medium social participation followed by 24.17 per cent respondents had high social participation while, 11.66 per cent of the respondents were found in category of low social participation.

Ekhande (2016) reported that 15 per cent respondents had low social participation while, 66.66 percent of the respondents having medium social participation and 18.34 per cent of the respondents were found in high category of social participation.

### **1.10 Risk orientation**

Kumar (2011) conducted a study on entrepreneurial qualities and adoption behaviour of banana growers in Gulbarga district of Karnataka and reported more number (62.50%) of banana growers belonged to high risk orientation category.

Lawrence *et al.* (2012) reported Majority of the respondents 58 per cent had medium level of risk orientation and remaining 28.00 per cent and 14.00 per cent had low level and high level of risk orientation, respectively.

Kaushalkumar (2012) reported that, the 60.00 per cent of the respondents had medium risk orientation, where as 14.17 per cent had low and 25.83 per cent had high level of risk orientation.

Thakare (2013) reported that majority of floriculturists 63.33 per cent had medium level of risk orientation followed by 24.17 per cent and 12.50 per cent respondents high and low level of risk orientation.

Lad (2013) that majority 67.50 per cent of the green gram growers were in the medium risk orientation category while, 20.00 per cent and 12.50 per cent were low and high risk orientation categories, respectively.

Ambavane (2014) reported that majority 67.50 per cent of the respondents were in the medium risk orientation category while, 20.83 per cent and 11.67 per cent were low and high risk orientation categories, respectively.

Deshmukh (2014) reported that majority 68.33 per cent of the farmers were in the medium risk preference category, while 15.83 per cent and 15.83 per cent farmers were low and high risk preference categories, respectively

Ekhande (2016) reported that the 14.17 per cent of farmers had low risk taking ability however, 71.67 per cent farmers had medium risk taking ability whereas, and 14.46 per cent of farmers belonged to high category of risk taking ability.

Potsangbam (2017) reported that, majority 72.50 per cent of the respondents had medium category of risk orientation. Whereas, 15 per low and high risk preference categories, respectively 12.50 per cent had low category of risk orientation

Shevale (2017) reported that that majority 62.22 per cent of the respondents had medium risk bring ability. Whereas, 16.66 per cent had low and 21.12 per cent of respondents had high level of risk bearing ability.

Chikane (2018) reported that, 55.00 per cent respondents had medium risk taking ability whereas 28.34 per cent of respondents belonged to high category of risk taking ability however, 16.66 per cent of respondents had low risk bearing taking ability.

### **1.11 Market orientation**

Sasane (2010) reported that study on knowledge and adoption of recommended production technology by Cauliflower growers, most of the pomegranate growers i.e., 72.50 per cent had medium level of market orientation followed by 15.00 per cent of the pomegranate growers had low level of market orientation and remaining 12.50 per cent of the pomegranate growers had high level of market orientation.

Atar (2012) reported that study on knowledge and adoption of recommended grape cultivation practices by the grape growers, majority 73.34 per cent of the grape growers had medium market orientation followed by 20.00 per cent and 6.66 per cent of the grape growers had low and high market orientation, respectively.

Pisure (2012) reported that, more majority dairy farmers 60.83 per cent of dairy farmers had medium level of market orientation, whereas 21.67 per cent of dairy farmers had high market orientation and 17.50 per cent of dairy farmers were categorized under low market orientation category.

Hipparkar (2015) reported that, majority 70.00 per cent had medium level of market orientation, whereas 15.83 per cent of respondent had low market orientation and 14.67 per cent of respondent found low market orientation

Ekhande (2016) reported that majority of respondent 65.00 per cent had medium level of market orientation, whereas 15.84 per cent of respondent had low market orientation and 19.16 per cent of respondent found high market orientation.

Shevale (2017) reported that majority 72.50 per cent of respondents had medium level of market orientation followed by 15.00 per cent had high and 12.50 per cent of respondents found low market orientation, respectively

Chikane (2018) reported that 72.50 per cent of respondents had medium level of market orientation followed by 15.00 per cent had high and 12.50 per cent of respondents found low market orientation, respectively.

## **2. Entrepreneurial behavior of turmeric growers**

### **2.1 Innovativeness**

Bhagyalaxmi *et al.* (2003) observed that majority 69.44 per cent of the respondents had medium innovativeness while 15.56 and 15.00 per cent of respondents had high and low innovativeness, respectively.

Suresh (2004) in his study on entrepreneurial behaviour of milk producers indicated that the milk producers in the district had medium, high and low innovativeness in the order of 55.00, 24.58 and 20.42 per cent, respectively.

Kumar (2011) conducted a study on entrepreneurial qualities and adoption behaviour of banana growers in Gulbarga district of Karnataka and reported 45.00 per cent of banana growers belonged to medium category of innovativeness.

Lawrence *et al.* (2012) reported that near about half 49.00 per cent of the respondents had medium level of innovativeness followed by 36.00 per cent and 15.00 per cent low and high level of innovativeness respectively.

Thakare (2013) reported that majority of respondents 50.00 per cent had medium level of innovativeness, followed by 44.00 per cent and 06.00 per cent respondents high and low level of innovativeness.

Hipparkar (2015) reported that majority 63.33 per cent of the respondents had medium innovativeness, followed by low 20.00 per cent and high 16.66 per cent level of innovativeness, respectively.

Ekhande (2016) reported that majority 63.34 per cent of the respondents had medium innovativeness, whereas, high 16.66 per cent and low 20.00 per cent innovativeness, respectively

Potsangbam (2017) reported that majority 71.66 per cent of the respondents were in medium innovativeness category, however each of the 14.17 per cent of the respondents belonged to low and high innovativeness category, respectively.

Shevale (2017) reported that majority 52.22 per cent of the respondents had medium innovativeness whereas rests distributed within low and high category of respondents equally *i.e.* 25.55 per cent and 22.23 per cent respectively.

Chikane (2018) reported that, majority 72.50 per cent respondents had medium innovativeness while 16.67 per cent of respondents had low innovativeness and 10.83 per cent of the respondents had high innovativeness, respectively

## **2.2 Achievement motivation**

Vijay Kumar (2001) reported that 44.16 per cent of respondents had medium achievement motivation, followed by 28.34 and 27.50 per cent of respondents with low and high achievement motivation, respectively.

Suresh (2004) indicated that 61.25 per cent of the respondents had medium achievement motivation, followed by 20.42 per cent and 18.33 per cent with low and high achievement motivation respectively.

Nagesha (2005) majority 71.70 per cent of the respondents had medium achievement motivation, followed by 15.00 and 13.30 per cent of respondents having low and high achievement motivation, respectively.

Lawrence *et al.* (2012) reported more than half 52.00 per cent of the respondents had medium level of achievement motivation followed by 20.00 and 28.00 per cent had high level and low level of achievement motivation, respectively.

Thakare (2013) reported that majority of floriculturists 74.17 per cent had medium level of achievement motivation followed by 15.00 per cent and 10.83 per cent respondents high and low level of achievement motivation

Ekhande (2016) reported that majority 67.50 per cent of the farmers had medium achievement motivation whereas, low 18.33 per cent and high 14.17 per cent achievement motivation of farmers, respectively.

Shevale (2017) reported that majority 62.23 per cent of the respondents had medium achievement motivation followed by 22.22 per cent and 15.55 per cent respondents who had low and high level of achievement motivation, respectively.

Potsangbam (2017) reported that nearly three fourth 73.33 per cent of the respondents had medium category of achievement motivation followed by 18.33 per cent and 08.34 per cent of the respondents having low and high category of achievement motivation, respectively

Chikane (2018) reported that majority 76.66 per cent of the respondents had medium achievement motivation followed by 20.00 per cent of

respondents had low achievement motivation and 03.34 per cent had high achievement motivation.

### **2.3 Decision making ability**

Vijay Kumar (2001) reported that majority 46.66 per cent of the respondents had medium decision making ability, followed by low 27.50 per cent and high 25.84 per cent decision making categories.

Suresh (2004) observed that majority of milk producers had medium level of decision making ability 65.83 per cent, followed by low and high with 21.67 and 12.50 per cent, respectively.

Nagesha (2005) reported majority 74.20 per cent of the respondents belonged to intermediate decision making ability, followed by 13.30 and 12.50 per cent, having less rational and rational decision making abilities, respectively.

Lawrence *et al.* (2012) reported that more than one-half 42.00 per cent of the respondents had medium level of decision making ability whereas nearly 17.00 per cent had high level and the rest 31.00 per cent have low level of decision making ability.

Kumar (2011) conducted a study on entrepreneurial qualities and adoption behaviour of banana growers in Gulbarga district of Karnataka and reported 47.50 per cent belonged to high category of decision making ability.

Kaushalkumar (2012) reported that more than half 58.33 per cent pineapple growers had medium level of decision making ability followed by 25.83 per cent and 15.00 per cent respondents low and high level of decision making ability.

Thakare (2013) observed that majority of floriculturists 65.00 per cent had medium level of decision making ability followed by 15.00 and 20.00 respondents high and low level of decision making ability.

Hipparkar (2015) reported that majority that two third 67.50 per cent of the respondent had medium level of achievement motivation followed by low 18.33 per cent level of and high 14.17 per cent level of achievement motivation of farmers, respectively.

Ekhande (2016) reported that majority of farmer 69.17 per cent belonged to medium farm decision making category, whereas, high 16.66 per cent and low 14.17 per cent farm decision making categories, respectively.

Potsangbam (2017) reported that decision making ability, it reveal that more than three fourth 77.50 per cent of the respondents belonged to intermediate

category, followed by 15.84 per cent and 06.66 per cent of the respondents belonged to less rational and rational categories, respectively.

Shevale (2017) reported that two third 66.64 per cent of the respondents belonging to medium decision making ability category. However, 13.34 per cent respondents belong to high and 22.22 per cent to low category of decision making ability respectively

#### **2.4 Leadership ability**

Vijay Kumar (2001) reported that 36.66, 32.60 and 30.84 per cent of total respondents fell under low, medium and high leadership ability categories, respectively.

Suresh (2004) conducted a study on entrepreneurial behaviour of milk producers in Andhra Pradesh and reported that among the respondents, 67.92 per cent had medium level of leadership ability, 16.25 per cent had low and remaining 15.83 per cent had high level of leadership ability.

Nagesha (2005) reported the majority 49.20 per cent of the respondents belonged to medium level of leadership ability, followed by 25.80 and 25.00 per cent of the respondents having low and high level of leadership ability, respectively.

Kumar (2011) conducted a study on entrepreneurial qualities and adoption behaviour of banana growers in Gulbarga district of Karnataka and reported more than half 55.00 per cent belonged to medium category of leadership ability.

Thakare (2013) reported that majority of floriculturists 72.50 per cent had medium level of leadership ability followed by 11.67 per cent and 15.83 per cent respondents high and low level of leadership ability

Hipparkar (2015) reported that majority 69.17 per cent of the respondents belonged to medium level of farm decision making category, followed by high 26.66 per cent and low 14.17 per cent level of farm decision making categories, respectively.

Shevale (2017) reported that majority 64.44 per cent of the respondents where belongs to medium category of leadership ability followed by high 25.56 per cent and low 10.00 per cent category of leadership ability, respectively.

Potsangbam (2017) reported that majority 54.16 per cent of the respondents were belonged to medium category of leadership ability followed by high 30.84 per cent and low 15.00 per cent of leadership ability, respectively. It concluded that, more than half of the respondent had medium category of leadership ability.

Chikane (2018) reported majority 78.33 per cent of respondents had medium leadership ability followed by 14.17 per cent of respondents had low leadership ability, followed by and 07.50 per cent of them had low leadership ability.

## **2.5 Management orientation**

Chauhan and Patel (2003) reported that majority 71.25 per cent of the poultry entrepreneurs had medium to high degree of management orientation.

Nagesha (2005) reported that the majority 66.70 per cent of the respondents belonged to medium category of management orientation, followed by 19.20 per cent of the respondents having low level management orientation and 14.2 per cent of respondents having high level management orientation.

Kumar (2011) conducted a study on entrepreneurial qualities and adoption behaviour of banana growers in Gulbarga district of Karnataka and reported about 45.00 per cent of banana growers belonged to medium category of scientific orientation.

Thakare (2013) reported that majority of floriculturists 70.00 per cent had medium level of management orientation followed by 15.00 and 15.00 respondents high and low level of management orientation.

Potsangbam (2017) reported that majority 88.33 per cent of the respondent had medium category of management orientation, followed by low 08.33 and high 0.3.34 category of management orientation, respectively.

Shevale (2017) reported that that majority 58.89 per cent of the respondents were in medium category management orientation while 27.78 per cent and 13.33 per cent were in low and high category of management orientation, respectively.

## **Overall entrepreneurial behaviour**

Hipparkar (2015) reported that majority 68.33 per cent of farmers belonged to medium entrepreneurial behaviour and 15.84 percent of farmers had high entrepreneurial behaviour, followed by 15.83 per cent of farmers had low entrepreneurial behaviour.

Ekhande (2016) reported that the majority of farmer 30 per cent of farmers belonged to low entrepreneurial behaviour and 40.84 percent of farmers had medium entrepreneurial behaviour, whereas, 29.16 per cent of farmers had high entrepreneurial behaviour.

### **3. Relationship between profile and their entrepreneurial attributes.**

#### **3.1 Age with entrepreneurial attributes**

Nandapurkar (1980) in his study on entrepreneurial behaviour of small farmers observed that there was no significant difference in the entrepreneurial behaviour of participant small farmers belonging to different age groups.

Patil *et al.* (1999) conducted a study on entrepreneurial behaviour of little gourd growers observed that the relationship between age and entrepreneurial behaviour of farmers was negative and significant.

Murali and Jhamtani (2003) reported negative significant relationship between age and entrepreneurial behaviour.

Anitha (2004) observed that there is positive significant relationship between age and entrepreneurial behaviour of respondents.

Shevale (2017) reported that that Age of nursery owners was non-significantly co-related with their entrepreneurial attributes as age increases entrepreneurial attributes shows negative relationship..

Chikane (2018) reported It was observed that, age of the respondents had negative and non-significant relationship with entrepreneurial behaviour of the members

#### **3.2 Education with entrepreneurial attributes**

Pandya (1996) in his study on entrepreneurial behaviour of sugarcane growers reported that there was a positive and highly significant relationship between entrepreneurial behaviour and education.

Patil *et al.* (1999) conducted a study on entrepreneurial behaviour of bitter gourd growers reported that the family education status is positively and significantly correlated with the entrepreneurial behaviour.

Subramanyeswari and Veeraraghava Reddy (2003) in their study on entrepreneurial behaviour of rural dairy women reported that education was found to have significant positive relationship with entrepreneurial behaviour.

Murali and Jhamtani (2003) reported that entrepreneurship behaviour was significantly and positively related to education.

Anitha (2004) observed that education had a negative significant relation with entrepreneurial behaviour of farm women.

Hipparkar (2015) reported that education of the respondent was positive and significant relationship with their entrepreneurial behaviour

Ekhande (2016) reported that with respect to education of farmers, there was positive and highly significant relationship with their entrepreneurial behaviour.

Shevale (2017) reported that that Education of nursery owners was positively and significantly co-related with their entrepreneurial attributes.

Chikane (2018) reported the education of members had positive significant relationship with their entrepreneurial behaviour.

Education broadens the vision of an individual. The educated persons develop more access to extension agencies, mass media, decision making, cosmopolitanism, and inclined to use innovations by taking the high risk. Thus, these factors help an individual to manage his enterprise. Hence, education was the influencing factor for entrepreneurial behaviour of members.

### **3.3 Family size with entrepreneurial attributes**

Mundhwa, and Padheria (1998) reported family size was positively and significantly related with entrepreneurial behaviour of dairy women.

Umarani (2002) reported there was non-significant relationship between family size of dairywomen and their technological needs in dairy enterprise.

Anitha (2004) stated that family size of farm women did not show any significant relationship with their entrepreneurial behaviour.

Pisure (2012) reported that, family size of the dairy farmers had shown highly significant correlation with entrepreneurial behaviour.

Hipparkar (2015) reported that Family size of farmer had shown highly significant correlation with entrepreneurial behaviour.

Shevale (2017) reported that that Family size of nursery owners was positively and highly significant co-related with their entrepreneurial attributes. It also helps in better management planning and production

Chikane (2018) reported Family size of member had positive and highly significant correlation with entrepreneurial behaviour. The size of family plays an important role for taking a rational decision regarding innovation. In present study it was found family size had positive and highly significant relation this might be due to more interest of the family members in the self-help groups.

### **3.4 Experience with entrepreneurial attributes**

Shinde *et al.* (2000) reported that the association between farming experience and the adoption of indigenous agricultural practices by dry land farmers was significant.

Rao *et al.* (2001) found that, experience in farming along with other variable have total indirect effect on entrepreneurial behaviour of the vegetable growers.

Bhagyalaxmi *et al.* (2003) stated that, more than half of the dairy farmers 51.67 per cent had medium entrepreneurial experience, followed by low entrepreneurial experience 36.67 per cent, while only 11.67 per cent of dairy farmers had high entrepreneurial experience of managing the dairy enterprise.

Kaushalkumar (2012) observed that experience and entrepreneurial behaviour of farmer non-significantly related.

Hipparkar (2015) reported that farming experience found to have positive and significant relationship with entrepreneurial behaviour of the formers

Ekhande (2016) reported that farming experience found to have positive and highly significant relationship with entrepreneurial behaviour of the formers.

Shevale (2017) reported that that Experience in nursery business was positively and highly significant co-related with their entrepreneurial attributes. Experience helps them for better decision making ability and management.

### **3.5 Source of Irrigation with entrepreneurial attributes**

Ambarkar (2003) reported that irrigation potentiality was negatively but non-significant associated with adaption of recommended practices of fruit vegetable growers.

Borate *et al.* (2012) observed that irrigation status of sapota growers was found to have a non-significant relationship with entrepreneurial behaviour.

Mehta *et al.* (2012) observed that irrigation status of mango growers was having negative and non-significant relationship with entrepreneurial behaviour.

Shweta Dutonde (2014) reported that source of irrigation was having negative and non-significant relationship with entrepreneurial behaviour.

Ghube (2014) reported source of irrigation of pomegranate growers was non-significant with the entrepreneurial behaviour.

### **3.6 Land holding with entrepreneurial attributes**

Pandya (1996) in his study on entrepreneurial behaviour of sugarcane growers reported that there was a positive and highly significant association between entrepreneurial behaviour and size of land holding.

Patil *et al.* (1999) conduct a study on entrepreneurial behaviour of little gourd growers observe that size of land holding was non-significantly related with entrepreneurial behaviour of little gourd growers.

Nomesh Kumar and Narayanaswamy (2000) indicated that there was significant difference in the entrepreneurial behaviour of farmers having different sizes of land holding.

Subramanyeswari and Veeraraghava Reddy (2003) reported that land holding was found to have significant relationship with their entrepreneurial behaviour.

Hipparkar (2015) reported that Land holding of the respondents had shown positive and significant relationship with entrepreneurial behaviour of farmers.

Ekhande (2016) reported that Land holding of the respondents had shown positive and highly significant relationship with entrepreneurial behaviour of farmers.

Shevale (2017) reported that that Land holding of the nursery owners was negatively and non-significantly co-related with their entrepreneurial attributes. It seems that small land holding of the respondents restrict them in development of entrepreneurial qualities.

### **3.7 Annual income with entrepreneurial attributes**

Pandya (1996) in his study on entrepreneurial behaviour of sugarcane growers reported there was a positive and highly significant association between entrepreneurial behaviour of sugarcane growers and their annual income.

Patil *et al.* (1999) reported that annual income of farmers and their entrepreneurial behaviour were non-significantly related.

Mundhwa and Padheriaa (1998) reported the income from dairy farming was positively and significantly associated with entrepreneurial behaviour of dairywomen.

Vijaykumar *et al.*, (2003) reported that annual income of small and big farmers had positively and significantly relationship with their entrepreneurial behaviour, whereas non-significant relationship was seen in case of medium farmers.

Subramanyeswari and Veeraraghava Reddy (2003) reported that there was a positive significant relationship between the entrepreneurial behaviour of dairy women and dairy income.

Pisure *et al.* (2014) found out in their study that total annual income of the entrepreneurs had significant relationship with their entrepreneurial behaviour of the dairy farmers.

Ekhande (2016) reported that Annual income of the respondents had shown positive and highly significant relationship with entrepreneurial behaviour of farmers

Shevale (2017) reported that that Annual income of the nursery owners was positively and significantly co-related with their entrepreneurial attributes. The nursery owners with more annual income had higher purchasing power and urge to invest in specialized nursery operations. It helps to motivate for adoption of innovations.

Chikane (2018) reported that Annual income of the respondents had shown positive and highly significant relationship with entrepreneurial behaviour of members. Annual income provides the economic base for the member; this was due to positive and good risk taking

### **3.8 Source of information with entrepreneurial attributes**

Katole (1998) reported more than 60.00 per cent of the cotton growers were found in medium level category of source of information

Lawrence *et al.* (2012) reported that sources of information have positive and significant relationship with entrepreneurial behaviour.

Kaushalkumar (2012) reported that there is positive and significant relationship between sources of information and entrepreneurial behaviour.

Shevale (2017) reported that that the use of sources of information by the nursery owners was positively and highly significant co-related with their entrepreneurial attributes. It helps them in proper decision making, management.

### **3.9 Social participation with entrepreneurial attributes**

Nomeshkumar and Narayanswamy (2000) reported there was a significant differences in the entrepreneurial behaviour of farmers having low, medium and high social participation.

Mehta *et al.* (2012) observed that social participation of mango grower was having significant relationship with entrepreneurial behaviour.

Ghube (2014) reported that social participation of pomegranate growers was positively significant with entrepreneurial behaviour.

Shete (2014) elucidated that majority 54.16 per cent of the respondent had medium social participation; while 31.66 per cent of the respondent had low social participation and 14.16 per cent of them had high social participation.

Ahire and Kapse (2015) reported that 61.67 per cent of the respondents were in medium level of social participation, whereas 26.68 per cent and 11.67 per cent of the respondent were in high and low level of social participation.

Ekhande (2016) reported that Social participation of the respondents had showed positive and highly significant relationship with entrepreneurial behaviour of farmers.

Chikane (2018) reported that Social participation of the respondents had showed positive and highly significant relationship with entrepreneurial behaviour of members. Better social participation of respondents enabled them to contact various sources of information for increasing the knowledge about management of their enterprise

### **3.10 Risk orientation with entrepreneurial attributes**

Bhagyalaxmi *et al.* (2003) reported that majority of the respondents 70.56 per cent had medium risk orientation, followed by low 15.56 per cent and high 13.33 per cent risk orientation categories respectively.

Kumar (2011) conducted a study on entrepreneurial qualities and adoption behaviour of banana growers in Gulbarga district of Karnataka and reported more number 62.50 per cent of banana growers belonged to high risk orientation category.

Lawrence *et al.* (2012) reported Majority of the respondents 58 per cent had medium level of risk orientation and remaining 28.00 and 14.00 per cent had low level and high level of risk orientation, respectively.

Kaushalkumar (2012) reported that more than half 60.00 per cent of the respondents had medium risk orientation, where as 14.17 per cent had low and 25.83 per cent had high level of risk orientation.

Shevale (2017) reported that Risk orientation of the nursery owners was positively and significantly co-related with their entrepreneurial attributes. It also helps adopt new idea, practices.

### **3.11 Market orientation with entrepreneurial behavior**

Patil *et al.* (1999) observed that, market orientation of entrepreneurs was found to have positive and highly significant relationship with their entrepreneurial behavior.

Chaudhary (2006) reported that, market orientation of the respondents had showed positive and significant relationship with entrepreneurial behavior.

Pisure (2012) reported that, market orientation of the respondents had shown positive and highly significant relationship with entrepreneurial behavior of dairy farmers.

Hipparkar (2015) found that, market orientation of the respondents found to have positive and highly significant relationship with entrepreneurial behaviour of the farmers.

Ekhande (2016) reported that Market orientation of the respondents had shown positive and highly significant relationship with entrepreneurial behaviour of sweet orange grower.

Chikane (2018) reported Market orientation of the respondents had shown positive and highly significant relationship with entrepreneurial behaviour of self help group members.

## **4 Constraints faced and to invite suggestions turmeric growers**

Wankhede *et al.* (1997) conduct study on chilly growers in Akola district of Maharashtra. Faced the problems like non availability of fertilizers and insecticides in time 68.33 per cent non- availability of plant protection appliances 13.33 per cent and high cost of seeds, fertilizers.FYM and insecticides 91.33 per cent.

Shrivastava *et al.* (1998) conducted a study on chilly growers in Kheda district of Gujrat, incidence of more pest and disease, high cost of pesticides and insecticides non- availability of plant protection equipment's and inadequacy of labours were problems faced by 96.67, 98.33, 36.67 and 30.00 per cent respondents respectively.

Achuta and Radhakrishnamurthy (2000) conducted a study on Betelvine growers of Puttur district of Andhra Pradesh and noticed the problems like high incidence of pests and diseases 100 per cent and non-availability of plant protection chemicals in time 58.33 per cent

Waman and Patil (2000) conducted a study on onion growers in Nasik district of Maharashtra and reported difficulty in identifying pests and diseases 54.66 per cent and nondurable nature of onion diseases even with pesticides 42.00 per cent were the major problems.

Ahire (2002) found that, 41.93 per cent respondent find difficult in getting technical know-how and did not get information in time. While, 19.38 per cent entrepreneurs faced the problem of bank delay in getting the loan, the 12.92 per cent raised the problem of unavailability of market and the problem of more cases in Metropolitan city. The respondents were greenhouse entrepreneurs.

Tarde *et al.* (2005) in their study on constraints faced by flower growers in Pune district reported 75.86 per cent of the respondents were faced non-availability of proper storage facility and 74.17 per cent non-availability of manures. 82.00 per cent and 42.52 per cent of the respondents faced marketing price fluctuation and transportation problem respectively.

Khin Mar Oo (2005) reported that the major suggestions for improvement of dairy enterprise were better milk price for the produces, the loan amount price for the purchase of dairy animals to be increased, providing water facilities by sinking open wells, tube wells or by constructing small tanks for their animals sufficiently, small scale dairy industries are to be encouraged at village level to produce dairy products, more importance to be given to educating them on improvement of dairy management practices especially on feeding of milch animals, pregnant animals, care of pregnant animals.

Tarde *et al.* (2005) in their study on constraints faced by flower growers in Pune district reported 75.86 per cent of the respondents were faced non-availability of proper storage facility and 74.17 per cent non-availability of manures. 82.00 per cent and 42.52 per cent of the respondents faced marketing price fluctuation and transportation problem respectively.

Sadanshiv (2006) reported among the different categories of constraints high cost of seeds of improved variety 87.50 per cent, frequent load shading and power cuts 84.61 per cent lack of knowledge about packaging of flowers for marketing 76.92 per cent, non-availability of FYM in village 75.00 per cent and lack of constant water supply for irrigation throughout the year 73.07 per cent were the major constraints encountered and reported by the respondents in adoption of improved cultivation practices for marigold and gaillardia flower crops.

Bodake *et al.* (2007) reported 64.66 per cent of the respondents from the information constraints faced the major constraints of non-availability of agricultural literature followed by 56.66 and 45.33 per cent of the respondents faced constraints namely absence of timely guidance by agricultural supervisor respectively.

Tale *et al.* (2009) noted that a great majority of respondents 95.24 per cent were constraints about the different store grain pests and the losses caused by them, followed by over three fourth of them 78.57 per cent who lacked the knowledge about the fumigation practices.

Shisode *et al.* (2012) reported that majority 85.00 per cent unavailability of capital and loan at proper time. 91.00, 31.00 and 29.50 per cent dairy cattle farmers explored that milk production of local breeds is very low, non-availability of labours and inadequate milk storage facility at village level.

Shweta Dutonde (2014) observed that 100 per cent problem in low price for produce, followed by non-availability of manures and fertilizers, high cost of transportation, high wages of labour, non-availability of labour, lack of knowledge and non-availability of inputs.

Wadekar (2016) observed that more than three fourth 86.00 of the respondents were expressed financial constraint like high investment, whereas non-availability of inputs 58.00 per cent, high cost of chemical fertilizers 94.00 per cent irregular supply of electricity 86 per cent, high wages of labour 90 per cent, lack of skilled labour 68 per cent and unavailability of labour 32 per cent and also transportation problem, exploitation by middlemen.

# METHODOLOGY



## CHAPTER-III

### METHODOLOGY

Research methodology deals with description of research method and techniques. For sound research, there search has to take support of various research method,technique and tools.There search during course of investigation has to develop different measurement and qualification,so that he can make use of it and putforth the efforts in that direction.The same has been discussed with relevant details under the following section.

- 3.1 Locale of study
- 3.2 Research design
- 3.3 Sample and sampling procedure
- 3.4 Preparation of interview schedule and data collection
- 3.5 Variable,their measurement and categorization
- 3.6 Statistical analysis

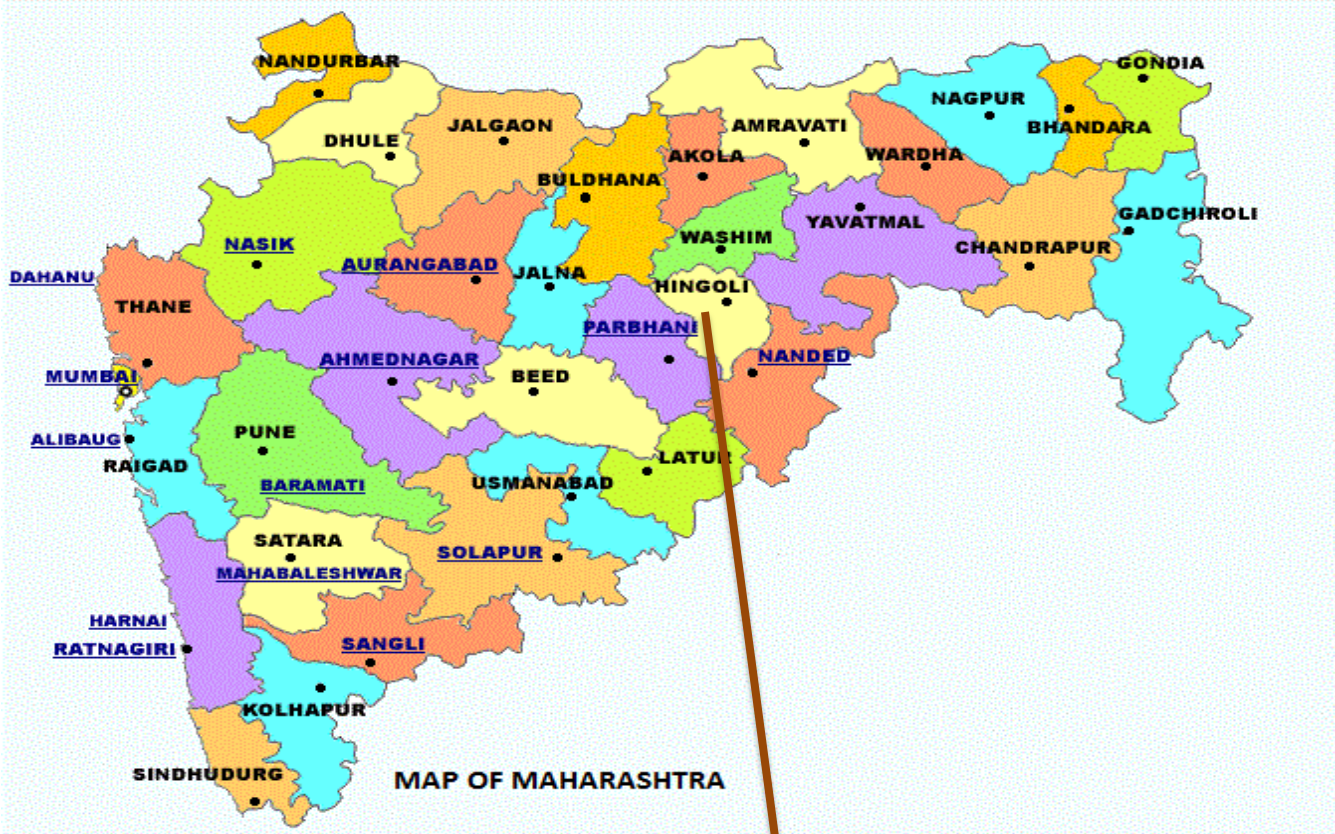
#### 3.1.1 Location and Size

This study was conducted in Maharashtra state.Hingoli District is situated in the central part of Maharashtra and lies between 19<sup>0</sup> 05' North and 20<sup>0</sup> 05' North latitudes, and 76<sup>0</sup> 30' East and 77<sup>0</sup> 30' East longitudes. It is surrounded by Buldana and Washim Districts to the North. Yavatmal and Nanded Districts to the East, Nanded and Parbhani Districts to the South and Parbhani and Jalna Districts lie to the West.

#### Population and Area

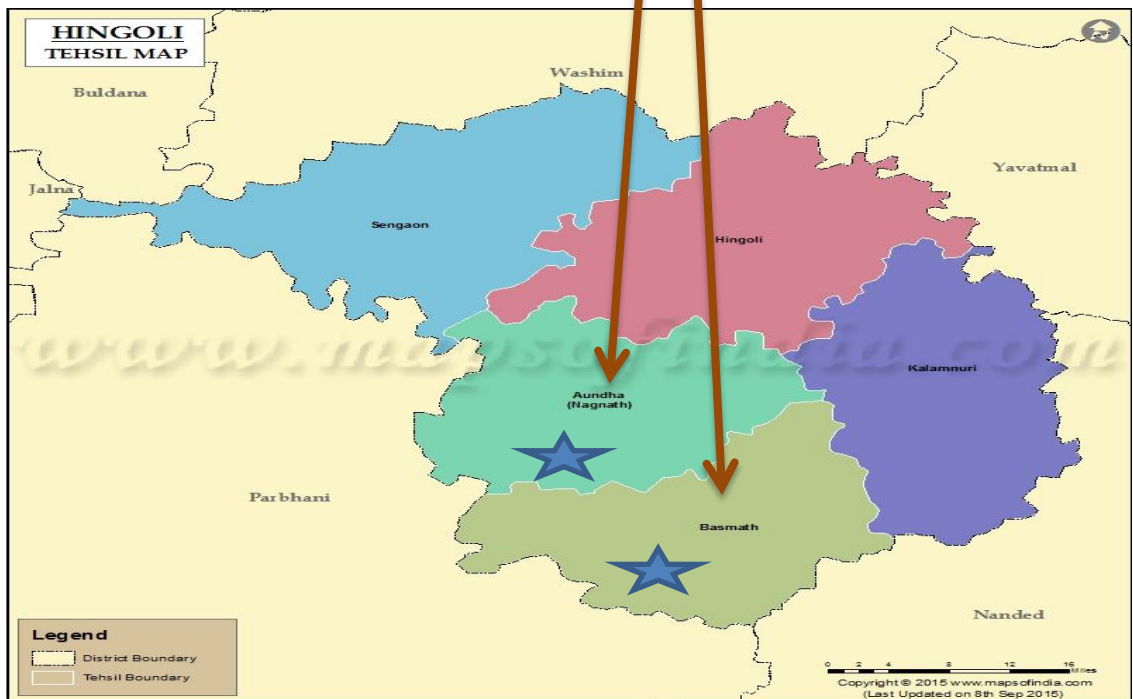
Most of the people of this District are engaged in agricultural activities. As per 2011 census 42.45 per cent of the total workers are engaged as cultivators and 39.79 per cent of the total workers are engaged as agricultural labourers in the District. Together constitute 82.24 per cent of the total workers of the District.

The headquarters of the District is located at Hingoli town, which has a population of 85,103 persons as per the 2011 census The District has an area of 4,827.0 sq.kms. and a population of 1,177,345 persons as per Census 2011. While the area of the District accounts for 1.57 per cent of the total area of the State. The Districts population constitutes 1.05 per cent of the total population of the State. The density of population is 244 persons per sq. km. Among the 35 Districts of the State,



Shows selected area

Fig. 1. Map showing the area under study



 Shows selected area

**Fig. 1. Map showing the area under study**



**Plate 1 (A). Interaction with Turmeric Growers**



**Plate 1 (B). Interaction with Turmeric Growers**



**Plate 1 (C). Interaction with Turmeric Growers**

the District ranks 32nd in terms of area, 33rd in terms of population and 26th in terms of density.

### **Climate**

The District experiences four seasons in a year. The rainy season (monsoon season) starts from June and lasts up to the end of September, while October and November are the post monsoon season. This is followed by the cold season from December to February and the hot season from March to the end of May. In summer the maximum temperature reaches as high as 42° C while in winter the minimum temperature is about 12 ° C. Sometimes due to cold waves over northern India, temperatures may drop to about 6 degrees centigrade. May and December are the hottest and coldest months of the year respectively..

### **Rainfall**

The average annual rainfall in the District is below 900 cm. Rainfall is not uniform in all parts of the District. The southern portion receives more rain. The District gets about 75 per cent of the annual rainfall during the southwest monsoon season. August is the rainiest month of the year.

### **Soil**

The soil of Hingoli District is known as Black Cotton Soil or regur, which can be broadly classified into two groups viz., i) Light soils and ii) Medium to deep black soils. The northern upland area of the District consisting of Sengao, Hingoli, Northern Kalamnuri and Aundha (Nagnath) Tahsils have light soils which are sandy loam in texture. These soils are most suitable for kharif crops like jowar, bajra, groundnuts etc. The southern portion of the District occupying Basmat, southern part of Aundha (Nagnath) and Kalamnuri Tahsils have medium to deep black soils, which vary in texture from clay to clay loams. These soils are retentive in moisture. These soils suit both Kharif and Rabi crops, wheat, jowar, Turmeric, cotton and are the main crops grown in these soils.

### **3.2 Research design**

The Ex-post-facto design was used for the present research study. Kerlinger (1976) stated that ex-post-facto research design is worthy to apply when the independent variables have already acted upon.

### 3.3 Sampling procedure

It includes the following aspects

#### 3.3.1 Selections of Tahasil

The study was purposively conducted in Vasmat and Aundha tahsils of Hingoli district as a major area under turmeric cultivation.

#### 3.3.2 Selection of villages

List of turmeric growing villages was prepared in consultation with Taluka agriculture officer of Vasmat and Aundha tahasil . From the list ten villages having maximum area under turmeric crop were selected.

#### 3.3.3 Selection of respondents

Respondents who have cultivated turmeric on more than 0.20 ha. Area were selected The list of respondents was obtained from talathi and from each village 15 respondents was drawn by n<sup>th</sup> method of random sampling. Thus, final sample was comprised of 150 respondents.

**Table-1.Details of respondents :-**

District	Tahasils	Villages	Respondents
HINGOLI	VASMAT	1.Vasmat	15
		2.Hatta	15
		3.Adgav	15
		4.Kurunda	15
		5. Girgav	15
	AUNDHA	1.Aundha	15
		2. Purunjal	15
		3. Kondashi	15
		4.Jawala bajar	15
		5.Sidheshwar	15
<b>Total</b>	<b>2</b>	<b>10</b>	<b>150</b>

### 3.4 Designing of interview schedule

Keeping in view the objectives of the study, an interview schedule was designed. This includes relevant questions for seeking information in respect of independent and dependent variables. The questions asked were in local language (i.e. Marathi). The schedule was pretested from respondents who are not included in study .The schedule included both open and close ended questions.

#### 3.4.1 Pre-testing of Schedule

The pre-testing of schedule is necessary on the part of researchers, in order to know the mistakes, ambiguities and shortfalls. Pretesting is also essential for

clarity, readability, and validity. Before finalizing the interview schedule it was pre-tested outside the sample area for reliability and validity of the questions by interviewing fifteen respondents.

The pretesting of interview schedule was done in pangarashinde village of Vasmat tahshil by interviewing fifteen respondents. The data collected from non-sampled farmers was thoroughly studied to detect the unfamiliar words, vagueness and complexity of questions included in the schedule. Certain changes were made in the schedule in the light of the practical experience of pre-testing. Thus, it was finally ready for data collection.

#### **3.4.2 Method of data collection**

The data were collected through face to face contact method by contacting the selected farmers. The farmers were contacted at their home or farm as per their convenience. For obtaining maximum accuracy in data collection, the author established rapport with the turmeric growers and tried to win their confidence. The purpose of the study was explained to them and they were assured that the information furnished by them was kept confidential and used strictly for the purpose of the study.

The information collected from turmeric growers with the help of interview schedule as mentioned below. Each respondent took about 30 to 35 minutes to understand the questions.

#### **3.5 Processing of data**

The information collected from the turmeric growers with the help of the personal interview schedule was processed by making primary and secondary tables. The data of qualitative nature were converted into quantitative form and computation of score was done for each of the independent and dependent variables. The information collected was transferred from the interview schedule to primary tables and to secondary tables. Qualitative data were quantified from quantified data the frequency, percentage and different scores in order to find out correlation between the dependent and independent variables were worked out for further need

**Table-2 Variables and their measurement**

<b>Sr. No.</b>	<b>Variables</b>	<b>Empirical Measurement</b>
<b>A.</b>	<b>Independent variables</b>	
1.	Age	The chronological age of the Turmeric growers
2.	Education	Formal education sought by the respondents.
3.	Family size	Number of family members.
4.	Experience in turmeric production	Total numbers of years in growing turmeric crop.
5.	Source of irrigation	Scale developed by Thakare(2004) was used
6.	Land holding	As per the classification of Govt. of Maharashtra.
7.	Annual income	Income in rupees obtained from all sources.
8.	Sources of information	Use of different sources for getting information by the turmeric growers.
9.	Social participation	Schedule was developed .
10.	Risk orientation	Scale developed by Supe (1969) was used with slightly modification .
11.	Market orientation	Scale developed by Samanta (1977) with slightly modification was used..
<b>B.</b>	<b>Dependent variable</b>	
	Entrepreneurial behaviour a) Innovativeness b) Achievement motivation c) Decision making ability d) Leadership ability e) Management orientation	Schedule was developed

### 3.5.1 Measurement of Independent variable

#### 3.5.1.1 Age

Considering chronological age completed at the time of interview the respondent were classified into three groups viz., be developed

<b>Sr. No.</b>	<b>Category</b>	<b>Age</b>
1.	Young	Upto27
2.	Middle	28 to 53
3.	Old	54 and above
	<b>Mean = 40.50</b>	<b>SD = 13.75</b>

### 3.5.1.2 Education

According to level of formal education, the turmeric growers were grouped into following categories.

Sr. No	Category	Score
1.	Illiterate	0
2.	Can read and write only	1
3.	Primary school (1st to 4th Std.)	2
4.	Secondary school (5 th to 10 <sup>th</sup> )	3
6.	Higher secondary education (11th to 12th)Std.	4
7.	College level/graduate/diploma	5

### 3.5.1.3 Family size

It refers to the total number of person living together in a family. According to the respondents families were grouped into three categories as below

Sr. No.	Category	Number of members
1	Small	Up to 4
2	Medium	5 to 10
3	Big	11 and above
	<b>Mean = 07.00</b>	<b>S.D=3.11</b>

### 3.5.1.4 Experience in turmeric cultivation:

It is the period measured in the years from the day the respondents entered in the turmeric cultivation . Based upon the experience in turmeric production the respondent were categorised on the basis of mean and standard deviation .

Sr. No.	Category	Years
1.	Low	Experience up to 7 years
2.	Medium	Experience from 8 to 18years
3.	High	Experience from 19 and above years
	<b>Mean=12.5</b>	<b>S.D=5.533</b>

### 3.5.1.5 Sources of irrigation

It is operationally refers as irrigation facilities available with selected respondent.

It was ascertained and the categorization and scoring procedure developed by Thakare (2004) scale was used for measurements of irrigation facilities asfollows.

Sr. No.	Category	Score
1.	No source	0
2.	River	1
3.	Well/ Tube well	2
4.	Canal	3

### 3.5.1.6 Land holding:

Land holding was defined as the number of hectares of land possessed by the turmeric growers . Considering the size of land owned and cultivated by each of the respondents family. The turmeric growers were grouped into five categories according to the standard category made by Government of Maharashtra as below.

Sr. No	Category	Score	Land holding (ha.)
1	Marginal	1	Up to 1.00
2	Small	2	1.01 to 2.00
3	Semi-medium	3	2.01 to 4.00
4	Medium	4	4.01 to 10.00
5	Big	5	10.10 & above

### 3.5.1.7 Annual income

Annual gross income of turmeric growers from different sources was measured in terms of rupees per annum from all the sources. According to their annual gross income the respondent were categorised on the basis of mean and standard deviation .

Sr. No.	Category	Annual income
1.	Low	Up to 99176
2.	Medium	99177 to 380823
3.	High	380824 and above
	<b>Mean = Rs240000</b>	<b>SD =Rs140824.247</b>

### 3.5.1.8. Sources of information:

It is operationally define as the degree of different personal, mass and impersonal sources used by the respondents for seeking information and getting guidance about different package practices and other information related to turmeric production. The possible resources were listed and responses were collected on three continuum i.e. always 2 sometime 1 and never 0 respectively and the respondent were categorised on the basis of mean and standard deviation .The possible rating score for sources of information ranged from minimum 0 and maximum 22

<b>Sr. No</b>	<b>Category</b>	<b>Score</b>
1	Low	Up to 4
2	Medium	5 to 17
3	High	18 and above
	<b>Mean= 11</b>	<b>S.D= 6.988</b>

### 3.5.1.9 Social participation

Social participation is the degree of involvement of the farmer from mere membership to organizational position and his active participation in the meetings of local formal organizations like gram panchayat, co-operatives, youth clubs and other unregistered organizations. The data is presented in frequency and percentage. The social participation level of respondents was measured by developing interview schedule.

<b>Sr. No.</b>	<b>Type of participation</b>	<b>Score</b>
1.	Regular	2
2.	Occasional	1
3.	Never	0

The scoring was calculated on the basis of mean and standard deviation .The possible rating score for social participation ranged from minimum 0 and maximum 18

<b>Sr. No.</b>	<b>Type of participation</b>	<b>Categories</b>
1.	Low	Up to 7
2.	Medium	8 to 11
3.	high	12 and above
	<b>Mean = 9.5</b>	<b>SD = 2.014</b>

### 3.5.1.10 Risk orientation

The degree of risk orientation was measured by the help of scale developed by Supe (1969) with suitable modification. Six statements were incorporated in the schedule. To measure risk orientation as strongly agree, agree, undecided, disagree and strongly disagree were assigned scores 5, 4, 3, 2, 1, respectively for the positive statement. In case of negative statement score was reversed. Thus, total score for all the statement was calculated and then they were classified into three categories score was calculated on the basis of mean and standard deviation . The possible rating score for risk orientation ranged from minimum 6 and maximum 30.

<b>Sr. No.</b>	<b>Category</b>	<b>Risk orientation</b>
1.	Low	Up to 13
2.	Medium	14 to 27
3.	High	28 and above
	<b>Mean = 20</b>	<b>SD =7.214</b>

### 3.5.1.11 Market Orientation

It refers to the orientation of the turmeric growers about the prevalence of ready and remunerative market. It was measured with the help of market orientation scale worked out by Samantha (1977) To measure market orientation as strongly agree, agree, undecided, disagree and strongly disagree were assigned scores 5, 4, 3, 2, 1, respectively for the positive statement. In case of negative statement score was reversed.

Thus, total scores for all the statements were obtained by adding all scores and then turmeric growers were classified into three categories score was calculated on the basis of mean and standard deviation . The possible rating score for social participation ranged from minimum 6 and maximum 30.

<b>Sr. No.</b>	<b>Category</b>	<b>Risk orientation</b>
1.	Low	Up to 17
2.	Medium	18to 26
3.	High	27 and above
	<b>Mean = 22.00</b>	<b>SD =5.07</b>

### 3.5.2 Entrepreneurial behaviour

For the present study, entrepreneurial behavior of turmeric growers is operationally defined as cumulative outcomes of five selected components of entrepreneurial behavior viz., innovativeness, achievement motivation, decision making ability, leadership ability and management orientation were measured by using the following methods

#### 3.5.2.1 Innovativeness

It refers to the behaviour pattern of an turmeric growerswho has interest and desire to seek changes turmeric production and is prepared to introduce such changes into his operations wherever practical and feasible.

In today's world, knowledge is currency, a person with accurate information can exploit the opportunities by acting at the right time. turmeric growers

who adopt improved technologies earlier than others in his social system can take relative advantage of the innovations.

The level of innovativeness respondents was measured by developing interview schedule. For the study of innovativeness of respondents total nine statements are formed and responses were obtained on three point continuum namely ‘agree’, ‘undecided’ and ‘disagree’. A weightage of 3, 2 and 1, respectively were assigned to the response categories in the case of positive statements and the scoring was reversed for negative statements.

The final scoring was arrived by summing up the scores of the weightage of response of each statement. As there will be three sets of statements for innovativeness scale, the sums of scores for the three sets were considered for each respondent. Self rating score for innovativeness ranged from minimum 9 and maximum 27. The respondents were then categorized into three categories based on mean and standard deviation as the measure of check. High score of the respondent reveals his more innovative nature.

<b>Sr.No.</b>	<b>Category</b>	<b>Score</b>
1.	Low	Up to 15
2.	Medium	16 to 24
3.	High	25 and above
	<b>Mean=20.00</b>	<b>S.D=4.97</b>

### 3.5.2.2 Achievement motivation

It was operationalized as the desire for excellence to attain a sense of personal accomplishment. The level of Achievement motivation of the respondents was measured by developing interview schedule.

The schedule consisted of six statements and responses were obtained on three point continuum namely ‘agree’, ‘undecided’ and ‘disagree’. A weightage of 3, 2 and 1, respectively were assigned to the response categories in the case of positive statements and the scoring was reversed for negative statements. The total score score was calculated on the basis of mean and standard deviation . The possible rating score for achievement motivation ranged from minimum 6 and maximum 30.

<b>Sr. No.</b>	<b>Category</b>	<b>Score</b>
1.	Low	Up to 8
2.	Medium	9 to 15
3.	High	16 And above
	<b>Mean= 12.00</b>	<b>S.D=4.08</b>

### 3.5.2.3 Decision making ability

The decision making ability of a farmer is operationally defined as the degree of weighing the available alternatives in terms of their desirability and their likelihoods and choosing the most appropriate one for achieving maximum profit on his farming.

The level of decision making ability of the respondents was measured by developing interview schedule. The schedule consist of weightages 3, 2 and 1 these was assigned to the three rationally levels namely ‘rational, inter mediate and less rational, respectively. score was calculated on the basis of mean and standard deviation .The possible rating score for decision making ability ranged from minimum 0 and maximum 8.

<b>Sr.No.</b>	<b>Category</b>	<b>Score</b>
1.	Low	Up to 3
2.	Medium	4 to 6
3.	High	7 and above
	<b>Mean=5.00</b>	<b>SD=1.986</b>

### 3.5..2.4 Leadership ability

Leadership ability was defined as the degree to which an turmeic grower initiated or motivates the action of others. The level of leadership ability of the respondents was measured by developing interview schedule.

In schedule consist of three point rating scale ‘Always’, ‘Sometimes’ and ‘Never’ with decreasing score from 2, 1 and 0 respectively. score was calculated on the basis of mean and standard deviation . The possible rating score for leadership ability ranged from minimum 0 and maximum 10.

<b>Sr. No.</b>	<b>Category</b>	<b>Score Range</b>
1	Low	Up to 4
2	Medium	5 to 6
3	High	7 and above
	<b>Mean=6.00</b>	<b>SD=2.15</b>

### 3.5..2.5 Management orientation

It refers to the degree to which a turmeric grower is oriented towards scientific farm management comprising planning, production and marketing functions in his farm.

The level of management orientation of the respondents was measured by developing interview schedule. The schedule consists of eight statements positive and negative statements. The positive statements were given scores of 3, 2 and 1 for agree, undecided and disagree, respectively. The scoring was reversed in case of negative statements..

Based on the total score score was calculated on the basis of mean and standard deviation. The possible rating score for management orientation ranged from minimum 8 and maximum 24

<b>Sr. No.</b>	<b>Category</b>	<b>Score Range</b>
1	Low	Up to 14
2	Medium	15 to 19
3	High	20 and above
	<b>Mean=17.00</b>	<b>SD=2.65</b>

### **3.6 Other related aspects studied**

#### **3.6.1**

The information on the constraints experienced by the farmers was assessed by asking close end questions. Response about this aspect was recorded and respective percentages were worked out in order to draw conclusion.

### **3.7. Statistical tools used for analysis of data**

In this study the statistical methods, such as percentage, range and Karl Pearson's correlation coefficient, multiple linear regression have been used.

#### **3.7.1 Frequency and percentage**

Frequency and percentage were used of making simple comparisons. The frequency of the particular category was multiplied by hundred and divided by total number of respondents to get percentage.

#### **3.7.2 Mean**

The arithmetic mean (X) is the quotient that results when the sum of all the items in the series is derived by the number (n) of items.

The mean was calculated by using formula

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

Where,

X= Mean

n= Total number of observations

$X_i$  = Value of observation

### 3.7.3 Standard deviation

Standard deviation is a measure of variability calculated around mean. It was denoted by Greek letter  $\delta$  (sigma) and calculated with the following formula.

$$\delta = (\text{S.D.}) = \sqrt{\frac{N\sum X^2 - (\sum X)^2}{N}}$$

Where,

$\delta = (\text{S.D.}) =$  Standard deviation

$\sum X^2 =$  Sum of square of 'X' series

$(\sum X)^2 =$  Square of summation 'X' series

$N =$  Number of respondents

### 3.7.4 Karl Pearson's correlation coefficient (r)

Correlation coefficient test was employed to find out the nature of relationship between dependent and independent variables.

This technique was used to find out the relationship between two variables. Following formula was used for computation of 'r' value.

$$r = \frac{\sum XY - \frac{(\sum X)(\sum Y)}{n}}{\sqrt{\left[\frac{\sum X^2 - (\sum X)^2}{n}\right] \left[\frac{\sum Y^2 - (\sum Y)^2}{n}\right]}}$$

Where,

$n =$  Total number of respondents,

$r =$  Correlation coefficient,

$X =$  Score of independent variables,

$Y =$  Score of dependent variable.

# RESULTS AND DISCUSSION



## CHAPTER-IV

### RESULTS AND DISCUSSION

This chapter deals with the presentation of the results of the investigation and critical discussion of the results presented. It presents the distribution of the respondents of turmeric growers with reference to their selected personal, social, economic characteristics. The data collected from 150 respondents were compiled and appropriate statistical tests were used for drawing the inferences. The results of the investigation are presented in this chapter with following heads:

- 4.1 Personal, socio-economic characteristics of the turmeric growers
- 4.2 Entrepreneurial behavior of turmeric growers
- 4.3 Relationship between socio-economic characteristics and their entrepreneurial behavior.
- 4.4 Constraints faced by the turmeric growers
- 4.5 Suggestions given by the turmeric growers

#### 4.1 Socio-economic characteristics of the turmeric growers

##### 4.1.1 Age:

Age was considered as a factor, since it reveals the ability of an individual to take positive decisions for achieving his needs and it influences the turmeric growers to choose and to adopt a particular technology. The results related to the age distribution of turmeric growers are presented in the table 3.

**Table 3. Distribution of the respondents according to their age:**

Sr. No.	Age	Respondents (n=150)	
		Number	Percentage
1.	Young (Up to 27 yrs.)	20	13.33
2.	Middle (28 yrs. to 53yrs.)	92	61.34
3.	Old (54 yrs. and above)	38	25.33
<b>Total</b>		<b>150</b>	<b>100.00</b>

The above Table 3 concluded that the majority 61.34 per cent of respondents were from middle age group, followed by old age group 25.33 per cent and young age group 13.33 per cent respectively.

The middle age farmers comparatively have free hands in financial affairs and they can take decisions independently to implement their ideas. Farmers of middle age are of enthusiastic, having moderate experience in turmeric and have more efficiency than older once.

This similar finding was also reported by Kanwat (2011), Kaushalkumar (2012), Thakare (2013), Ahire and Kapse (2015) and Kamble

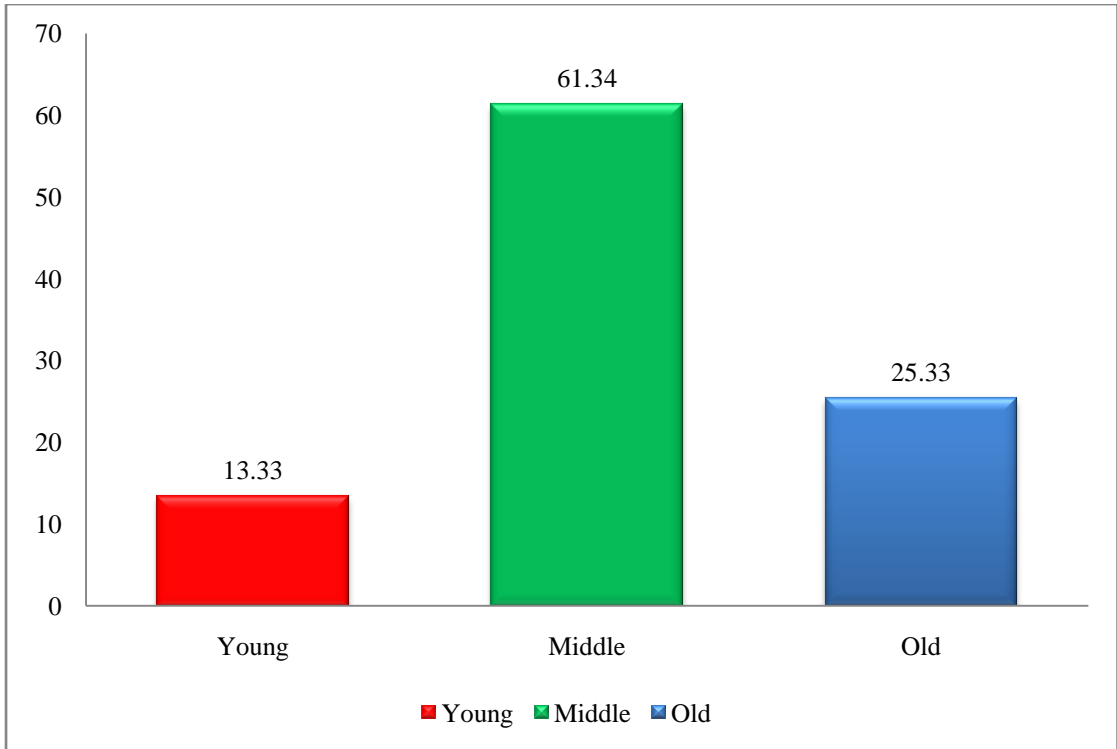
#### 4.1.2 Education:

Education is the process of bringing about desirable changes in the behaviour. Educational status of an individual is considered as one of the major factors influencing the entrepreneurial attributes of the turmeric growers. The education of the respondents was studied and the result has been presented in table 4.

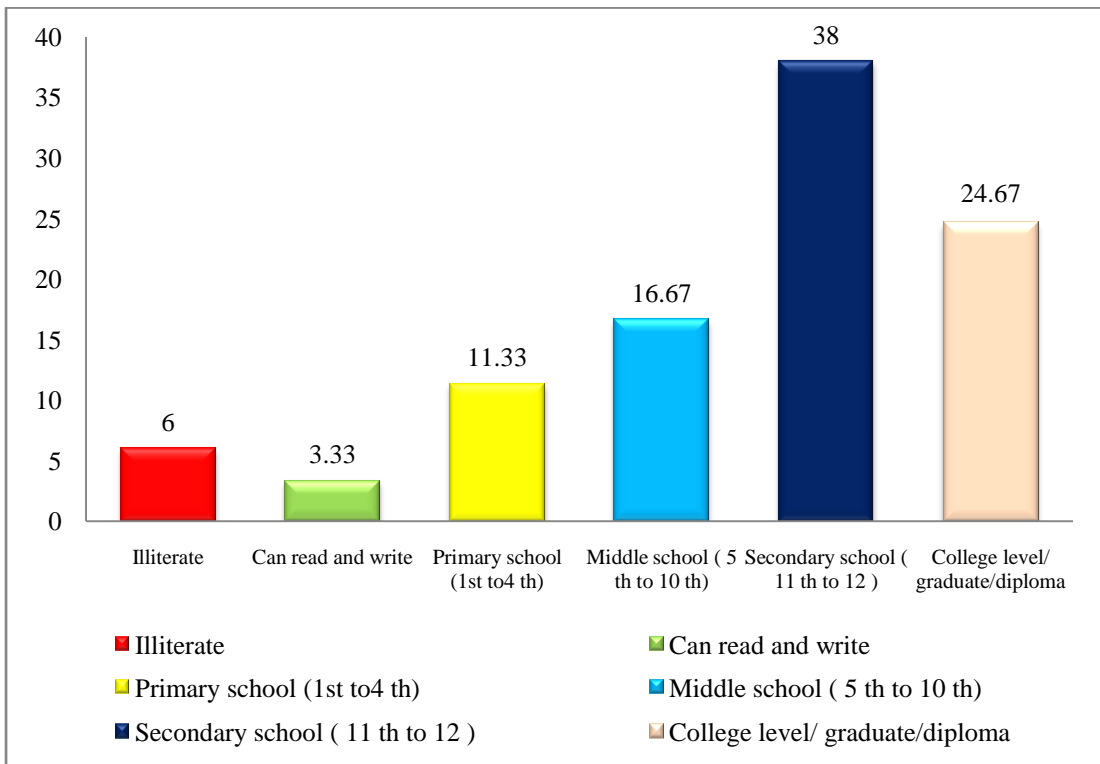
**Table 4. Distribution of the respondents according to their education:**

Sr. No.	Level of education	Respondents (n=150)	
		Number	Percentage
1.	Illiterate	9	06.00
2.	Can read and write	5	03.33
3.	Primary school (1st to4 th)	17	11.33
4.	Secondary education ( 5 thto 10 th)	25	16.67
5.	High school ( 11 th to 12 )	57	38.00
6.	College level/ graduate/diploma	37	24.67
<b>Total</b>		<b>150</b>	<b>100.00</b>

The above Table 4 concluded that the majority 38.00 per cent of respondents were educated up to High school, where as one third 24.67 per cent up to College level. About 16.67 per cent respondents educated up to Middle school and very few 11.33 per cent was found in primary whereas 06.00 per cent and 03.33 per cent of the respondents are illiterate and can read and write respectively.



**Fig. 2. Distribution of respondents according to their age**



**Fig.3. Distribution of respondents according to their Education**

As the respondents are staying in and around the city place which might be realized them the importance of formal education and motivated to pursue higher education it can be the probable reason for majority of farmers to be educated up to High school level.

This was due to as education of respondent increases then there is increase in the knowledge of respondents so it helps in carrying out better entrepreneurial activity.

This observation is similar with findings of Sharma (2015), Kumar (2011), Kaushalkumar (2012), Shinde (2014), Kamble (2015), Ahire and Kapse (2015)

#### **4.1.3 Family size**

Family size is the sum total number of the members in the family. Responses of the members were categorized *viz.* Small, medium and big. Data regarding the family size are presented in table 5.

**Table no.5: Distribution of turmeric growers according to their size of family**

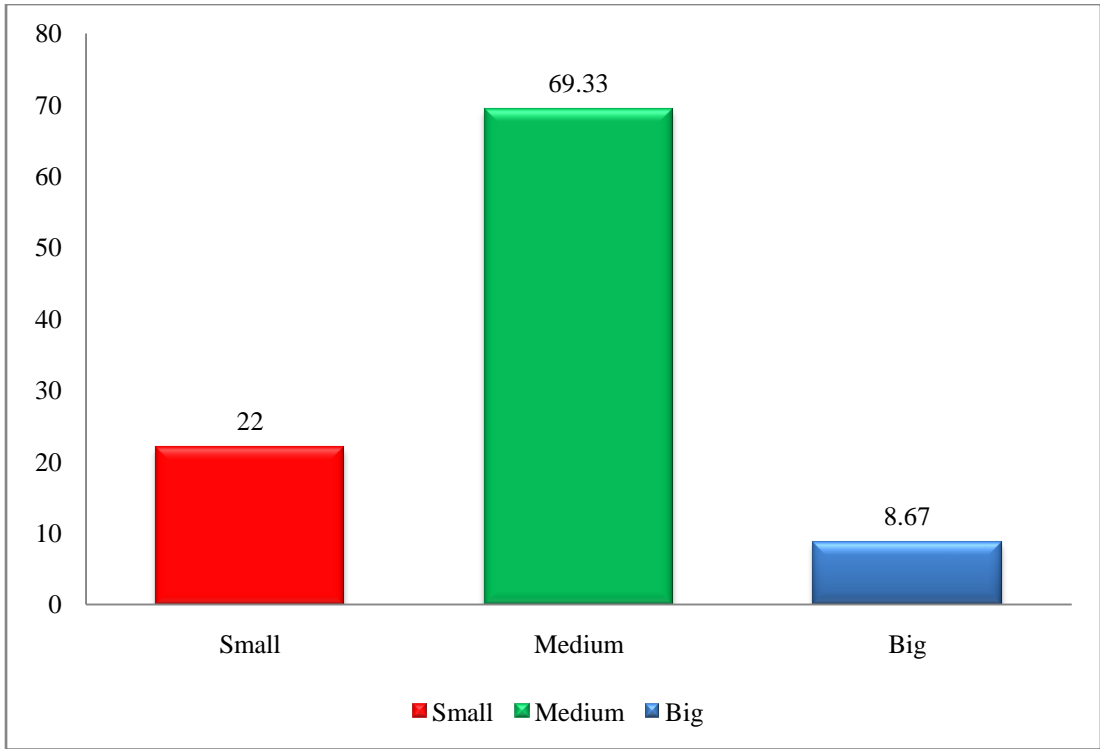
<b>Sr. No.</b>	<b>Category</b>	<b>Frequency</b>	<b>Percentage</b>
1	Small ( up to 4)	33	22.00
2	Medium ( 5 to 10)	104	69.33
3	Big (11 and above)	13	08.67
<b>Total</b>		<b>150</b>	<b>100.00</b>

The above Table 5 concluded that the majority, more than half of the turmeric grower 69.33 per cent had medium family size whereas, 22.00 per cent of turmeric grower belonged to small family size. Thus, 08.67 per cent of turmeric growers belonged to big family size

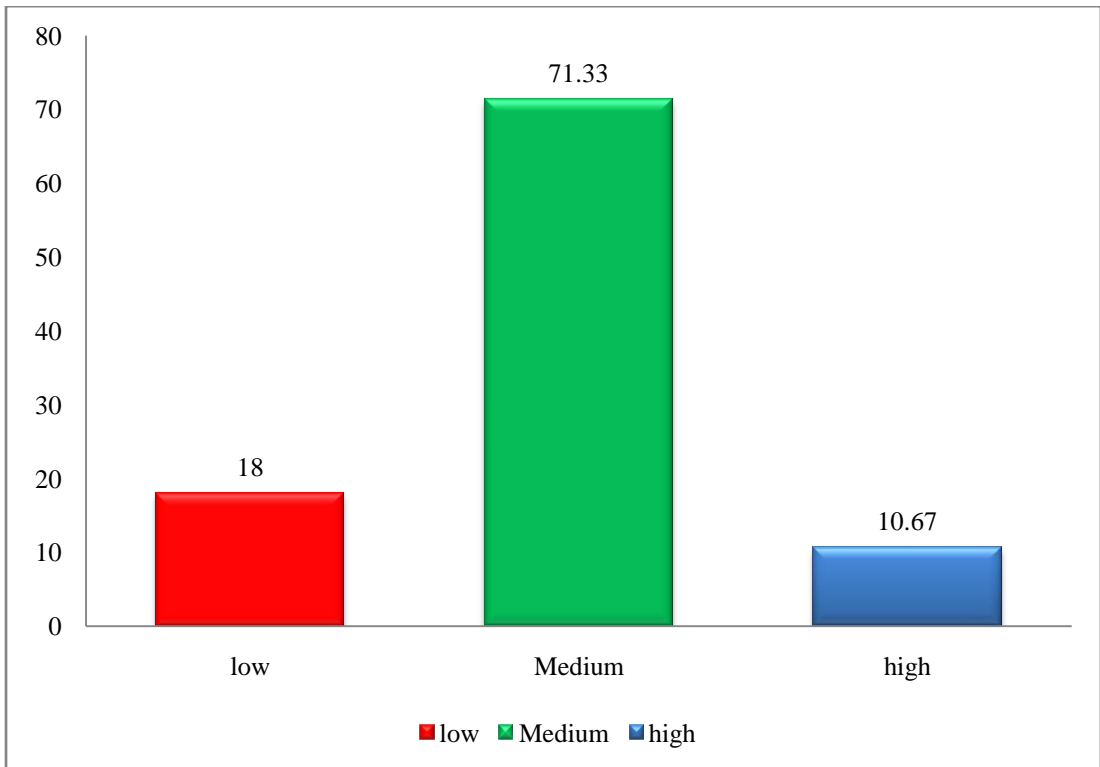
Similar result found by Ekhande (2016), Chauhan *et al.* (2004), Nagesha (2005) and Pandeti (2005)

#### **4.1.4 Experience in turmeric production:**

Experience is the important factor, which influence the decision making ability, management ability and help the turmeric producer in taking



**Fig. 4. Distribution of respondents according to their Family Size**



**Fig. 5. Distribution of respondents according to their Experience in turmeric production**

calculated risk. Apart from this it also influence the social and economic status of the turmeric growers.

The information pertaining to the experience of the respondents were collected, tabulated and analyzed. The results are presented in the table 6

The below Table 6 concluded that the majority 71.33 per cent of the turmeric growers had medium experience in turmeric production for a period ranging between 8 to 17years , followed by 18.00 per cent of respondents had low experience

**Table 6. Distribution of the respondents according to their experience:**

Sr. No.	Experience	Respondents (n=150)	
		Number	Percentage
1	Low (upto 7 years)	27	18.00
2	medium (8 to 17 years)	107	71.33
3	High (18 years & above)	16	10.67
<b>Total</b>		<b>150</b>	<b>100.00</b>

in the turmeric production for a period ranges up to 7 years. The 10.67 per cent of the respondents had high experience in the turmeric production for a period ranging between 18and above years.

The probable reason for most of the turmeric growers had medium experience and most of them are middle age group. The experience helps turmeric growers improve their decision making ability, management orientation and risk taking ability. Apart from that it helps them to improve their socio-economic status.

This was due to as farming experience of respondents had more then there is similarly increase in entrepreneurial attributes of respondents.

This observation is similar with findings of Sonwane et al.(2009), Kumar (2011), Kaushalkumar (2012), and Lad (2014) , Ekhande (2016) .

#### **4.1.5. Source of irrigation**

The sources of irrigation are quite useful to increase the productivity hence, it is included in the study and result has been presented in Table 7

**Table 7. Distribution of the respondents according to their source of irrigation**

Sr. No.	Source of irrigation	Respondents (n = 150)	
		Number	Per cent
1.	River	4	02.67
2.	Well / Tube well	116	77.33
3.	Canal	30	20.00
<b>Total</b>		<b>150</b>	<b>100.00</b>

The above Table 7 concluded that the majority that 77.33 per cent of the respondents had well or tubewell their source of irrigation, canal 20.00 per cent and remaining 02.67 per cent of the respondents had river as their source of irrigation. Thus, the study concluded that maximum number of the respondents had Well or tubewell as their source of irrigation.

It was due to farmers used the irrigation source nearer to their farm and used that water for cash crop like turmeric production. It is due to they are educated also they have more turmeric production experience.

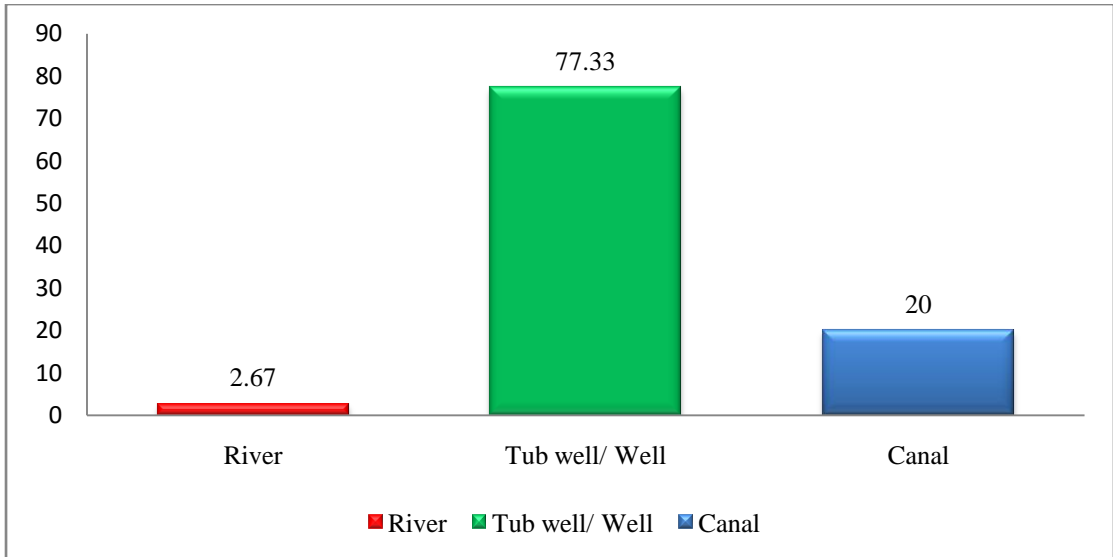
This observation is similar with findings of Gavade (2013), Dutonde (2014) and Amle (2016)

#### **4.1.6 Land holding:**

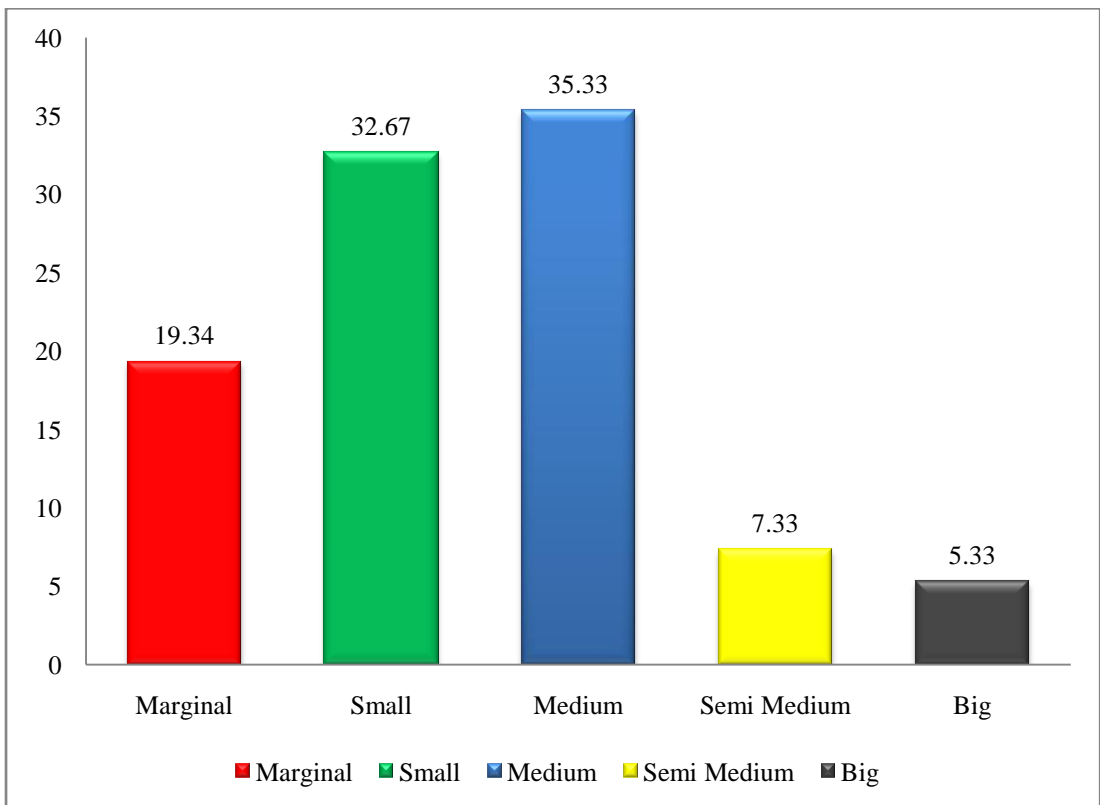
The hectare of land possessed by an individual had might influence on adoption of innovation and also determine the decision making ability and risk taking ability. The result obtained has been presented in table 8.

**Table 8. Distribution of the respondents according their size of land holding:**

Sr. No.	Land holding	Respondents (n=150)	
		Number	Percentage
1.	Marginal (Up to 1.00 ha.)	29	19.34
2.	Small (1.01 ha.to 2.00 ha.)	49	32.67
3.	Semi-medium (2.01 ha.to 4.00 ha.)	53	35.33
4.	Medium (4.01 ha. to 10.00 ha.)	11	07.33
5.	Big (10.10 ha.& above)	8	05.33
<b>Total</b>		<b>150</b>	<b>100.00</b>



**Fig. 6. Distribution of respondents according to their Source of irrigation**



**Fig. 7. Distribution of respondents according to their Land Holding**

The above Table 8 concluded that 35.33 per cent of the turmeric growers belonged to category of semi-medium land holding, followed by 32.67 per cent of respondents who belonged to category of small land holding possessing land between 1.01 ha.to 2.00 ha, 19.34 per cent of the respondents belonged to marginal land holding category up to 01.00 ha. 05.33 per cent respondents belonged to big category between 10.10 ha.& above ha.

It is concluded that maximum percentage of the turmeric growers were found in semi-medium and medium land holding category. The reason for possession of higher per cent of semi medium land holding could be due to fragmentation of land because of separation of families.

This observation is similar with findings of Andhari and Sonwane (2012), Thakare (2013), Deshmukh (2014), Shinde (2014) and Ahire and Kapse (2015).

#### **4.1.7. Annual income:**

Annual income refers to the total income in year of all the family members of the respondents from all the sources. Annual income of the family helps to project the overall economic position and is indication of economic stability. The result obtained and presented in table 9.

**Table 9. Distribution of the respondents according to their annual income:**

Sr. No.	Annual income	Respondents (n=150)	
		Number	Percentage
1.	Low (Up to 99176)	23	15.33
2.	Medium (99177 to 380823)	114	76.00
3.	High (380824& Above )	13	8.67
<b>Total</b>		<b>150</b>	<b>100.00</b>

The above Table 9 concluded that majority 76.00 per cent had annual income of Rs. 99176 to Rs. 380824, followed by 15.33 per cent of the respondent had annual income of below Rs. 99175 and only 08.67 per cent had annual income of Rs. 380822 and above .

The probable reason, would be attributed to varied income level of respondents, might be due to the semi-medium size of land holding and few of them practicing the subsidiary occupation.

This similar finding was also reported by Todmal and Kadam(2009), Kaushalkumar (2012), Thakare (2013), Shete (2014), Ahire and Kapse(2015)

#### **4.1.8. Sources of Information:**

Sources of information help to seek knowledge and guidance about many aspects of turmeric growers. The information sources not only provide information but also provide some guidance along with information.

Apart from this it also plays vital role in acquiring latest improved turmeric technology, motivated turmeric growers for its adoption and that helpful for adopting new technology. The result obtained has been presented in table 8.

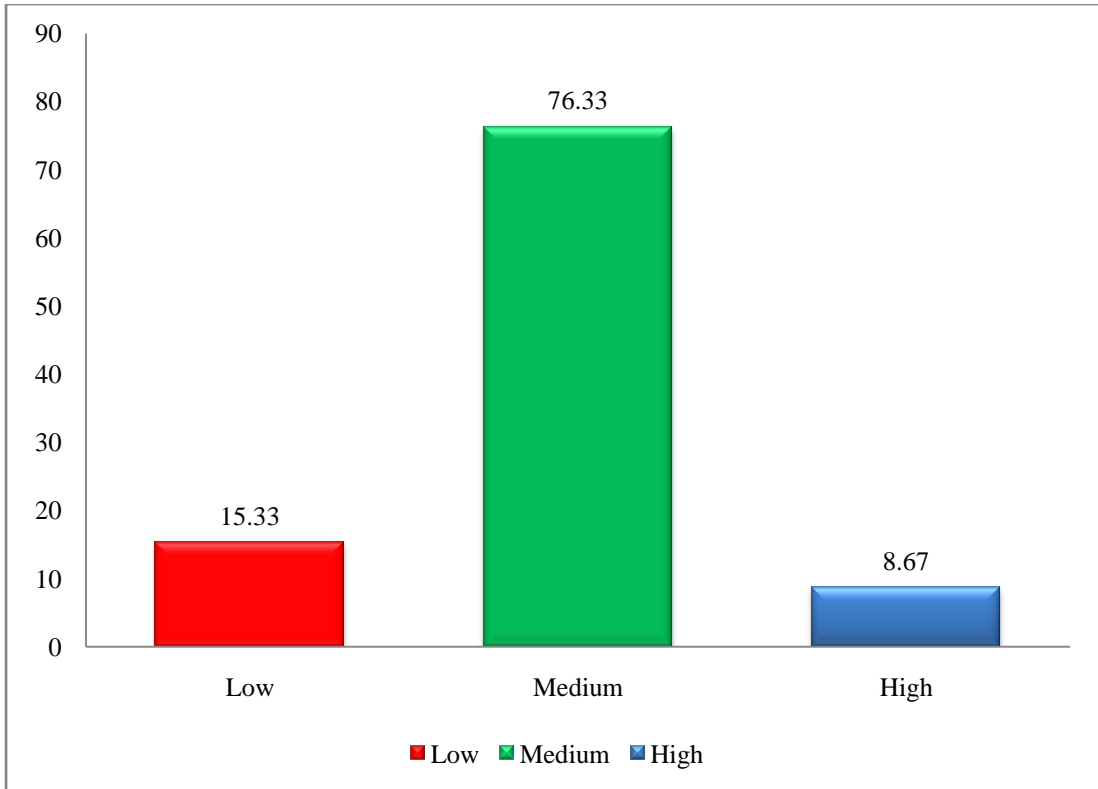
The Table 10 indicated that more than two third 64.00 per cent of respondents uses medium sources of information followed by, low 20.00 per cent and high category of sources of information 16.00 per cent respectively.

**Table 10. Distribution of the respondents according to their use of source of information:**

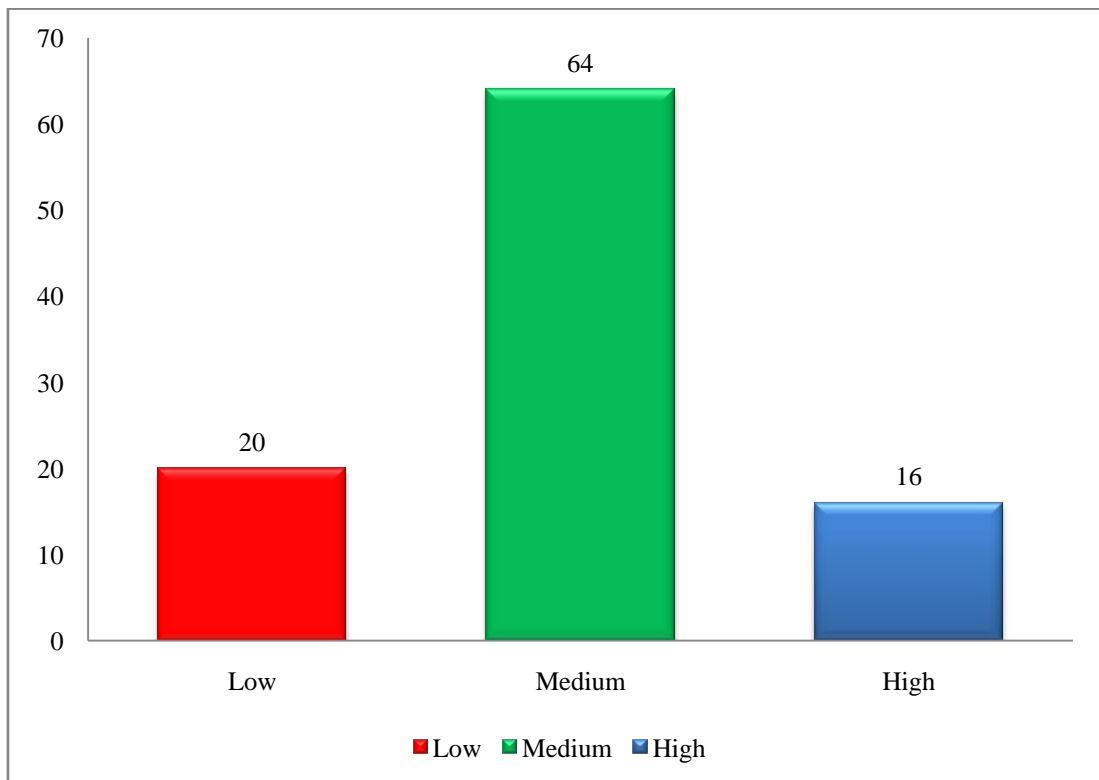
Sr. No.	Sources of information	Respondents (n=150)	
		Number	Percentage
1.	Low ( up to 4)	30	20.00
2.	Medium ( 5 to 17)	96	64.00
3.	High ( 18 and above )	24	16.00
<b>Total</b>		<b>150</b>	<b>100.00</b>

Most of the respondents preferred individual contact methods i.e. discussion with friends, colleagues and get information from successful turmeric growers. Apart from this they used group contact methods like demonstrations and organization of turmeric grower's etc. for getting information related to turmeric enterprise.

This similar finding was also reported by Jadhav (2013), Lad(2013), Ambavane (2014), Deshmukh (2014), Shinde (2014) and Ahire and Kapse (2015).



**Fig. 8. Distribution of respondents according to their Annual income**



**Fig. 9. Distribution of respondents according to their Source of information**

#### 4.1.9 Social participation

Social participation helps the individual to broaden their vision and insight for self -development in right direction. It also plays pivotal role in influencing adoption behavior of the farmers.

**Table 11. Distribution of turmeric growers according to their social participation**

Sr. No.	Category	Frequency	Percentage
1.	Low ( up to 7)	19	12.67
2.	Medium ( 8 to11)	116	77.33
3.	High (12 and above)	15	10.00
	Total	<b>150</b>	<b>100.00</b>

The above Table 11 concluded that the majority 77.33 per cent of the turmeric growers had high social participation, while, 12.67 per cent of turmeric growers were having medium level of social participation. Only, 10.00 per cent of them had low social participation.

The possible reason is due to the fact that people have a greater access to the gram Panhayat, Gram Sabha, Co-operative society. Co-operative societies in the rural sector are extending all facilities to their members. For availing the facility the rural people develop their interest to be the member of the society. One can easily adopt a new technology by participation in the social institution and gain a lot of knowledge and experience. The above study show that majority of respondent belongs to the medium level of social participation. The results implied that some of the respondents have low social participation and the reason might be the inconvenient timings of the turmeric growers , they might have been busy in agricultural operations and allied activities, and might not know about the programme due to improper communication.

The similar finding was also reported by Katke (2011), Jamadar(2012), Sable (2012), Patel et al. (2012) Ghinath and Singh (2013), Deshmukh(2014), Shete (2014) and Ahire and Kapse (2015).

#### 4.1.10. Risk orientation

In general, turmeric growers are always facing risk and uncertainty in adopting new ideas. Risk orientation decides individual's innovativeness and influence positively on the entrepreneurial behaviour. The successful turmeric growers are one who readily accepts to face the risk and play with nature. Therefore, the risk orientation nature of the respondents was studied and the results are depicted in Table 12

The below Table 12 concluded that the majority 69.33 per cent of the respondents had medium risk bring ability. Whereas, 20.00per cent had low and 10.67per cent of respondents had high level of risk bearing ability.

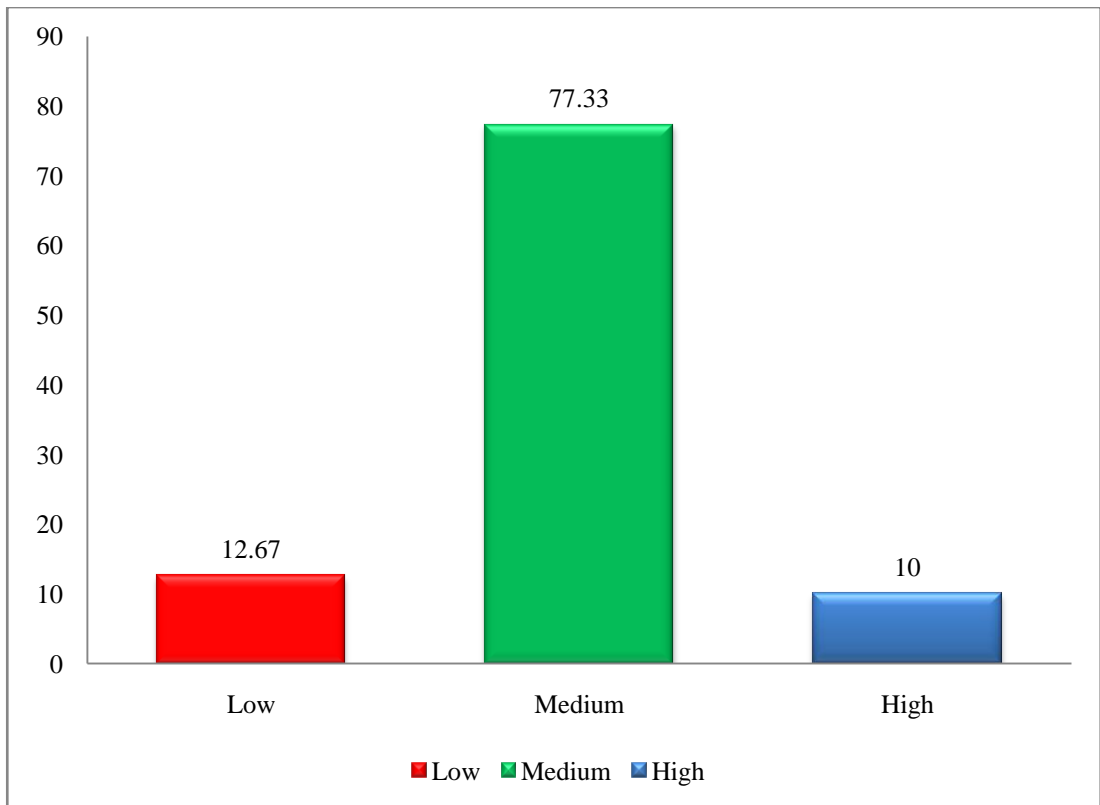
It depends on personal and socio-economic characteristics. The individual with more experience and good income possess better risk taking ability. All these are the probable reasons because of which majority of them possess medium level of risk taking ability. Apart from these fluctuation and low market price is also responsible.

**Table 12. Distribution of the respondents according to their risk orientation:**

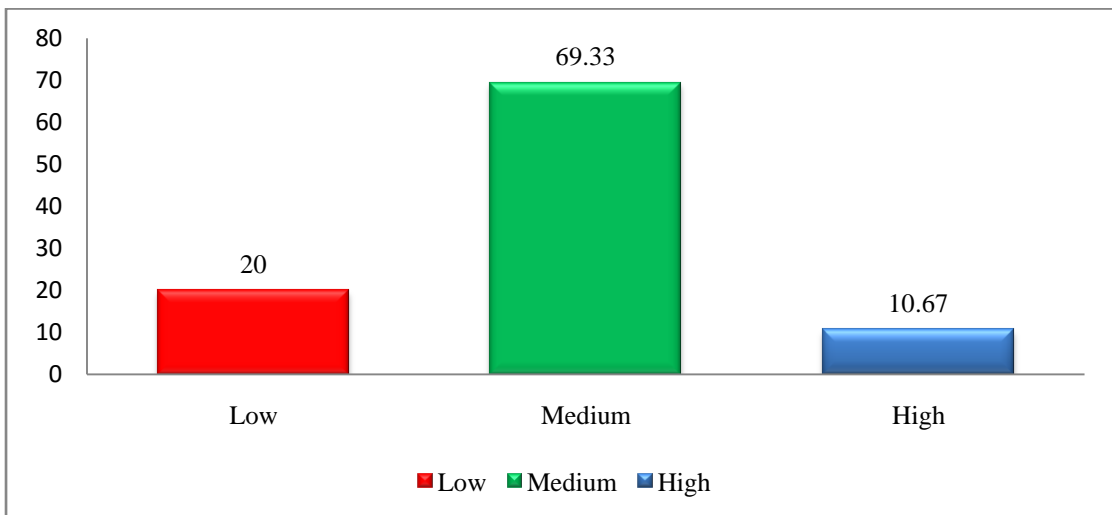
Sr. No.	Risk orientation	Respondents (n=150)	
		Number	Percentage
1.	Low ( up to 12)	30	20.00
2.	Medium (13 to 25)	104	69.33
3.	High (26 and above)	16	10.67
<b>Total</b>		<b>150</b>	<b>100.00</b>

This was may be due to more risk preference of respondents which can help in better stagnation in the turmeric management practices, which helps in better entrepreneurial activity.

This similar finding was also reported by Lawrence et al. (2012), Kaushalkumar (2012), Thakare (2013) Lad (2013), Thorat (2013), Ambavane(2014) and Deshmukh (2014).



**Fig. 10. Distribution of respondents according to their Social participation**



**Fig. 11. Distribution of respondents according to their Risk orientation**

### 3.1.11 Market orientation

The Table 13 concluded that the majority indicated that, more than half of respondent 70.00 per cent had medium level of market orientation, whereas 16.67 per cent of respondent had low market orientation and 13.33 per cent of respondent found high market orientation. The reason behind such findings may be the turmeric grower were having medium farming experience and having education level up to higher secondary school .Also this might be due to moderate social participation and medium sources of information

**Table 13. Distribution of the respondents according to their Market orientation:**

Sr. No.	Market orientation	Respondents (n=150)	
		Number	Percentage
1.	Low( up to 17)	25	16.67
2.	Medium(18 to 26)	105	70.00
3.	High( 27 and above )	20	13.33
<b>Total</b>		<b>150</b>	<b>100.00</b>

These results are in similar with Pisure (2012),Chikane (2018)

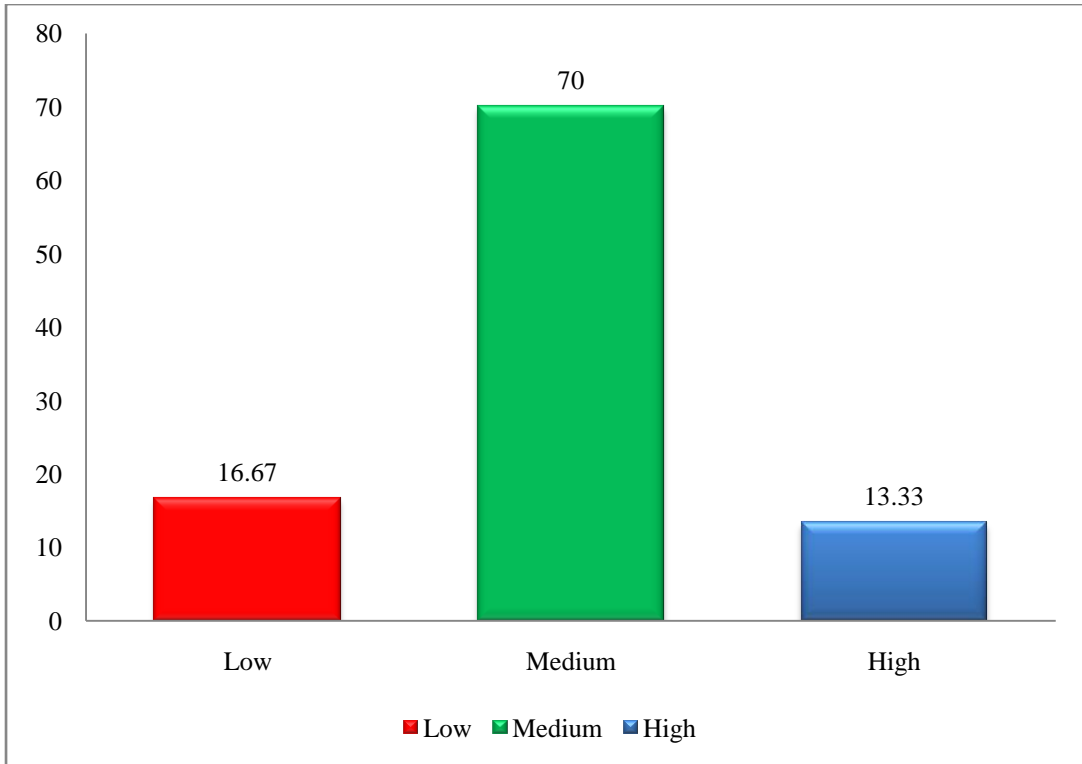
## 4.2 Entrepreneurial behavior of turmeric growers

### 4.2.1. Innovativeness

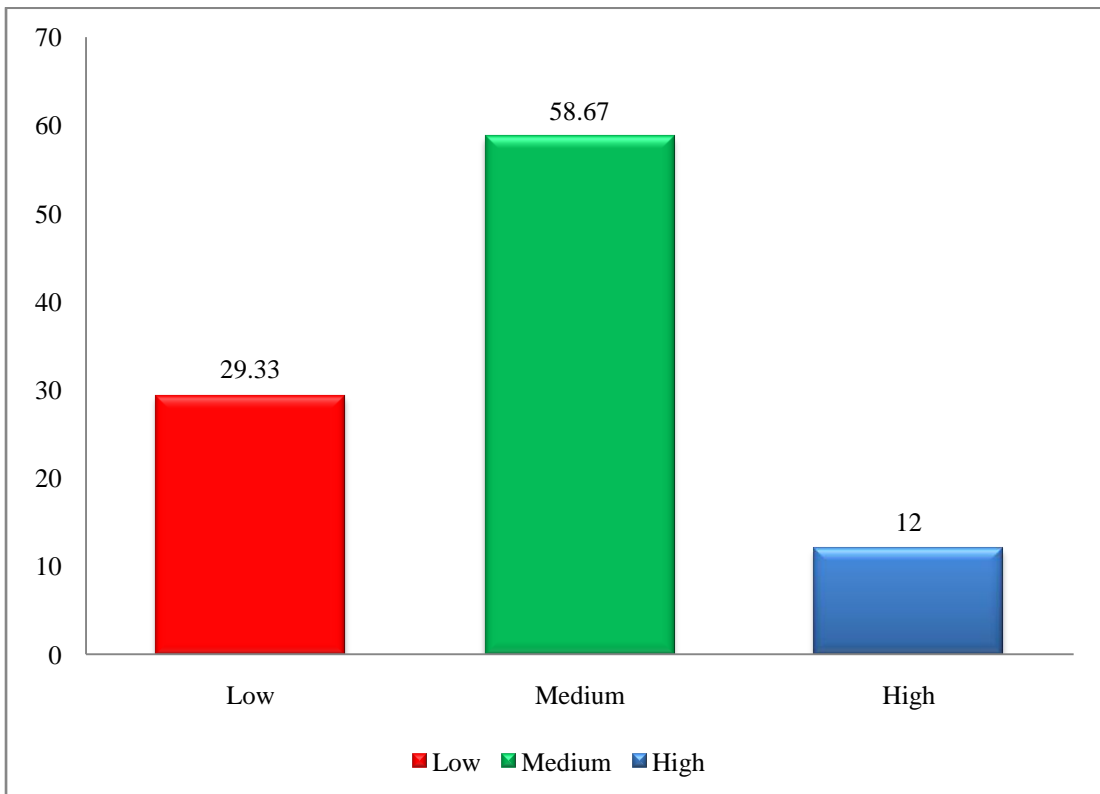
As innovativeness is the important factor in turmeric production. As it indicates the willingness of the individual to know about new things, ideas and new practices related to enterprise and up to what extends he is going to apply this things in his business.

**Table 14. Distribution of the respondents according to their innovativeness:**

Sr. No.	Innovativeness	Respondents (n=150)	
		Number	Percentage
1.	Low( up to 15 )	44	29.33
2.	Medium ( 16 to 24 )	88	58.67
3.	High ( 25 and above )	18	12.00
<b>Total</b>		<b>150</b>	<b>100.00</b>



**Fig. 12. Distribution of respondents according to their Market orientation**



**Fig. 13. Distribution of respondents according to their Innovativeness**

The above Table 14 concluded that the majority 58.67 per cent of the respondents had medium level of innovativeness followed by 29.33 per cent of the respondents under low innovativeness category and 12.00 per cent of the respondents were in high innovativeness category.

The medium innovativeness of farmers might be due to their majority of the farmers belonged to semi medium land holding category 35.33 per cent and majority level of education of farmers was only up to higher secondary school. Also majority of them had medium annual income, and social participation, good education, better annual income and better sources of information. All these factors might have contributed for their medium level of innovativeness

This similar finding was also reported Ekhande (2016), shevale (2017) Chikane (2018)

#### 4.2.2. Achievement Motivation

Achievement motivation is more of a psychological variable which differs from individual to individual. It is assumed that achievement motivation forces the individual towards reaching some goals, which he has set for himself. Higher the association with the individual, higher will be his efforts. This can be attributed to the social status of a respondent, who feels to keep greater goals.

The information regarding achievement motivation of the respondents collected, compile and presented in table 15

**Table 15. Distribution of the respondents according to their achievement motivation:**

Sr. No.	Achievement motivation	Respondents (n=150)	
		Number	Percentage
1.	Low ( up to 8 )	53	35.33
2.	Medium ( 9 to 15 )	89	59.34
3.	High ( 16 and above )	08	05.33
<b>Total</b>		<b>150</b>	<b>100.00</b>

The above Table 15 concluded that the majority more than half 59.34 per cent of the respondents had medium category of achievement motivation followed

by 35.33 per cent and 5.33 per cent of the respondents having low and high category of achievement motivation, respectively

The possible reason might be due to medium level of education, social participation, which had to medium achievement motivation.

This observation is similar with finding of Suresh (2004), Nagesha (2005), Thakare (2013) and Shewale (2016), Chikane (2018)

#### 4.3.3. Decision making ability

In general, the turmeric growers have to take many decisions at every step while doing the business. This is the important attribute which many times decide the success of the enterprise. That is why the decision making attribute was studied and the results are presented in Table 16

**Table 16. Distribution of the respondents according to their decision making ability:**

Sr. No.	Decision making ability	Respondents (n=150)	
		Number	Percentage
1.	Low ( 1 to 3)	22	14.67
2.	Medium ( 4 to 6 )	120	80.00
3.	High ( 7 and above )	08	05.33
<b>Total</b>		<b>150</b>	<b>100.00</b>

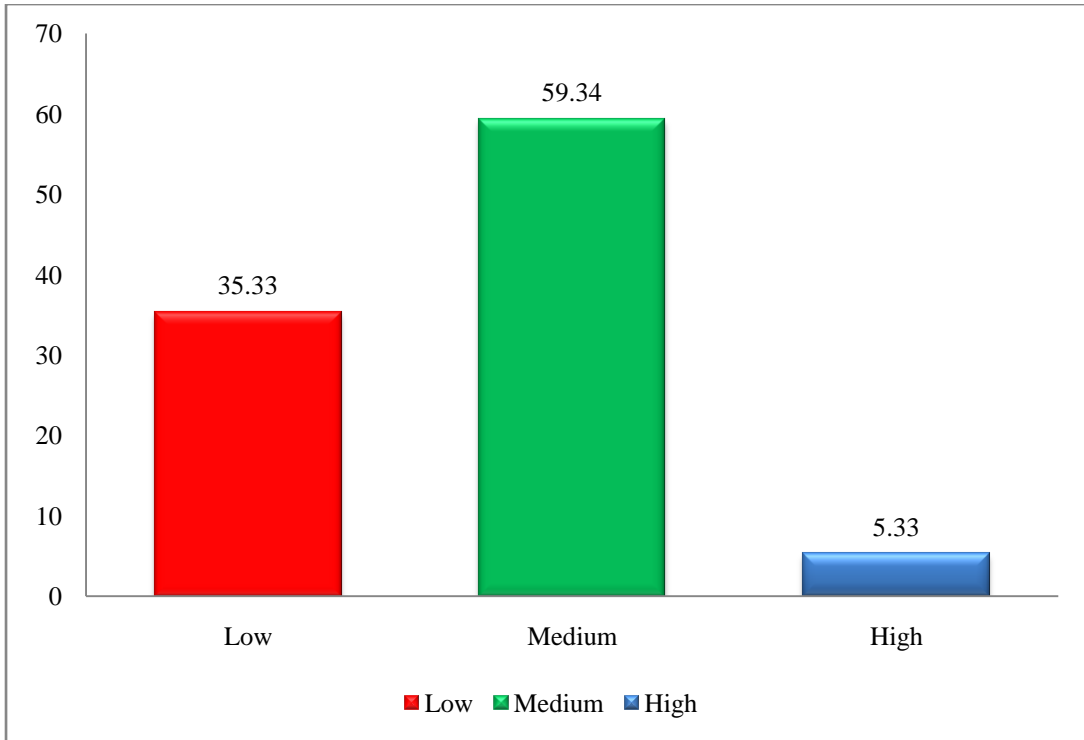
The above Table 16 concluded that the majority more than three fourth 80.00 per cent of the respondents belonged to medium category, followed by 14.67 per cent and 05.33 per cent of the respondents belonged low and high categories, respectively.

The possible reason that majority of the respondents were from medium category who had their medium level of income, education, medium level of experience and management ability.

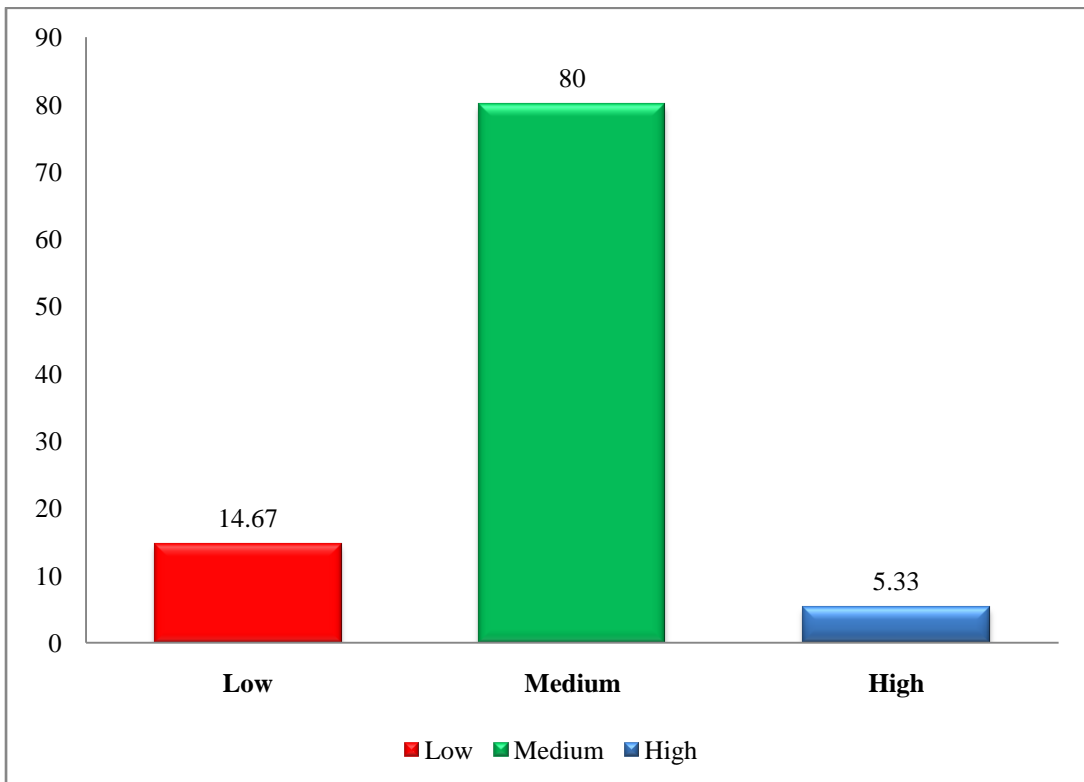
This observation is similar findings of, Nagesha (2005), Kumar (2011) and Sabale (2013) Ekhande (2016)

#### 4.2.4. Leadership ability

Leadership is the process of influencing the behavior of the individual in given situation. Thus, leadership is the phenomenon of influencing, guiding and



**Fig.14.Distribution of respondents according to their Achievement motivation**



**Fig. 15.Distribution of respondents according to their Decision making ability**

directing the action and thoughts of the people in the intended direction. It is important attribute in entrepreneurship development among the nursery owners. Thus leadership ability was considered for study. The collected data regarding leadership ability of the respondents compile and presented as in below table 17

**Table 17. Distribution of the respondents according to their leadership ability:**

Sr. No.	Leadership ability	Respondents (n=150)	
		Number	Percentage
1.	Low ( up to 4)	52	34.67
2.	Medium (5 to 7)	81	54.00
3.	High ( 8 and above )	17	11.33
<b>Total</b>		<b>150</b>	<b>100.00</b>

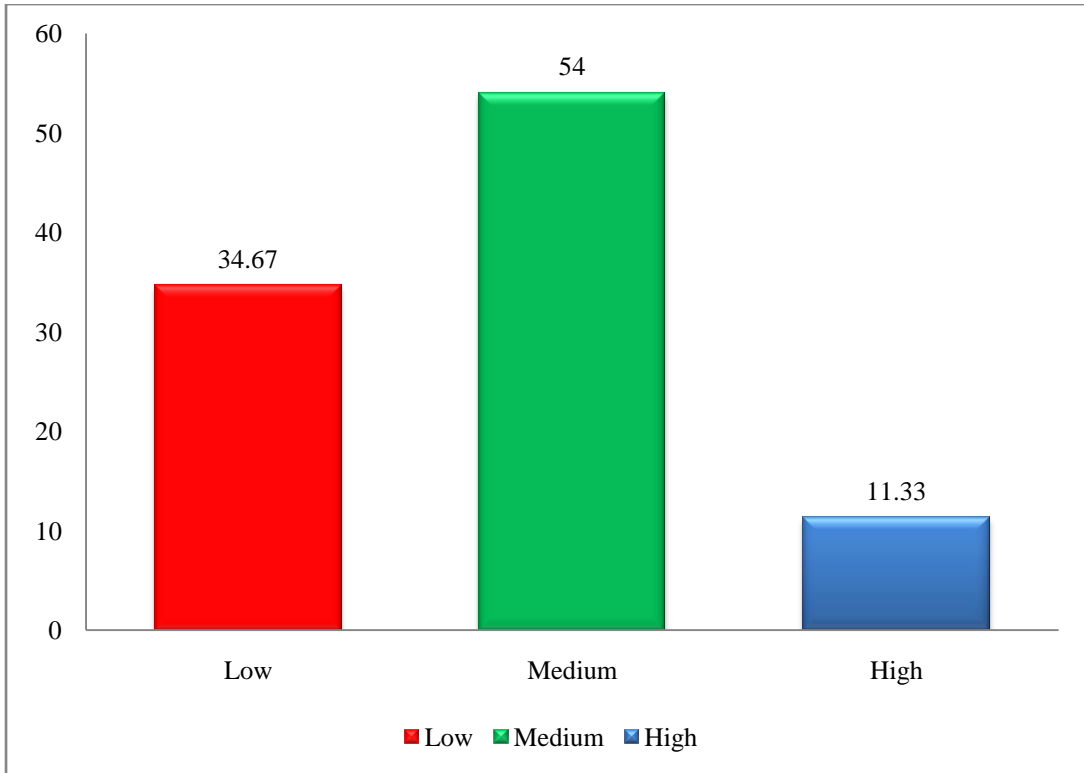
The above Table 17 concluded that the majority of farmer 54.00 per cent belonged to medium farm decision making category followed by low 34.67per cent and high 11.33 per cent farm decision making categories, respectively.

This might be due to their medium annual family income and semi medium size of land holding. Middle age group and had medium level of education and experience and possible reason might be that decision making in farming, especially under Indian conditions is very difficult due to ever changing agro-climatic conditions and lack of stabilized price policy.

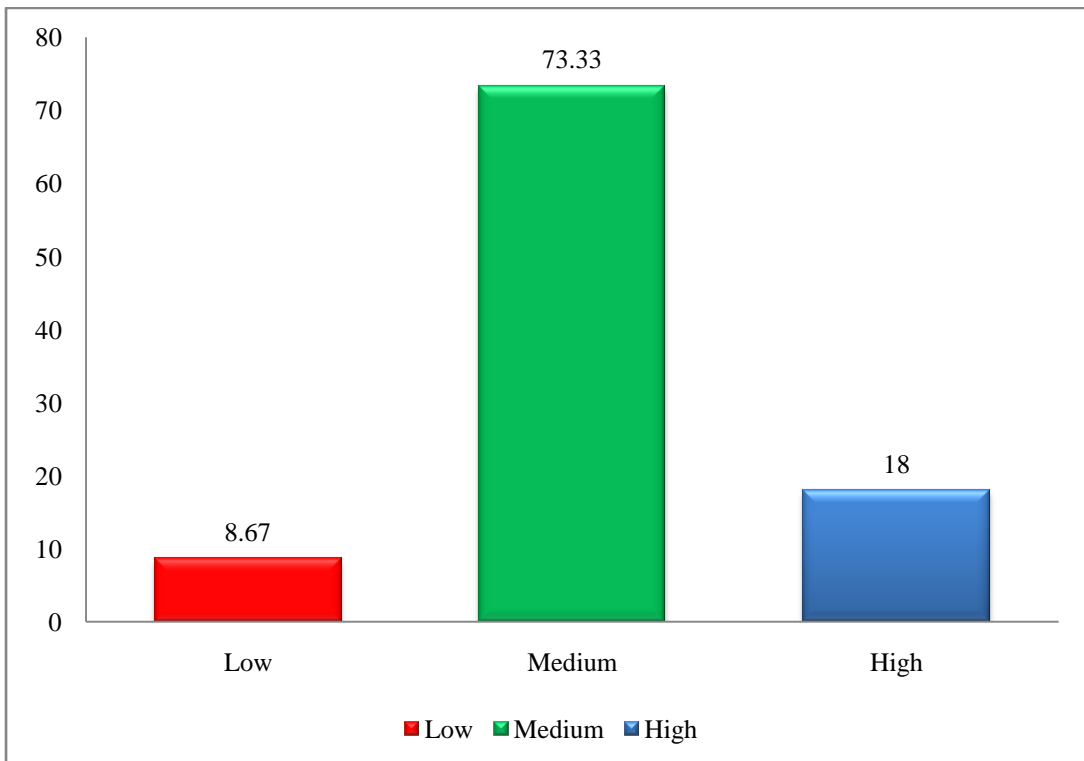
This similar finding was also reported sabale (2013) Chikane (2018)

#### **4.2.5. Management orientation**

Management orientation is the important factor contributing in success of the enterprise with various orientation i.e. planning, production and market orientation. A good manager is always a successful entrepreneur. So, it was important to study management orientation. The information regarding management ability of the respondents collected, compile and presented in Table 18.



**Fig.16.Distribution of respondents according to their Leadership ability**



**Fig. 17.Distribution of respondents according to their Management orientation**

**Table 18 Distribution of the respondents according to their management orientation:**

Sr. No.	Management orientation	Respondents (n=150)	
		Number	Percentage
1.	Low ( up to 14 )	13	8.67
2.	Medium ( 15 to 19 )	110	73.33
3.	High ( 20 and above )	27	18.00
<b>Total</b>		<b>150</b>	<b>100.00</b>

The above Table 18 concluded that the majority 73.34 per cent of the respondents were in medium category management orientation while 8.66 per cent and 18.00 per cent were in low and high category of management orientation, respectively.

Majority of the respondents had medium level followed by high and low category of the management orientation respectively.

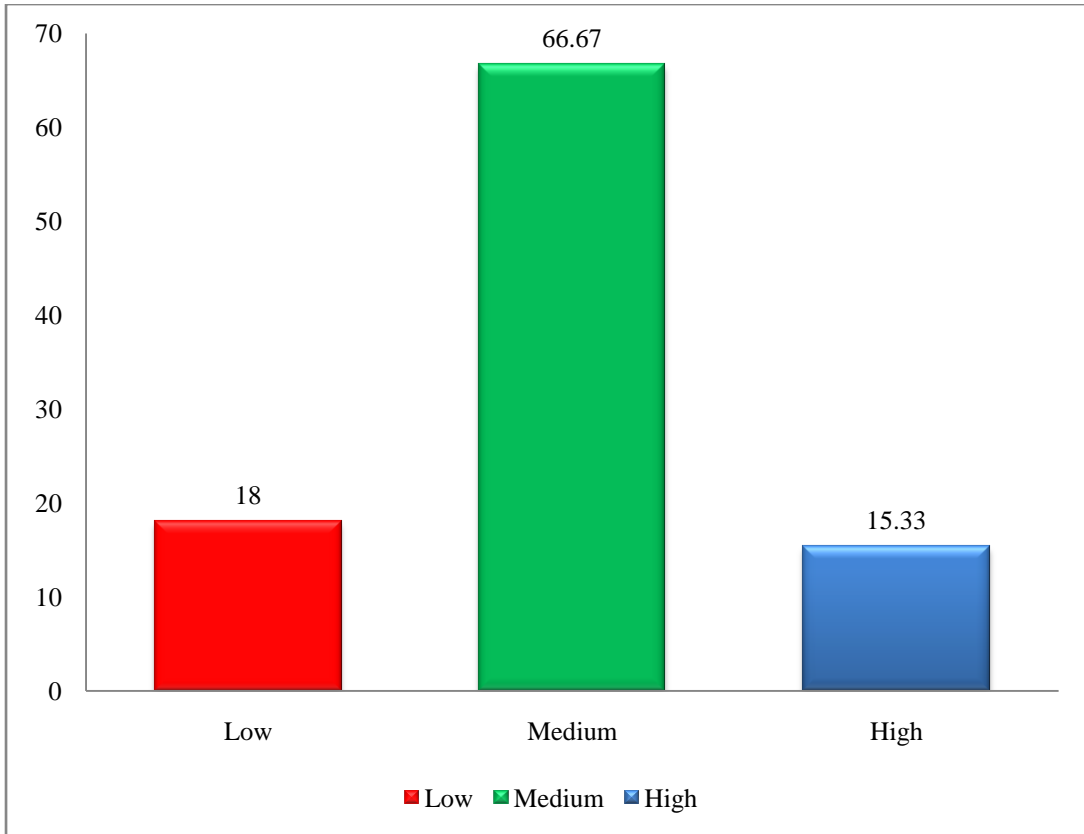
The probable reasons might be that most of them had medium level of education. Apart from this lack of quality planting material, unavailability of labour, lack of market information and high cost of inputs are also responsible for medium level of management orientation.

The findings of present study are slightly similar with Chauhan and Patel (2003), Nagesha (2005), Kumar (2011) and Thakare (2013) Shevale (2017)

#### **4.2.6. Overall Entrepreneurial Attributes**

It is concluded from table 19 that majority of 66.67 per cent of the respondents belonged to medium entrepreneurial behaviour category followed by 18.00 percent to low entrepreneurial behaviour category and only 15.33 per cent of the respondents were in high entrepreneurial behaviour category.

Majority of respondent belongs to medium level of entrepreneurial behaviour category and the possible reason is due to medium level of innovativeness, achievement motivation, risk orientation, leadership ability, and management orientation of the respondents. Other reason for medium entrepreneurial behaviour of farmers is due to significant and positive relationship between, annual family income,



**Fig. 18. Distribution of respondents according to their overall entrepreneurial behavior**

social participation and source of irrigation with entrepreneurial behaviour. Majority of the respondents were having medium level categories in comparison to their personal and socio-economic characteristics.

**Table 19. Distribution of the respondents according to their overall entrepreneurial attributes:**

Sr. No.	Overall entrepreneurial attributes	Respondents (n=90)	
		Number	Percentage
1.	Low	27	18.00
2.	Medium	100	66.67
3.	High	23	15.33
<b>Total</b>		<b>150</b>	<b>100.00</b>

#### **4.3. Relationship between personal and socio economic characteristic of turmeric growers and their entrepreneurial behavioural**

It can be inferred from table 20 that the calculated co-relation coefficient between entrepreneurial attributes of respondents and socio-economic characteristics revealed the following results.

**Table No 20 Relationship between selected independent variables of turmeric growers and their entrepreneurial behaviour**

Sr. No.	Independent Variables	Correlation coefficient (r)
1.	Age	0.141
2.	Education	0.228**
3.	Family size	-0.016
4.	Experience in turmeric production	0.208*
5.	Source of irrigation	0.207*
6.	Land holding	0.035
7.	Annual income	0.206*
8.	Source of information	0.197*
9.	Social participation	0.228*
10.	Risk orientation	0.216*
11.	Market orientation	0.205**

\*Significant at 0.05 level of probability

\*\* Significant at 0.01 level of probability

<sup>NS</sup> Non significant

#### **4.3.1 Age and entrepreneurial attributes**

Age of turmeric growers was non-significantly co-related with their entrepreneurial attributes. It means that as age of the respondent had no influence on entrepreneurial attributes. It also can be said that the respondent belonging to different age categories have more or less entrepreneurial behavior.

This finding is dissimilar with the findings of Kanwat (2011), Kaushalkumar (2012), Thakare (2013), Ahire and Kapse (2015) and Kamble(2015).

#### **4.3.2 Education and entrepreneurial attributes**

Education of turmeric growers was positively and significantly correlated with their entrepreneurial attributes.

Education helps the farmer to get information from various sources. It also helps to bring changes in their socio psychological orientation to adopt new ideas, practices. It also helps in better management planning and production. As the education of respondent increases then there is increase in the knowledge of respondents so it helps in carrying out better entrepreneurial activity.

This observation is similar with findings of Sharma (2015), Kumar (2011), Kaushalkumar (2012), Shinde (2014), Kamble (2015), Ahire and Kapse (2015) and Shewale (2017).

#### **4.3.3 Family size and entrepreneurial attributes**

Size of family showed negative and no relationship with an entrepreneurial behaviour of the nursery owners. This might be due to lack of coordination between the members of large family to undertake unified entrepreneurial adventure

The slightly similar finding was also reported by KhinMarOo (2005) and Chaudhari (2006) Shevale (2017)

#### **4.3.4 Experience turmeric production and entrepreneurial attributes**

It was observed from table 18 that farming experience found to have positive and significant relationship with entrepreneurial behaviour of the turmeric growers. Longer experience allows to efficient management under differing and different situations or contexts. Increase in experience of an individual would help in minimizing the expenditure required to manage the enterprise and ultimately resulting in increase in income level.

This observation is similar with findings of Reddy and Reddi (2005), Chaudhari (2006) and Sable (2013) Shevale (2017)

#### **4.3.5 Source of irrigation and entrepreneurial attributes**

Source of irrigation was positively and significantly co-related with their entrepreneurial attributes.

This was due to respondents had many sources of irrigation for farming and they had utilized it with contributing different entrepreneurial attributes.

#### **4.3.6 Land holding and entrepreneurial attributes**

Land holding of the turmeric growers was non-significantly co-related with their entrepreneurial attributes.

It can be concluded that the size of land holding did not play significant role in deciding the entrepreneurial attributes. It might be due to the significant influence of other inputs required for developing entrepreneurial attributes.

This observation is dissimilar with findings of Andhari and Sonwane (2012), Thakare (2013), Deshmukh (2014), Shinde (2014) and Ahire and Kapse (2015).

#### **4.3.7 Annual income and entrepreneurial attributes**

Annual income of turmeric growers was positively and significantly correlated with their entrepreneurial behaviour. Turmeric growers with higher annual family income have higher purchasing power and as a result have an urge to invest in specialized farm operations. The higher income itself motivates the farmers to seek new technologies for improving their income and standard of living. Farmers with

high annual family income usually have good leadership abilities and they can normally bear risk and uncertainty in adopting new ideas.

This similar finding was also reported by Kaushalkumar (2012), Thakare (2013), Shete (2014), Ahire and Kapse (2015) Ekhande (2016) ,Shevale (2017)

#### **4.3.8 Sources of information and entrepreneurial attributes**

The use of sources of information by the turmeric growers was positively and significantly co-related with their entrepreneurial attributes.

It helps them in proper decision making, management .This may be due to increase in various sources of information which leads to the turmeric growers to gain information from out of social system which had helped is better entrepreneurial activity.

This similar finding was also reported by Jadhav (2013), Lad (2013), Ambavane (2014), Deshmukh (2014), Shinde (2014) and Ahire and Kapse (2015).

#### **4.3.9 Risk orientation and entrepreneurial attributes**

Risk orientation had a positive and significant relationship with entrepreneurial behaviour. This is because only a reasonable adventurous entrepreneur can take calculated risk in the overall interest of his enterprise.

This similar finding was also reported by Lawrence et al. (2012),Kaushalkumar (2012), Thakare (2013) Lad (2013), Thorat (2013), Ambavane(2014) and Deshmukh (2014).Ekhande (2016) Shevale (2017)

#### **4.3.10 Social participation and entrepreneurial attributes**

Social participation of the respondents had showed positive and significant relationship with entrepreneurial behaviour of turmeric growers. Better social participation of respondent would have enabled them to contact various sources of information for increasing the knowledge about management of their turmeric production

The similar finding was also reported by Katke (2011), Patel et al. and Singh Deshmukh (2014), Shete (2014) and Ahire and Kapse (2015).

#### 4.3.11. Market orientation and entrepreneurial attributes

Market orientation of the respondents had shown positive and significant relationship with entrepreneurial behaviour of turmeric growers. Hence better market orientation was the influencing factor for entrepreneurial behavior it also helps adopt new idea, practices. The reasons might be due to the fact that respondents with higher market orientation would try to gather more information, which could be applied at the field level, thus increasing production.

The above result is in accordance with the findings of Chaudhari (2006) and Pisure (2012).

#### 4.4 Constraints faced by Turmeric growers

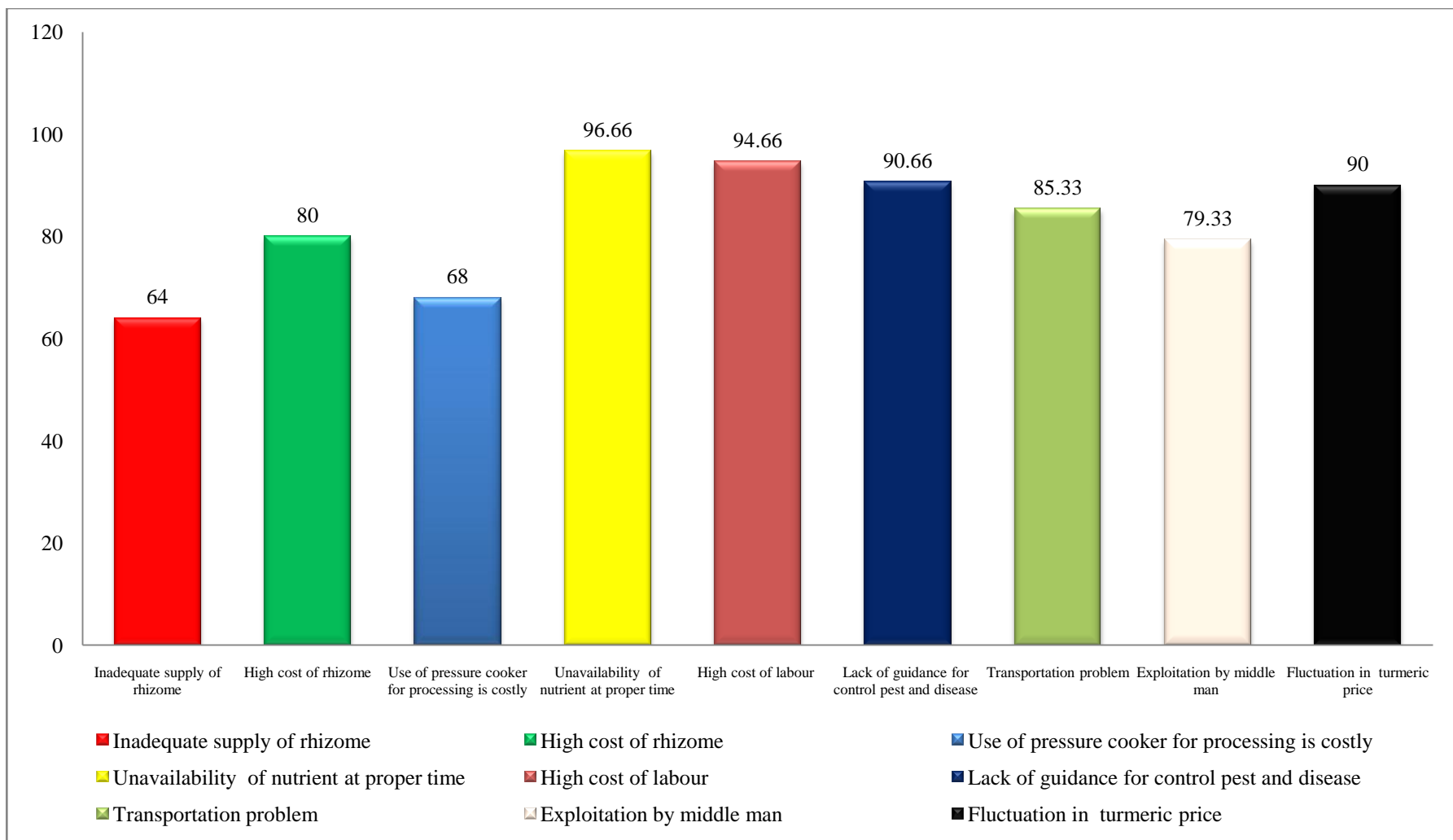
The Turmeric growers were found being confronted with various personal, social, economic constraints. The constraints faced by the majority of the respondent as revealed in Table 21 are as follows.

**Table no 21 Distribution of respondent according to constrains faced by them**

<b>Sr. No.</b>	<b>Constraints</b>	<b>F</b>	<b>%</b>	<b>Rank</b>
1)	Inadequate supply of rhizome	96	64	<b>IX</b>
2)	High cost of rhizome	120	80	<b>VI</b>
3)	Use of pressure cooker for processing is costly	102	68	<b>VIII</b>
4)	Unavailability of nutrient at proper time	145	96.66	<b>I</b>
5)	High cost of labour	142	94.66	<b>II</b>
6)	Lack of guidance for control pest and disease	136	90.66	<b>III</b>
7)	Transportation problem	128	85.33	<b>V</b>
8)	Exploitation by middle man	119	79.33	<b>VII</b>
9)	Fluctuation in turmeric price	135	90	<b>IV</b>

From the above table 22 it can be observed that 96.66 per cent of the respondents had expressed unavailability of nutrient at proper time. Where as 94.66 per cent of the respondents expressed high cost of labour. Lack of guidance for control pest and disease problems were faced by the 90.66 per cent of the respondents.

However ,Most 90.00 per cent, 85.33 per cent, 79.33 per cent, 80.00 per cent, 68.00 per cent and 64.00 per cent of the respondents expressed fluctuation in



**Fig. 19. Distribution of respondents according to their Constraints faced by Turmeric growers**

turmeric price, transportation problem, exploitation by middle man, high cost of rhizome and inadequate supply of rhizome

Lack of market knowledge, Use of pressure cooker for processing is costly and exploitation by middleman are the major problems of the turmeric growers respectively.

Some of the findings are related to Sadanshiv (2006) and Wadekar (2016).

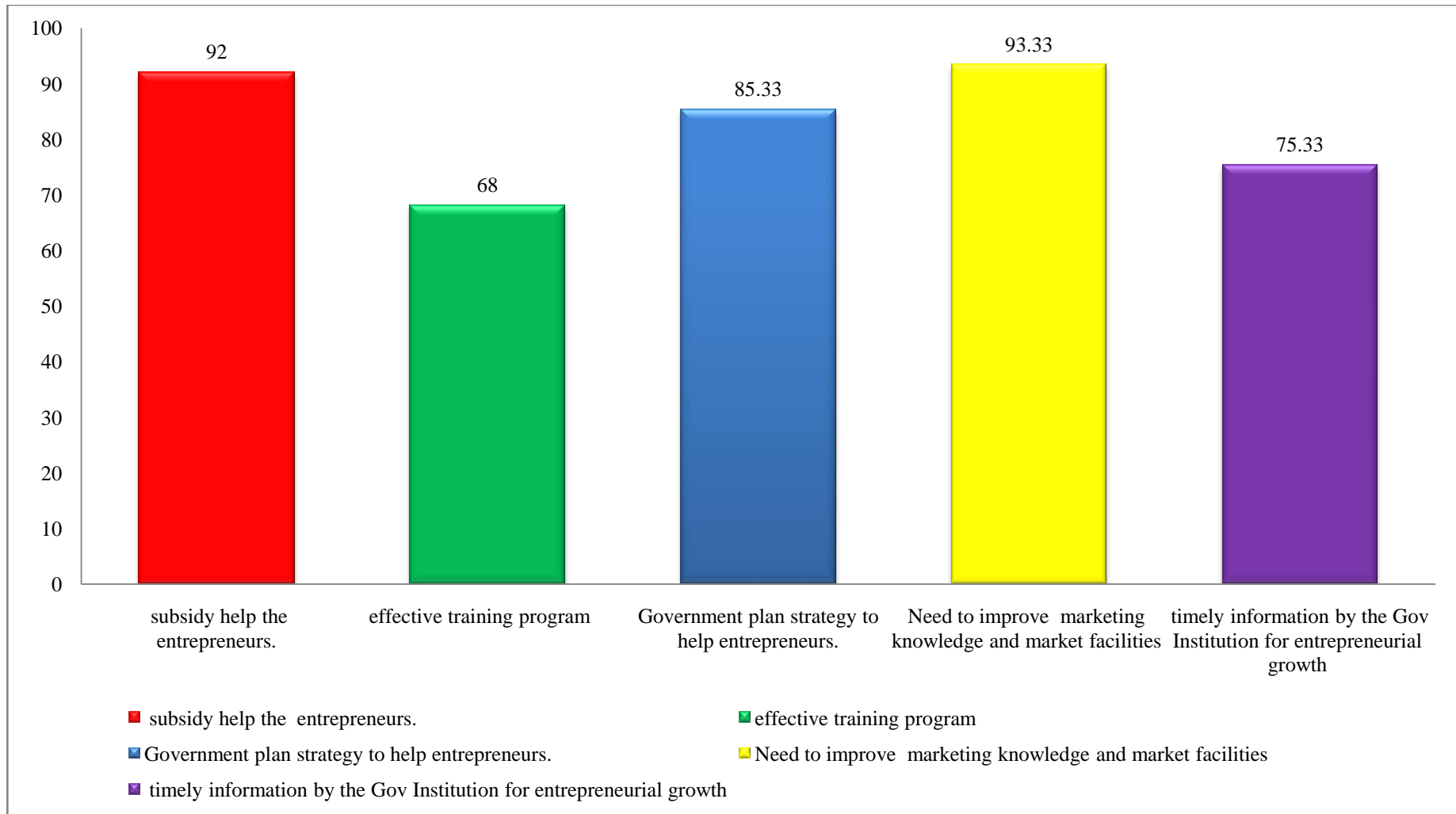
#### **4.5 Suggestions given by the Turmeric growers for development of Turmeric production enterprises:**

The Turmeric growers were approximately unanimous as revealed by the suggestions they sought to render to the government for the development of their turmeric production enterprises.

**Table 22. Distribution of respondents according to given suggestion by them**

<b>Sr. No.</b>	<b>Suggestions</b>	<b>F</b>	<b>%</b>	<b>Rank</b>
1)	Need to provide subsidy help to the entrepreneurs.	138	92.00	<b>II</b>
2)	Need to provide effective training program	102	68.00	<b>V</b>
3)	Government plan strategy to help entrepreneurs.	128	85.33	<b>III</b>
4)	Need to improve marketing knowledge and market facilities	140	93.33	<b>I</b>
5)	There is necessity to provide timely information by the Govt. Institution for entrepreneurial growth	113	75.33	<b>IV</b>

Regarding entrepreneurial attributes of Turmeric growers, the data from Table 22 revealed that 93.33 per cent of the respondents suggested that need to improve marketing knowledge and market facilities and 92.00 per cent of them said that there is a need to provide subsidy help to the entrepreneurs. While, 85.33 per cent respondents suggested government plan strategy to help entrepreneurs, 75.33 per cent respondents suggested that there is necessity to provide timely information by the Government Institution for entrepreneurial growth and 68.00 per cent of them said that need to provide effective training program.



**Fig. 20. Distribution of respondents according to their Suggestions**



**SUMMARY  
AND  
CONCLUSION**

## CHAPTER-VI

### SUMMARY AND CONCLUSIONS

This chapter deals with the summary of the whole study, major findings and their implications for future course of action and research.

The present study was conducted with specific objectives.

Personal, socio-economic characteristics of the turmeric growers

1. To study the profile of the turmeric growers/
2. Entrepreneurial behavior of turmeric growers
3. Relationship between socio-economic characteristics and their entrepreneurial behaviour.
4. Constraints faced by the turmeric growers
5. Suggestions given by the turmeric growers

Turmeric (*Curcuma longa* L), the ancient and sacred spice of India known as 'Indian saffron' is an important commercial spice crop grown in India. The word "turmeric" is derived from the Latin word "*terra merita*" which means "meritorious earth" referring to the colour of ground turmeric. Turmeric is popular in different names in different local languages in India. "Haldi", a word derived from Sanskrit word "Haridra", is commonly used in North India for turmeric. In South India, it is known in the name of "Manjal", a word obtained from ancient Tamil literatures

Turmeric (*Curcuma longa* L.) is a well-known medicinal plant of family Zingiberaceae, It is used in diversified forms as a condiment, flavorings and coloring agent and as a principal ingredient in Indian culinary as curry powder. It has anti cancer and anti viral activities and hence finds use in the drug industry and cosmetic industry. 'Kum-kum', popular with every house wife, is also a by-product of turmeric. It finds a place in offerings on religious and ceremonial occasions.. India is the largest producer of turmeric in the whole world. The use of turmeric in India was dated 4000 years back as evident from Vedic culture. It might have reached to China in 700AD, then to East Africa by 800AD and later to West Africa.

India, the land of spices, had a pre-eminent position in the production of condiments and accounted for about 35.00 per cent of global trade. The annual production of horticulture crop 2017-2018 in India was 311714.220 thousand MT, while area was about 25431.405 thousand ha. The annual production of spices during 2017-2018 in India was 8124 thousand MT, while area was about 3878 thousand ha. (Indian National horticulture board ). and Area and Production of turmeric during 2018-2019 (1<sup>st</sup> Advance Estimate) are area 248 thousand ha and production is 1149 thousand MT

In today's changing scenario, skills in entrepreneurial development have transformed and have become important. Entrepreneurship is most needed component for the agriculture development. Entrepreneurship is the central force driving economic activity and prime catalyst in socio economic development. Hence, it is necessary component for the development of nation .Development considering these facts it felt necessary to conduct the study on entrepreneurial behavior of turmeric growers many entrepreneurial opportunities are emerging in various fields such as computers, electronics, fashion, medicine, agriculture food technology etc.

During 1970's entrepreneurship was recognized as a vehicle for economic growth and industrial development and a potential solution to problems of unemployment.

Chatterjee (1992) define an entrepreneur as one who create something new, undertakes risk, organized production and handle the economic uncertainty. He termed entrepreneurship as mission and entrepreneur as missionary.

The findings of this study may help the government and policy makers to know the entrepreneurial behaviour of farmers, the relationship between socio-economic characteristics with entrepreneurial behaviour and reasons for cultivating turmeric this study is use full for turmeric growers.

As the present study was confined to only 150 turmeric growers selected from 10 villages of Basmat and Aundha tahsil of Hingoli district in Maharashtra state. Its findings would have limited implications. The findings of the study might be applicable to the localities having environmental, ecological and social environment as that of Hingoli district.

Therefore, for more generalization similar studies at different localities with larger sample size needed to be undertaken. In short the present investigation has been exploratory nature and needs to be replicated for wider adaptability and generalization of the findings.

The data pertaining to selected variables were collected through a specially designed interview schedule and the results were presented by using statistical tools viz., frequency distribution, per cent distribution, arithmetic mean, standard deviation and correlation coefficient.

## **D) SUMMARY**

### **6.1 Socio-economic characteristics of nursery owners**

#### **6.1.1. Age**

Majority 61.34 per cent of respondents were from middle age group, followed by old age group 25.33 per cent and young age group 13.33 per cent respectively.

#### **6.1.2 Education**

Majority 38.00 per cent of respondents were educated up to High school, where as one third 24.67 per cent up to College level. About 16.67 per cent respondents educated up to Middle school and very few 11.33 per cent was found in primary whereas 06.00 per cent and 03.33 per cent of the respondents are illiterate and can read and write respectively.

#### **6.1.3 Family size**

Majority, more than half of the turmeric grower 69.33 per cent had medium family size whereas, 22.00 per cent of turmeric grower belonged to small family size. Thus, 08.67 per cent of turmeric growers belonged to large family size

#### **6.1.4 Experience**

Majority more than half 71.33 per cent of the turmeric growers had medium experience in turmeric production for a period ranging between 8 to 17 years., followed by 18.00 per cent of respondents had low experience in the turmeric production for a period ranges up to 7 years. The 10.67 per cent of the respondents had high experience.

#### **6.1.5. Source of irrigation**

Majority that 77.33 per cent of the respondents had well or tube well their source of irrigation, canal 20 per cent and remaining 2.67 per cent of the respondents had river as their source of irrigation. Thus, the study concluded that maximum number of the respondents had Well or tube well as their source of irrigation.

#### **6.1.6 Land holding**

Majority of 35.33 per cent of the turmeric growers belonged to category of Semi-medium land holding, Followed by 32.67 per cent of respondents who belonged to category of small land holding possessing land between 1.01 ha.to 2.00 ha., 19.34 per cent of the respondents belonged to marginal land holding category up to 01.00 ha., 5.33 per cent respondents belonged to big category between 10.10 ha. & above ha..

#### **6.1.7 Annual income**

Majority more than half 76.00 per cent had annual income of Rs. 99176 to Rs. 380824, followed by 15.33 per cent of the respondent had annual income of below Rs. 99175 and only 8.67 per cent had annual income of Rs380822 and above .

#### **6.1.8 Source of information**

More than two third 64.00 per cent of respondents uses medium sources of information followed by, low 20.00 per cent and high category of sources of information 16.00 per cent respectively.

#### **6.1.9 Social participation**

Majority 77.33 per cent of the turmeric growers had high social participation, while, 12.67 per cent of turmeric growers were having medium level of social participation. Only, 2.00 per cent of them had low social participation.

#### **6.1.10 Risk orientation**

Majority 69.33 per cent of the respondents had medium risk bring ability. Whereas, 20.00 per cent had low and 10.67 per cent of respondents had high level of risk bearing ability.

### **6.1.11 Market orientation**

More than half of respondent 70.00 per cent had medium level of market orientation, whereas 16.67 per cent of respondent had low market orientation and 13.33 per cent of respondent found high market orientation.

## **6.2 Entrepreneurial attributes of turmeric growers**

### **6.2.1 Innovativeness**

Majority 58.67 per cent of the respondents had medium level of innovativeness followed by 29.33 per cent of the respondents under low innovativeness category and 12.00 per cent of the respondents were in high innovativeness category.

### **6.2.2 Achievement motivation**

More than half 59.34 per cent of the respondents had medium category of achievement motivation followed by 35.33 per cent and 5.33 per cent of the respondents having low and high category of achievement motivation, respectively

### **6.2.3 Decision making ability**

The majority more than three fourth 80.00 per cent of the respondents belonged to medium category, followed by 14.67 per cent and 5.33 per cent of the respondents belonged low and high categories, respectively.

### **6.2.4 Leadership ability**

Majority of farmer 54.00 per cent belonged to medium farm decision making category followed by low 34.66 per cent and high 11.33 per cent farm decision making categories, respectively.

### **6.2.5 Management orientation**

Majority 73.33 per cent of the respondents where in medium category management orientation while 8.67 per cent and 18.00 per cent where in low and high category of management orientation, respectively.

## **6.3 Co-relation between entrepreneurial attributes and socio-economic characteristics**

The entrepreneurial attributes found significant co-relationship with socio-economic characteristics like experience, annual income sources of information,

source of irrigation, risk orientation market orientation and social participation, whereas no any variable negatively non significant relation with entrepreneurial attributes.

#### **6.4 Constraints faced by the turmeric growers**

Near about over all 96.66 per cent of the respondents had expressed Unavailability of nutrient at proper time. Whereas 94.66 per cent of the respondents expressed High cost of labour. Lack of guidance for control pest and disease problems were faced by the 90.66 per cent of the respondents.

However Most 90.00 per cent, 85.33 per cent, 79.33 per cent, 80.00 per cent, 68.00 per cent and 64.00 per cent of the respondents expressed fluctuation in turmeric price, transportation problem, Exploitation by middle man, High cost of rhizome and Inadequate supply of rhizome

lack of market knowledge ,Use of pressure cooker for processing is costly and exploitation by middleman are the major problems of the turmeric growers respectively.

#### **6.5 Suggestions of turmeric growers to overcome the constrains in turmeric production**

Suggestion given by respondents to overcome the problems in turmeric production Majority 93.33 per cent respondents suggested that need to marketing knowledge and market facilities followed by the suggestion respondents 92.00 cent suggested that need to provide subsidy help to the entrepreneurs, about 85.33 per cent respondents suggested that government plan to strategy to help entrepreneur 75.33 respondents suggested that there is a necessity to provide timely information by government institution for entrepreneurial growth , and reaming 68.00 per cent respondents suggested that need to provide effective training program .

## II) CONCLUSIONS

The results of the study lead to following conclusions

1. The entrepreneurs was in medium age group are prominent in turmeric production
2. Not only all the turmeric growers are literate but considerable numbers of them are highly educated.
3. A large number of the turmeric growers have do this business since many years.
4. Majority of them need to be encouraged to develop risk orientation amongst them.
5. That 96.66 per cent of the respondents had expressed unavailability of nutrient at proper time. Whereas 94.66 per cent of the respondents expressed High cost of labour .Lack of guidance for control pest and disease problems were faced by the 90.66 per cent of the respondents.
6. However Most 90 per cent, 85.33 per cent, 79.33 per cent, 80.00 per cent, 68.00 per cent and 64 per cent of the respondents expressed fluctuation in turmeric price, Transportation problem, Exploitation by middle man, High cost of rhizome and inadequate supply of rhizome
7. Lack of market knowledge, Use of pressure cooker for processing is costly and exploitation by middleman are the major problems of the turmeric growers respectively.
8. Unavailability of nutrient at proper time the major problem for Most of the turmeric growers



# IMPLICATIONS

## **CHAPTER-VII**

### **IMPLICATION**

The study was undertaken to investigate the entrepreneurial behavior of turmeric grower sin Hingoli district. In the light of findings the implications are given below.

The findings of the study may helps to know the entrepreneurial behavior of turmeric growers the relationship between socio-economic characteristic with entrepreneurial behaviour of turmeric growers and reasons for growing turmeric and help in further investigations on entrepreneurial behavior of turmeric growers

In the light of findings of the study and from the personal experience of researcher at the time of personally interviewing respondents, following implications are made for the effective improvement of entrepreneurial behavior of turmeric growers to the concerned extension and field level government personnel, administrators and policy makers

#### **7.2 Implications for action**

1. The fact that majority of the farmers had medium entrepreneurial behaviour is a clear indication going towards progressiveness of the turmeric growers. Further, it calls for intensification of educational efforts and policy support to the turmeric growers by the field extension workers of the development departments, non-government organizations and private organizations to make them more enterprising.
2. As most of the farmers had medium innovativeness, still there is a need to expose the turmeric growers to recent developments in agricultural technologies and motivate them to adopt the latest and new technologies by organizing group discussions, meetings, study tours and field trips. Turmeric production is one of the economically viable enterprise in agriculture sector, therefore more number of agriculture graduates should be organize to tap the opportunity to over comes the present problem of unemployment in agriculture.
3. As the present era is of public private partnership the government agencies and state agriculture universities should develop linkage with turmeric growers and

provide them the technical support to produce of quality planting material for the farming community.

4. Also there is a need to have strong association of all turmeric growers to address their problems and to develop good marketing network for sale of planting material.
5. Intensive training programmes need to be conducted by government and non-government agencies for skill development among the agri-preneurs.
6. The study revealed that most of the respondents faced problem in nutrient supply, control and management of pest and disease, so various extension agencies like krishi vigyan kendra non-government organization, agriculture technology manegment agency should be take lead for organizing different training programme, skill oriented training programmes for rural youth, farmers for developing better entrepreneurial activities among themselves.
7. Minimum support price may be given for turmeric as of other cash crop like sugarcane, soybean which will be beneficial for the farm entrepreneurs to decide on the cost of production.

### **7. 3. Implications for future study**

The present investigation was confined to 2 tahasil of hingoli district. The study needs to be replicated in large sample covering all the major potential areas in Maharashtra. So, that the inference drawn can be generalized to a greater extent.

There is a need to standardize turmeric processing technology in turmeric production. Further, there is also need to develop entrepreneurial development programme (EDP). Hence, this field of investigations offers a broad scope for future research.



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## LITERATURE CITED

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# THESIS ABSTRACT



**Department of Extension Education  
College of Agriculture, Parbhani.  
Vasantnao Naik Marathwada Krishi Vidyapeeth, Parbhani**

**ABSTRACT**

**Thesis Title**

**“ENTREPRENEURIAL BEHAVIOUR OF TURMERIC GROWERS IN HINGOLI  
DISTRICT**

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Name of the student	: <b>Mr. Shende S.S</b>	Research Guide:	<b>Dr. R.D. Ahire</b>
Reg. No.	: <b>2017A/ 91 M</b>	Head,	
Degree	: <b>M.Sc. (Agri.)</b>	Dept. of Ext. Education	
VNMKV, Parbhani			

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The present study was conducted mainly with the objective to study Entrepreneurial behavior of turmeric growers in Hingoli district. For the study, Hingoli district was selected from Marathwada region due to high area under turmeric production. Two tahasil viz., Vasmat and Aundha were selected purposively on the basis of maximum number turmeric growers and five villages from both tahasil were selected. From each village fifteen members were selected constituting the sample size 150. Ex-post-facto research design was used for the study

The distributional analysis pertaining to, age of the members observed that majority (61.34%) of respondents were from middle age group. It was found that majority (38.00%) of respondents were educated up to High school. It was found that majority, more than half of the turmeric grower (69.33%) had medium family size. It was found that majority more than half (71.33%) of the turmeric growers had medium experience in turmeric production it was found that majority that nearly cent percent (77.33%) of the respondents had well or Tube wells. It was found that Majority of (35.33%) of the turmeric growers belonged to category of Semi-medium land holding, (1.01 ha. to 2.00 ha). It was observed that majority more than half (76.00%) had annual income of Rs. 99176 to Rs. 380824. It was observed that majority third (64.00%) of respondents uses medium sources of information. It was observed that majority (77.33%) of the turmeric growers had high social participation. It was observed that that majority (69.33%) of the respondents had medium risk bring ability. It was observed that more than half of respondent (77.00%) had medium level of market orientation.

The entrepreneurial attributes found significant co-relationship with socio-economic characteristics like experience, annual income, sources of information, source of irrigation, risk

orientation, market orientation and social participation, whereas no any variable negatively non-significant relation with entrepreneurial attributes.

It was observed that majority more than half (58.67%) of the respondents had medium level of innovativeness. It was observed that More than half (59.34%) of the respondents had medium category of achievement motivation. It was observed that the majority more than three fourth (80.00 %) of the respondents belonged to medium decision making

Category. It was observe that majority of farmers (54.00%) belonged to medium farm leadership ability. It was observed that majority (73.33%) of the respondents where in medium category management orientation.

Near about over all (96.66%) of the respondents had expressed unavailability of nutrient at proper time. Whereas (94.66%) of the respondents expressed High cost of labour. Lack of guidance for control pest and disease problems were faced by the (90.66%) of the respondents.

However Most (90.00%), (85.33%), (79.33%) (80.00 %), (68.00 %) and (64.00%) of the respondents expressed fluctuation in turmeric price, transportation problem, exploitation by middle man, high cost of rhizome and inadequate supply of rhizome lack of market knowledge, Use of pressure cooker for processing is costly and exploitation by middleman are the major problems of the turmeric growers respectively.

Suggestion given by respondents to overcome the problems in turmeric production Majority (93.33%) respondents suggested that need to marketing knowledge and market facilities followed by the suggestion respondents (92.00%) suggested that need to provide subsidy help to the entrepreneurs, about (85.33%) respondents suggested that government plan to strategy to help entrepreneur (75.33%) respondents suggested that there is a necessity to provide timely information by government institution for entrepreneurial growth , and reaming (68.00%) respondents suggested that need to provide effective training programme.

# APPENDIX



**विस्तार शिक्षण विभाग**  
**कृषि महाविद्यालय, व.ना.म.कृ.वि., परभणी**  
**मुलाखत प्रश्नावली**

**विषय: हिंगोली जिल्ह्यातील हळद उत्पादकांचे उद्योजक वर्तन**

**अभ्यासक:- शेंडे संतोष सुभाष**

**मार्गदर्शक:- डॉ.आर.डी. आहिरे**

**रजि. क्र. :- २०१७A/९१M**

**विभाग प्रमुख**

**विस्तार शिक्षण विभाग**

**कृषि महाविद्यालय, परभणी**

**भाग - पहिला**

**हळद उत्पादक शेतकऱ्याची माहिती :-**

**शेतकऱ्याचे नाव :-** \_\_\_\_\_

**गाव :-** \_\_\_\_\_ **तालुका:-** \_\_\_\_\_ **जिल्हा :-** \_\_\_\_\_

**धमणधवनी क्र. :-** \_\_\_\_\_

**१) वय :-** \_\_\_\_\_ वर्षे

**२. शिक्षण-**

अ.क्र.	शिक्षण	प्रतिसाद
अ.	अशिक्षित	
ब.	फक्त वाचता व लिहता येते.	
क.	प्राथमिक (१ली ते ४थी)	
ड.	माध्यमिक (५वी ते १०वी)	
इ.	उच्च माध्यमिक (११वी ते १२वी)	
इ.	पदविका/पदवी/पदव्युत्तर.	

**३. कुटुंबातील सदस्य संख्या** \_\_\_\_\_ .

**४. हळद उत्पादनाचा अनुभव** \_\_\_\_\_ वर्षे

**५. पाण्याचा स्रोत:-** खोतनाही / नदी/ विहीर-कुपनलिका / कॅनाल

**६. जमिन धारणा :-**

अ.क्र.	विभाग	जमिन धारणा	प्रतिसाद
१	सिमान्त	१हेक्टर पर्यंत	
३	लहान	१.०१ ते २.०० हेक्टर पर्यंत	
४	अर्ध मध्यम	२.०१ ते ४ .०० हेक्टर पर्यंत	
५	मोठा मध्यम	४.०१ ते १० .००	
६	मोठा	१०.०१ हेक्टर पेक्षा जास्त	

**७. वार्षिक उत्पन्न :-**

अ.क्र.	व्यवसाय	वार्षिक उत्पन्न
१	शेती	
२	नोकरी	
३	व्यवसाय	
४	व्यापार	
५	इतर	
	एकूण	

**८. माहितीची साधने:-**

अ.क्र.	माहिती साधने	नियमित	कधीतरी	कधीच नाही
अ	वैयक्तिक माहिती साधने			
१	स्थानिक नेते			

२	प्रगतशील शेतकरी			
३	नातेवाईक			
४	कृषि अधिकारी/कृषि मंडल अधिकारी			
५	कृषि विद्यापीठ शास्त्रज्ञ			
६	इतर			
<b>ब</b>	<b>गट संपर्क माहिती साधने</b>			
१	सभा			
२	गट चर्चा			
३	प्रत्याक्षिके			
४	शेतकरी अभ्यास दौरे			
५	इतर			
<b>क</b>	<b>सामूहिक संपर्क माहिती साधने</b>			
१	वर्तमानपत्र			
२	कृषि प्रकाशने			
३	शेतकरी मेळावे			
४	कृषि दैनंदिनी			
५	दूरदर्शन			
६	चित्रफित			
७	इंटरनेट			
८	रेडीओ			
९	टी.व्ही .			
१०	मोबाईल सेवा			
११	इतर			

**९. सामाजिक सहभाग :-**

अ.क्र.	संस्थेचे नाव	सहभाग		
		नियमित	कधीतरी	कधीही नाही
१	ग्रामपंचायत			
२	सहकारी सोसायटी			
३	तरुण्य मंडळ			
४	महिला मंडळ			
५	मदत गट			
६	कृषीविज्ञान मंडळ			
७	शेतकरी गट			
८	इतर			

**१०. जोखीमभिमुखता :-**

अ.क्र.	विधाने	कौल				
		पूर्णपणे सहमत	सहमत	अनिश्चित	असहमत	पूर्णपणे असहमत
१.	शेतकऱ्याने जास्त पीके घ्यावीत, किंवा दोन पीके घेवून होणाऱ्या नुकसानीचा धोका टाळावा.					
२.	शेतकऱ्याने साधरणपणे चांगली संधी साधून जास्त नफा मिळवावा व धोका नसलेल्या कमी उत्पन्नातून समाधान मानू नये.					
३.	जो शेतकरी साधरण शेतकऱ्यापेक्षा जास्त धोका पत्करण्यास तयार असतो तो आर्थिकदृष्ट्या यशस्वी असतो.					

४.	जेव्हा यशस्वी होण्याची शक्यता असते तेव्हा तो धोका पत्करावा.					
५.	इतर बहुतांशी शेतकऱ्यांनी यशस्वीपणे नवीन पध्दतीचा वापर केल्यावर शेतकऱ्यांने तिचा अवलंब करणे चांगले.					
६.	शेतातील बाजारपेठ भिमुखता अगदी नवीन पध्दतीचा अवलंब करण्यास जोखीम असते परंतु अशी जोखीम सुध्दा मोलाची असते.					

११ . बाजारपेठ भिमुखता :-

अ.क्र	विधाने	पूर्णपणे सहमत	सहमत	अनिश्चित	असहमत	पूर्णपणे असहमत
१	बाजाराच्या बातम्या शेतकऱ्यांसाठी पाहिजे तितक्या उपयुक्त नाहीत.					
२	शेतकरी आपल्या उत्पादनाची प्रतवारी करून चांगली किंमत मिळू शकतो.					
३	साठवणुकीसाठी साठवण कक्ष असल्यास चांगली मदत मिळण्यास मदत होते .					
४	शेतकऱ्यांनी चांगल्या किमतीची अपेक्षा करता जवळच्या बाजारात उत्पादन विकावे .					
५	शेतकऱ्यांने त्याला लागणारी निविष्ठा अशाच दुकानातून खरेदी करावी की जेथून आसस्वकीय खरेदी करतात .					
६	बाजारात जास्त असलेल्या पिकाचेच उत्पादन घ्यावे .					

विभाग 'ब'

हळद उत्पादक शेतकऱ्यांचे उद्योजकांचे वर्तन

१ नाविन्यता

अ.क्र.	विधान	सहमत	असहमत	सांगूशकतनाहि
१.	मी नवीन माहिती मिळवण्यासाठी नेहमी उत्सुक असतो. पण ती नवीन माहिती /तंत्रज्ञान वापरतोच असे नाही.			
२.	नवीन माहितीचे / तंत्रज्ञानाचे ज्ञान होताच, मी ते आत्मसात करतोच.			
३.	नवीन माहिती/ तंत्रज्ञान नेहमी वापरात असलेल्या तंत्रज्ञानापेक्षा उपयुक्त असते असे नाही.			
४.	मागील काही वर्षात तयार /निर्मित केलेले तंत्रज्ञान मी हळद उत्पादनामध्ये मध्ये वापरत आहे.			
५.	नवीन तंत्रज्ञान आत्मसात करण्याआधी मी इतरांचे त्या तंत्रज्ञानाबद्दल निकाल पाहतो.			
६ .	मुल्यवर्धन करून हळदीची विक्री करणे जास्त फायद्याचे ठरते			

७.	जरी नवीन तंत्रज्ञान सध्या फायदेशीर नसेल पण भविष्यात फायद्याची हमी असल्यास मी ते आत्मासात करीन .			
८ .	आगोदर वापरत असलेल्या गोष्टीतबदल करण्याचे मी टाळतो .			
९ .	हळद लागवडी विषयी माहिती मिळविण्यासाठी मी माहिती तंत्रज्ञानाचा वापर करतो .			

### २ यश प्राप्त करण्याची प्रेरणा :

अक्र.	विधाने	सहमत (३)	डळमळीत (२)	असहमत (१)
१	एखादे ध्येय मिळवल्यानंतर आरामाला प्राधान्य न देता कामाला प्राधान्य द्यायला पाहिजे .			
२	मोठ्या गोष्टींसाठी संघर्ष करण्यापेक्षा छोठ्या मजकुरांवर लक्ष देणे कधीही चांगले असते .			
३	मी काय केलेय याची काळजी न करता मला सतत काहीतरी मोठ करावस वाटत .			
४	मला एखादी कठीण गोष्टी करायला आवडेल जी कि खरचं खूप अवघड आणि लोकांच्या दृष्टीने अशक्य असेल .			
५	एखादे कठीण काम करण्याचा उत्साह कमी करणे सध्याची विचारप्रवृत्ती आहे .			
६	कुटुंबाने दुर्लक्ष केले तरी आपण आपल्या व्यवसायात यश मिळवले पाहिजे .			

### ३ . निर्णयक्षमता

अ. क्र.	निर्णय	समर्थन
१	तुम्ही मागच्या वर्षी विविध पिकांच्या लागवडीखालील क्षेत्र कसे ठरवले	माहित नाही / नेहमीची समान एकर लागवड / देखरेख आणि लागवडीच्या सोयीनुसार /बाजाराची स्थिती
२	तुम्ही पिकांच्या विविध जाती कशा ठरविल्या ?	माहितनाही / स्थानिक पातळीवरील उपलब्ध बियांचा वापर / नवीन वाणांचा अनुभव /बाजाराची स्थिती
३	तुम्ही तुमच्या पिकासाठी किती प्रमाणात खत वापरावे हे कसे ठरवले ?	माहित नाही / उपलब्धतेनुसार वापर / सार्वत्रिक अनुभव /माती परीक्षण
४	तुम्ही तुमच्या पिक संरक्षणाचे विविध उपाय कसे ठरवले ?	माहित नाही / उपलब्धतेनुसार वापर / काळजी पूर्वक निरीक्षण /विस्तार कामगारांच्या शिफारशी
५	तुम्ही तुमच्या मालाच्या विपणनाची वेळ कशी ठरवली?	माहिती नाही / नेहमी विकण्याचा ठराविक कालावधी /नातेवाईक , शेजारी शेतकऱ्यांच्या शिफारशी /मालाची गुणवत्ता ठेवण्याचा मोबदला
६	तुम्ही तुमच्याकडे कोणत्या प्रकारची लेखी नोंद ठेवता?	माहितनाही /स्मृतींचा वापर / मजुरांची नोंद /शेतीपुस्तिका

### ४ नेतृत्व करण्याची क्षमता

क्र.	विधाने	नेहमी	कधी कधी	कधीही नाही
१	नवीन शेतीपद्धती या गट चर्चेत तुम्ही सहभागी होता का?			
२	तुम्ही जेव्हा एखाद्या नवीन शेती पद्धतीबद्दल ऐकता किंवा बघता तेव्हा त्याविषयी तुम्ही तुमच्या सहकार्यांबरोबर चर्चा केली आहे का?			

३	तुम्हाला तुमच्या गावातील लोक नवीन शेती पद्धतीच्या माहितीचा चांगला स्रोत मानतात का ?			
४	तुम्ही तुमच्या कुटुंबातील सदस्यांना शेतीची कामे ठरवून देता का ?			
५	समस्यावर मात करण्यासाठी तुम्ही नवीन पद्धतीचा अवलंब करता का ?			

५) व्यवस्थापनक्षमता :

अ.क्र.	विधान	सहमत	अंशतः सहमत	असहमत
१.	हळद पीक उत्पादन नियोजनातून उत्पन्न वाढविणे शक्य आहे .			
२.	पीक उत्पादनासाठी प्रशिक्षणाची गरज नाही .			
३.	एखाद्याने पीक नियोजनासाठी कृषी तज्ञाशी सल्ला मसलत करणे गरजेचे नाही .			
४.	माती परीक्षण द्वारे खताची मात्रा काढल्यास आपला खतांवरील अतिरिक्त खर्च वाचतो			
५.	पाण्याची मात्रा कमी असताना एखाद्याने पाणी उपलब्धतेप्रमाणे जास्तीत जास्त पाणी वापरावे			
६.	पूर्व नियोजनामुळे हळद उत्पन्नवाढण्यास मदत होते .			
७.	पूर्णतः मजुरांवर अवलंबून राहण्यापेक्षा शक्य तिथे यांत्रिकीद्वारे व्यवस्थापन करतो .			
८.	लागवड करणाऱ्या व्यक्तीस बाजार संबंधित बातम्या उपयोगी पडत नाहीत			

भाग क -

हळद उत्पादक शेतकऱ्यांना येणाऱ्या समस्या: -

अ.क्र.	समस्या	होय	नाही
१	बिणे वेळेवर व पुरेशा प्रमाणात उपलब्ध होत नाही		
२	बिणे फार महाग असते		
३	प्रेसर कुकरचा वापर करणे महाग आहे		
४	सुक्ष्मअन्नद्रव्ये वेळेवर उपलब्ध होत नाहीत		
५	मजुरांचा खर्च जास्त आहे .		
६	कीडवोग नियंत्रणासाठी योग्य मार्गदर्शन मिळत नाही .		
७	वाहतुकीची समस्या आहे का ?		
८	मध्यास्थांकडून फसवणूक होते .		
९	दररामध्ये चढ उतार असणे		

हळद उत्पादक शेतकऱ्यांना येणाऱ्यासमस्यावरील उपाय योजना :-

क्र .	उपाय योजना	होय	नाही
१	उद्योजकांना अनुदान सहाय्य आवश्यक आहे.		
२	प्रभावी प्रशिक्षण कार्यक्रम आयोजित करण्याची आवश्यकता आहे.		
३	उद्योजकांना मदत करणारी धोरणे सरकारने बनवायला पाहिजेत.		
४	विपणन बुद्धिमत्ता, बाजार सुविधा सुधारण्याची आवश्यकता आहे.		
५	सदस्यांची उन्नती करण्यासाठी शासकीय संस्थांनी वेळेवर माहिती पुरवण्याची आवश्यकता आहे.		