CHAPTER : VI

SUMMARY AND CONCLUSIONS

This chapter summarises the main findings of the study.

I.1 Agriculture is a very wide and comprehensive economic activity embracing cultivation of soil for growing plants, for food and raw-materials, raising and maintenance of livestock, forestry, fishing, hunting, horticulture, fruit growing, glass-house culture, bees, poultry, etc. Thus, agriculture is an economic activity in which human being labours to cultivate the soil for growing plants and undertakes allied activities for satisfying certain human wants.

I.2 (a) According to the Food and Agricultural Organisation of the United Nations in the world as a whole, 50 per cent of the population is engaged in agriculture, or dependent on agriculture. In less developed nations, agriculture occupies half or more of the labour force and generates from one fourth to one half of the gross national product. When process of development occurs in any nation, the population grows and per capita income rises. To feed more people a better quality diet, agricultural production, must increase. Life and food are inseparable. As a hymn from India's ancient books of wisdom, the Upanishads, puts it:

"From food are born all creatures that live on earth, afterwards they live on food and when they die they return to food."
The search for food is the foundation of all other quests. The wish for plenty—whether from hunt, catch or harvest—is mankind's easy oldest, collective thought. The earliest civilizations arose when the hunter turned into a farmer. Agriculture cradled culture.

(b) In India, the development of entrepreneurship in agriculture is paramount since agriculture is the biggest industry of our country and the largest component of India's economic life. Around 34 per cent of the national income originates from agricultural sector. Besides, about 65 per cent of the total working population is engaged in agriculture or activities allied to it for their livelihood. It supplies foodgrains to millions of people; fodder to livestock; and raw material to a host of industries engaged in manufacture, trade and transport. From all this, it is evident that all the other sectors of the economy are so concerned with the performance of the agricultural sector that they cannot escape the impact of the fluctuating fortunes in this sector. It is also true that nothing moves in the Indian economy unless agriculture moves. And it may not be an exaggeration to state that agriculture cannot move unless water moves into agriculture.

(c) Agricultural progress is normally a precondition for industrial development. Economic historians generally concur that there are no cases of successful development of major countries in which a rise in agricultural productivity did not precede or accompany industrial development. In short for the
overall economic development of the country there should be a proper balance between the growth of manufacturing and agriculture. No underdeveloped country can at any stage afford to concentrate all its investment on either agricultural or industrial development until it has succeeded in achieving a reliable food surplus.

(d) Despite its importance, agriculture remained to be the most backward part of Indian economy. So much is yet to be achieved in this front if India is to join or at least to stand near the advanced countries of the world in terms of per hectare yields and practices of farming.

(e) The need for increasing production to meet the growing needs of the people through various scientific methods in the sphere of agriculture is very much realised. Success in this regard depends mostly on the availability of inputs, their use and farmers with entrepreneurial skills. The Government should take initiative for the use of modern inputs in farming and also to develop entrepreneurial skills among the farmers.

1.3 (a) Entrepreneurship can take place in a variety of fields of social endeavours like business, industry, agriculture, education, social work etc. It is also recognised that the development of economy of any nation depends on the important role played by entrepreneurs. The term is primarily used with reference to self-employment in industries. Entrepreneurship as a variable in farming is not yet recognised. Further research based literature on the farm entrepreneurship is also limited.
The characteristics of entrepreneurship identified for urban entrepreneurs, may not apply equally well to rural entrepreneurs. Only a few researches have been conducted on agricultural entrepreneurs in India. Although number of studies have been conducted to find out adoption behaviour of farmers, none of these studies have tried to investigate on farmer's entrepreneurial ability. None of the researches conducted on the farmers, have studied their entrepreneurial ability as a factor in their agricultural development.

The present study was therefore designed to fill up the gap in the study of entrepreneurial ability of farmers.

The specific objectives of this study are:
(1) To examine the role and significance of agriculture in economic development.
(2) To review the role of farm entrepreneurs in agricultural development.
(3) To measure the entrepreneurial ability in farming.
(4) To derive appropriate conclusions for improving the role of farm entrepreneurs in agricultural development.

(b) The study is empirical in nature and is based on primary and secondary data. It is mainly based on the primary data. An individual farmer's schedule was designed and the interviewing method was used to collect data from the sample households of Bharuch district. The schedule was designed in such a way as to collect quantitative and qualitative informations on social, economical and psychological attitudes of farm entrepreneurs and
their innovativeness in agricultural development.

A list of farmers, according to the size of land holding, from 12 villages of 6 talukas of Bharuch district was prepared. Out of all the small, medium and large farmers, with the help of random sampling, 220 households were selected.

The secondary data regarding the district profile are collected from various district credit plans, the statistical outline of Bharuch district, statistical outline of Gujarat State and other Government publications. Important findings reported in various experts Committee reports and other studies on agricultural entrepreneurship in agricultural development have also been used. Information has also been obtained by personal visits and discussions with experts in the concerned area.

II. 1. Bharuch district is one of the most backward districts of the state. Agricultural productivity is nearly stagnant in the district. The per hectare yield of cotton - the major crop in the district marginally declined during 1949-50 to 1989-90.

II. 2. There has been a large scale outmigration of population during the period from 1971 to 1981. This migration is largely due to non-availability of adequate income and employment in agricultural sector in the rural areas of the district. During 1981 -1991 census figures prove that the ratio of outmigration of population in the district has declined, because, heavy industrialization surrounding Ankleshwar, Bharuch and other parts of the district.
II. 3. (a) The land use pattern of the district reveals that despite of increase in the area under forest; the density of natural forest seems to be declining. It is therefore, necessary that effective steps should be taken so as to increase not only the areas under forest but also the density of trees in the forest. The problem of checking the activities of illegal cutting needs to be taken very seriously.

(b) Large amount of land is lying waste in different parts of the district. A part of land can be brought under cultivation by extending irrigation facilities to this area. There is also a great potential for development of social forestry in the district.

(c) Saline land in coastal area can be used for social forestry. The cultivation of trees of gandabaval, pilu and tavvar can be undertaken through co-operative societies of farmers.

II. 4. The cropping pattern of the district has considerably changed during the last decade. The cotton which was a principal crop in the district has lost its place to tur. The cotton being still a major crop, there is a need to make this crop a remunerative one. Development of irrigation and timely availability of strategic inputs like seeds, fertilizers, insecticides and pesticides in adequate quantity at reasonable price through co-operatives seem to be an ultimate answer.

Nearly entire district will be covered by irrigation facilities by the end of this century. With the irrigation water made available on perennial scale, the cropping pattern of the
district is likely to change in favour of sugarcane.

The sugarcane cultivation will require perennial irrigation which will create problems of salinity. In this circumstances farmers should be imparted training in making judicious use of water.

II. 5. At present the irrigation ratio in the district is very low. The Ukai Water is available to Hansot and Ankleshwar talukas. By improving water management practices more area can be irrigated by available water in the Ukai command area. The talukas of Jambusar, Amod, Vagra, Bharuch and Nandod are likely to get Narmada Water by 1997. With completion of Karjan project irrigation water will also be available to the farmers of Valia, Jhagadia and Nandod talukas. Thus, except far eastern tract of Dediapada and Sagbara the entire district will be within the command areas of Canal Irrigation Projects. Due to favourable monsoon conditions, there are great potentialities for irrigation through checkdams and tubewells in eastern tract if proper planning is made for the purpose.

II. 6. (a) The improved varieties of seeds are very popular among the farmers in the district. However, it is necessary to make arrangements for good quality seeds for the farmers in time at reasonable prices.

(b) The farmers also make use of chemical fertilizers. However, the per hectare use of fertilizers is very low and the use of different types of fertilizers is not balanced. It is
necessary that guidance for proper use of fertilizers should be provided to farmers. In future when area under sugarcane will increase, use of manures will be very useful. It is necessary that supply of manures is increased by popularising the bio-gas plants in rural areas.

(c) So far as the use of insecticides and pesticides is concerned, their indiscriminate use has on the one hand adversely affected the per hectare yield and on the other hand has increased the cost of cultivation. Proper guidance to the farmers is very critical in this regard.

II. 7. (a) The dairy enterprise is not adequately developed in the district. Inspite of large number of milch animals, yield of milk per animal is very low. Modern technique of animal husbandary has not yet become popular among the farmers. If cross-breed animals are made popular among people and arrangements for cattle-feed is made, dairy enterprise offers great scope for increasing income for the people. This particular enterprise can contribute to great extent in increasing employment and income in the rural areas.

(b) With increasing irrigation facilities, inland fishery can also be developed in rural area. Due to the long coastal line, the district has great scope for marine fisheries also. If co-operative societies are developed and modern technology is used, fisheries potentials that exists in the district can be exploited.
(c) Poultry like dairy and fisheries can also become supplementary source of income and employment in the rural areas. Though the district is a pioneer in the poultry co-operatives, most of the co-operative poultry units have become inactive. Mismanagement and corruption is responsible for this. It is necessary, therefore, that the poultry development agencies will have to take necessary step to check corruption before opening new poultry units or revitalising sick units.

III. 1. (a) The term "entrepreneurship" used in this study, of course, does not strictly conform to its usually accepted meaning in economics. Which denotes an "Ideal type rather than a term continuously applicable to the real person". For, apart from those who co-ordinate the factors of production, "if the achievement level is high, there will be presumably more people who behave like entrepreneurs." Therefore, McClelland defined an entrepreneur as, "Some one who exercises some control over the means of production and produces more than what he can consume in order to sell (or exchange) it for individual (or household) income.

(b) Schumpeter argued that creative innovations are the functions of free entrepreneurial activity requiring the knowledge and skills of the entrepreneur. An increase in the stock of knowledge changes the environment in which the entrepreneur decides whether or not to engage in a given activity. In short Schumpeter concluded, that the function is innovation, and the personage who is responsible for innovating is called the entrepreneur. According to him, an entrepreneur is
the person who carries out a new combination of factors of production and distribution of goods and services.

(c) F. H. Knight propounded the theory that entrepreneurs are a specialised group of people who bear risks and deal with uncertainty. Whereas David Ricardo noted that, "the farmer and manufacturer can no more live without profit than the labourer without wages."

(d) Entrepreneurship may be defined as the purposeful activity of an individual or group of associated persons, initiating, promoting and maintaining business activity for the production of wealth and distribution of goods and services, with a pecuniary motive, or such benefits in the given social and political conditions, and enjoying an appreciable measure of freedom of choice and decision to run the business units. Therefore the term "entrepreneurship" refers to the production, the processing and the business spheres of the economy. Entrepreneurship does not mean either a specific individual or occupation. It is an activity, which an individual may carry out habitually, occassionally, very rarely or never. The clear identification of entrepreneurship with a specific individual as is done in economic theory is not correct. An individual may, however, be characterised by activity of entrepreneurial nature and individuals do constitute the source of entrepreneurial skills.

Thus a large number of authorities can be quoted stressing the different facets of entrepreneurship. By its very nature,
entrepreneurial function appears to be a composite one. Analysis of the development of entrepreneurship reveals that an entrepreneur is multi-functional personality discharging different roles such as capitalist, investor, promoter, co-ordinator, manager, administrator, risk-bearer, uncertainty-undertaker, innovator, decision maker and organiser. The specific combination of these functions or roles has been varying in relation to time, place and country.

(e) The analytical approach to entrepreneurial research may be fivefold, firstly innovation, secondly Migration, thirdly Speculation, fourthly accumulation and finally ethics. Like the classification of entrepreneurial function for the purpose of study, patterns of entrepreneurship can be distinguished. As they vary in relation to time, country, race, economic sector and personnel abilities, they provide scope for the study of historical, national, sociological, occupational and individual patterns respectively. The different patterns possess their unique characteristics. For instance, "great entrepreneurs are born, not made". Hence, like others, there is a need to study the individual patterns of entrepreneurship.

(f) Entrepreneurship comprises, "a more or less continuous set of functions running from the purely innovative toward the purely routine", performed within business firms or agricultural sector or other agencies "at many levels of initiative and responsibility, ....... Wherever significant decisions involving change are made affecting the combination and commitment of
resources under conditions of uncertainty.

(g) The physiocratic economists of the later eighteenth century, such as François Quesnay and Nicolas Baudeau, called the agricultural cultivator an entrepreneur. Since the physiocrats also thought that only the land was a source of social product, this put the entrepreneur in a key position.

According to Dr. Bhattacharya Sib Nath, some farmers have responded to the new enterprise commonly associated with the use of high-yielding variety of seeds, use of chemical fertilizers, pesticides, etc. and of new agricultural machineries better than the other farmers, thus the former group of farmers is called agricultural enterprisers.

Thus a large number of authorities evaluated farm entrepreneurs as farmers who with a high level of adoption of the farm technology, a greater return from their land over the expenditures made on crop cultivation were more efficacious and willing to shoulder responsibility and had a higher level of personal achievement motivation and a greater participation in economic institutions. Lack of high formal education did not come in their way to entrepreneurial activities.

III. 2. (a) Development of economy of any nation depends primarily on the important role played by entrepreneurs. The part played by such entrepreneurs is of vital importance in a developing country like India, where there are ample opportunities for using innovations to exploit the available resources. Thus in all economic development activities more and
more focus is being centred on entrepreneurship of the people. Entrepreneurship should be recognised as a concept, not only vital for starting industries but also for the development of agriculture. (b) Entrepreneurship is a human activity which plays a major role in economic development. In the absence of it, the resources of production remain resources and can never become products or services. Whether the field of activity pertains to industry or agriculture or something else, entrepreneurship is indispensable for the growth and development of any society. Further, the present day industrially advanced nations of the world owe much of their development to the initial successes made in the farm front. Despite the basic differences in the nature of industrial and agricultural entrepreneurship, the quality of entrepreneurship, is similar in the two sectors. Without the production of entrepreneurship, transformation of traditional agriculture into modern agriculture becomes impracticable. For such a transformation, an entrepreneurial class of farmers should come forward to adopt new practices, to take risk and to face challenges. Thus, the essence of entrepreneurship lies in the shedding of inhibiting value system and in the imbibing of 'new values' relevant to the emerging realities of the environment.

III. 3. (a) Theoretical aspect of the farmer as an entrepreneur and how the farmer behaves in his role as entrepreneurs are explained by given assumptions.

(b) Economic maturity is reached only when a diversified and multi-functional agricultural network in the hands of farm
entrepreneurs has developed. Achievement of such a network is to be more deeply viewed as manifestation of the farm entrepreneurial initiative and the breadth of self-stimulated market adequate for the subsequent endurance and expansion of the specific economy in question.

Without payments no production can be carried on; hence wages to labour, interest for the use of capital and funds, and rent for land are paid. Profits are rewards reaped by the entrepreneur for his adventure, risk-taking and uncertainty bearing.

Entrepreneur's functions are distinct from those of the organizer and manager. In agriculture such a fine distinction between organizer and entrepreneur is not so sharp as in industries. Generally, the farmer combines in himself the function of an entrepreneur, organizer, capitalist, land lord and even a labourer. On larger units, the farmer may spend more time on managerial functions but it is only on very large farms that there is a separation between managerial and entrepreneurial functions. Usually the same individual shoulders both these responsibilities. Entrepreneurship is postulated here as the function of generalised agricultural experience, ability to anticipate and plan, adaptability to changing agriculture conditions, decisions pertaining to the diversification of agriculture, ability to recognize market opportunities, ability to recognize alternative possibilities of action and ability to combine elements of rational decision making with some elements.
of irrational risk taking. In short, the entrepreneur must be willing to act in an independent manner. These functions are basically on the socio-psychological orientations of the persons concerned in terms of their motivations, aspirations and modernity. Conceptually all these variables are related to entrepreneurial success.

IV.1. According to Dr. Bhattacharya Sib Nath a farm entrepreneur must possess the following distinctive features.

(1) Ability to think purposefully in the matter of farm activities.
(2) Ability to express himself clearly.
(3) Proficiency in farm operations.
(4) Efficiency of broad thinking.
(5) Intelligence and foresight regarding the persons employed on his own/hired farm.
(6) Capability of taking decisions at proper time.
(7) Possess knowledge of various facilities provided by the Government, Semi-Government and other relevant authorities.
(8) Ability to think about alternative cropping-patterns.
(9) Capability of maintaining daily records of costs and revenues.
(10) Ability to think about a supplementary source of income.
(11) Capability of maintaining proper relations with neighbours.
(12) Aptness to avoid political pressures influencing his farm decisions.
(13) Ability to predict vested interests influencing his farm activities.
Possesses innovativeness.

Capability to motivate farm workers.

The above characteristics have highlighted the point that to be a successful farm entrepreneurs in the agriculture sector is not an easy task, it needs to coordinate conceptual acts, physical acts, conceptual environment, physical environment, individual and or cooperative objectives with successful integration of planning, organisation, directing and controlling of farm operations. The task is stupendous, and in our country, the availability of such entrepreneurs is very scarce indeed. Attempts should be made to increase the supply of this type of farm entrepreneurs in the agriculture sector to enrich the fortune of the vast countryside of the nation. Many things indeed, depend upon how these entrepreneurs behave in the agriculture sector in the years to come.

IV.2. So far as the present study is concerned, farm entrepreneur should have to adopt advanced mechanisation in farming. Their position regarding the level of irrigation should be higher than an ordinary farmers, i.e. use of modern technology like sprinkler-sets to irrigate the crops, which is based on capital-intensity method for irrigation. Farm entrepreneurs must have up to date agricultural knowledge, they require high investments as a result of material inputs needed and access to information on marketing and high risk-bearing capacity. They should have high sensitiveness to price fluctuations in deciding which crops to grow. Farm entrepreneurs should be alert to the fluctuations in prices of his crop, what's more, they are in a position to
postpone selling till some months after harvesting and are therefore able to earn a much better price for their crop. Thus he should have knowledge of new marketing opportunities of his farm products.

An important part of their activity is to acquire necessary resources for the agricultural production. Making contacts and keeping up one's relations with semi-government organisations, banks and co-operative farms are significant parts of their work. In short they are the main beneficiaries of state supported facilities for supplying agricultural information to the farming community.

IV.3. Without the initiative of Government in providing better and more congenial environment in developing economies, it will not be possible to solve the bottleneck of entrepreneurship. Government has to take a number of steps to facilitate the supply of entrepreneurs, such as the introduction of land reform and legislation to abolish intermediaries and guarantee land to the tiller to promote agricultural entrepreneurship, provision of industrial and agricultural finance, establishment of educational and training facilities, promotion of foreign business collaboration, provision of technical services, about market price, taxation measures and loans, and provision of security against entrepreneurial risks. Unless the state in underdeveloped countries initiates steps and plays a crucial role in inducing the growth of entrepreneurship, economic system may not be in a position to get the necessary developmental stimulus for rapid
growth of national income and per capita income in both sector.

IV.4 The study tries to examine following characteristics of the farm entrepreneurs.

(1) Innovativeness:

Innovativeness of farm entrepreneurs is one of the most important characteristic of farmers. According to Schumpeter, "the defining characteristic is simply the doing of new things or doing of things that are already being done in a new way (innovation)". In other words, 'Newness' and 'Firstness' notion is important. In agriculture, the innovator is an active seeker of new ideas while the influential in a conservative community is much more likely to require considerable convincing.

(2) Farm Decision Making:

The role of the farm entrepreneur is more of a decision-maker. He has to take decision regarding all these at the right time, failure of which obviously results in decline in income or even in loss. Farm decision making is the most important characteristic of farmer. The process of decision making depends on many other variables, such as farm size, education, age, size of family, caste, and income etc. The process of farming activities depends on good decision, like timely sowing of crops, inter-cropping system, economising fertilizer use. They are very important factors to achieve better yield or profit. Profit plays a central role in decision making and because of this, profit must not have multiple meaning. Profit, as a matter of
fact, is the widely accepted and genuine rod of measuring the efficiency of the farm entrepreneur. Thus decision-making is a process that may be divided into a sequence of stages with a different type of activity occurring during each stage. In short decision-making is the degree to which an individual justifies his selection of most efficient means from among the available alternatives on the basis of scientific criteria for achieving maximum economic profit.

(3) Knowledge of Farming Enterprise:

Knowledge is precondition to adopt any innovation. So knowledge of farming enterprise is also one of the important characteristics of farm entrepreneurs. Modern farming is dynamic and requires men and women with scientific knowledge, skill and ambition. Knowledge of farm technology, chemistry, pathology, entomology, genetics, nutrition and economics is necessary to successful farming.

(4) Information Seeking:

Information seeking is also one of the important characteristics of farm entrepreneurs. The decision to adopt usually takes time. Farmers normally do not adopt a new practice or idea as soon as they hear about it. Before they adopt any new practice or idea they collect information about new ideas to be sure whether the adoption is profitable or not. Normally farmers collect their information pertaining to agricultural practices and innovations which flows through mass media and the institutional sources. Those farmers who have mostly accepted
the mass-media communication for their information about agricultural activities, have their rate of adaptability of agricultural innovation higher than others.

(5) **Risk Taking Ability:**

Risk taking ability is the degree to which the farmer is oriented towards risk and uncertainty and has a courage to face the problem in farming. Risk involves natural phenomena and is largely the outcome of destruction caused by nature. Risk therefore, implies a phenomenal loss or failure. Risk we usually can't foresee. Thus risk taking ability plays an important role in farming activities for farm entrepreneurs.

(6) **Ability to Co-ordinate Farm Activities:**

This is also an important characteristic of farm entrepreneurs. In the operation of farming activities, each farmer plays two roles. He is at the same time a cultivator and a manager. Farmers must have to co-ordinate the farming activities.

(7) **Assistance of Management Service:**

Assistance of management service of farm entrepreneurs is one of the important characteristics of farmers. This type of service is required in agriculture, because farmers like any other entrepreneur is faced with the question of how to allocate his limited resources among the several available alternatives so as to maximise his return per unit of available resources.
Farmers require an assistance of agricultural labours, their neighbours, their family members and available resources during peak period of sowing and harvesting. So farm entrepreneurs must have a knowledge of assistance of management service.

(8) **Leadership Ability:**

Leadership ability is the degree to which an individual initiates or motivates the action of the other fellows. Leadership is a function of community social structure in terms of its controlling and influencing the social, economic and political processes in the society. Leadership ability is basically concerned with an inquiry into cultural orientation and structural determinants of power processes in the economy.

(9) **Cosmopolitaness:**

This is also an important characteristic of farm entrepreneurs. Progressive farmers always try to get information such as, what and when to do certain agricultural operations, where to sell food grains for obtaining maximum price, how to utilise available benefits from Government agencies, co-operative society, and other institutions. They also try to get information about cheap or economical price of inputs required in agricultural activities. For this type of attitude is necessary for maximizing profit in farming. Various Government agencies, different institutions, marketing facilities are normally located in city area or near by city. So farmers have to move to some other places in order to get information and inputs required for his farming. The importance of this characteristic is to measure
entrepreneurial ability and his eagerness for obtaining new ideas for farming activities.

(10) **Achievement Motivation:**

Achievement motivation is also one of the important characteristics of farm entrepreneurs. It has been defined as the desire to excel regardless of social rewards. It has been suggested that this motivation is the mainspring of western civilisation and its economic prosperity. The achievement motivation should lead individuals to seek out situations which provide moderate challenge to their skills, to perform better in such situations, and to have greater confidence in the likelihood of their success.

V. A. 1. From Table No.1 overall impression is that as farm size decreases the rate of adoption of practices decreases, except in one practice i.e. Jowar crop, because this is one of the major crops in the district.

V.A.2. Table No.2. The comparative views of farm size groups i.e. large farmers, medium farmers and small farmers indicate that, the percentage of farmers is higher in the large farm size groups followed by medium and small farm size groups in making decision independently regarding borrowing money for farming, attending agricultural meeting, reading of agricultural magazine, adopting new farm practices, increasing or decreasing crop acreage and switching over new cropping plan, etc. However, the more than 50 per cent of the all types of farmers had made their
decision independently.

V.A.3. Table No.3. It can be said that, on the whole out of 220 sample farmers most of them had positively replied for each criterion, the comparative views of farm size groups indicate that, the percentage of farmers is higher in the large farm group followed by medium and small farm size groups. Sample farmers' approach for farming enterprise was highly positive in all types of criteria, such as knowledge of HYV of jowar, green manuring for wheat crop, appropriate time for applying nitrogenous fertilizers, name of weedicide, name of cross-breed, measures for powdery mildew, insecticide used for storing the grain, etc. However more than 50 per cent of the all types of farmers had replied positively in the context of these criteria.

V.A.4. Table No.4. On the whole out of 220 sample farmers majority of them had obtained the information mainly from newspaper, radio/television, neighbours, leaflets/magazines etc.

V.A.5. Table No.5. The comparative view of sample farmers most of them adopted HYV crops (93 per cent) and used fertilizers for their rainfed crops (95 per cent). Nearly 50 per cent of sample farmers had positively replied for criteria like, taking loan for sinking well, stopping to grow crop due to price going down. Whereas below 50 per cent of sample farmers had positively replied for criteria such as growing vegetables, adopting the new practice or new crops for the first time in their village, in favour of cross-breed cow, in favour of poultry, growing more than one crop on their farms, and willing to try new practice.
V.A.6. Table No.6. On the whole out of 220 sample farmers most of them had obtained more than 60 per cent for criteria like estimating money for their farming operation well in advance, always thinking about their cropping pattern in advance, procuring (or purchasing) HYV seeds in advance. Below 50 per cent of sample farmers had positively replied criteria like, purchasing fertilizer well in advance, and being conscious in advance regarding the insect attack on their crops.

V.A.7. Table No.7. On the whole out of 220 sample farmers most of them had obtained less than 50 per cent for criteria like getting new information from authorities, estimating their inputs requirement from authorities, getting helps for 7/12 forms and bank loan form, discussing with credit supervisor and obtaining helps from officers for applying for training courses organised by various institutions.

V.A.8. Table No.8. On the whole out of 220 sample farmers majority of them had obtained more than or nearly 50 per cent for criteria such as initiating discussion with their colleagues, assigning the farm work to their family members. Whereas less than 50 per cent of sample farmers had positively replied to criterion like participating in group discussion, regarding them as a good source of information on new farm practices, offering new approaches for the problem.

V.A.9. Table No.9. It can be said that, on the whole out of 220 sample farmers majority of them had obtained more than 50 per cent for criteria like, living in a large town/city for any
purpose, visiting Bharuch or Rajpipla often or sometimes for their farming activities or performing some social work during the last three months, visiting the subject specialists i.e. veterinary doctor, agricultural extension officer or subject expert during the last season, visiting agricultural exhibition during last year. Whereas less than 50 per cent of sample farmers had replied positively to criterion like regular member of any institution.

V.A.10. Table No.10. Statistical analysis in table no. 10 shows that, out of 220 sample farmers not even 50 per cent had obtained any criterion. Whereas less than 50 per cent of sample farmers had replied positively in all criteria which are narrated in Table no.10.

V. B. The present study is mainly concerned with examining characteristics of farm entrepreneurship and six variables such as farm size groups, education groups, age groups, size of family groups, caste groups and income groups which have been analysed with the help of chi-square test and correlation coefficient technique.

V.B.1. Innovativeness of farm entrepreneurship and farm size groups, age groups and size of family groups are independent variables, that means they are not correlated to each other. Whereas innovativeness and education groups, caste groups and income groups are dependent variables, that means, they are
associated to each other.

V.B.2. Farm decision-making and age groups, size of family groups are independent, it shows that they are not correlated to each other. While farm size groups, education groups, caste groups and income groups are dependent variables with decision making. They are associated to each other.

V.B.3. Knowledge of farming enterprise of farm entrepreneurship and education groups, age groups and size of family groups are independent. Which indicate that, they are not correlated while farm size groups, caste groups and income groups are associated or correlated, that means they are dependent variables.

V.B.4. Information seeking of farm entrepreneurship and age groups, size of family groups are independent, it shows that, they are not correlated. Whereas, farm size groups, education groups, caste groups and income groups are dependent variables which shows that they are associated to each other.

V.B.5. Risk taking ability of farm entrepreneurship and farm size groups, age groups, size of family groups and caste groups are independent, which indicate that, they are not correlated variables. While education groups and income groups are dependent, that means they are associated to each other.

V.B.6. Ability to coordinate farm activities of farm entrepreneurship and education groups, age groups and size of family groups are independent, that means, they are not correlated variables. While farm size groups, caste groups and
income groups are dependent which indicate that, they are correlated to each other.

V.B.7. Assistance of management service of farm entrepreneurship and farm size groups, age groups and size of family groups are independent variables. Whereas education groups, caste groups and income groups are dependent or they are associated to each other.

V.B.8. Leadership ability of farm entrepreneurship and age groups, size of family groups are independent variables. While farm size groups, education groups, caste groups and income groups are dependent variables which indicate that, they are associated to each other.

V.B.9. Cosmopoliteness of farm entrepreneurship and education groups, age groups, size of family groups and income groups are independent variables. While farm size groups and caste groups are dependent, that means they are associated to each other.

V.B.10. Achievement motivation of farm entrepreneurship and age groups, size of family groups are independent variables, it shows that, they are not correlated. Whereas farm size groups, education groups, caste groups and income groups are dependent variables, that means they are associated to each other.

V.B.11. On the whole out of ten characteristics i.e. an entrepreneurship index and age groups, size of family groups are independent variables, it shows that they are not correlated with an entrepreneurship index. Whereas farm size groups, education groups, caste groups and income groups are dependent variables,
that means they are correlated to each other, i.e., an entrepreneurship index and variables like farm size groups, education groups, caste groups and income groups are positively related with each other.

V.C.Conclusions:-

V.C.1. The above interpretation provides sufficient evidence to measure the farm entrepreneurial ability of respondents. Which was examined with respect to characteristics of farm entrepreneurship and variables such as farm size groups, education groups, age groups, size of family groups, caste groups and income groups. The entire results of the micro study are summerised and presented in Table 1 and 2. The main summary of these Tables are as follows :-

V.C.2 Out of the ten characteristics of farm entrepreneurship considered in the present study; except cosmopolitaness and income groups and risk taking ability and caste groups; a high correlation is found among other variables. These variables are also correlated with entrepreneurship index, i.e., positive relationship among them.

V.C.3. The education groups and given characteristics of farm entrepreneurship such as knowledge of farming enterprise, ability to co-ordinate farm activities and cosmopolitaness are independent i.e., they are not associated. The innovativeness, farm decision making, information seeking, risk taking ability, assistance of management service, leadership ability and achievement motivation are positively correlated with education
### Table 1

**Chi-Square and Coefficient of Contingency**

<table>
<thead>
<tr>
<th>Sr. Characteristic</th>
<th>Farm Size Group</th>
<th>Education Group</th>
<th>Age Group</th>
<th>Size of Family Group</th>
<th>Caste Group</th>
<th>Income Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient X of Contingency</td>
<td>Coefficient X of Contingency</td>
<td>Coefficient X of Contingency</td>
<td>Coefficient X of Contingency</td>
<td>Coefficient X of Contingency</td>
<td>Coefficient X of Contingency</td>
</tr>
<tr>
<td>1   Innovativeness</td>
<td>8.81*</td>
<td>0.19</td>
<td>10.30</td>
<td>0.21</td>
<td>1.66*</td>
<td>0.08</td>
</tr>
<tr>
<td>2   Farm Decision Making</td>
<td>20.28</td>
<td>0.29</td>
<td>16.22</td>
<td>0.26</td>
<td>2.68</td>
<td>0.11</td>
</tr>
<tr>
<td>3   Knowledge of Farming Enterprise</td>
<td>19.69</td>
<td>0.28</td>
<td>7.73*</td>
<td>0.18</td>
<td>4.52*</td>
<td>0.14</td>
</tr>
<tr>
<td>4   Information Seeking</td>
<td>18.34</td>
<td>0.27</td>
<td>11.56</td>
<td>0.22</td>
<td>7.15*</td>
<td>0.17</td>
</tr>
<tr>
<td>5   Risk taking ability</td>
<td>9.42*</td>
<td>0.20</td>
<td>13.62</td>
<td>0.24</td>
<td>2.34*</td>
<td>0.10</td>
</tr>
<tr>
<td>6   Ability to Co-ordinate Farm Activities</td>
<td>21.04</td>
<td>0.29</td>
<td>9.10*</td>
<td>0.19</td>
<td>1.35*</td>
<td>0.07</td>
</tr>
<tr>
<td>7   Assistance of Management Service</td>
<td>7.26*</td>
<td>0.17</td>
<td>21.99</td>
<td>0.30</td>
<td>5.33*</td>
<td>0.15</td>
</tr>
<tr>
<td>8   Leadership Ability</td>
<td>17.78</td>
<td>0.27</td>
<td>13.71</td>
<td>0.24</td>
<td>8.16*</td>
<td>0.18</td>
</tr>
<tr>
<td>9   Cosmopolitaness</td>
<td>16.12</td>
<td>0.26</td>
<td>3.02*</td>
<td>0.11</td>
<td>6.09*</td>
<td>0.16</td>
</tr>
<tr>
<td>10  Achievement Motivation</td>
<td>30.35</td>
<td>0.34</td>
<td>16.17</td>
<td>0.26</td>
<td>3.11*</td>
<td>0.11</td>
</tr>
</tbody>
</table>

**Notes:**
1. The value of $\chi^2$ for the column on caste group based on 2 d.f. and the value of $\chi^2 = 5.99$ at 5 per cent level of significance.
2. $\chi^2$ = calculated Chi-Square
3. * = Indicate that $\chi^2$ is insignificant at 5 per cent level of significance. The table value of $\chi^2 = 9.49$ at 5 per cent level for 4 degree of freedom (d.f.)
TABLE-2
Matrix of Coefficient of Correlation

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Characteristics of Farm Entrepreneur</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farm size group</td>
<td>Education group</td>
<td>Age group</td>
<td>Size of Family group</td>
<td>Income group</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Innovativeness</td>
<td>0.2474</td>
<td>0.1675</td>
<td>0.085</td>
<td>-0.029</td>
<td>0.4447</td>
</tr>
<tr>
<td>2</td>
<td>Farm Decision Making</td>
<td>0.2901</td>
<td>0.4080</td>
<td>-0.027</td>
<td>-0.107</td>
<td>0.3874</td>
</tr>
<tr>
<td>3</td>
<td>Knowledge of Farming Enterprise</td>
<td>0.2727</td>
<td>0.2657</td>
<td>0.034</td>
<td>-0.033</td>
<td>0.4191</td>
</tr>
<tr>
<td>4</td>
<td>Information Seeking</td>
<td>0.2585</td>
<td>0.3821</td>
<td>-0.071</td>
<td>-0.103</td>
<td>0.3661</td>
</tr>
<tr>
<td>5</td>
<td>Risk taking ability</td>
<td>0.3056</td>
<td>0.1919</td>
<td>-0.031</td>
<td>0.056</td>
<td>0.3479</td>
</tr>
<tr>
<td>6</td>
<td>Ability to Co-ordinate Farm Activities</td>
<td>0.3032</td>
<td>0.4073</td>
<td>-0.017</td>
<td>-0.085</td>
<td>0.4562</td>
</tr>
<tr>
<td>7</td>
<td>Assistance of Management Service</td>
<td>0.2648</td>
<td>0.2512</td>
<td>-0.022</td>
<td>-0.039</td>
<td>0.4444</td>
</tr>
<tr>
<td>8</td>
<td>Leadership Ability</td>
<td>0.3386</td>
<td>0.2411</td>
<td>-0.124</td>
<td>-0.047</td>
<td>0.3631</td>
</tr>
<tr>
<td>9</td>
<td>Cosmopoliteness</td>
<td>0.2681</td>
<td>0.1163</td>
<td>-0.043</td>
<td>-0.074</td>
<td>0.2990</td>
</tr>
<tr>
<td>10</td>
<td>Achievement Motivation</td>
<td>0.3276</td>
<td>0.2615</td>
<td>0.0582</td>
<td>0.132</td>
<td>0.3984</td>
</tr>
</tbody>
</table>

Note: Coefficient of correlation is not possible for Caste group, because this variable is attribute.
groups i.e., education groups and rest of the given characteristics of farm entrepreneurship are associated. It shows that as the level of education increases, the level of innovativeness, farm decision making, knowledge of farming enterprise, information seeking etc. also increases.

V.C.4. The farm size groups and innovativeness, risk taking ability and assistance of management service are independent i.e., they are not associated with each other. Whereas, the farm size groups and rest of the other characteristics are highly correlated or dependent. In other words, as the farm size increases, achievement motivation or rest of the given characteristics of farm entrepreneurship also increases. It is also found that entrepreneurship index and farm size groups are positively correlated.

V.C.5. Age groups and size of family groups are independent, i.e., both of these variables are not associated with any characteristics of the farm entrepreneurship. It is also observed that entrepreneurship index and age groups, entrepreneurship index and size of family groups are not associated because they are independent.

V.C.6. In the present analysis it is observed that, out of six variables, farm size groups, education groups, caste groups and income groups are significantly associated with given characteristics of farm entrepreneurship and there exists high farm entrepreneurial ability in these four variables.

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