STRATEGIC ANALYSIS OF MARKET-LED-EXTENSION ACTIVITIES OF APMCs OF SOUTH GUJARAT

A THESIS SUBMITTED TO THE FACULTY OF AGRICULTURE NAVSARI AGRICULTURAL UNIVERSITY NAVSARI IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN EXTENSION EDUCATION

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Agricultural markets are as important as the actual farming itself. The low bargaining capacity of farmers and unregulated markets restricts them to get the remunerative price of their produce. The APMCs established with a view to protect the interests of the farmers in general and small and marginal farmers in particular. The aim of regulated markets are to prevent exploitation of farmers by removing the hurdles in the marketing, to improve the marketing system for getting better prices of their produce and the goods are made available to consumers at reasonable prices. In this context, market-led-extension approach in the APMC activities play important role to enhance the market efficiency and marketing behaviour of farmers.

OBJECTIVES

1. To study the personal, socio-economic, psychological, communicational and situational characteristics of office bearers, committee members and beneficiaries of APMC

2. To assess the perception of beneficiaries, office bearers and committee members about the role of APMC in market-led-extension

3. To study the managerial ability of beneficiaries, office bearers and committee members of APMC in market-led-extension activities

4. To analyze the marketing behaviour of beneficiaries, office bearers and committee members of APMC towards market-led-extension

5. To find out the association between selected characteristics with role perception, managerial ability and marketing behaviour towards market-led-extension of office bearers, committee members and beneficiaries of APMC and
To identify the factors influencing the marketing behaviour of APMC beneficiaries and obtain their strategic suggestions for enhancing the market-led-extension activities

METHODOLOGY

The ex-post-facto as well as exploratory research designs were adopted in the present investigation. The area of seven districts of South Gujarat were bifurcated in to tribal area and non-tribal area and from both, 4 APMCs were randomly selected. For the study, respondents were of three types and from each APMC were taken in to account with a ratio of 20:6:3. One village each fell within the distances of 5 km and 5 to 10 km per APMC as well as from selected villages, 10 farmers as respondents were randomly selected which made the total of 160 farmers. Further, 6 committee members and 3 office bearers were also randomly selected as respondents from each APMC which made total of 48 committee members and 24 office bearers. Three dependent and nineteen independent variables were included for the present study. A scale developed to measure marketing behaviour, structure schedule prepared for knowing the role of APMC in market-led-extension and for managerial ability, the scale developed by the Chari (1985) was used. The collected data were analyzed with advocated statistical tools by the statistician.

FINDINGS

1. It can be concluded that majority of the APMC respondents were found in middle age group, had secondary level of education, belonged medium size of land holding, had medium level of experience, found in the moderate to short market distance categories, found in higher annual income category, having membership in more than one social organization, had moderate level of extension contact, frequently accessed the sources of information, not received any type of training, had better cropping pattern, good cropping intensity, had more than 75.00 per cent of marketable and marketed surplus, adequate knowledge about the statutory activities of APMC, moderate level of economic orientation, scientific orientation, risk orientation and moderate level of group cohesiveness.

2. Majority of the respondents of APMCs had moderately perceived the roles of APMC in market-led-extension.

3. Majority of the respondents of APMCs possessed good managerial ability for market-led-extension.
4 Majority of the respondents of APMCs had good level of marketing behaviour towards market-led-extension.

5 The land holding, extension contact, training received, knowledge about the statutory activities of APMC, economic orientation, scientific orientation and risk orientation of APMC farmers were found highly significantly associated with the role perception about market-led-extension. Whereas, education, source of information on marketing and cropping intensity were found significantly associated with role perception about market-led-extension.

6 The education and working experience of committee members and office bearers of APMCs found highly significant and group cohesiveness was significantly associated with the role perception about market-led-extension.

7 The age and farming experience of the APMC farmers had highly significant but negatively associated with the managerial ability for market-led-extension. The education, annual income, social participation, extension contact, source of information on marketing, training received, knowledge about the statutory activities of APMC, economic orientation, scientific orientation and risk orientation of the APMC farmers were found highly significant association and cropping pattern, cropping intensity and group cohesiveness were significantly associated with managerial ability for market-led-extension.

8 The education, working experience, training received and group cohesiveness of committee members and office bearers of APMCs found highly significant with their managerial ability for market-led-extension.

9 The age and farming experience of APMC farmers had highly significant but negatively associated with marketing behaviour towards market-led-extension. The education, land holding, distance from market, annual income, social participation, extension contact, source of information on marketing, training received, cropping intensity, knowledge about the statutory activities of APMC, economic orientation, scientific orientation, risk orientation and group cohesiveness of APMC farmers were found highly significant association and cropping pattern was significantly associated with marketing behaviour towards market-led-extension of APMC farmers.

10 The education, working experience and group cohesiveness were found highly significant with the marketing behaviour towards market-led-extension of APMC committee members and office bearers.

11 The high cost of inputs, monopolistic characteristics of traders / middlemen, shortage of labourers, less price/profit due to low market rate/production cost, fluctuation in market price, the shortage of irrigation, lack of open auction,
high labour charges/wages, inadequate physical facilities/market infrastructure and lack of unity among the farmers were found as the major influencing factors in marketing behaviour of the farmers.

Inputs should be subsidised, more buyers should be in open auction, promote low cost farm mechanization, MSP should be fixed on cost of production and margin, assure the farmers on MSP under promotion of marketing reforms, the irrigation canal should be extended up to unreached area, open auction should allowed, invent/promote substitute farm machinery with new idea, create market infrastructure facilities and promote farmers organization were the suggestions offered by APMC farmers to overcome the influencing factors in market behaviour.
Dr. R. D. Pandya  
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CERTIFICATE

This is to certify that thesis entitled “STRATEGIC ANALYSIS OF MARKET-LED-EXTENSION ACTIVITIES OF APMCs OF SOUTH GUJARAT” Submitted by Mr. KAVAD SHAMJIBHAI DULABHAI in Partial fulfillment of the requirement for the award of the degree of DOCTOR OF PHILOSOPHY in the subject of EXTENSION EDUCATION of the Navsari Agricultural University is a record of bonafide research work carried out by him under my guidance and supervision and thesis has not previously formed the basis for the award of any degree, diploma or other similar title.

Place : Navsari  
Date : 03 November, 2015  
(R. D. PANDYA)  
MAJOR ADVISER
DECLARATION

This is declared that the whole of the research work reported in the thesis for partial fulfillment for the requirements of the degree of **DOCTOR OF PHILOSOPHY in EXTENSION EDUCATION** by the undersigned is the result of investigations done by me under the direct guidance and supervision of **Dr. R. D. PANDYA**, Professor and Head, Department of Extension Education, N. M. College of Agriculture, Navsari Agricultural University, Navsari and no part of the work has been submitted for any other degree so far.

**Place**: Navsari  
**Date**: 03 November, 2015

**Countersigned by**

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(Kavad Shamji D.)
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<tr>
<td>%</td>
<td>Per cent</td>
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<tr>
<td>&gt;</td>
<td>Greater than</td>
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<tr>
<td>Anon.</td>
<td>Anonymous</td>
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<tr>
<td>APMC</td>
<td>Agriculture Produce Market Committee</td>
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<tr>
<td>ATMA</td>
<td>Agricultural Technology Management Agency</td>
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<tr>
<td>CM</td>
<td>Committee members</td>
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<tr>
<td>DGVCL</td>
<td>Dakshin Gujarat Vij Company Limited</td>
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<tr>
<td>et al.</td>
<td>et alii; and others</td>
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<td>etc.</td>
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<td>Fig.</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>i. e.</td>
<td>That is</td>
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<tr>
<td>ICT</td>
<td>Information Communication Technology</td>
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<tr>
<td>KVK.</td>
<td>Krishi Vigyan Kendra</td>
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<tr>
<td>MSP</td>
<td>Minimum Support Price</td>
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<tr>
<td>MT</td>
<td>Million tonnes</td>
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<td>n</td>
<td>Number of farmers</td>
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<tr>
<td>NAU</td>
<td>Navsari Agricultural University</td>
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<tr>
<td>NC</td>
<td>North Central</td>
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<tr>
<td>NGOs</td>
<td>Non-Government Organizations</td>
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<tr>
<td>NS</td>
<td>Non significant</td>
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<tr>
<td>NTa</td>
<td>Non Tribal area</td>
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<tr>
<td>OB</td>
<td>Office bearers</td>
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<tr>
<td>SC</td>
<td>South Central</td>
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<tr>
<td>S.D.</td>
<td>Standard Deviation</td>
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<tr>
<td>SAUs</td>
<td>State Agricultural Universities</td>
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<td>SHG</td>
<td>Self Help Group</td>
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<td>Ta</td>
<td>Tribal area</td>
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<td>viz.,</td>
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CHAPTER – I
INTRODUCTION

Agriculture is ensuring food and nutritional security, sustainable development and for alleviation of poverty. It is the key sector for generating employment opportunities for the vast population of India. The emerging challenges and opportunities call for a paradigm shift in the innovation driven agricultural research system to connect inventions with all the stakeholders in the entire food supply chain. During the first decade of the 21st century, two divergent trends have been noticed the first, India being recognized as the global power in the key economic sectors with consistent high economic growth and second with its slow growth is causing concerns for the future food and nutritional security.

Indian agriculture contributes 8.0 per cent to global agricultural gross domestic product to support 18.0 per cent of world population with only 9.0 per cent of world’s arable land and 2.3 per cent of geographical area. Nearly one-third of the country’s population lives below poverty line and about 80 per cent of our land mass are highly vulnerable to drought, floods and cyclones. On the brighter side, nearly 8.0 per cent of substantial biodiversity of the world’s documented animal and plant species are found in our country. Many of these are considered crucial for livelihood security of poor and vulnerable population (vision 2050 www.icar.org.in).

According to Agriculture Census 2010-11, the total number of operational holdings was 138.35 million with average size of 1.15 ha of the total holdings where 85 per cent belonged to marginal and small farm categories. The average size of the landholding declined to 1.32 ha in 2000-01 from 2.30 ha in 1970-71 and absolute number of operational holdings increased from about 70 to 121 million. If this trend continues, the average size of holding would be mere 0.68 ha in 2020 and may 0.32 ha in 2030. This is a very complex and severe problem, when the share of domestic products is declining and average size of fragmented holding with operational landholdings is increased. These small farms, though operating only on 44 per cent of land under cultivation are the main providers of food and nutritional security to the nation but, have limited access to technology, inputs, credit, capital and markets. Declining size of landholdings without any alternative income augmenting opportunity is resulting in fall in farm income, causing agrarian distress.

The demand for food and processed commodities is increasing due to growing population and rising per capita income. There are projections that demand for food grains would increase 345 million tons in 2030. Hence in the next 15 years,
the production of food grains needs to be increased at the rate of 5.5 million tons annually. Currently, Indian Agricultural Economy contributing with 13.7 per cent to the national GDP through agriculture sector, though agricultural production in 2013 was at all-time high of 264 million tons. The agricultural economy that grew at an average rate of 3.7 per cent per year during 2007 to 2012 is projected to grow annually at 4.0 per cent during 2012 to 2017, with growth in national GDP estimated at 8.0 per cent. However, it must be remembered that the GDP estimates do not take into account the costs of environmental degradation. Agriculture places considerable load on environment in the process of production of goods and services. A template for estimating green national accounts, which would measure national production while allowing for the negative effects on national resources, is contemplated. (www.icar.org.in)

The demand for high-value commodities like horticulture, dairy, livestock and fish is increasing faster than food grains. These commodities are all perishable and requires different infrastructure for handling, value-addition, processing and marketing. This is a challenge as well as an opportunity. The challenge is that it appears to be a difficult task for attaining mountainous targets and the opportunities would be in augmenting farm incomes, generating employment and in involving a number of additional stakeholders in the food-supply chain through institutional interventions for production, post-harvest and marketing of high-value, perishable commodities and their value-added products.

Farming feeds the world and farming is done by farmers using natural resources, various other inputs and hard labour though agriculture is mostly rain fed, risky and involve drudgery. Farm outputs are needed by each and every person on the planet earth irrespective of cast, creed, colour, richness or poverty for their survival, living and physical and mental performance and efficiency. People having economic activities other than agriculture are always dependent on farmers for their food to survive and live, irrespective of how much they earn therefore, it can be said that there is no noble and better profession than agriculture in the present world. Farmers, therefore, deserve a great appreciation and are paid appropriate prices for their produces, so that they can also lead a dignified life and a graceful living.

Since last 50 years, production-led-extension (PLE) approach resulted in raise in agricultural production and extended certain benefit to the farmers. As a result, India stands first in horticulture, pulse and milk production while, in rice and
wheat stands second. In the present context of globalization and liberalization, agricultural marketing plays an important role hence, need is felt to sensitize the farmers about the accessible structures, ways of good returns on their produce and facilities at different markets (Gummagolmath et al., 2013).

Area and seasons based markets in the form of mandis or haats have shown their significant presence throughout India. More or less they are performing on commodity, kind of produce, areas and need of farmers. It was noted by the several economist that unregulated markers are hampering the agricultural economy and found much disadvantageous to the farming communities and consumers.

Farming communities are habituated with what to produce, when to produce, how much to produce but, time demands to conceptualize the concept of market-led-extension and counsel them about when and where to sell, at what price and in which form to sell their produce. (Gummagolmath et al., 2013).

The globalization of market has create an avenue to the farmers who are ready to transform themselves from mere producers cum sellers in the domestic market to a wider market to best realize the returns for their investments, risks and efforts. Moreover, the dietary preferences, consumption of more processed foods and crowding out of peri-urban area become subsequent alternative for perishable commodities. This signifies that the farmers’ needs to be oriented with knowledge and skills related to market (Kaleel, et al. 2007).

Under the traditional system of marketing of agricultural products, producers-sellers incurred a high marketing cost and suffered due to unauthorized deductions of marketing charges and the prevalence of various malpractices. Creating fair competitive conditions, the bargaining power of producer-sellers was considered to be the most important pre-requisite of orderly marketing.

Markets are the primary drivers for agricultural development. Agricultural markets are as important as the actual farming itself. The new Agricultural Policy emphasizes on commercialization, diversification, value addition and export orientation, which emphasizes the importance of market-led-extension (Prasad, 2007). Market-led-extension works with various aspects on quality, consumer’s preference, market intelligence, processing, value addition and other marketing information on regular basis. These can helps the farmers to realize high returns for their produce, minimize the production costs and improve the product value and marketability. Hence, the extension should focus on end-to-end basis. The
extension system now needs to be oriented with knowledge and skills related to the market. To accomplish efficient marketing, the infrastructure like information and extension services to farmers, transport and communication facilities, public utility supply, trade and advertisement, public storage, market and abattoir facilities are very much required (Duraisamy, 2007).

After executing the reform at Agricultural Producers Marketing Committee (APMC), the regulated markets are playing a fairly palpable role in enhancing the supply of both perishable and non perishable farm produce. Statutorily, the most regulated Indian markets for agricultural produce are being organized in market yards, sub-yards, sunghs and mandalis.

Regulated markets where the prices, market procedures and operations are controlled by the government. The objectives are to prevent the exploitation of farmers by removing the handicaps in the marketing of their products, to make the marketing system most effective and efficient to get better prices for their produce and the goods are made available to consumers at reasonable prices, to provide incentive prices to farmers for inducing them to increase the production both in terms of quantity and quality and to promote an orderly marketing of agricultural produce by improving the infrastructural facilities. Any legislative measure designed to regulate the marketing of agricultural produce in order to establish, improve and enforce standard marketing practices and charges may be termed as one that aims at establishing regulated markets.

Realizing the fact that farmers are the only category who pay high price for the inputs they buy and receive low price for the produces which they sell, market-led-extension helps the farmers realize high returns for the produce and minimize the production costs and improve the product value and marketability. This market led extension has emerged as the need of the day. The transition from legitimizer-led to farmer/group-led to state-led to market-led extension is required in the country. Market-led-extension emphasizes the shift of focus from the content to function. It also highlights the need for agricultural extension to be more than just a delivery vehicle for agricultural technologies. Market-led-extension is the market ward orientation of agriculture through extension includes agriculture & economics, is the perfect blend for reaching at the door steps of farming community with the help of appropriate technology.
Market-led-extension is comparatively new approach which includes new methods/techniques of farming, importance of proper post harvest handling and marketing. This is to be disseminated among the communities of farmers through APMCs. This is done to maximize the profits of the producer whilst, at the same time, focusing on lowering the costs of production and expose them direct to markets. Basically market-led-extension is working on Market Oriented Production, Latest Knowledge of Market, Market Analysis, Market Intelligence, Use of ICTs and Appropriate Extension Approaches. Thus, the market-led-extension establishes its position by helping the farmers to realize high returns for their produce; minimize the production costs, reduce the post harvest loses and improve the product value with marketability.

In this context, Government of India, the Ministry of Agriculture appointed an Expert Committee to review the system of agricultural marketing of the country. As measures to make the system more efficient and competitive the Model Act, 2003, redefines the role of APMC to promote alternative marketing system, contract farming, direct marketing and farmers / consumers markets. Basically, APMC acts run on two principles; first is to ensure that intermediaries do not compel farmers to sell their produce at the farm gate at extremely low price so that farmers are not exploited and second, all food produce should first be brought to the market yard and then be sold through auction. Moreover, they also redefine the role of State Agricultural Marketing Board in promotion, standardization, grading, quality certification, market-led-extension, training to farmers and market functionaries in marketing related areas. Effective linkages of production systems with marketing, agro-processing and other value added activities would play an increasingly important role in the diversification of agriculture.

The Government provides much of the infrastructure required for efficient marketing. One of the most important is the information and extension services to farmers besides, transport and communication facilities, public utility supply, like water, electricity, fiscal and trade administration and public storage, market and abattoir facilities (Singh, 2013).

1.1 **Statement of the Problem**

The APMCs have been established with a view to protect the interests of the farmers in general and small and marginal farmers in particular. APMC is the structure which looks after the interest of farmers in context to marketing and
processing aspects of agriculture produce. Every APMC is to be act as Centralized Marketing Place. It is the meeting point for sellers, buyers and agents. The APMC is responsible for providing the required infrastructure as well as for preventing unfair trade practices. Considering the importance of market and activities of APMCs at grass root level, this research was framed. After reforms in the APMC Act, the APMCs are more responsible to implement the reforms for creating better facilities and market-led-extension for the farmers to change their perception about APMC and marketing behavior. It was observed that not a single study of this kind was done in the area of South Gujarat.

Considering all these thoughts, the present study was conducted on; 'Strategic analysis of market-led-extension activities of APMCs of South Gujarat' with following specific objectives.

1.2 Objectives of the study:

1.2.1 To study the personal, socio-economic, psychological, communicational and situational characteristics of office bearers, committee members and beneficiaries of APMC

1.2.2 To assess the perception of beneficiaries, office bearers and committee members about the role of APMC in market-led-extension

1.2.3 To study the managerial ability of beneficiaries, office bearers and committee members of APMC in market-led-extension activities

1.2.4 To analyze the marketing behaviour of beneficiaries, office bearers and committee members of APMC towards market-led-extension

1.2.5 To find out the association between selected characteristics with role perception, managerial ability and marketing behaviour towards market-led-extension of office bearers, committee members and beneficiaries of APMC and

1.2.6 To identify the factors influencing the marketing behaviour of APMC beneficiaries and obtain their strategic suggestions for enhancing the market-led-extension activities

1.3 Importance of the study

The conceptualization about market regulation was attributed during British rulers while supplying pure cotton at reasonable prices to the textile mills in Manchester. Karanjia Cotton Market was the first regulated market established at Hyderabad Residency in 1886. The first legislation passed as Berar Cotton and Grain
Market Act in 1897. It was considered as model act and adopted in other parts of the country. The then Bombay Government was first province to enact Cotton Market Act in 1927. This was the first law in the country which attempted to regulate markets with a view to evolving fair market practices. The Royal commission on Agriculture in 1928 and the Central Banking Enquiry Committee in 1931 recommended to establish Central Marketing Department (1935), later in renamed as Directorate of Marketing and Inspection (DMI) under the Ministry of Food and Agriculture to address the problems in Agricultural marketing and for advising the government on improvement of primary agricultural produce markets. The regulation programme in India got momentum after the independence and regulated markets / Agricultural Produce Market Committee (APMC) came into existence in different parts of the country, there were 236 regulated markets during 1951. Agricultural marketing in India has made notable progress after independence. A dynamic and vibrant marketing system with adequate supply chain infrastructure has been felt necessary to keep pace with the changing agricultural production and growing marketable surplus.

At present the number of markets is 28723 (comprising 5964 Whole sale and 22759 Rural Primary markets). On the end of March 2014, the Gujarat has 400 (199 Primary regulated markets and 201 Sub market yards) and India has 7114 (2483 Primary and 4631 Sub market yards) regulated markets (www.agmarknet.nic.in/RMS2014.pdf) whereas, South Gujarat region has 94 regulated markets (comprising 28 Primary and 66 Sub market yards) (www.agmarknet.nic.in/dwapdir.pdf). There has been a huge variation in the density of regulated markets in different parts of the country, which varies from 118 sq km. in Punjab to 11,214 sq km. in Meghalaya, while ideally a regulated market should be available to farmers within a radius of 5 km.

Agricultural marketing in India suffers from inefficiency, fragmented marketing channels, poor infrastructure, excesses of middlemen, policy distortions and disconnect between the prices received by producers and the prices paid by consumers (Ramesh, 2012). However, the prices are rising but the benefit does not reach to farmers. For example, in 1951-52, about 90 per cent of what the consumer paid for food reached to the farmers and in the mid 1980s, it was about 50 per cent but now in 2011, only 35 per cent or so reaches to the farmers and the remaining 65 per cent goes to the middlemen. At
present, it is the middlemen of the trade who manages to keep the lion's share of prices for food commodities paid by the urban consumers and those who do not do farming (Ali, 2011).

The findings on the farmers' share in the final consumer price found in different marketing systems may be summarized as follows (Anon, 2013a). The share of farmers in the final consumer price varies between 24 and 58 per cent. The share of farmers is highest in the markets controlled by farmers' organizations particularly in vegetable and fruit growers as 75 per cent of the stall price. The most efficient market system for farmers and consumers is farmers' markets such as Apni Mandi, Rythu Bazaar, Uzhavar Sandhai and Krushak Bazaar. (Anon., 2007)

The regulation of markets, however, achieved limited success in providing an efficient agricultural marketing system in the country because, over the years, the development oriented institutions (APMCs, State Agriculture Marketing Boards) turned out to be more of revenue generating institutions than facilitating efficient marketing practices to benefit the farmers and other market participants (Anon. 2013)

Attempt had been made to explore the role and feasibility of utilizing the network of APMCs in Market-led-extension. Supplying the agricultural inputs and guidance on efficient use of inputs may rendered by APMC to the farmers. APMC can also impart training to the farmers in various aspects of agricultural marketing which would improve their marketing behavior and ultimately the market efficiency. The APMC, being an institution comprising of farmers' representatives, traders and government departments as committee members, can organize various extension education activities successfully. The APMC’s infrastructure and resources will be best utilized by performing the complementary role of market-led-extension. It is normally located at block and district level, so technical support to them for carrying out extension function can be ensured by establishing strong linkages with the Line departments, Panchayats, NGOs and private organizations in their jurisdiction. Thus it may be the prospective institutions for performing the roles relating to market-led-extension for the farming community and can fulfill the sole aim of Government behind establishment of APMC. Market-led-extension approach has strength to enhance the extension system of the States.
Findings of the study will help to the Department of Agriculture and Horticulture, NGOs and other private agencies involved in the promotion of agricultural marketing to formulate their strategies in order to intensify their efforts in promotion of marketing behavior among conventional farmers in the interior areas. The information about managerial ability and marketing behavior of the farmers may help to develop the policy or plan to eliminate the factors works adversely in promotion of marketing behavior. The perception about role of APMCs among the farmers may be considered to create awareness among social scientists, students and extension workers to take up future research projects. All the information and findings generated through the present study may helpful to the whole community engaged in the promotion of marketing behaviour in the region and beyond the boundaries and lastly the outcome helps to develop the strategy to motivate the marketing behavior of the farmers.

1.4 Limitations of the study

1.4.1 The study was conducted in the APMCs working in seven districts of South Gujarat. However, 160 beneficiary farmers, 48 committee members and 24 office bearers of APMCs chosen as respondents due to limited time and resources at the disposal of the researcher. Therefore, results could not be made generalized.

1.4.2 An ex-post-facto research design was employed hence; all the limitation associated with it set a limitation for the study.

1.4.3 The findings are based on the verbal expressions and responses of the respondents.
CHAPTER – II
REVIEW OF LITERATURE

A comprehensive review of literature is an essential part of any scientific research. The review from literature used by the researcher clearly indicates that very scanty researchers were conducted research in regards. Keeping this in view, an attempt was made to furnish relevant review in context to present study which is presented in following heads.

2.1 Profiles
2.2 Role perception
2.3 Managerial ability
2.4 Marketing behaviour
2.5 Association between profiles with perception of role, managerial ability and marketing behaviour
2.6 Factors influencing in marketing behaviour and their suggestions
2.7 Strategy

2.1 PROFILES

It refers to the information of individuals covered under the present research. In present study 19 independent and 3 dependent variables incorporated as profile of respondents.

2.1.1 Age

Borate (2002) conducted a study on entrepreneurial behaviour of the mango growers in Ratnagiri district of Maharashtra State and observed that majority (62.00 per cent) of the respondents belonged to middle age category, while less than one-fifth (18.00 per cent) of the respondents belonged to young age category and one-fifth (20.00 per cent) of the respondents belonged to old age category. The average age of the respondents was 45.90 years.

Pawar (2002) reported in his study on knowledge and adoption of post harvest technology and market information of tomato growers that 46.00 per cent of the tomato growers belonged to middle age group followed by the old (32.67 per cent) and young (21.33 per cent) age groups.

Nirban (2004) in his study on analysis of the agricultural produce market committees in Konkan and Western Maharashtra with reference to their potential role of extension in agricultural marketing, observed that majority of the farmers from Konkan region (66.00 per cent), Western Maharashtra (61.00 per cent)
and of total sample (63.50 per cent) belonged to middle age category. Average age of
the farmers from Konkan region and Western Maharashtra was 49.44 and 47.66 years
respectively, while that of overall sample was 48.55 years.

Naik (2006) in his study on the personal and socio-economic correlates
of marketing pattern of the mango growers, observed that majority (65.00 per cent) of
the respondents belonged to middle age category, less than one fifth each of the
respondents belonged to young (18.00 per cent) and old age (17.00 per cent)
categories respectively. The average age of the respondents was 50.31 years.

Kachhiapatel (2007) reported that majority of the technology adopters
(63.50 per cent) were in middle age group, while 20.00 and 16.50 per cent of
technology adopters were from young and old age groups respectively.

Pawar (2009) in his study on inter-gender involvement in paddy and
sugarcane crops cultivation in Navsari district of Gujarat State reported that half
(51.50 per cent) of the respondents were found in middle age group.

Lahoti and Chole (2010) in their study on training needs of dairy
farmers found that more than half of the respondents (53.33 per cent) were of middle
age, followed by 33.33 and 13.33 per cent of them were from old and young age
groups respectively.

Kanat et al. (2012) conducted a study on adoption of back yard poultry
farming and indicated that majority of the respondents (68.33 per cent) were in
middle age group followed by 20.00 per cent were in old age and 11.67 per cent were
in young age groups.

Parvez et al. (2013) found that majority of the fish farmers (58.88
per cent) belonged to young age group followed by 30.00 and 11.12 per cent belonged
to middle and old age groups respectively.

De et al. (2014) observed that about half of the respondents (46.04
per cent) belonged to the age group of 35 to 50 years followed by 29.50 per cent were
from above 51 years and 24.46 per cent to the age group of below 35 years.

Amita Hanglem et al. (2015) concluded that slightly more than two
fifth of the farmers (44.17 per cent) belonged to middle age group followed by old
age (30.00 per cent) and young age groups (25.83 per cent).

2.1.2 Education

Pawar (2002) indicated that 20.00 per cent of the tomato growers had
higher level of education, while 20.67, 18.00, 15.33 and 26.00 per cent of the tomato
growers found in illiterate, primary, secondary and higher secondary level of education categories respectively.

Nirban (2004) observed that more than one third (35.00 per cent) of the farmers from the Konkan region had up to pre-primary level of education followed by 28.00 per cent were having secondary education and 16.00 per cent had primary education. On other hand, more than one fifth (22.00 per cent) of the farmers of Western Maharashtra had primary, 19.00 per cent had secondary and 18.00 per cent had college level education. The mean score of education of Konkan region, Western Maharashtra and overall sample was 6.64, 8.14 and 7.39 per cent respectively.

Naik (2006) found that more than one third (37.00 per cent) of the respondents had higher secondary education, while high school education possessed by 36.50 per cent of the respondents. The college education possessed by 20.00 per cent and the primary education possessed by 6.50 per cent only.

Kachhiapatel (2007) revealed that more than two-fifth of the technology adopters (45.00 per cent) had education up to college followed by 41.00 and 14.00 per cent had higher secondary and primary level of education respectively.

Salunkhe (2009) in his study on agro service providers and beneficiaries of Navsari district of Gujarat State found that more than two fifth (43.00 per cent) of the respondents had secondary level of education.

Lahoti and Chole (2010) in their study on training needs of dairy farmers found that more than half of the respondents (55.32 per cent) had primary to secondary level of education.

Roy et al. (2013) in their study on socio-economic status of hill farmers observed that majority of the farmers (63.33 per cent) had medium level of education.

Muhammad et al. (2014) reported that one fourth (25.00 and 24.20 per cent) of the respondents got education upto matriculation and above matriculation respectively. More than one fifth (22.50 per cent) were up to middle and 17.50 per cent were up to primary level whereas, one tenth (10.8 per cent) were illiterate.

Jamadar et al. (2015) found that slightly more than two fifth of the sugarcane growers (43.33 per cent) were educated up to primary level (1st to 4th standard) of their schooling life.
2.1.3 Land holding

Nirban (2004) concluded that more than two third (67.00 per cent) of the farmers from the Konkan region possessed marginal land followed by small land holdings (28.00 per cent). On the other side, one-third (32.00 per cent) of the respondents from the Western Maharashtra had semi-medium land holdings followed by small (28.00 per cent) and medium (25.00 per cent) land holdings. The average size of land holding pointed out that the farmers from the Western Maharashtra (3.86 ha) had almost four times bigger than the farmers of the Konkan region (1.00 ha).

Walke (2005) observed that 44.44 per cent of the respondents had medium land holding followed by 36.11 per cent respondents with semi-medium land holding and 11.11 per cent of them had marginal land holding, while, 5.56 and 2.78 per cent of them had small and large land holding respectively.

Naik (2006) found that less than one half (47.50 per cent) of the respondents belonged to medium land holding followed by 29.50 and 20.00 per cent had semi-medium and large land holding respectively. Only 2.50 and 0.50 per cent had small and marginal land holding respectively. The average size of land holding of the respondents’ was 7.19 ha.

Kachhiapatel (2007) revealed that majority (73.00 per cent) of the technology adopters possessed medium size of landholding followed by 16.00 and 11.00 per cent had small and big land size respectively.

Pawar (2009) in his study on inter-gender involvement in paddy and sugarcane crops cultivation in Navsari district of Gujarat State reported that majority of the respondents (68.00 per cent) possessed medium size of land holding.

Rathod et al. (2011) found that 33.33 per cent farm women were in marginal farm category followed by 28.34 and 18.00 per cent were in small and big farm categories respectively. Besides that 20.83 per cent farm women were landless.

Naseri et al. (2013) reported that majority (56.00 per cent) of the respondents were small farmers followed by 29.50 and 14.50 per cent were belonged to marginal and big farmers categories respectively.

De et al. (2014) observed that majority of the (62.59 per cent) respondents belonged to marginal land holding category followed by 34.53 per cent of them had small land holding, while only 2.88 per cent were in landless category.

Amita Hanglem et al. (2015) indicated that slightly more than two fifth of the farmers (42.50 per cent) possessed medium size of land holding
followed by 37.50 per cent belonged from small and semi-medium size of land holding and 20.00 per cent of them had marginal size of land holding.

2.1.4 Farming experience

Patel (2005) revealed that majority (57.78 per cent) of the organic farmers found to have 3 to 5 years of experience in organic farming and 35.56 per cent possessed 6 to 8 years of experience. Only, 6.66 per cent of them had high level of experience.

Kachhiapatel (2007) reported that majority of the technology adopters (73.00 per cent) had high level of farming experience followed by 15.00 and 12.00 per cent of them possessed medium and low level of farming experience respectively.

Salunkhe (2009) in his study on agro service providers and beneficiaries of Navsari district of Gujarat State stated that nearly half (45.00 per cent) of the beneficiaries of agro service providers had medium level of farming experience.

Bite (2012) revealed that majority (65.00 per cent) of the coconut growers belonged to medium experience category, while 19.00 per cent of the coconut growers had high and 16.00 per cent had low level of experience. The average farming experience of the coconut growers was 31 years.

Pawar (2013) revealed that majority (64.00 per cent) of the mango growers belonged to medium farming experience category, while 19.50 per cent of the mango growers had low and 16.50 per cent had high farming experience. The average farming experience of the mango growers was 16.95 years.

Usha Rani and Selvaraj (2013) found that almost all the Bt cotton growers had more than 10 years of farming experience in cotton cultivation followed by 5 to 10 years of experience and 2 to 3 years of experience in Bt cotton cultivation.

Sani et al. (2014) reported that majority (90.5 per cent) of the farmers had 5 to 10 years of farming experience.

Shirke et al. (2015) found that exactly two fifth of the pomegranate growers (40.00 per cent) had medium farming experience.

2.1.5 Distance from market

Singh et al. (1992) conducted an analytical study on poor arrivals of agricultural produce in regulated markets of UP and reported that the major constraint responsible for poor arrivals of agricultural produce was the long distance between the market yard and their production place.
Shinde (1997) reported that the average distance of villages to yard-I was 7.24 km and yard-II was 18.00 km. The average distance of the selected villages from the market yard was 12.62 km.

Srinivasan (1997) found that the farmers living nearby the villages used regulated markets more than those of the distant villages. As the distance of the markets from farm increased the proportion of quantity marketed through regulated markets declined considerably.

Chhikara et al. (1998) studied the problems and prospects of agricultural markets in Haryana and suggested that marketing facilities should be made available to the farmers within a radius of 5 km.

Alagh (2014) reported in his study that majority (60.00 per cent) of the farmers had sold in local market across farm sizes followed by 40.00 per cent of them had sold in distant markets. The average distance to market is around 10 kms. It was also observed that the farmers generally prefer to sale at local market and the average transport cost per quintal was highest for large farms.

Hlongwane et al. (2014) in their study on Analyzing the factors affecting the market participation of maize farmers: A case study of small-scale farmers in greater Giyani Local Municipality of the Mopani District, Limpopo Province found that half (50.50 per cent) of the respondents sold their produce in the market distance between 5 to 10 km followed by 37.40 and 12.10 per cent sold their produces in less than 5 km and more than 10 km range respectively.

2.1.6 Annual income

Borate (2002) revealed that nearly half (45.00 per cent) of the respondents had medium level of annual income, while more than one-third, (36.00 per cent) of the respondents had low annual income and slightly less than one-fifth (19.00 per cent) of the respondents had high level of annual income. The average annual income of the respondents was Rs. 3,02,829/–.  

Nirban (2004) indicated that the majority (66.00 per cent) of farmers from the Konkan region found in low income category, while in case of Western Maharashtra, majority (56.00 per cent) of the farmers belonged to medium income category. Less than two-fifth (38.00 per cent) of the farmers from the Western Maharashtra and only 4.00 per cent from the Konkan region had high annual income. The average annual income of the farmers of Konkan region was Rs. 29,396.40, while that of the Western Maharashtra farmers was Rs. 1,17,964.50.
Walke (2005) revealed that 44.44 per cent of the respondents belonged to above Rs. 2,67,723 /- annual income category and 41.67 per cent had annual income in between Rs.1,27,741/- to 2,67,722/- . Only, 13.89 per cent of them had low annual income (up to Rs. 1,27,740 /-). The average annual income of the respondents was Rs. 2,67,722 /-. Naik (2006) found that the one third (31.50 per cent) of respondents were from Rs.1.01 to 2 lakh annual income level followed by one fourth (25.50 per cent) of the respondents were from Rs.2.01 to 3 lakh annual income level, more than one fifth (21.50 per cent) of them had annual income Rs.3.01 to 4 lakh and 19.00 per cent of were from Rs.4.01 lakh and above level of annual income.

Kachhiapatel (2007) reported that more than two-fifth (44.00 per cent) of the technology adopters had high annual income followed by 33.50 and 22.50 per cent possessed medium and low level of annual income respectively.

Hanumanaikar et al. (2008) revealed that the majority of the farmers (66.67 per cent) belong to medium level of income group.

Lahoti and Chole (2010) in their study on training needs of dairy farmers found that nearly half of the respondents (48.00 per cent) belonged to medium level income group.

Singh et al. (2012) reported that the maximum net annual income Rs.73430/ha obtained from maize-potato-summer groundnut crops with one graded buffalo then the other combination.

Parvez et al. (2013) reported that majority of the fish farmers (53.34 per cent) were in low income group followed by 33.33 and 13.33 per cent were in medium and high income groups respectively.

Biswa et al. (2014) stated that 44.44 per cent of selected farmers found in low income group followed by 41.67 and 13.89 per cent belonged to medium and high income groups.

Gulkari et al. (2014) found that majority (84.37 per cent) of the respondents had medium level of family income.

Boruah et al. (2015) reported that 51.67 per cent of the vegetable growers had annual income ranging from Rs 25001 to 50000 followed by 25.00, 20.83 and 02.50 per cent with annual income between Rs.75001 and above, ranging between Rs. 50001 to 75000 and up to Rs.25000.
2.1.7 Social participation

Nirban (2004) observed that majority of the farmers from the Konkan region (79.00 per cent) and Western Maharashtra (67.00 per cent) had medium social participation. The mean score of social participation of farmers of Konkan region and Western Maharashtra was 5.91 and 6.01 respectively.

Kachhiapatel (2007) reported that majority (70.50 per cent) of the technology adopters had low level of social participation followed by 17.00 and 12.50 per cent had medium and high level of social participation.

Dipti (2006) concluded that more than two-fifth of the paddy growers (43.33 per cent) had membership in one organization followed by 31.67 and 15.83 per cent had no membership in any organization and holding the position respectively. Only 9.17 per cent of the respondents were members in more than one organization.

Salunkhe (2009) in his study on agro service providers and beneficiaries of Navsari district of Gujarat State found that majority (55.00 per cent) of the farmers had membership in one organization.

Tala (2013) reported that majority of the respondents of different farming system (61.33 per cent) had membership in one organization followed by 22.66 and 16.00 per cent of them had membership in more than one organization and no membership respectively.

Warawdekar (2014) stated that 35.00 per cent of the cotton growers were holding a position in political or social organization followed by 30.84, 22.08 and 12.08 per cent of them had membership in more than one, membership in one organization and no membership in political or social organization respectively.

Jamadar et al. (2015) inferred that more than two third of the sugarcane growers (70.84 per cent) had medium social participation.

2.1.8 Extension contact

Gandhi (1993) reported that 64.00 per cent of the North Central (NC) Zone and 47.00 per cent of the South Central (SC) Zone respondents had medium level of extension contact. The average extension contact score of the NC Zone and SC Zone respondents was 4.88 and 4.32 respectively.

Nirban (2004) revealed that majority (83.00 per cent) of the farmers from the Konkan region had medium level of extension contact. On the other hand, one-fourth of the farmers from the Western Maharashtra had low (25.00 per cent) and high (26.00 per cent) level of extension contact, while less than one-half (49.00 per cent) of them had medium level of extension contact. The average extension contact
score of the farmers of the Konkan region was 15.36, while that of the farmers from the Western Maharashtra was 18.55.

Dalvi (2009) revealed that majority of the Bt (76.00 per cent) as well as non Bt (85.33 per cent) cotton growers were having medium level of extension contact followed by 13.33 per cent Bt and 5.34 per cent of non Bt cotton growers having high level of extension contact. Only 10.67 and 9.33 per cent of the Bt and non Bt cotton growers were having low level of extension contact respectively.

Usha Rani and Selvaraj (2013) revealed that the Bt cotton growers had good contact with extension agencies.

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Usha Rani and Selvaraj (2013) revealed that the Bt cotton growers had good contact with extension agencies.

Bharamagoudar et al. (2014) indicated that slightly more than two fifth of the respondents (41.67 per cent) had medium extension contact and only 22.83 per cent of respondents were noticed in high extension contact category.

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Boruah et al. (2015) concluded that more than two third of the vegetable growers (70.83 per cent) had medium level of extension contact followed by 16.67 and 12.50 per cent had low and high level of extension contact respectively.

Usha Rani and Selvaraj (2013) revealed that the Bt cotton growers had good contact with extension agencies.

2.1.9 Source of information on marketing

Singh et al. (2000) revealed that the choice of market and time schedule can be planned for realizing the best possible returns, reliable information in time to the farmers, traders and others. Further, he stated that majority (60.00 per cent) of farmers relies on message through telephone and 30.00 per cent farmers depend upon information broadcasted through radio about prices prevailing in various markets.

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Patil (2001) observed that the personal informal sources like visit to market, progressive farmers and neighbors play major role as the sources of market information. This was followed by mass media like telephone (agent, *adatiya* and radio) Personal formal sources such as Secretary of Co-operative Society (6.89 per cent) and APMC personnel (2.30 per cent) were the least used as sources of market information by the respondents.

Kachhiapatel (2007) concluded that majority of the technology adopters (63.00 per cent) had medium level of information input and processing behaviour followed by 20.50 and 16.50 per cent belonged to high and low level of information input and processing behaviour categories respectively.

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Lawrence and Ganguli (2012) revealed that majority (56.00 per cent) of the respondents had medium level of information seeking behaviour and the
remaining 26.00 and 18.00 per cent had low and high level of information seeking behaviour respectively.

Patel et al. (2014) found that majority of the farmers (73.75 per cent) had medium level of information seeking behaviour followed by low (13.75 per cent) and high information seeking behaviour (12.5 per cent).

Shelke et al. (2015) noted that nearly two-third (63.80 per cent) of the sugarcane growers had medium level of sources of information.

2.1.10 Training received

Rangi et al. (1997) assessed the organizational and management efficiency in agricultural marketing system in Punjab. They suggested that senior officers and above level should get their training at the Center for Agricultural Marketing, Jaipur and Directorate of Marketing and Inspection (Government of India), Nagpur. A State Agricultural Marketing Training Institute can be established by the Board to train middle and lower level personnel of the Board, Market Committees and the State Directorate of Marketing. The Institute may also organize training courses for the farmers, market functionaries etc. The extension workers should be given appropriate training in agricultural marketing, important area for training should be includes, promotion planning in relation to the market, analysis of market information, post harvest practices, group marketing and design and organization of rural markets.

Yadav and Verma (1998) stated that more than two-fifth (45.00 per cent) of respondents had not attended any training.

Shaha, et al. (1999) in their study in Bangladesh reported that 45.00 per cent of the rural youth did not have any training experience, while only 18.00 per cent of them had certain degree of training experience.

Okoye (2000) reported in his study on extension personnel of Rivers States, Nigeria, that the personnel to be effective in dealing with the clientele, they must be well trained in both, technical agriculture and behaviour sciences and to be able to bring about the desired changes in the knowledge and behaviour of the clientele.

Pawar (2009) in his study on inter-gender involvement in paddy and sugarcane crops cultivation in Navsari district of Gujarat State reported that majority of the men (74.00 per cent) and nearly one-third women (32.00 per cent) had received training one time only.
Nain and Chandel (2010) divulged that 53.56 per cent of the farmers had not received any training followed by 38.98 and 07.46 per cent farmers received one time and more than two time trainings respectively.

Jaganathan *et al.* (2011) observed that nearly three fifth of the vegetable growers (57.00 per cent) had medium level of training followed by low level (33.00 per cent) and high level (10.00 per cent) of training.

Patel and Kokate (2011) in his study on training need assessment of Subject Matter Specialists of Krushi Vigyan Kendras revealed that the training need index of SMSs of KVK was 82.08 per cent for the area of agricultural marketing and export.

Soni and Kothari (2012) stated that slightly more than four fifth of the cotton growers (83.33 per cent) found to be untrained while 17.67 per cent of them obtained trained regarding Bt cotton cultivation technology.

Ghosh *et al.* (2013) inferred that slightly less than half of the farmers (46.56 per cent) had not received any training followed by 42.98 and 10.47 per cent farmers received one time and 2 to 3 times training respectively.

Gummagolmath *et al.* (2013) in their study on assessment of training needs and knowledge level of officers in agricultural marketing revealed that the extent of overall training need of the officers of agricultural marketing was 72.20 per cent and the mean value of number of trainings attended was low (1.78 per cent).

Nain *et al.* (2014) found that slightly less than three fourth of the legume farmers (72.00) had not attained any type of training while rest (28.00 per cent) of the legume farmers attained training for 1 to 2 time.

Shakti Khajuria *et al.* (2015) disclosed that more than two third vegetable growers (70.50 per cent) had not received any type of training regarding pest management.

### 2.1.11 Cropping pattern

Chavan (1997) observed that more than half of the area under different crops were covered in *kharif* season at overall level (58.63 per cent), followed by *rabi* (38.49 per cent) and along with horticultural crops (2.88 per cent).

Shinde (1997) pointed out that in *kharif* season paddy occupied 61.11 and 67.72 per cent areas in with and without yard groups respectively. The overall area under *kharif* paddy was 64.09 per cent. Area under *rabi*/hot weather season
paddy was 21.82 and 12.16 per cent in with and without yard groups respectively. Area under *wal* and *tur* was more in without market yard group.

Khatri (2004) in his study on comparative economics of production of important vegetables in Choryasi taluka of Surat district found that cereals crops shared 16.23 per cent of the total cropped area. Among the cereals, jowar was the main crop and occupied 12.62 per cent of the gross cropped area followed by paddy (3.00 per cent) and wheat (0.61 per cent). Next to cereals, the pulse crops occupied 7.20 per cent of the gross cropped area. Out of this, tur crop alone shared 5.40 per cent of the gross cropped area. Oilseed crops occupied 3.00 per cent of the gross cropped area. A significant proportion of area under different vegetables (41.74 per cent) was noticed. The area under brinjal and cauliflower were found as the main vegetable crop under study area and was covered 18.92 and 18.32 per cent of the gross cropped area respectively. Fruits crops occupied 16.82 per cent of the gross cropped area. So far the cash crops are concerned, Sugarcane shared 12.61 per cent of the gross cropped area.

Katre (2013) in his study on economics of integrated pest management technology for cotton in Bharuch district of South Gujarat revealed that area under cotton worked out to 40.80 per cent, for gram 21.33 per cent, for wheat 17.60 per cent and for tur 9.87 per cent.

Parmar (2015) in his study on an economic efficiency of sugar co-operatives in South Gujarat region of Gujarat found that field crops, fruits, flowers and vegetables contributed 85.93, 13.45, 0.61 and 0.25 per cent respectively. Rice was the major field crops of the study area contributing 28.43 per cent of total cropped area which was followed by sugarcane (18.70 per cent) and cotton (17.32 per cent). Mango was the major fruit crop which was followed by banana, sapota, cashew nut and papaya crop.

### 2.1.12 Cropping intensity

Patel (1995) found that majority (85.00 per cent) of the watershed beneficiaries had cropping intensity between 126 to 150 per cent while in the case of the non-beneficiaries (60.00 per cent) was ranging between 101 to 125 per cent.

Chavan (1997) reported that cropping intensity was highest in small farms (157.08 per cent) followed by medium farms (145.73 per cent) and large farms (133.27 per cent). At overall level, it was 149.46 per cent.

Desai (1997) concluded that more than one-third of the respondents (35.43 per cent) had cropping intensity ranging between 151 to 200 per cent.
Kanani (1998) observed that majority of the groundnut growers (60.00 per cent) had medium level of cropping intensity.

Patel (2000) in his study on the consequences of adoption of watershed management technology revealed that 66.67 per cent of the respondents had medium level of cropping intensity and ranging between 151 to 200 per cent.

Patel (2005) observed that the majority of the organic farmers (61.11 per cent) had medium level of cropping intensity. On the other hand, 27.78 per cent organic farmers had low cropping intensity.

Anonymous, (2015) reported that the cropping intensity (ratio of net sown area to gross cropped area) in the Punjab state has increased sharply from 126 per cent in 1960-61 to 190 per cent in 2012-13 with adoption of input intensive agricultural practices. As per State of Indian Agriculture Report: 2012-13, Punjab has the highest cropping intensity in the country closely followed by West Bengal (185.00 per cent), Haryana (181.00 per cent), Himachal Pradesh (173.00 per cent) and Orissa (162.00 per cent) as compared to all India percentage 138.00.

### 2.1.13 Marketable surplus

Raveendran et al. (1992) reported that all 47 farmers who raised first season paddy sold their entire marketable surplus immediately after harvest means without storing. Unlike in the first season, 53.13 per cent of the total marketable surplus was sold immediately after harvest and the rest 46.87 per cent of the marketable surplus was kept under storage for periods ranging from 40 to 180 days for want of higher prices.

Chavan (1997) indicated that majority (77.50 per cent) of the farmers had marketable surplus of paddy. Further, reported that cent per cent farmers of medium and large size groups had marketable surplus, while the percentage of such farmers in small size holding group was 70.00 per cent.

Goal and Singh (1998) observed that the average farm level retention of wheat was 35.11 qtls. It left average marketable surplus of 207.34 qtls., which constituted 85.52 per cent of the total production.

Mistry et al. (2011) in their study on marketing of pigeon pea found that marginal size farm group have 97.38 per cent, small size farm group have 95.60 per cent, medium size farm group have 95.01 per cent and large size farm group have 93.73 per cent of marketable surplus.

Saraswat, Vidhya (2012) in her study on economics of production, resource use and marketing of major vegetable crops in South Gujarat revealed that
the average 8754 qtl. of brinjal was produced by the sample households, of which 8471 qtl. (96.77 per cent) was the marketable surplus.

Malik et al. (2013) indicated that highest marketable surplus was found in medium size group (98.30 per cent) followed by 98.25 per cent in large size group and 97.54 per cent in small size group. This makes the sample average of 98.13 per cent of the total production.

Patel et al. (2013) in their study on marketing of vegetables in North Gujarat found that the total marketable surplus of tomato was 93.37 per cent and in case of brinjal the total marketable surplus was 92.72 per cent.

Alagh (2014) in his study on assessment of marketed and marketable surplus of major food grains in Gujarat reported that marketable surplus tends to be highest for wheat followed by bajra and tur. For wheat, around 73.00 per cent of the availability was marketable (Marketable Surplus Ratio), for bajra it was 64.00 per cent and for tur the number was less than 70.

2.1.14 Marketed surplus

Chavan (1997) found that marketed surplus of paddy had positive relation with size of holding and it was 12.65, 54.16 and 125.00 qtls per farm in small, medium and large size holding group respectively.

Rangarajan (1997) revealed that during 1988-89 to 1990-91, the marketed surplus ratios of paddy and wheat were 42.71 and 52.44 per cent respectively. About one-half of the marketed surplus found in the categories of small and marginal farmers. The marketed surplus was almost hundred per cent in respect to commercial crops, while it was as low as 18.20 per cent in respect of ragi.

Kumar (1999) reported that the percentage of marketed surplus was higher in the case of cash crops like cotton and oilseeds, while in paddy as compared to other food crops like wheat, pulses and coarse serials also found higher. The big farmer who constituted 10.00 per cent of total farmers were contributed 45.00 per cent of total marketed surplus while the marginal farmers constituting 25.00 per cent of total households contributed only 2.60 per cent of marketed surplus.

Singh et al. (2000) observed that in the case of fruit and vegetables, a very high proportion (90.00 per cent) of the total produce goes to the markets as a marketed surplus. The production as well as marketed surplus of cereals and pulses is very small and major part of the productions is retained by farmers for family consumption.
Mistry et al. (2011) observed in their study on marketing of pigeon pea and found that majority (89.47 per cent) of the overall level per farm marketed surplus was 75.56 qtls.

Saraswat, Vidhya (2012) in her study on economics of production, resource use and marketing of major vegetable crops in South Gujarat revealed that average 8754 qtl. of brinjal was produced by the sample households, of which 8471 qtl. (96.77 per cent) was the marketed surplus, which is same to marketable surplus due to its perishable nature.

Khanal and Maharjan (2013) in their study on factors influencing farmers’ behavior in rice seed selling in the market: a case study in the Tarai region of Nepal found that majority (65.00 per cent) of them used for household purpose and 64.00 per cent of rice seed produced.

Patel et al. (2013) in their study on marketing of vegetables in North Gujarat found that the total marketed surplus of tomato was 93.37 per cent and in case of brinjal the total marketed surplus was 92.72 per cent.

Alagh (2014) in his study on assessment of marketed and marketable surplus of major food grains in Gujarat reported that marketed surplus tends to be highest for wheat followed by bajra and tur. For wheat, around 73.00 per cent of the availability was marketed (Marketed Surplus Ratio), for bajra it was 71.00 per cent and for tur the number was less than 70.

2.1.15 Knowledge about statutory activities of APMCs

Srinivasan (1997) observed that number of regulated markets with godowns was limited as compared to the total number of markets in the committees. Majority (83.00 per cent) of the small farmers was not aware of the purpose of rural godowns and hence, the rural godown facilities were not fully utilized.

Sukhsanjam et al. (2000) in their study found that majority (83.33 per cent) of the farmers were not found the facilities like overnight parking, arrangement for food and tea (86.67 per cent) and adequate sitting arrangement (84.44 per cent), whereas, market awareness (71.11 per cent) was lacking and were also not having any knowledge about the rate of incidental charges. Other than this, there were not adequate facilities.

Sundaresan et al. (2000) revealed that the educational status of the farmers was found to be an important factor which influences farmers’ awareness about the regulated market. It could be inferred that farmers with only higher level of education were aware with the regulated markets. Similarly, the variable publicity and
propaganda activities were found to be significant. Therefore, to create awareness about the regulated markets among the farmers, the publicity and propaganda activities have to be strengthened.

Pawar (2002) observed that all (100.00 per cent) the tomato growers had complete knowledge about the facilities at the market yard, namely Shetkari Nivas, Ksatachi Bhakari, Upahar Gruha, Toilet, Parking and board of market rates. Only 12.00 per cent of them had complete knowledge about library and locker facilities. Except Shetkari Nivas, library and lockers, remaining all available facilities of market yard were fully utilized by the tomato growers.

Vikhe, Archana (2003) studied six APMCs each of Marathwada and Western Maharashtra, with regard to utilization of the infrastructural facilities at APMCs, she found that there was cent per cent utilization of the facilities namely, ancillary trading facilities, cold storage, processing units, grading equipments, weighting equipments, banks, post office, security post, urinals, tea shops, canteen, municipal water supply, area for loading/ unloading and parking, internal roads, compound wall, electric lights, shade trees, rate display board, public telephone, garbage disposal system and drainage system in the regulated markets in Marathwada and Western Maharashtra.

Pant et al. (2004) examined the utilization of infrastructural and other facilities by traders and farmers created in the primary regulated market yard found that the awareness among the producer, seller about godowns and rural warehouses, bank facility, communication facility and post office, market committee, farmers rest house, cattle shed with rest house and dissemination of market news was 13.32, 13.32, 20.00, 40.00, 40.00, 53.00 and 26.00 per cent respectively.

Anonymous (2012) reported under an assessment of level of farmers’ awareness on agricultural marketing regarding the knowledge of farmers about different services and facilities provided by APMCs for orderly marketing of agricultural produce shows that the knowledge of farmers on different services provided by APMCs was higher in the states of Gujarat, Rajasthan and Haryana. It is interesting to note that the response of small farmers was negligible about facilities of weighing and grading in APMCs in all the selected states. The facility of cleaning and grading of produce is negligible in many of the mandies. But negligible response of farmers on weighing facilities is heartening to note. This may be due to dissatisfaction of farmers on weighing methods at mandi by commission agents /traders.
2.1.16 **Economic orientation**

Pathak (2004) studied on feasibility of private agricultural research in South Gujarat and found that majority of the farmers (72.00 per cent) had medium level of economic orientation about agriculture.

Balasubramani *et al.* (2004) during their study on the yield gap analysis in paddy in the Erode districts of Tamil Nadu reported that two fifth of the farmers (40.00 per cent) had higher level of economic orientation followed by 33.33 and 23.33 per cent of them had medium and lower level of economic orientation respectively.

Mewara and Pandya (2007) concluded that majority of farmers (74.00 per cent) had medium level of economic orientation followed by 20.00 per cent had higher level of economic orientation and only 6.00 per cent of the farmers had low level of economic orientation towards value addition.

Singh *et al.* (2008) indicated that majority of cotton growers were having medium level of economic orientation.

Sadanshiv *et al.* (2008) revealed that majority of the farmers (73.08 per cent) possessed medium level of economic orientation towards floriculture.

Pawar (2009) in his study on inter-gender involvement in paddy and sugarcane crops cultivation in Navsari district of Gujarat State reported that nearly half of the farmers (49.50 per cent) had moderate level of economic orientation.

Tala (2013) reported that majority of the farmers of different farming system (60.00 per cent) had moderate level of economic motivation followed by 29.33 and 10.66 per cent had higher and lower level of economic motivation respectively.

2.1.17 **Scientific orientation**

Logonathan (2002) found that organic farmers possessed lower degree of scientific orientation than conventional farmers.

Loganandhan and Singh (2005) reported that organic farmers possessed lower scientific orientation than the conventional farmers.

Patel (2005, b) stated that half of the organic farmers (50.00 per cent) had medium level of scientific orientation, while 47.78 per cent had low level of scientific orientation. Only, 2.22 per cent of them had high level of scientific orientation.

Kachhiapatel (2007) reported that majority (57.00 per cent) of the tissue cultured banana plant technology adopters had medium level of scientific
orientation followed by 27.00 and 16.00 per cent of them had high and low level of scientific orientation respectively.

Sadanshiv et al. (2008) revealed that majority of the floriculturists (62.50 per cent) possessed medium level of scientific orientation.

Tala (2013) reported that majority of the farmers (60.66 per cent) of different farming system had moderate level of scientific orientation.

Parvez et al. (2013) reported that majority of the farmers (82.22 per cent) possessed high level of scientific orientation, while 17.78 per cent possessed medium level of scientific orientation about fish production technology.

Bharamagoudar et al. (2014) noted that more than half of the (55.00 per cent) Bt cotton growers had medium level of scientific orientation whereas 23.33 and 21.67 per cent of them had high and low level of scientific orientation respectively.

Gulkari et al. (2014) found that majority of the respondents (66.87 per cent) had medium level of scientific orientation towards dairy practices.

Jatapara et al. (2015) analyzed that slightly less than three fifth of the gram growers (59.38 per cent) had medium level of scientific orientation.

Risk orientation

Jadav (2001) indicated that majority (72.50 per cent) of the onion growers were from the medium risk orientation followed by 16.67 and 10.83 per cent respondents were from low and high risk orientation respectively.

Logonathan (2002) found that the organic farmers possessed higher level of risk preference than conventional farmers.

A study conducted by Lien et al. (2004) to provide empirical insight into farmers’ goal relative risk attitude and risk management. The results suggested that the organic farmers have different goals than the average organic farmers and were less risk averse.

Sahoo (2004) during his study on knowledge and adoption of eco-friendly practices followed by the groundnut growers of south Saurashtra zone of Gujarat state found that majority (62.50 per cent) of the respondents were from medium risk orientation group, whereas 30.84 and 6.66 per cent of them belonged to low and high categories respectively.

Kaur and Kaur (2005) stated that majority (56.67 per cent) of the respondents of organic farming fall under the medium risk bearing capacity.
Patel (2005, a) in his study on knowledge and attitude of farmers towards organic farming practices in South Saurashtra zone of Gujarat State concluded that majority of the respondents (70.00 per cent) possessed medium risk orientation, whereas 26.00 and 4.00 per cent of the respondents fall into the low and high risk orientation groups respectively.

Patel (2005, b) observed that majority of the organic farmers (67.78 per cent) had medium level of risk orientation, while 24.44 and 7.78 per cent of them had high and low level of risk orientation respectively.

Kachhiaapatel (2007) reported that majority (55.00 per cent) of the tissue cultured banana plant technology adopters had medium level of risk orientation followed by 28.00 and 17.50 per cent of them possessed high and low level of risk orientation respectively.

Singh *et al.* (2008) indicated that majority of the cotton grower farmers (65.00 per cent) had medium level of risk orientation.

Saha and Bahal (2010) reported that majority of the diversified farmers (56.52 per cent) had medium level of risk orientation.

Singh *et al.* (2011) found that majority of beekeepers (67.00 per cent) had medium to high level of risk orientation.

Tala (2013) reported that majority of the farmers (64.00 per cent) had moderate level of risk orientation towards different farming systems followed by 18.66 per cent had higher level of risk orientation and 17.33 per cent of them had lower level of risk orientation.

Tochhawng and Rewani (2013) revealed that nearly half of the pig farmers (47.00 per cent) had low level of risk orientation, while 32.22 and 21.11 per cent farmers had medium and high level of risk orientation respectively.

Patel *et al.* (2014) found that more than half of the dairy farmers (53.75 per cent) were found to have medium level of risk orientation, followed by low (25.00 per cent) and high (15.00 per cent) level of risk orientation.

Warawdekar (2014) observed that majority (80.41 per cent) of the cotton growers had medium level of risk orientation followed by 10.83 and 8.75 per cent had lower and higher level of risk orientation respectively.

Darandale *et al.* (2015) stated that more than half of the cotton growers (55.83 per cent) had medium level of risk orientation.
2.1.19 Group cohesiveness

Prajapati et al. (2005) pointed out that more than three fifth of the oilseed growers (67.00 per cent) belonged to somewhat extent of cohesiveness category followed by 20.00 and 13.00 per cent belonged to least and great extent of cohesiveness categories respectively.

Naik (2006) accounted that nearly two third of the respondents (66.11 per cent) had medium level of group cohesiveness followed by 17.22 and 16.67 per cent had low and high level of group cohesiveness respectively.

Khalche et al. (2008) divulged that slightly less than two third (65.00 per cent) of paddy growers had medium level of cohesiveness followed by 20.83 and 14.17 per cent with low and high level of cohesiveness respectively.

Wankhade et al. (2009) observed that majority (61.00 per cent) of the pigeon pea growers had medium level of cohesiveness followed by 27.40 and 11.60 per cent had low and high level of cohesiveness respectively.

Baria (2010) stated that more than two third of the mango growers (70.00 per cent) had moderate level of group cohesiveness followed by 16.00 and 14.00 per cent of them had higher and lower level of group cohesiveness respectively.

Rai (2011) stated that 44.00 per cent of the beneficiaries of Participatory Irrigation Management Programme had moderate level of group cohesiveness followed by 31.50 and 24.50 per cent of the beneficiaries had lower and higher level of group cohesiveness respectively.

Mehta and Sonawane (2012) found that majority (73.41 per cent) of the mango growers had medium level of group cohesiveness followed by 17.22 and 09.67 per cent had low and high level of group cohesiveness respectively.

Gardhariya (2013) presented that nearly two third of the beneficiaries of Farm School (66.00 per cent) belonged to somewhat extent of cohesiveness category followed by 17.00 per cent each belonged to least and great extent of cohesiveness categories.

Shinde (2013) disclosed that majority of the okra growers under the PPP (72.00 per cent) had moderate level of group cohesiveness followed by 15.00 and 13.00 per cent had higher and lower level of group cohesiveness respectively.

Singh et al. (2014) examined that 46.00 per cent of the vegetable growers had medium level of cohesiveness followed by 34.00 and 20.00 per cent of the vegetable growers had low and high level of cohesiveness respectively.
Vohra and Timbadia (2015) revealed that nearly three fourth of the vegetable growers (71.89 per cent) had moderate level of group cohesiveness.

2.2 ROLE PERCEPTION

Prakash and Srivastava (1994) in their study on role of wholesale markets in agricultural development in Uttar Pradesh revealed that the regulated markets played an important role, several programmes have been started for disseminating the information about Mandi Act and active participation of the farmers in the marketing of agricultural produce was observed. A meeting of the farmers was organized in each market at every fortnight. Apart from these, camps are being organized for disseminating the information on improved production technology and agricultural marketing.

Singh and Pandey (1999) suggested that under the SAUs and ICAR system should perceive their role and training should be provided to the farmers in various aspects of agricultural marketing through their existing setup of KGKs and KVKs. Further, the APMCs should also play their role in functioning the training programmes for farmers. The State Agricultural Marketing Boards should spearhead and identify suitable organizations/ agencies for imparting training. Part of the revenue generated from marketing cess collected by the state governments could be used for conducting such training programmes.

Sukhsanjam et al. (2000) in their study on an impact of market regulation on adequacy of market infrastructure in Punjab found that the farmers were not satisfied by various operations performed in the disposal of the produce starting from loading to weighment. According to the farmers the entire marketing system should perceive their role and for that they have to restructure to make it more efficient.

Reddy and Jaya (2002) observed the role in the changing scenario of Indian agriculture with newly added face of marketing, the extension system was likely to undergo series of crises like, lack of knowledge, lack of skill, input crisis, efficacy crisis, credibility crisis and reorganization structure crisis. Establishment of linkages between agriculture Line Department and Departments of Market would strengthen the Market Led Extension.

Singh and Singh (2003) stated that the present extension services need to be revamped on the lines of marketing education programme, HRD in agriculture marketing, consumer preferences, market extension services, infrastructure challenges, storage and preservation of produce, post harvest losses, promoting
processing, grading and packing, cyber technology in disseminating market intelligence for playing their stipulated role.

They further opined that if the country would like to take full benefits of the expanding domestic and external markets, there is an urgent need to modify the existing marketing policy where agricultural extension education had a greater role to play. Besides providing information and training in production technologies, education on important aspects of marketing such as grading and standardization, storage, processing, market information and intelligence and pricing of farm products should get the attention in the programmes of farmers training. According to them, marketing extension envisaged advise on product planning, marketing information, securing markets for farmers, advise on alternate marketing, advise on improved marketing practices and advise on establishing and operating of markets. There was a need that every agricultural market should have an extension cell equipped with internet and other audio-video facilities necessary to educate farmers in various aspects of marketing functions and services.

Nirban (2004) reported that under the agricultural marketing extension crop production technology (73.50 per cent) emerged out as the important area for training of the participant farmers followed by processing of farm produce (58.00 per cent), preparation of crop production plan (57.50 per cent), use of inputs for crop production (56.50 per cent) and post harvest technology of crops (54.50 per cent).

Samantara (2009) observed that State Agricultural Marketing Boards through market committees perceived their role and provide various incentives to them in the form of compensation for accidents, free storage facilities for limited period, free or subsidized soil testing, free grading, drying yards, supply of implements on reduced rates, free trainings, ensuring sale of quality inputs in the market yards, spot payment etc. Further, the development in information technology has great role for integration of agricultural markets.

Rajendran and Thamilmani (2009) in their study found that farmers perceptions as all the farmers avail very good and adequate size of stalls, weighing machines, drinking water, toilet, vehicle parking and other facilities to a reasonable extent. But no cold storage facility and rest room facilities were available.

Kumar (2010) stated that APMC market yards are expected to provide certain facilities for the benefit of the farmers who visit these yards to sell their produce. These facilities include, auction platforms, banking facilities, grading
facilities, roads in and around the market yards, parking at the market place, rest-house facilities, market information unit and handling of trade by APMC etc.

Kavad and Pandya (2013) in their study on market-led-extension activities of APMCs found that very few facilities were made available by APMC further, farmers opined that these were inadequate and not up to the satisfactory level.

Joshi (2014) in his study on farmers’ satisfaction towards performance of APMC found that majority (84.00 per cent) of the respondents have preferred the role of Regulated markets followed by 80.00 per cent of respondents have fair idea about APMC Act and 80.00 per cent of them were happy with the procedure role followed in the APMCs.

Sangappa (2014) during his research on role perception about marketing management of APMC in Gulbarga division found that about half of the APMCs providing the facilities viz; water, toilet, canteen, communication, shopping properties, market information and other facilities to the visiting farmers.

### 2.3 MANAGERIAL ABILITY

Chari and Nandapurkar (1987) studied the relative importance of different components (planning, organizing, human relationship, supervision, communication, coordination and control) of managerial ability scale by treating yields obtained by farmers for jowar crop as dependent variable. They found that all the components of managerial ability were highly significant. Further, pointed out that all variables covered under the study were important. The most two important variables were supervision and human relationship, while the least important variables were control and organizing.

Sidhu (1992) reported that the programmes and policies of the government do not produce tangible results in increasing the income of the farmers and mitigating their inconveniences and the training for farmers in agricultural marketing was not adequate and effectively managed. Hence, the farmers were not familiar with the programmes and policies and the improvement of the field-oriented and on-the-spot marketing training specially designed to assist the farmers in marketing their produce.

Patel and Patel (2000) inferred that majority (70.18 per cent) of the respondents possessed medium level of managerial ability for plant protection measures in chilli crop. An equal number of respondents (14.91 per cent) fall in the categories of low and high level of managerial ability.
For improving the managerial ability of field level agricultural extension functionaries need to be trained on the most important aspects like planning for market oriented production, preparation of produce for marketing, storage/preservation techniques, infrastructure and transport facilities, market information and use of information technology and integration of marketing network (Anonymous, 2001).

Jadav (2004) revealed that majority of respondents (60.00 per cent) were observed in the medium managerial ability category about scientific cultivation of mango, while 21.50 per cent respondents fall under the category of low managerial ability. The remaining 18.50 per cent respondents possessed high managerial ability.

Patel (2006) under his study on managerial efficiency of anola growers of Anand and Kheda districts of Gujarat state reported that majority of the farmers (67.92 per cent) had medium level of management efficiency.

Chintaman (2010) found that majority of the milk producers (67.50 per cent) had medium level of management efficiency regarding improved dairy farming practices, while 18.33 and 14.17 per cent of the milk producers had high and low level of management efficiency regarding improved dairy farming respectively.

Patel (2010) found that majority (68.50 per cent) of the rose grower farmers had medium level of management efficiency.

Sonawane (2010) during his study on management ability of banana growers regarding drip system in Anand and Vadodara districts of Gujarat state reported that majority of the farmers (54.17 per cent) had medium level of management efficiency, while 25.83 and 20.00 per cent of the farmers had high and low level of management efficiency respectively.

Prajapati (2011) reported in his study on managerial ability of potato growers of Banaskantha district that majority of the respondents (60.00 per cent) were possessed medium level of managerial ability, while 20.83 per cent respondents fall under the category of low managerial ability.

Rai (2011) reveal that majority of the respondents (68.00 per cent) of PIM programme had moderate level management efficiency followed by 18.00 and 14.00 per cent of them had lower and higher level of management efficiency respectively.

Baria et al. (2012) presented that 42.50 per cent of mango growers had low level of managerial ability, while 36.67 and 20.83 per cent of the mango growers had high and medium level of managerial ability respectively.
Chauhan and Chauhan (2012) in the study on managerial ability of the Programme Coordinators of Krishi Vigyan Kendras of India found that nearly half (51.25 per cent) of the PCs of KVKs had high level of planning ability, majority (85.00 per cent) of them had medium to high level of organizing capacity, 76.87 per cent had high level of ability of directing to their subordinates, 58.13 per cent had high level of communicating ability, 91.87 per cent had medium to high level of capacity to maintain human relations, 61.88 per cent had high level of lead taking behavior, 71.26 per cent had high level of supervising ability, 62.50 per cent had high level of coordinating ability and 68.12 per cent had medium level of overall extension management ability. Whereas 45.00 and 48.12 per cent had high level of decision making capacity and controlling power respectively.

Shinde (2013) explained that the nearly two-third of the okra growers of PPP (64.00 per cent) found in the category of moderate level of management efficiency followed by 19.00 and 17.00 per cent of them had higher and lower level of management efficiency respectively.

Joshi and Shekhavat (2014) examined that majority (66.67 per cent) of the potato growers were having medium level of management ability of sprinkler irrigation system followed by 18.33 and 15.00 per cent with high and low level of management ability of sprinkler irrigation system respectively.

Patel and Borate (2014) pointed out that majority (54.17 per cent) of banana growers found in medium category of management ability regarding drip irrigation system, while 25.83 and 20.00 per cent had high and low management ability respectively.

Warawdekar et al. (2015) revealed that majority of the cotton growers (70.83 per cent) belonged to medium level of management ability regarding eco-friendly cotton cultivation.

2.4 MARKETING BEHAVIOUR

Dasarthan and Ali (1991) studied the problems in marketing of agricultural products at market yards in Andhra Pradesh. The study revealed that most of the farmers had behaved to sell their output immediately after harvesting, either due to lack of storage facilities or to meet present consumption or to clear off the loans.

Raveendran et al. (1992) reported that out of 47 farmers, two farmers had stored their paddy only in their houses and not in the rat proof godowns of the Co-operative Primary Agricultural Banks.
Seetharaman and Suganthi (1992) reported regarding the marketing behaviour of regulated market users that 77.14 per cent of respondents sold their produce through regulated market and 22.86 per cent sold partially through regulated market, open market and co-operative societies.

Gandhi (1993) revealed that 72.00 per cent each of the respondents from SC Zone and NC Zone were using farm produce for home consumption and sold. However, the large majority of the respondents from NC Zone (91.67 per cent) and SC Zone (92.86 per cent) sold their produce outside the village.

Barman and Deka (1995) studied the role of marketing institutions in market regulation in Assam and observed that the rural farmers were followed traditional marketing system in Assam. They were habituated by selling their produce in the village and ignored the existence of regulated markets.

Topare, Deepali (1996) found that more than one-half (55.50 per cent) of the respondents had medium level of behaviour of market orientation, while 18.00 and 26.50 per cent of the respondents were having low and high level of behaviour of market orientation respectively. The average market orientation score was 8.1, which indicated medium level of market behaviour.

Pandirajan and Manoharan (1996) found that 75.00 per cent of the farmers shown their marketing behaviour by using traditional bullock cart to transport their produce to market in absence of other source of transportation. Two fifth (40.00 per cent) of them sold a part of their produce in regulated market, while 10.00 per cent sold full produce after initial storage. However, two third of the farmers shown progressive marketing behaviour by grading their produce before marketing (67.50 per cent) and checked the weights of their produce while weighing at the time of marketing (66.67 per cent).

Wang (1996) studied the behaviour on contract marketing of wheat, rice, maize and soybeans by contacting 1017 small farmers of 104 villages in five provinces of China. It was noticed that many of the small farmers were selling their grain through the state purchases system in low prices and according to those farmers it was suggested that this system should be abolished.

Chavan (1997) stated that in general local sale to rice millers was predominant behaviour prevailed in all the size of groups, however, 65.57 per cent of surplus of large paddy growers were sold to local traders and specifically the small farmers sold their produce within one or two months after harvest of paddy crop.
Shinde (1997) revealed that 62.16 per cent farmers in with yard group and 86.20 per cent farmers in without yard group sold their produce to village traders followed by 56.70 per cent in with yard group and 30.96 per cent in without yard group in regulated markets. Only 13.50 and 6.88 per cent farmers in with and without yard groups sold their produce in other deregulated markets respectively. In case of quantity sold, 47.16 per cent in with yard group and 46.71 per cent in without yard group were sold to village traders; the corresponding figures for regulated markets were 36.22 and 29.36 per cent respectively.

Yelpanekar (1997) reported that the custard apple growers, who possessed behaviour of higher yield, send their produce to big markets like Pune and Mumbai, while the growers with low production were sold their produce at local markets. Good quality fruits were exported to the middle-east countries like Quatar, Saudi Arabia and Baharin.

Patil (1998) revealed that majority (59.00 per cent) of the respondents had medium level of behaviour of market orientation, while 29.00 and 12.00 per cent of the respondents were having high and low level of behaviour of market orientation respectively. The average market orientation score was 15.47 per cent, which indicated medium level of behaviour of market orientation.

Manvar (1999) showed that more than one-half (51.33 per cent) of the respondents had medium market orientation, whereas about one-fifth (22.00 per cent) of them had high market orientation. At the same time, 26.67 per cent of the respondents had low market orientation.

Sadaphal (2000), in his study on existing cultivation practices of white onion in Raigad district, reported that nearly all (99.00 per cent) respondents had stored white onion in the house itself. Majority (82.00 per cent) of the respondents had sold their produce in their own villages to the wholesaler and 87.00 per cent of them had transported their produce by bullock cart to marketing place.

Patil (2001) observed that majority (80.00 per cent) of the farmers followed with their age old behaviour to chose the popular marketing channel as producer-commission agents-wholesaler-retailer-consumer for selling their chillies in Dharmabad market.

Santucci (2001) analysed the marketing behaviour of 884 organic farmers in Italy. The study revealed that most farmers entered recently into organic farming and their land productivity was quite low. They had insufficient knowledge about proper marketing and used wholesalers as their most important marketing
channel. Most of them were sold it very locally and without any support or advice. Their most important form of promotion was to sell at the local annual fair and at the weekly local market. More than 50.00 per cent had ignored the existence of the National Organic Fair, organized since 1989. Consequently, the major medium term goal for almost 74.00 per cent of respondents remained to find new marketing channels.

Misal (2002) found that 46.00 per cent of the respondents had medium level of behaviour of market orientation, while 29.00 per cent of the respondents had low and 25.00 per cent of them had high level of behaviour. The average market orientation score was 8.07.

Pawar (2002) observed that majority of the tomato growers had medium knowledge (68.00 per cent) and medium adoption (63.33 per cent) of post harvest technology and market information of tomato crop. He further reported that majority of the tomato growers were behaves completely or partially by following the picking practices, grading on the basis of colour and luster and packaging in wooden boxes with belt packing and were using information pertaining to marketing cost and market rules.

Thorat (2003) in his study on technological gap and constraints in adoption of recommended cultivation practices of mango growers noticed that nearly one-half (48.00 per cent) of the respondents had medium level of behaviour of market orientation, while 34.00 and 18.00 per cent of them had high and low level of behaviour of market orientation respectively.

Nirban (2004) observed that majority (61.00 per cent) of the farmers from the Konkan and Western Maharashtra region had medium level of marketing behaviour. Less than two fifth (39.00 per cent) of the farmers from the Konkan had low level of marketing behaviour, while 35.00 per cent of the farmers from the Western Maharashtra had high level of marketing behaviour. Average marketing behaviour score of the farmers from the Konkan and Western Maharashtra regions were 39.97 and 68.84 per cent respectively.

Santoshkumar (2008) in his study on marketing behaviour, information source consultancy pattern and problems of vegetable growers in Bijapur district of Karnataka found that majority of the respondents (81.25 per cent) sold their produce because of financial urgency, 92.89 per cent of them sold their produce through wholesalers and 91.87 per cent of them sold their produce because of lack of time to engage themselves to sell directly to the consumers.
Chorge (2009) revealed that majority of the small (63.37 per cent), medium (72.94 per cent) and large (73.33 per cent) cashewnut growers had medium level of marketing behaviour. At overall level, 71.42 per cent cashewnut growers found in medium category of marketing behaviour. The mean score indicate that the large cashewnut growers had better marketing behaviour (76.01) followed by medium (73.01) and small (71.57) categories.

Johnson and Manoharan (2009) during their study on marketing behaviour of cashew farmers revealed that the overall marketing behaviour of the respondents with new gardens (37.78 per cent) had medium level of marketing behaviour closely followed by high (33.33 per cent) and low (29.89 per cent) level of marketing behaviour. Majority (71.11 per cent) of the old garden owners had medium level of marketing behaviour followed by low (24.45 per cent) level of marketing behaviour and only 4.44 per cent were with high marketing behaviour.

Muthukumar and Thiyagarajan (2010) in their study on marketing behaviour of farmers in cultivation of glory lily showed that the collectors sold tubers to brokers based in the small towns or amidst villages, the most widely used channel was farmer-broker-exporter, method of price fixation was negotiation with exporters or farmers receiving the determined price from brokers, while fellow farmers and friends were the most important sources for getting marketing related information followed by brokers and local merchants.

Shukla and Gupta (2010) in their study found that majority (81.66 per cent) of the cabbage growers possessed marketing behaviour to sold their product through commission agents and all the farmers used gunny bags for packing of cabbage.

Raina et al. (2011) in their study on marketing behaviour and information sources utilization pattern of flower growers found that all the respondents sold their flowers to the markets as raw, market their produce in the main season only, without grading in the nearby market, sold flowers to the small processors at the farm site itself, counseled outsiders to get knowledge about the market price.

Joshi (2012) in his study on marketing behaviour of mango growers observed that majority (71.67 per cent) of the mango growers had medium marketing behaviour followed by 19.67 and 9.16 per cent of growers found in low and high marketing behaviour categories respectively. The average score of marketing behaviour of the respondents was 70.00 per cent.
Kad *et al.* (2013) during their study on marketing behaviour of pulse growers of Amravati district of Maharashtra found that majority (73.33 per cent) of the pulse growers had medium level of marketing behaviour.

### 2.5 ASSOCIATION BETWEEN PROFILES WITH ROLE PERCEPTION, MANAGERIAL ABILITY AND MARKETING BEHAVIOUR

#### 2.5.1 Association between profile and role perception

Sundaresan *et al.* (2000) revealed that as the distance between the farm and regulated market increases the probability of awareness of regulated market decreases.

#### 2.5.2 Association between profile and managerial ability

Chari and Nandapurkar (1987) observed that the managerial ability was positively and significantly related with innovativeness, achievement motivation, risk taking ability, knowledge about farming and entrepreneurial behavior, when it was applied to large sample.

Balogun (2011) in his study on determinants of managerial abilities of small scale cocoa farmers found that the age of farmer, family size, number of family members engaged in farming, level of education, reasons for setting up cocoa farm, purchase of insecticide, amount on insecticide, amount on insecticide, purchase of labour services, amount spent on labour, purchase of transport service, spent on transport, age of cocoa farm, place where highest price is obtained for cocoa beans, secondary occupation, market place, average income from cocoa farm and total expenditure on farm as having positive relation with managerial ability of cocoa farmers in the study area. On the other hand, source of labour, purchase of fungicide, variety of cocoa grown, source of credit, number of man days for land preparation and planting as well as effectiveness of spraying have no relation with the managerial abilities of small scale cocoa farmers in the study area.

Darandale and Bhatt (2011) revealed that education, extension contact, risk orientation and farming experience had positive and significant association with management efficiency of cotton growers.

Aruna, Shantha *et al.* (2012) in their study on efficiency and managerial ability of paddy farming under minor irrigation conditions and found the positive and significant coefficient for the level of education which suggests that the more educated farmers were more efficient than less educated farmers. The efficiency of paddy farming has been increased as knowledge of water management increased.
Despite of water availability right to formal credit and sowing time emerge as significant factors behind technical efficiency of paddy farmers. Contact with extension officers was also leads to enhance the technical efficiency of small farmers. However, among selected technical efficiency variables, farmers’ experiences in paddy farming found as most effective variable in technical efficiency of paddy farming.

Chauhan and Chauhan (2012) in the study on managerial ability of the PCs of KVKs of India revealed that the young age, higher education, vigorous status of health and rural native place, conducive organizational climate, sufficient needed organizational facility and better interpersonal communication, whereas extrovert personality and positive attitudes towards extension work and low level of job stress played significant role in improving their extension management ability.

2.5.3 Association between profile and marketing behaviour

Smidts (1990) analyzed the theoretical and methodological issues in the context of the farmers' choice of a marketing strategy. He observed that the risk orientation was found significantly influenced on their preferences for marketing strategies.

Musser et al. (1996) examined the relationship between farm characteristics and the use of forward pricing techniques by large scale MidWestern US maize and soybean producers. Age, education, gross income, location and future price expectations were significantly related to the percentage of maize marketed in 1993. The maximum percentage of maize marketed by August was significantly related to percentage of income from livestock and futures price expectations. Farm location significantly affected the percentage of soybeans marketed in 1993, while the maximum percentage marketed was significantly related to the debt/asset ratio. A safety-first risk attitude toward the losses variable significantly affected the maximum percentage of marketing of both commodities.

Pennings and Leuthold (2000) in their study on the role of farmers’ behavioural attitudes and heterogeneity in futures contracts usage found that the decision unit, perceived performance, exercising entrepreneurial freedom and level of understanding were significantly influence in the probability of using futures and consequently farmers’ choice. Risk attitude and perceived risk exposure were not significantly related to the farmers’ use of futures.
Heltberg and Tarp (2002) found that farm size, animal manure, age of household head, ownership of transportation means and strategies to adapt to climate risk found positively associated with market participation.

Nirban (2004) found that in case of Konkan farmers, the characteristics namely, age, education, land holding, annual income, social participation, extension contact, mass media exposure and contacts with APMCs had significant relationship with marketing behaviour.

Benfica et al. (2006) during their study on interlinked transaction in cash cropping economies: the determinant of farmers’ participation and performance in the Zambezi River Vally of Mozambique, Gold Coast, Australia found the significant and positive relation with education, household head, access to credit and households’ off-farm income on market participation.

Govindarajan et al. (2006) found that the variables such as distance from the farm to regulated market, ratio between the farm gate prices and regulated market prices, educational status and the number of contacts made by the regulated market functionaries were significant and found to be the determinants of participation of farmers in the regulated markets.

Chorge (2009) observed that in case of the small cashew nut growers, four characteristics namely; major occupation, cashew nut production, annual income and economic motivation had highly significant relationship with their marketing behaviour. The step down analysis revealed that variables namely, age and cashew production contributed significantly and explained 31.10 per cent variation in the marketing behaviour of the small farmers.

Johnson and Manoharan (2009) during their study on marketing behaviour of cashew farmers revealed that the educational status, extension agency contact, mass media exposure, scientific orientation and progressiveness had positive and highly significant association with marketing behaviour. The age showed negative and highly significant association with marketing behaviour. The farm status, farming experience, experience in cashew cultivation, social participation, annual income, economic motivation, decision making behaviour and credit orientation had shown a non-significant association with the marketing behaviour.

Witcombe et al. (2010) in their study on linking community-based seed producers to markets for a sustainable seed supply system shows a significant positive association with training on market participation.
Joshi (2012) in his study on Marketing behaviour of mango growers observed that association between education, annual income, size of mango orchard, extension contact, market orientation, mass media exposure, economic motivation and marketing behaviour was significant.

Kad et al. (2013) during their study on marketing behaviour of pulse growers of Amravati district of Maharashtra found that among the selected characteristics, education, cosmopolitaness, extension contact, market orientation and mass media availability were positive and significantly related with level of marketing behaviour and age and farming experience were negative and significant with marketing behaviour, whereas land holding and annual income were non-significant with level of marketing behaviour.

Khanal and Maharjan (2013) in their study on factors influencing to farmers’ behavior in rice seed selling in the market: a case study in the Tarai region of Nepal found that households with older household heads, higher operational land and access to an irrigation facility sell a higher amount of rice seed in the market has significant association with marketing.

Nobeji et al. (2014) in the study on an analysis of factors affecting smallholder rice farmers’ level of sales and market participation in Tanzania found that the total size of land cultivated has a positive significant influences (p<0.01) to house hold market participation, implying that an increase in the size of cultivated land increases household market participation in rice markets by a margin of 3.32 per cent. The income from non-farm side indicated a negative significant (p<0.10) weak relationship and increased distance to the market had lowered the level of market participation.

2.6 FACTORS INFLUENCING IN MARKETING BEHAVIOUR AND THEIR SUGGESTIONS

2.6.1 Factors

Bhall (1991) stated that one of the main reasons for limited success of market regulation were, it only confined to marketing and did not help to reduce monopolistics hold on credit, transport, processing and storage.

Dasarthan and Ali (1991) observed the wide range of problems like lack of proper crop account maintained by the farmers, no knowledge of the sale management, inadequate infrastructure facilities at the market yard and lack of unity among the farmers.
Suganthi (1991) observed the insufficient quantum for marketing, delayed and lack of credit facilities, cumbersome marketing procedure and distant location of the market as the major problems for non-utilization of regulated market by the farmers.

Walawalkar (1991) reported the constraints in fruit processing and marketing namely, lack of nearby market (53.88 per cent), shortage of labourers (33.33 per cent) and lack of knowledge about processing (33.23 per cent).

Agarwal and Saini (1995) reported that the problem of marketing of vegetables posses more problems as compared to agricultural commodities as they have a high degree of perishability, bulkiness, existence of large number of middlemen in their trade due to low capital investments and are grown mostly by the small and marginal farmers. The middlemen manipulate the situation by offering low prices to the growers under the pre-text of low demand falsely rejecting the produce as substandard one. Sometimes, the vegetables also get accumulated in particular areas, then make distress sale and get substantially low prices in addition to wastage of large quantities of the produce.

Kumar and Arora (1999) from their study on post-harvest management of vegetables in the hills of Uttar Pradesh reported that 20 to 30 per cent of the total harvest of vegetables produced annually is lost primarily because of the factors influencing viz.; lack of adequate infrastructure, lack of post-harvest technology relevant to their needs and lack of machinery for technology dissemination.

Subramanyam (1999) in his study on problem of risk reducing and efficient marketing strategies for perishable viz., fruits and vegetables reported that factor influencing in regulated markets were the cheating in weighing, high commission charges, high labour charges and delayed cash payment by middlemen.

Lu and Zheng (2000) studied the marketing behaviour of China’s farmers and their influencing factors. They observed that the marketing behaviour of China’s farmers had five distinct characteristics. The significant difference in marketed quantity, rapid increase in the marketable surplus, seasonal fluctuation, similarity in the structure of marketed farm products among farmers with different income levels and in areas of differing levels of development and the fifth was a close correlation between farm product marketing and income. Marketing behaviour of farmers were influenced by farm scale, price of farm products, types of sideline occupation and the commercialization of their farm products.
Meeta Krishna (2000) while studying the role of vegetable marketing federation in marketing of vegetables in Bihar and reported that the problems of vegetable growers regarding marketing of vegetables were manifold seen in the characteristics of unorganized marketing, low prices, freight structure, malpractice intervention of intermediaries, high and undue market margin, lack of mechanical grading, storage facilities and link roads. A substantial portion of vegetables are sold in the rural haats or periodical markets where most of the buyers are compelled to sell their vegetables at low prices. This shows monopolistic character of vegetables trade and imperfections in vegetable marketing.

Sadaphal (2000) reported the three types of constraints. No separate place for storage, high labour charges (99.00 per cent) and shortage of labourers (92.00 per cent) in harvesting. Regarding grading, 98.78 per cent reported the constraint of no knowledge. In case of marketing, could not get reasonable price (100.00 per cent) and non-availability of transport facilities (45.45 per cent).

Singh et al. (2000) found that the problems faced by the farmers growing fruit and vegetables were lack of price information, lack of storage in market yard, lack of transportation, malpractices by traders, high charges of transportation, higher market charges, traders collusion, lack of market yard and late payment.

Balaji et al. (2001) reported that the low marketed surplus, collusion among the traders, malpractices in weighing, inadequate storage facility, late payment, higher cost of transport, unauthorized deduction and absence of market information were the major problems expressed by the farmers.

Basu (2002) examined the efficiency of potato market in West Bengal, incorporating the factors namely non-institutional credit, inter-linked credit, distress sale, nature of buying agency, time of sale and cold storage facilities. He observed that the farmers in the villages having abundant cold storage facilities were getting higher prices for potato as compared to the villages having no cold storage facilities.

Walke (2005) pointed out the constraints of cashewnut processors namely, non-availability of nearest market (22.88 per cent), no reasonable price for produce (9.68 per cent) and insufficient knowledge regarding grading and packing (9.68 per cent).

Govindarajan et al. (2006) found the factors that determine the selling of produce through regulated markets such as educational status of the decision maker of the household, farm size, nearness of the farm to the regulated market and the extension activities by the functionaries of the regulated markets.
Hashim (2009) revealed that the inadequacy of transport and storage, absence of an efficient chain of trading in all the areas, malfunctioning of regulated markets etc. are the facts which severely curtail a fuller and healthier marketing experience for Indian agriculture.

Jari and Fraser (2009) in their study on factors influencing agricultural marketing amongst smallholder farmers in the Kat River Valley, South Africa revealed that access to market information, expertise on grades and standards, availability of contractual agreements, existence of extensive social capital, availability of good market infrastructure, group participation and reliance on tradition significantly influence household marketing behaviour.

Kumar (2010) found that among the problems faced by the farmers in marketing their produce, the major ones were traders’ collusion, late payment and incorrect weighing, lack of packing material, high transportation cost, lack of credit and storage facilities in market yards and lack of market information on prices.

Joshi (2012) in his study on marketing behaviour of mango growers noticed that majority (98.33 per cent) of the growers stated non-availability of labour followed by high wages of labour (92.50 per cent) as major constraints in grading of mangoes, two third respondents (67.50 per cent) reported non availability of time and space for grading, while half of respondents (50.83 per cent) reported non-availability of automatic grader as a constraints in mango grading.

Joshi (2014) during his study revealed that the main problems or defects in marketing system were costly transport facilities, lack of market knowledge, Chain of middlemen, multiplicity of charges, lack of storage and warehousing facilities.

Darandale et al. (2015) revealed that high cost of inputs (93.33 per cent), fluctuations in market rates (90.00 per cent), unavailability of seed at proper time (85.00 per cent), lack of knowledge about plant protection of cotton (85.50 per cent), high cost of transportation (77.50 per cent), lack of technical advice (75.00 per cent), high rates of labours (71.66 per cent), non-availability of timely credits (60.83 per cent), complex process of getting crop insurance (59.16 per cent) and lack of market facilities (55.83 per cent) were the major constraints faced by cotton growers.

2.6.2 Suggestions
Atibudhi (1998) concluded from his study on agricultural marketing in Sakhigopal district of Orissa state that the exploitation of farmers by the traders can
be minimized by strengthening the market committee, providing proper marketing facilities, competent staff and strict enforcement of regulated market act.

Shah (1999) stated that to create chain of scientific onion storages in different region of the country, cut down upon the post-harvest losses in order to meet increasing demand in the international market, marketing system encompassing onions also need improvement in the efficiency.

Mohapatra (1999) found that establishment of storage rooms at each block headquarter and in the onion producing areas is necessary to get fair prices for the produce in lean season, regulation of onion sale price should be done by government through involvement of regulated market committee ‘NAFED’ by establishing procurement centers so that exploitation by the middlemen can be minimized, institutional credit facilities at right time should be extended to the onion farmers on propriety basis.

Waman and Patil (2000) from their study on onion growers of Solapur district of Maharashtra state observed that concerned efforts of the extension agencies working in the area growing onion crop were necessary to overcome to the problems faced by growers.

Santoshkumar (2008) in his study on marketing behaviour, information source consultancy pattern and problems of vegetable growers in Bijapur district of Karnataka revealed that majority of the respondents (97.50 per cent) suggested for providing access to market information, 88.75 per cent suggested for fixing minimum price for the produce whereas 87.00 per cent suggested to display the prices at each market place, followed by fixing minimum labour charges (78.75 per cent), providing concession in transportation charges (72.50 per cent), providing lodging and boarding facilities at market places (70.00 per cent), procurement at nearby places (52.50 per cent) and establishing separate markets for their major produce (35.00 per cent) were the suggestions offered by vegetable growers for marketing their produce in a better way.

2.7 EXTENSION STRATEGY

Roling and Pretty (1994) reported that there are three important lessons for extension. First, is to make new thing visible. Extension can demonstrate the feasibility of marketing functions and practices. Even more important is to give farmers the views for observation and to train them to monitor the situation of their farms. The second lesson is the use of farmer’s knowledge. Extension must make use
of farmer’s knowledge and work together with farmers. The third lesson is an emphasis on facilitating learning.

Garforth (1997) suggested some strategic policies such as extension programme should be highlighted locally or adaptation of technologies which can address the needs of specific clients, support farmers organization and farmer to farmer extension. Diversity of extension provision from agencies in the public, private, NGO and academic sectors gives clients to greater choice of sources of information to support long term sustainability of their farming, mass media coverage and relevance of contact to rural audiences. Extension material should be designed to offer options and problem solving strategies.

Wasnik and Bhaskar (2004) revealed that the first and foremost strategy is to develop insight in the socio economic environments of the cotton growers. The diagnostic survey made by multidisciplinary team comprising of agronomist, plant protection and social scientist in coordination with state extension functionaries. The strategy should be aimed at demonstrating the usefulness of different components and assisting small and poor farmers in obtaining necessary resources.

Pandya (2010) divulged that the constraints and suggestions may vary from person to person and place to place. Before evolving and go for any suitable strategy for intended users, it is necessary to obtain experience based suggestions from the respondents along with the technical option from the experts. This can be workout by using Situation Based Extension Approach (SBEA) with participatory method. A situation based extension strategies can be worked out by using triangulation method.

Yadav et al. (2012) reported that eight major constraints of mango orchardists were; lack of awareness regarding improved mango cultivation techniques, unavailability of scientific formation at proper time, lack of money, export facilities, poor marketing channel, testing laboratories are not available, unavailability of qualitative critical inputs at proper time and more risk involved. For elimination the same they strategically suggested that by organization of short duration training courses at time to time, maximum demonstrations on different aspects for increasing knowledge of the mango orchardists, supply of critical agricultural inputs at proper time, assistance of financial support through different banking organization, providing post harvest technology and one window marketing information to the mango orchardists can helps to overcame the same.
Warawdekar et al. (2014) found the constraints faced by the cotton growers scarcity of labours during critical operations followed by scanty technical and in time advice about eco-friendly from line department, high exploitation from the traders, irregular supply of electricity, high cost of inputs, for these constraints he used the triangular method of PRA technique and by availing suggestions from experts of respective fields the suitable strategies were suggested like Commodity Interest Group under ATMA should be formed for mechanization, by forming CIG under ATMA one can organize visits for technical guidance, APMC should take lead to frame the cooperatives, schedule of electric supply should be made by DGVCL in South Gujarat, GROFED and Line Department should play their role respectively.
CHAPTER - III
THEORETICAL ORIENTATION

This chapter is devoted to theoretical orientation for the study. The literatures reviewed in context to specific objectives were discussed in previous chapter in support of selected variables. Conceptualization of concepts provides the strength to signify the selection of variables. The chapter was divided and presented in the following sections.

3.1 Conceptual framework of the study
3.2 Identification of variables
3.3 Hypotheses of the study
3.4 Conceptual model

3.1 CONCEPTUAL FRAMEWORK OF THE STUDY

Conceptualization of concept is important and integral part of research in social sciences. In present study, the marketing behaviour of APMC farmers, office bearers and committee members towards market-led-extension was the major domain. It was conceptualized with the help of three aspects first, role perception about market-led-extension second, managerial ability for market-led-extension and third, by standardizing the scaling procedure to measure the marketing behavior. The discussions in regards are conceptualized in subsequent pages.

3.1.1 Role perception about market-led-extension of APMC

Perception is a cognitive process by which individuals organize, interpret and understand their surroundings and environment which also includes impressions formed through objects, events and people. In the process of performing the role, one must fully understand along with its necessities to come to a resolution. Without consuming all the facts, one may not correctly perceive the role (http://www.techrepublic.com/resource-library/whitepapers/the-role-of-perception-in-the-decision-making-process).

The absence of a distinctly defined role of employees and an amorphous perception of their roles and responsibilities in the organization may have a downturn effect on the employees' morale and self-esteem. Role perception of the employees acts as one of the most critical components in the workplaces today. It also plays a key role in an individual's performance. A misty perception of the role may also lead to underperformance by and underutilization of the potential of the individual. Consequently, the organization may lose not only some vital man-hours
but also some of the most competent employees, in the long run. It is, therefore, in the organization's interest to provide a clearly-defined role to every employee as a step towards combating the ever-increasing competition in the global milieu. (http://psychology.wikia.com/wiki/Role_perception)

Agriculture is major domain as food supplier in India. The person involved in agricultural sector and other may have different level of perception. Moreover, by virtue the involved person works with his perception. Basically, perception is a lot more complicated process. This has led to representative realism which suggests that the perception is not a passive process and one do not simply perceive the information through his senses and for that, one has to involve actively.

The link between agriculture and food is continually evolved. In primitive societies, the farmer and consumer were either the same family or close neighbors who bartered their products and services, but as societies developed other linkages are added. Commodity traders, processors, manufacture who converts produce in to food items and retailers among others are interposed between the producer and consumer. As the link between food and agriculture, the agribusiness emerge as an important one. Perceiving the importance of this chain, the government has introduced certain reforms and tries to confine the statutory roles of APMC in present marketing set-up for the socio-economic development of farming communities.

In order to improve the marketing system the cooperative marketing, establishment of regulated markets, grading of produce, storage and warehousing are to be essentially encouraged. In this connection the role of Agricultural Produce Marketing Committee members has to perceive their pivotal roles in promoting the agricultural marketing (Kadrolkar, 2012).

According to Model State Agricultural Produce Marketing (Development and Regulation) Act: 2003, the reformed roles of APMC are; Advice on production planning: careful selection of the crop from the viewpoint of internal or export marketability, Marketing information: price and arrivals, forecasting of market trends, demand of other markets, facilities available in the target markets, quality requirements, market fees etc., Securing markets: awareness about regulated market laws and reforms, information regarding procurement by governmental agencies, contract farming arrangement for cash crops with wholesalers, processors etc., Advice on improved marketing practices: packaging, appropriate storing methods, standardization and grading and other post harvest management practices such as
maintenance of quality, awareness about post-harvest losses etc., Advice on establishing and operating markets: farmers groups to set up and run their own markets within defined rules, Processing and value addition: farmers to be educated about value addition through primary processing, Group action: promotion of informal groups and SHGs, Marketing Credit: educating farmers about different schemes of marketing credits and advice on warehousing with pledge finance scheme, Problem solving methods: at micro-level and Marketing extension for export market: WTO implications, Codex, HACCP, Euro gap standards, Awareness on ill effects of pesticide/insecticides residue etc. (Paty, 2011).

It was observed that in the changing scenario of Indian agriculture with newly added face of marketing, the extension system is likely to undergo with series of crises are; knowledge, skill, input, efficacy, credibility and reorganization structure. Establishment of linkages between Line departments and Department of Market would strengthen the market-led-extension (Reddy and Jaya, 2002).

Singh and Singh (2003) stated that the present extension services need to be revamped on the lines of human resource development in agricultural marketing, educational programmes on marketing, consumer preferences, market extension services, infrastructure challenges, storage and preservation of produce, post harvest losses, promoting processing, grading and packing, cyber technology in disseminating market intelligence. They further opined that if, the country would like to take full benefits of the expanding domestic and external markets, there is an urgent need to modify the existing marketing policy where agricultural extension education had a greater role to play. Besides providing information and training in production technologies, education on important aspects of marketing such as grading and standardization, storage, processing, market information and intelligence and pricing of farm products should get the more attention in the programmes of farmers training. According to them, marketing extension envisaged advise on product planning, marketing information, securing markets for farmers, advise on alternate marketing, advise on improved marketing practices and advise on establishing and operating of markets. There was a need that every agricultural market should have an extension cell equipped with internet and other audio-video facilities necessarily to educate farmers in various aspects of marketing functions and services.

Forgoing discussion supports to derive that the agriculture sector needs well functioning markets to drive growth and economic prosperity in rural areas of the country by perceiving the roles of APMC. Policies need to be put in place to
encourage procurement of agricultural commodities directly from farmers' field and to
establish effective linkage between the farm production, and the retail chain and food
processing industries and there market-led-extension helps to eliminate the
bottlenecks at larger level.

3.1.2 Managerial ability in market-led-extension

Management is not a simple task. It requires knowledge base, role
perception based on experience and individual’s ability. Managerial ability are what
the manager uses to assist the organization in accomplishing its goals. Specifically, a
manager will make use of his or her own abilities in perspectives to increase the
productivity of those with whom they work.

The aspect of human efforts guides the activities through subordinates
in organizations. The guiding principle arises because decisions have to be made and
action taken to fulfill the goals and desires with scarce resources. It appears that
decision making is the central element in managerial ability and it looks as continuous
process which ultimately works as stimuli for consequences. The efficient
management in agriculture is always working around land, labour and capital (Ajobo,
1975). These resources need to be effectively managed in addition to get adequate
production and maximize the income vis-à-vis.

Further in other words, managerial ability is the ability of manager to
use the techniques and skills in planning, scheduling, guiding, supervising and
organizing the resources (man, material and money). Generally, the socio-economic
forces may have significant influence on the individual’s ability to work as a manager
with farming and marketing. In the present study, it is been operationalised as the
ability of farmers, committee members and office bearers who apply the basic
principles of management in farming and marketing. It can also be stated as
the ability to make business decision and lead subordinates within the organization.
For that one requires three most common abilities; human abilities - the ability to
interact and motivate, technical abilities - the knowledge and proficiency in the trade
and conceptual abilities - the ability to understand concepts, develop ideas and
implement the strategies. These may reflect on one’s communication ability,
response, behaviour and negotiation tactics.

According to Bora and Ray (1986) management is the process by
which the farmer is able to enhance return from the farm on a sustained basis for the
attainment of a family goal. In enhancing the managerial ability of farmers, emphasis
should be given to develop an orientation for planning, marketing and skills in
decision making and communication, besides new agricultural technology. Knowledge is important determinant of managerial ability of farmers. Planning orientation helps the farmer in proper allocation of resources and better organization of farm activities. Acquisition of certain basic abilities through working in the farm for a number of years is the experience factor which helps in efficient management of farm. Rationality in decision making helps the farmer to set up clear goals in farming. A profit-minded farmer is generally marketing-oriented. Communication skill helps the farmer to receive and disseminate profitable information relating to farm enterprise and enables him to keep in touch with the agri-support system.

Chari and Nandapurkar (1987) studied the relative importance of different components (planning, organizing, human relationship, supervision, communication, coordination and control) of managerial ability. They found that all the components of managerial ability found highly influence.

The field level agricultural extension functionaries need to be trained on the most important aspects like planning for market oriented production, preparation of produce for marketing, storage/preservation techniques, infrastructure and transport facilities, market information and use of information technology and integration of marketing network (Anonymous, 2001).

The problem of management is more acute for small land holders who personally face the difficulty of earning a net income that is inadequate for their needs. Management in cocoa farms for production has been very crucial aspect so its production is more of a business than a way of life. Profit from cocoa cultivation can be increased through good management practices by the farmers. There are five major resources which the farmers need to manage on their farms and these resources are, the soil, climate, the tree, human resources and time (Ajobo 1975).

Decisions have to be made on farm, particularly, when farmers are faced with limited resources and alternative courses of action and therefore, one must make some choices (Oji, 2002). The farmers make decisions on a number of pre harvest and post-harvest activities such as what to produce, input use, harvest and post-harvest issues, which affect production, processing, distribution, prices and costs. Farming decisions are made to maximize farm objectives subject to available material and human resources (William, 2003)

### 3.1.3 Marketing behaviour towards market-led-extension

An act refers as behavior. It may vary in forms and depends on environment in which one live. The behavior, driven in part by thoughts and feelings
and it is an insight into individual psyche, revealing among other things like attitudes and values. It is also experience based. Moreover, it also affected by individual genetics, social norms, core faith. It may impact by certain traits also. These may vary from person to person which may have capacity to produce different actions. In general, it is the physical and or psychological effect of the relative features, relationships of a human being on other human being(s) and/or their environment.

In social science, many measurement techniques were work out with approximations but, somehow in the present scenario, they have lost their measurability. This shows that one or two or three packages of practices are devaluating the importance of other practices of crop. Here, if one uses the measuring technique, the results may mislead the planner or policy maker while developing the strategies. The measurement is made by a scale, which comprises the set of numerals given to the objects by using a certain rule of an assignment. According to Bogardus (1990) a scale is a standard against which to measure the factors, which are otherwise difficult to measure. In other words, scale is a device by which one can measure the things. A suitable scale used in measuring the behaviour helps to eliminate the confusion in social and educational research. A great deal of effort must be taken to make a scale as accurate as possible. Therefore, an accurate scaling technique is essential in the field of social science.

Development and standardization of a scale to measure the marketing behaviour: Measurement word is derived from the French word ‘mesurement’. The science of measurement is called methodology. It is a cornerstone of most researches conducted under natural sciences, technology, economics, and the social sciences. The value of something is made meaningful by quantifying into specific units. Measurements act as labels which make those values more useful in terms of details. Any measurement can be judged by the following meta-measurement criteria values; level of measurement (which includes magnitude), dimensions (units), and uncertainty. In other words, a measurement is made by comparing a quantity with a standard unit. Sometimes, comparison cannot be perfect which results in to error or create confusion. Therefore, to reduce confusion, comparisons should be made with different measurements. In case of clear qualitative similarity or difference, the quantitative measurement is often preferred in order to go with repetition or replication to increase precision. Considering the facts, investigator had tried to construct a scale to measure the marketing behavior towards market-led-extension with upmost care.
In the study the marketing behaviour has been operationalised as, all the mental activities like information collection, gaining knowledge about the market situation, making decisions about the crops to be grown, management of resources, crop production technologies to be used, selection of market for sale of farm produce, as well as, physical activities like cultivation of crops and cleaning, grading, sorting, processing, packing, transporting, weighing of farm produce, performed by the farmers.

Smidts (1990) analyzed the theoretical and methodological issues in the context of the farmers' choice of a marketing strategy. He observed that the attitude of farmers towards risk was significantly influenced on his preferences for marketing strategies.

Agarwal and Saini (1995) from their study on vegetable marketing in Jaipur market of Rajasthan reported that marketing of vegetables posses more problems as compared to agricultural commodities as they have a high degree of perishability, bulkiness, existence of large number of middlemen in their trade due to low capital investments and are grown mostly by the small and marginal farmers. The middlemen manipulate the situation by offering low prices to the growers under the pre-text of low demand falsely rejecting the produce as substandard one. Sometimes, the vegetables also get accumulated in particular areas, then make distress sale and get substantially low prices in addition to wastage of large quantities of the produce.

Musser et al. (1996) examined the relationship between farm characteristics and the use of forward pricing techniques by large scale Midwestern US maize and soybean producers. Age, education, gross income, location and future price expectations were significantly related to the percentage of maize marketed in 1993. The maximum percentage of maize marketed by August was significantly related to percentage of income from livestock and futures price expectations. Farm location significantly affected the percentage of soybeans marketed in 1993, while the maximum percentage marketed was significantly related to the debt/asset ratio. A safety-first risk attitude toward the losses variable significantly affected the maximum percentage of marketing of both commodities.

Lu and Zheng (2000) studied the marketing behaviour of China’s farmers and their influencing factors. They observed that the marketing behaviour of China’s farmers had five distinct characteristics. The first was a significant difference in marketed quantity of farm products in eastern, central and western China. The second was a rapid increase in the marketable surplus. The third was seasonal
fluctuation. The fourth was similarity in the structure of marketed farm products among farmers with different income levels and in areas of differing levels of development. The fifth was a close correlation between farm product marketing and income. Farmers had their marketing behaviour influenced by farm scale, price of farm products, types of sideline occupation and the commercialization of their farm products.

Santoshkumar (2008) in his study on marketing behaviour, information source consultancy pattern and problems of vegetable growers in Bijapur district of Karnataka revealed that majority of the respondents (97.50 per cent) suggested for providing access to market information, 88.75 per cent suggested for fixing minimum price for the produce followed by 87.00 per cent suggested to display the prices at each market place, 78.75 per cent had fixing minimum labour charges, 72.50 per cent providing concession in transportation charges, 70.00 per cent providing lodging and boarding facilities at market places, 52.50 per cent procurement at nearby places and 35.00 per cent establishing separate markets for their major produce.

Chorge (2009) observed that in case of the small cashew nut growers, major occupation, cashew nut production, annual income and economic motivation had highly significant relationship with their marketing behaviour. The step down analysis revealed that variables namely, age and cashew production contributed significantly and explained 31.10 per cent variation in the marketing behaviour of the small farmers.

Hashim (2009) revealed that the inadequacy of transport and storage, absence of an efficient chain of trading in all the areas, malfunctioning of regulated markets etc. were the factors which severely curtail a fuller and healthier marketing experience for Indian agriculture.

Jari and Fraser (2009) in their study on factors influencing agricultural marketing amongst smallholder farmers in the Kat River Valley, South Africa revealed that access to market information, expertise on grades and standards, availability of contractual agreements, existence of extensive social capital, availability of good market infrastructure, group participation and reliance on tradition significantly influence household marketing behaviour.

Johnson and Manoharan (2009) during their study on marketing behaviour of cashew farmers revealed that the educational status, contact with extension agencies, mass media exposure, scientific orientation and progressiveness had positive and highly significant association with marketing behaviour. The age
showed negative and highly significant association with marketing behaviour. Whereas, the farm status, farming experience, experience in cashew cultivation, social participation, annual income, economic motivation, decision making behaviour and credit orientation had shown a non-significant association with the marketing behaviour.

Kad et al. (2013) during their study on marketing behaviour of pulse growers of Amravati district of Maharashtra found that among the selected characteristics the education, cosmopolitaness, extension contact, market orientation and mass media availability were positive and significantly related with level of marketing behaviour and age and farming experience were negative but significant with marketing behaviour where as land holding and annual income were non-significant with level of marketing behaviour.

Khanal and Maharjan (2013) in their study on factors influencing farmers’ behavior in rice seed selling in the market: a case study in the Tarai region of Nepal found that households with older household heads, higher operational land, and access to an irrigation facility sell a higher amount of rice seed in the market.

Other studies have attempted to identify the factors that influence farmers to adopt a particular marketing strategy. For example, distribution risk is one factor that influences marketing decision making in the agribusiness sector. Risks that agricultural producers face are linked with decisions about the prices, quantity, quality, and the timing of delivery (Royer, 1995). Transaction cost was identified as another factor in addition to age, education and farm profit, which has significant impact on marketing decision-making (Hobbs, 1996).

3.1.4 Factors influencing on marketing behaviour

One of the objectives of this study was to identify and assess the factors influencing marketing behaviour of the farmers of South Gujarat. The study focuses on the factors that compel farmers to make certain marketing decisions (which may be the problems, difficulties, constraints, shortcomings etc. enforcing to take various decisions in the process of marketing as a whole). Thus, it considers factors that guide farmers in deciding the farm planning, production planning and post harvest management. It further looks at the factors that influence whether to sell produce or not at a particular time, choice of place, marketing channel etc. when selling produce.
3.2 IDENTIFICATION OF VARIABLES

The role of situation or environment is very crucial in understanding the human action. Sometimes, situation presents the actor with certain goals to pursue. Rogers (1962) therefore, confirmed the decisive role of situation. The social system, of which individual is a member, had dominant effect on the behavior. An individual’s action is dependent upon many factors. As conceptualized by Parsons (1954), the action takes place in a situation consisting of social, physical and cultural factors. To be precise, any decision is influenced not only by economic factors but also by those related to socio-personal, psychological, communicational, situational etc. As it is known that an individual differs in their characteristics. Thus, on the basis of extensive review, 19 variables were included in this study to know their influence on perception of role, managerial ability and marketing behaviour of the farmers, office bearers and committee members of APMCs of South Gujarat. These variables were considered as independent variables which precede the other in order of time and which theoretically are expected to lead or be followed by certain other variables. With some assumption, the present investigation was formulated. A brief discussion on selection of variables having bearing on marketing behavior are given and discussed as below.

3.2.1 Age

Physical and psychological development of an individual among other characteristics is related to age. Thus, it influences the interest and needs of an individual. It also plays a vital role in acquiring knowledge about agricultural innovations, methods and strategies. It is generally believed that younger persons are more energetic, change-prone, progressive and innovative than the older generation.

Studies conducted by Heltberg and Tarp (2002), Nirban (2004), Chorge (2009), Johnson and Manoharan (2009), Balogun, Olubunmi Lawrence (2011), Chauhan and Chauhan (2012), Kad et al. (2013) and Khanal and Maharjan (2013) revealed an association between age and managerial ability and marketing behaviour of the farmers. Therefore, it is conceptualized that age may be related to the role perception, managerial ability and marketing behaviour of the farmers.

3.2.2 Education

Education is pre-requisite for the development of the human behaviour. Beal and Sibley (1967) rightly pointed out that the individual’s ability to read and write and the amount of formal education he possesses ultimately affect the manner in which the individual gathers information and relates himself to his environment. It
also develops intellectual of an individual to know the world better and direct their thinking process.

An association was considered to exist between education and managerial ability and marketing behaviour in the studies conducted by Musser et al. (1996), Benfica et al. (2006), Govindarajan et al. (2006), Johnson and Manoharan (2009), Balogun, Olubunmi Lawrence (2011), Darandale and Bhatt (2011), Aruna, Shantha et al. (2012), Chauhan and Chauhan (2012), Joshi (2012) and Kad et al. (2013). Hence, it is assumed that education of farmer is likely to be related with the role perception, managerial ability and marketing behavior of the farmers.

3.2.3 **Land holding**

Land holding is operationalised as total land possessed by the farmer. Size of land holding is one of the most important indicators to measure one's socio-economic status. It also plays an important role in adoption of different agricultural enterprises according to the size of landholding. Majority of the past studies have indicated that land holding is related positively to the dependent variable. It is postulated that a farmer having a larger size of land holding has substantial invisible capital which is beyond the investment potential and credit resources of small farmers.

The size of land holding affects the thinking/action of the farmers as evidenced by Hoffer and Gibson (1942), Reddy (1962), Vyas (1995), Heltberg and Tarp (2002), Nirban (2004), Patel (2006), Joshi (2012), Kad et al. (2013), Khanal and Maharjan (2013) and Nobeji et al. (2014) reported that size of land holding significantly associated with managerial ability that may help farmers to diversify their agriculture better. Hence, in the present study, it is conceptualized that the size of land holding will be associated to the role perception, managerial ability and marketing behavior of the farmers.

3.2.4 **Farming experience**

It refers to the years of experience of farmers in farming. The farming experience would help the farmers to judge the appropriateness of the marketing of farm produce and would be able to overcome the constraints they may face in marketing. Marketing behavior mostly relies on farmer’s knowledge and their management ability. Hence, more experience of farming would have impact on success in farming.

The studies conducted by Nirban (2004), Johnson and Manoharan (2009), Darandale and Bhatt (2011), Aruna, Shantha et al. (2012) and Kad et al.
(2013) concluded an association between farming experience and the marketing behaviour of the farmers. Therefore, it is conceptualized that the farming experience may be associated with the role perception, managerial ability and marketing behaviour.

3.2.5 Distance from market

It refers to the physical distance between the residence of the respondent farmer and the place of market yard. Farmer has to bear the transportation cost for the produce according to the distance.

Past studies conducted by Sundaresan et al. (2000), Nirban (2004), Govindarajan et al. (2006), Balogun, Olubunmi Lawrence (2011) and Nobeji et al. (2014) revealed the relationship between market distance and marketing behaviour of the farmers. Hence, in the present study, it is conceptualized that the distance from market may be associated to the role perception, managerial ability and marketing behavior of the farmers.

3.2.6 Annual income

This indicates the total annual income expressed in rupees earned by an individual from all available resources or enterprise. Economically sound farmers can perform better; as they can purchase necessary agricultural inputs for boosting up agricultural production. It is postulated that higher family income may leads to high investment on farming and thus reduce technological gap. Selection and management of different agricultural enterprises, optimum and timely procurement of inputs can also be possible easy when finance is available on hand.

Results of the studies conducted by Musser et al. (1996), Nirban (2004), Benfica et al. (2006), Chorge (2009), Johnson and Manoharan (2009), Balogun, Olubunmi Lawrence (2011), Joshi (2012), Kad et al. (2013) and Nobeji et al. (2014) disclosed relation between annual income and the managerial ability and marketing behaviour. Hence, in the context of present study, it is conceptualized that the annual family income will be related to the role perception, managerial ability and marketing behavior of the farmers.

3.2.7 Social participation

Social participation refers to the participation of farmers in formal or informal organizations. It helps individual to broaden their vision and insight for self-development. It shows the degree to which individuals are involved with informal organizations as members or office-bearers. It plays an important role in increasing one’s contact with the outside world, and in widening one’s horizons of experience by
exposing him to the secondary group atmosphere. It also plays pivotal role in influencing the behavior of farmer for starting different new enterprises in order to profit maximization and risk reduction in farming. Those who have wider social contacts are probably more knowledgeable, resourceful and hence it may help the person in getting exposed with useful ideas about new profit making methods/technologies.

The studies conducted by Nirban (2004), Johnson and Manoharan (2009), Chauhan and Chauhan (2012) and Khanal and Maharjan (2013) showed the association between social participation and managerial ability and marketing behaviour. Hence in the present study, it has assumed that social participation may influence the role perception, managerial ability and marketing behaviour of the farmers.

3.2.8 Extension contact

It refers to the contact made by the farmers for seeking knowledge about agricultural and marketing development. Ultimately, it results in efficient marketing behavior and managerial ability in farming.

Past studies conducted by Nirban (2004), Govindarajan et al. (2006), Johnson and Manoharan (2009), Darandale and Bhatt (2011), Aruna, Shantha et al. (2012), Chauhan and Chauhan (2012), Joshi (2012) and Kad et al. (2013) found association between the extension contact and the managerial ability and marketing behaviour. Therefore, in the context of present study, it is conceptualized that the extension contact may be related to the managerial ability and marketing behavior of the farmers.

3.2.9 Source of information on marketing

Information sources play important role in dissemination of agricultural know-how while information seeking is a conscious effort to acquire information in response to a need or a gap in one’s knowledge. Wilson (2000) described information seeking behaviour as the totality of human behaviour in relation to sources and channels of information, including both active and passive information-seeking and information use. In present study information seeking behaviour is conceptualized as the degree to which an individual collect information from different sources and frequency of the contact, whether locally or outside the village. Farmers generally use different information sources and channels for seeking information which help them in acquisition of knowledge and skills for the farming and marketing. Study conducted by Johnson and Manoharan (2009) also supports the
view. Therefore, in the present study, it has been assumed that information seeking behaviour has a significant association with role perception, managerial ability and marketing behavior of the farmers.

3.2.10 **Training received**

Training always enhances performance of individual in doing particular job in most efficient way. It also gives new techniques of work; orientation of forthcoming practices. It operationally meant the degree of exposure of the respondents to formal courses of various durations organized by different organizations for imparting knowledge and skills in agriculture and marketing. The training on various aspects gives opportunity to an individual to increase his association with work and capability to do the work efficiently. Training had very specific and quantifiable goals, such as operating a particular piece of machinery, understanding a specific process, or performing certain procedures with great precision. Training improves the competency of the individuals and keeps them informed on the latest developments.

Association was confirmed between training received and managerial ability and marketing behaviour in the studies conducted by Nirban (2004), Witcombe *et al.* (2010), Chauhan and Chauhan (2012) and Khanal and Maharjan (2013). Hence, in the context of present study, it is conceptualized that the training received by the respondents may be related to the role perception, managerial ability and marketing behavior of the farmers.

3.2.11 **Cropping pattern**

It refers to the yearly sequence and spatial arrangements of crops and fallow on a given area by the respondent farmer. In other words, it denotes the crops grown by the respondents in *kharif*, *rabi* and summer season, as well as annual and perennial crops in his/her land. Cropping pattern itself connected with many other variables, it affect the marketing behaviour of the farmers.

The study conducted by Nirban (2004) revealed the association between cropping pattern and marketing behaviour of the farmers. Therefore, in the context of present study, it is conceptualized that the cropping pattern adopted by the respondents may be related to the role perception, managerial ability and marketing behavior of the farmers.
3.2.12 Cropping intensity

Cropping intensity is a ratio of actual cropped area to net cultivated area with the farmer. It means the increase in cropping intensity is the resultant effect of other factors.

It was supported by the research conducted by Nirban (2004) showing the significant relationship between cropping intensity and marketing behaviour of the farmers. Hence, it is conceptualized that the farmers following high cropping intensity are generally having favourable marketing behaviour.

3.2.13 Marketable surplus

It was that quantity of the produce which was made available to the non-farm population by the respondent after meeting his requirements for family consumption, farm needs, for seeds and for feed for cattle, payment to labour, artisans, landlord and social, religious payments in kind. It may be associated with other factors viz., land holding, irrigation facilities, adoption of technologies, crop yield etc.

In the past studies conducted by Nirban (2004), Witcombe et al. (2010) and Khanal and Maharjan (2013) found an association between marketable surplus and marketing behaviour of the farmers. Therefore, in the present study, it is conceptualized that the marketable surplus of farmers associated with role perception, managerial ability and marketing behaviour of the farmers.

3.2.14 Marketed surplus

It is that quantity of the produce actually sold by the respondent in the market, irrespective of his/her requirements for family consumption, farm needs and other payments. It may also associated with other factors viz., land holding, irrigation facilities, adoption of technologies, crop yield etc.

The studies conducted by Musser et al. (1996) Nirban (2004) Witcombe et al. (2010) Khanal and Maharjan (2013) shows that there is association between marketed surplus and marketing behaviour of the farmers. Therefore, in the present study, it is conceptualized that the marketed surplus of farmers associated with role perception, managerial ability and marketing behaviour of the farmers.

3.2.15 Knowledge about statutory activities of APMCs

It is the knowledge regarding the activities and facilities provided by the APMCs to the farmers in order to help them to gain and facilitate knowledge and skill about agriculture and marketing. It may directly affect the thinking of the farmers
regarding the adoption of marketing practices for selling their produce at optimum price to get maximum return against their produce.

The studies conducted by Chari and Nandapurkar (1987), Nirban (2004) and Aruna, Shantha et al. (2012) revealed the association between knowledge and managerial ability and marketing behaviour of the farmers. Hence in the present study, it has assumed that social participation may influence the role perception, managerial ability and marketing behaviour of the farmers.

3.2.16 Economic orientation

In any enterprise economic orientation may be regarded as an indication of the degree of willingness for investment of available resources in the adoption of an innovation. Therefore, it can be conceptualized as the attributes with greater importance to profit maximization on immediate and long term basis. It is believed that every individual possess different degrees of economic orientation.

In the study conducted by Chorge (2009), Johnson and Manoharan (2009), Witcombe et al. (2010) and Joshi (2012) found association between the economic orientation and the managerial ability and marketing behaviour. Therefore, in the context of present study, it is conceptualized that the economic orientation may be positively associated with the role perception, managerial ability and marketing behavior of the farmers.

3.2.17 Scientific orientation

It is conceptualized as the degree to which a farmer is oriented to the use of scientific methods in decision making in relation to farming and marketing. It is important psychological factor in decision-making process of the farmers. It can be said as the degree to which a farmer is oriented to use scientific method in his crop cultivation. It refers to the degree to which a farmer or a peasant oriented towards scientific methods in decision making in relation to their adoption behaviour.

The result of the study conducted by Chorge (2009) showed the significant association between scientific orientation and marketing behaviour of the farmers. Hence, it has presumed that farmers those have high scientific orientation may have high level of role perception, managerial ability and marketing behaviour.

3.2.18 Risk orientation

The enterprise risk commonly refers to the all outcomes which lead to losses or deviation of realization from expectations. Risk orientation may be described as the degree to which an individual is oriented towards encountering risks and uncertainty associated with an enterprise and has courage to face the problems in
farming. Wherein the present context, it assumed that the farmer having high risk orientation may have high level of managerial ability and high level of marketing behaviour.

Studies conducted by Chari and Nandapurkar (1987), Smidts (1990), Musser et al. (1996), Heltberg and Tarp (2002) and Darandale and Bhatt (2011) concluded that risk orientation was related with managerial ability and marketing behaviour of the farmers. Hence, it has been assumed in this study that the risk orientation may be related with the role perception, managerial ability and marketing behavior of the farmers.

3.2.19 **Group cohesiveness**

Group cohesiveness can be defined as feeling and sense of belonging developed by the members in the group. Group cohesiveness refers to the degree to which its members are attracted to the group, are motivated to remain in the group and mutually influence one another. Members of highly cohesive groups are more energetic in group activities, are less likely to be absent from group meetings, and are happy when the group succeeds and sad when it fails, whereas, member of less cohesive groups are less concerned about the group's activities. The members of highly cohesive group are more likely to conform to group pressures than are members of low cohesive groups.

This was supported by the finding of the studies of Pennings and Leuthold (2000), Gardhariya (2013) and Shinde (2013). Hence, it has assumed that the farmers those have high group cohesiveness may have high level of role perception, managerial ability and marketing behaviour.

**3.3 HYPOTHESES OF THE STUDY**

Based on the literature reviewed and theoretical framework of the study, the following hypotheses pertaining to the specific objectives were formulated as per the procedure given by Kerlinger (1976).

- **Ho₁**: There is no relationship between profile of the respondents and role perception about market-led-extension
- **Ho₂**: There is no relationship between profile of the respondents and managerial ability for market-led-extension
- **Ho₃**: There is no relationship between profile of the respondents and marketing behaviour towards market-led-extension
3.4 CONCEPTUAL MODEL

In the light of the inferences derived from the recorded evidence in the review of literature, a conceptual framework has been developed for the present study which is diagrammatically presented with important dimension and postulated relationship among the different variables (Fig. 4).

The model portrays that the respondents *i.e.* beneficiaries, office bearers and committee members of APMC would have similar behaviour with respect to marketing behavior, perception about role of APMC and managerial ability. The main feature of this model is that it takes into consideration all the possibilities of respondents in marketing behaviour.

Thus, the whole study is based on analysis-synthesis and criterion. It uses a conceptual framework for the problem diagnosis and utilizes the investigated data to synthesize an empirical model.
Fig. 1: Conceptual paradigm showing association between independent and dependent variables
CHAPTER – IV
RESEARCH METHODOLOGY

The scientific study of any investigation requires appropriate methods, procedures in order to reach reliable conclusion and in that connection the methodology deals with the methods and procedures was covered in this chapter. It describes and classifies the methods used for measuring the dependent, independent variables as well as, techniques followed for data collection and analysis. The methodology of this research is described under the following sections.

4.1 Identification of the problem
4.2 Area of the study and its geography
4.3 Research design
4.4 Sampling technique
4.5 Variables under study and their measurements
4.6 Tools and techniques of data collection
4.7 Statistical framework used for analysis of the data

4.1 IDENTIFICATION OF THE PROBLEM

In the present context of globalization and liberalization the conceptualization of value addition and marketing of agricultural produces plays pivotal role. The existing agricultural marketing system needs to be enhanced through skills, knowledge and attitude of personnel working in the sector. It is necessary to enable the farmers to respond positively to these changes occurred in the market through production systems, diversification, increased farm productivity, improved product quality, universal standards and realization of value addition opportunities. These could be only managed by allowing the farmers through market-led-extension.

The government has pass the Model Act, in year 2003, and redefines the role of APMC and tried to promote alternative marketing system, contract farming, direct marketing, farmers / consumers markets and market-led-extension.

The behaviour of APMC farmers varies from crop to crop and place to place. It was observed that very scanty attempts were made to measure the marketing behaviour of involved mass could able to answer in this course. The present study was a maiden effort in that direction. All types of natural, manmade and other resources were very carefully considered moreover, macro and micro level thinking on marketing behaviour and market-led-extension were sought out with the help of extension, economic and market experts.
4.2 AREA OF THE STUDY AND ITS GEOGRAPHY

The study was conducted in the Southern region of Gujarat State having seven districts. This region is well known for its potentiality in farming and its related enterprises.

According to Agro-Climatic condition, the South Gujarat was divided in two zones. The zone-I possessed heavy rainfall with hilly areas. It consists of southern part of the Dang from Abmika river, part of Valsad, Navsari, Gandevi, part of Surat, Valod, Vyara, Uchchhal, Songadh and Mahuva. It has an intensive rainfall of over 1500 to 2200 mm per annum received mostly during the months of June to August. The zone has clayey soil with normal pH and EC, medium organic carbon and phosphorus with high level of potash. The zone-II possessed medium rainfall with plain area. It consists of some portion of Valsad and in between Ambika and Narmada river, Navsari, Gandevi, part of Surat, Kamrej, Nizar, Palsana, Bardoli, Mangarol, part of Bharuch, Akleshwar, Valiya, Jaghadiya and Rajpipala. The rainfall of the area is varying between 1000 to 1500 mm per annum. This zone has black soil of medium to heavy texture. The major field crops are upland and low land paddy, sugarcane, groundnut, gram, kharif sorghum, pigeon pea, cotton, kharif maize, soybean and minor millets. Moreover, the mango, sapota, banana, coconut, cashew nut, jack fruit, brinjal, tomato, okra, chili, turmeric, onion are grown as the major horticultural crops.

The boundary of present study area is touches with Arabian Sea in west, northern side is attached with Vadodara district, north-eastern to southern side have common boundary with Maharashtra state.

The farmers of South Gujarat are very hard working by nature. Fortunately, South Gujarat has well developed railway and road services hence, the transportation of agricultural produces becomes very easy for the community engaged to send in the markets of Mumbai, Ahmadabad, Surat and up to Delhi.

Hierarchies of state and national level research stations, teaching and extension education institutions, NGOs are working in the Southern Gujarat. The Government of Gujarat has brought this area under the jurisdiction of Navsari Agricultural University, with well established fifteen research stations, one Aspee Agri-Business Management Institute, one Aspee College of Horticulture and Forestry, Vanbandhu Veterinary Science and Animal Husbandry and three Colleges of Agriculture. On the other hand, well established structures of all Line Departments are efficiently working in South Gujarat. Further, more than fifty types of private
stockholders are working to enhance the agriculture in the periphery of villages, talukas and districts of this region.

4.3 RESEARCH DESIGN

The present study confined to an *Ex-post-facto* research design. According to Kerlinger (1976), it is a systematic empirical enquiry in which the investigator does not have direct control over the independent variables because their manifestations have already occurred or they are inherently not manipulated.

Moreover, the present investigation aims to know the perception of existing situation in regard to managerial ability and marketing behavior of the farmers, committee members and office bearers about the potential role of the APMCs towards market-led-extension. Therefore, an exploratory research design was also used in the study.

According to Katz (1953) the field studies are conducted in real setting could be much practical value in improving the life of the people. The exploratory field study is one that intends to discover significant variables in the field situation and find out relations among the variables so, that the ground work for better and more systematic testing of hypothesis can be laid down.

4.4 SAMPLING TECHNIQUE

Sampling is a method of selecting a fraction of the population in such a way that it represents the whole population. In present study, selection of APMCs and three types of respondents were considered.

4.4.1 Selection of APMCs

One third portion of the South Gujarat region was earmarked under tribal area hence, considering the governmental efforts and its influence through different amendments made to enhance the agricultural sector may give the new dimension and looking to that the investigator has bifurcated all the 33 APMCs according to their location as tribal and non-tribal areas. Bearing in mind of resources available with the investigator 4 APMCs from each area were randomly selected from both the area. In all, 8 APMCs were covered under the study.

4.4.2 Selection of respondents

In light of the objectives of study, the investigator has adopted a ratio system to select the respondents. First, the APMC beneficiary farmers located in the jurisdiction of selected APMCs, second was office bearers and third committee members of selected APMCs.
Fig. 2: Operational structure of the present investigation - Farmers

Fig. 3: Operational structure of the present investigation - OB & CM

Total farmer respondents = 160

Total OB and CM respondents = 72
Further, for obtaining the APMC beneficiary farmer as respondent, the lists of villages located under the jurisdiction were obtained and were bifurcated on the base of distance criteria. The lists of villages of each APMC fell within the 5 km and 5 to 10 km of radios were separated and out of them one from each were randomly selected. These way 16 villages were obtained for the study. Moreover, the office bearers of active cooperative units of selected villages were contacted and the names of farmers who frequently selling their produces at APMC were obtained. After preparing the lists, a simple random sampling method was adopted to obtain 10 APMC beneficiary farmers from each village as respondents for the study. The list of office bearers and committee members of randomly selected APMCs were obtained personally and by lottery method of randomization 3 office bearers and 6 committee members from each selected APMCs were obtained as respondents for the present study.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Districts</th>
<th>Number &amp; Location of APMCs</th>
<th>Selected APMCs</th>
<th>Office Bearer Committee member</th>
<th>Villages Up to 5 km</th>
<th>5 to 10 km</th>
<th>APMC beneficiary farmers as respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dang</td>
<td>Ta 1</td>
<td>3 6</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NTa 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Valsad</td>
<td>Ta 4</td>
<td>1</td>
<td>3 6</td>
<td>1</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NTa 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Navsari</td>
<td>Ta 3</td>
<td>1</td>
<td>3 6</td>
<td>1</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NTa 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Tapi</td>
<td>Ta 5</td>
<td>1</td>
<td>3 6</td>
<td>1</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NTa 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Surat</td>
<td>Ta 4</td>
<td>2</td>
<td>3 6</td>
<td>1</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NTa 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Narmada</td>
<td>Ta 4</td>
<td>1</td>
<td>3 6</td>
<td>1</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NTa 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Bharuch</td>
<td>Ta 2</td>
<td>1</td>
<td>3 6</td>
<td>1</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NTa 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>33 8</td>
<td>24 48</td>
<td></td>
<td>8</td>
<td>8</td>
<td>160</td>
</tr>
</tbody>
</table>

Finally, in all 160 beneficiary farmers, 24 office bearers and 48 committee members as respondents were obtained for the study.

4.5 VARIABLES UNDER STUDY AND THEIR MEASUREMENTS

4.5.1 Selection of variables

The most relevant variables were scrutinized from the different research reviews and were presented before the Student Advisory Committee as well as to the Board of Studies for Social Sciences.
Fig. 4: Map of South Gujarat showing location of selected APMCs and villages
After rigorous discussion, three dependent and nineteen independent variables were finalized for the present study for the APMC farmers, while out of nineteen independent variables, only five were finalized for the office bearers and committee members in order to avoid the biased responses from them due to their direct involved in the management of respective APMC activities. The appropriate empirical measuring techniques/scales developed by eminent educationist for independent variables were also resorted from the research reviews. However, it was observed that for some variables the measuring techniques were not scientifically developed and for them the structured schedules were developed with the assistance of experts. A detailed description of the variables selected for the study along with their empirical measurement has been presented in table 2.

**Table 2 : Variables and their measurement**

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Variables</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Independent variables</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Age</td>
<td>Chronological age in completed years</td>
</tr>
<tr>
<td>2</td>
<td>Education</td>
<td>Scale developed by Pandya (2010)</td>
</tr>
<tr>
<td>3</td>
<td>Land holding</td>
<td>Scale developed by Pandya (2010)</td>
</tr>
<tr>
<td>4</td>
<td>Farming experience</td>
<td>Scale developed by Silvakumar (1988)</td>
</tr>
<tr>
<td>5</td>
<td>Distance from market</td>
<td>Structure schedule was developed</td>
</tr>
<tr>
<td>6</td>
<td>Annual income</td>
<td>Scale developed by Pandya (2010)</td>
</tr>
<tr>
<td>7</td>
<td>Social participation</td>
<td>Scale developed by Pandya (2010)</td>
</tr>
<tr>
<td>8</td>
<td>Extension contact</td>
<td>Structure schedule was developed</td>
</tr>
<tr>
<td>9</td>
<td>Source of information on marketing</td>
<td>Structure schedule was developed</td>
</tr>
<tr>
<td>10</td>
<td>Training received</td>
<td>Structure schedule was developed</td>
</tr>
<tr>
<td>11</td>
<td>Cropping pattern</td>
<td>Structure schedule was developed</td>
</tr>
<tr>
<td>12</td>
<td>Cropping intensity</td>
<td>Structure schedule was developed</td>
</tr>
<tr>
<td>13</td>
<td>Marketable surplus</td>
<td>Structure schedule was developed</td>
</tr>
<tr>
<td>14</td>
<td>Marketed surplus</td>
<td>Structure schedule was developed</td>
</tr>
<tr>
<td>15</td>
<td>Knowledge about the statutory activities of APMC</td>
<td>Structure schedule was developed</td>
</tr>
<tr>
<td>16</td>
<td>Economic orientation</td>
<td>Scale developed by Supe (1969)</td>
</tr>
<tr>
<td>17</td>
<td>Scientific orientation</td>
<td>Scale developed by Supe (1969)</td>
</tr>
<tr>
<td>18</td>
<td>Risk orientation</td>
<td>Scale developed by Supe (1969)</td>
</tr>
<tr>
<td>19</td>
<td>Group cohesiveness</td>
<td>Structure schedule was developed</td>
</tr>
<tr>
<td></td>
<td><strong>Dependent variables</strong></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Role perception about market-led-extension</td>
<td>Teacher made scale was used</td>
</tr>
<tr>
<td>21</td>
<td>Managerial ability for market-led-extension</td>
<td>Teacher made scale was used</td>
</tr>
<tr>
<td>22</td>
<td>Marketing behaviour towards market-led-extension</td>
<td>Scale was developed</td>
</tr>
</tbody>
</table>
4.5.2 Measurement of variables

4.5.2.1 Independent variables

4.5.2.1.1 Age

The age was operationalised as the number of completed years by the respondents at the time of interview and was ascertained with the help of direct questioning and the data were categorized into three groups as follows. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Age groups</th>
<th>Class range</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Young age</td>
<td>Up to 36</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Middle age</td>
<td>37 to 51</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Old age</td>
<td>Above 51</td>
<td>3</td>
</tr>
</tbody>
</table>

4.5.2.1.2 Education

Education was operationalised as formal education received by the respondents. The data in this regard were collected and score were assigned as suggested by the SES scale developed by Pandya (2010) with due modification. The information collected was grouped into three categories as shown below. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of education</th>
<th>Class range</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Primary education</td>
<td>Up to 7th std.</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Secondary education</td>
<td>8th to 12th std.</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>College and above education</td>
<td>Graduation/Post graduation</td>
<td>3</td>
</tr>
</tbody>
</table>

4.5.2.1.3 Land holding

This variable was operationalised as the number of acre of land possessed and used by the farmers for their livelihood. It is an important variable which helps to determine the economic as well as the social status of an individual. The land holding was measured with the SES scale developed by Pandya (2010) with some modifications. Information about total number of land owned by the farmers was classified into three categories. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of land holding</th>
<th>Class range</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Small land holding</td>
<td>Up to 2.00 acre</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Medium land holding</td>
<td>2.01 to 5.00 acre</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Big land holding</td>
<td>Above 5.00 acre</td>
<td>3</td>
</tr>
</tbody>
</table>
4.5.2.1.4 Experience

Farming as well as working experience refers as the years spent in farming as well as its related enterprise by the farmers, while for committee members and office bearers the experience of working with APMC was considered. The data in this regards was collected and scores were assigned as suggested by the scale developed by the Silvakumar (1988) with some modifications. The one score given for every year and was summed up for individual. By using mean and standard deviation they were grouped in to three categories. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of experience</th>
<th>Class range (farmers)</th>
<th>Class range (CM &amp; OB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower level of experience</td>
<td>Up to 14 years</td>
<td>Up to 5 years</td>
</tr>
<tr>
<td>2</td>
<td>Medium level of experience</td>
<td>15 to 27 years</td>
<td>6 to 20 years</td>
</tr>
<tr>
<td>3</td>
<td>Higher level of experience</td>
<td>Above 27 years</td>
<td>Above 20 years</td>
</tr>
</tbody>
</table>

4.5.2.1.5 Distance from market

Distance of marketing place is one of the importance variables of the present study. In general, it refers as physical distance between the farm / residence of the respondents and the place of market yard. The distance denotes with kilometers. One score was given to every kilometer and was summed up for each individual. Lastly on this they were grouped into three categories by using mean and standard deviation. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Categories of distance from market</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Short distance</td>
<td>Up to 5 km</td>
</tr>
<tr>
<td>2</td>
<td>Moderate distance</td>
<td>6 to 11 km</td>
</tr>
<tr>
<td>3</td>
<td>Faraway distance</td>
<td>Above 11 km</td>
</tr>
</tbody>
</table>

4.5.2.1.6 Annual income

Annual income includes quantum of money earned during the year from the on and off farm sources by the members of respondent's family. It is believed that a sound economic position can help in multipurpose activities for development of family / society. The data in this regard were collected and score assigned as suggested by the SES scale developed by Pandya (2010) with due modification. According to level of total annual income of members as family, they grouped into three categories. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.
### Social participation

Several researches noted that social participation has certain influence on the behaviour of farmers. It is the voluntary sharing in person to group and group to group relationships beyond the immediate household. It was also interpreted by including both formal and informal group activities. The data in this regard were collected and score were assigned as suggested by the SES scale developed by Pandya (2010) with due modification. The frequency on each category applicable to the respondents was summed up and converted in to percentage. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Categories of social participation</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No membership / participation</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Membership in one organization</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Membership in more than one organization</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Holding position in an organization</td>
<td>3</td>
</tr>
</tbody>
</table>

### Extension contact

It refers to the frequency of visits for improving their knowledge about farming. A structure schedule was developed. The responses were measured on three point continuum, were frequently, occasionally and never with the score 3, 2 and 1. The collected data were separated on the score obtained by an individual and grouped in to three categories by using mean and standard deviation. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Categories of extension contact</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower extension contact</td>
<td>Up to 8 score</td>
</tr>
<tr>
<td>2</td>
<td>Moderate extension contact</td>
<td>9 to 11 score</td>
</tr>
<tr>
<td>3</td>
<td>Higher extension contact</td>
<td>Above 11 score</td>
</tr>
</tbody>
</table>

### Sources of information

The source of information is an important component for marketing the agricultural produces. In time, right and factual information helps the farmer to take decision to sell his produce. APMC farmers are using different types of sources of information. The responses were measured on three point continuum were regular, occasionally and never with the score 3, 2 and 1 were assigned. The collected data were separated on the score obtained by an individual and grouped in to three
categories by using mean and standard deviation. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of sources of information</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hardly assess the information</td>
<td>Up to 11 score</td>
</tr>
<tr>
<td>2</td>
<td>Frequently assess the information</td>
<td>12 to 13 score</td>
</tr>
<tr>
<td>3</td>
<td>Regularly assess the information</td>
<td>Above 13 score</td>
</tr>
</tbody>
</table>

4.5.2.1.10 Training received

Training organized to enhance the inbuilt abilities of an individual on decided aspect which may helps to change the behaviour of an individual. It means, by availing a training the change can be brought in one’s knowledge, skill, attitude, understanding which helps to enhance the capabilities. The information in regards was collected through structure schedule. One score assigned to each individual for availing training in the field of agriculture, horticulture or animal husbandry and 2 score given for the training regarding marketing, storage and value addition while, for those who were not having any type of training were scored with zero.

The collected data were separated according to the score obtained by an individual and grouped in to three categories by using mean and standard deviation. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of training received</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Training not received</td>
<td>0 score</td>
</tr>
<tr>
<td>2</td>
<td>Insufficient training received</td>
<td>1 to 3 score</td>
</tr>
<tr>
<td>3</td>
<td>Sufficient training received</td>
<td>Above 3 score</td>
</tr>
</tbody>
</table>

4.5.2.1.11 Cropping pattern

It refers to the yearly sequence and special arrangements of crops and fallow on a given area by the farmer. It means, the proportion of area under various crops at a point of time in a unit area. In other words, it denotes the crops grown by the respondents in kharif, rabi and summer season as well as annual and perennial crops. A schedule was developed to collect the information in regards and for each crop grown in the cultivable land in a season 1 score assigned, 2 score was given for each annual crop and 3 score was given for each perennial crop grown by them.

The collected data were separated on the score obtained by an individual and grouped in to three categories by using mean and standard deviation. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.
### Categories of cropping pattern

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Categories of cropping pattern</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Good cropping pattern</td>
<td>Up to 3 score</td>
</tr>
<tr>
<td>2</td>
<td>Better cropping pattern</td>
<td>4 to 7 score</td>
</tr>
<tr>
<td>3</td>
<td>Best cropping pattern</td>
<td>Above 7 score</td>
</tr>
</tbody>
</table>

#### 4.5.2.12 Cropping intensity

The cropping intensity referred as the ratio of Net Area Sown to the Total Cropped Area. It was measured in percentage. The responses in this regards were collected through the structured schedule and the scores were assigned on the percentage of cropping intensity of respective respondents. One score assigned to those who had covered their cultivable land up to 25%, followed by 2 score for 26 to 50%, 3 for 51 to 75%, 4 for 76 to 100%, 5 for 101 to 125%, 6 for 126 to 150%, 7 for 151 to 175%, 8 for 176 to 200%, 9 for 201 to 225%, 10 for 226 to 250, 11 for 251 to 275% and 12 for 276 to 300%.

The collected data were separated on the score obtained by an individual and grouped in to three categories by using mean and standard deviation. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.

#### 4.5.2.13 Marketable surplus

The quantity of the produce of the total which was made available to others by the respondent after meeting requirements of his family consumption, farm needs as seeds, feed for cattle, payment to labour, artisans, landlord and for arranging the social, religious activities. In the present study, this variable was considered only for cereal, oilseeds and pulse crops grown by the respondent. This variable was quantified in percentage. The responses in this regards were collected and on the basis of percentage they were categorized in four groups viz; those who had marketable surplus up to 25% as category-I, followed by category-II 26 to 50%, category-III 51 to 75 % and category-IV above 75%.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Categories of marketable surplus</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Category I</td>
<td>up to 25%</td>
</tr>
<tr>
<td>2</td>
<td>Category II</td>
<td>26 to 50%</td>
</tr>
<tr>
<td>3</td>
<td>Category III</td>
<td>51 to 75%</td>
</tr>
<tr>
<td>4</td>
<td>Category IV</td>
<td>above 75%</td>
</tr>
</tbody>
</table>
4.5.2.14 Marketed surplus

It is that quantity of the produce was actually sold out by the respondent in the market, irrespective of his family requirements for consumption, farm needs as seeds, feed for cattle and payment to others. Considering the unavoidable needs of the family the quantity of produce sold out by the respondent from the total production of major crops. This variable was quantified in percentage. The responses in this regards were collected and on the basis of percentage categorized in four groups viz; those who had marketed surplus up to 25 % as category-I, followed by category-II 26 to 50 %, category-III 51 to 75 % and category-IV above 75 %.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Categories of marketed surplus</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Category I</td>
<td>up to 25%</td>
</tr>
<tr>
<td>2</td>
<td>Category II</td>
<td>26 to 50%</td>
</tr>
<tr>
<td>3</td>
<td>Category III</td>
<td>51 to 75%</td>
</tr>
<tr>
<td>4</td>
<td>Category IV</td>
<td>above 75%</td>
</tr>
</tbody>
</table>

4.5.2.15 Knowledge about the statutory activities of APMC

Knowledge is known as understood information possessed by an individual. In context of present study, it was operationally defined as the knowledge possessed by the respondents about statutory activities of APMCs and for that a schedule developed with a view to assess the knowledge of the available facilities or provide by APMC under the APMC Model Act, 2003. In all, 56 facilities were identified and bifurcated under three major heads viz., (i) provision of market facilities : trading facilities, ancillary trading facilities, administrative facilities, farmers’ facilities, common facilities, water and other facilities, parking and traffic facilities, garbage disposal and drainage system, (ii) publicity and communication and (iii) human resource development. The responses on each item of sub heads were gathered.

The response in the form of yes was scored 1 and zero as not known about the aspect. The collected data were separated on the score obtained by an individual and grouped in to three categories by using mean and standard deviation. Later on, category wise responses were weighted by score to find out the correlation with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of knowledge</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Poor level of knowledge</td>
<td>Up to 14 score</td>
</tr>
<tr>
<td>2</td>
<td>Adequate level of knowledge</td>
<td>15 to 25 score</td>
</tr>
<tr>
<td>3</td>
<td>Authoritative level of knowledge</td>
<td>Above 25 score</td>
</tr>
</tbody>
</table>
4.5.2.1.16 Economic orientation

Economic orientation is defined as occupational success in terms of profit maximization and the relative value of an individual placed on economic ends. The degree of an economic orientation of the respondents was measured with the scale developed by Supe (1969) with some modification. The scale consisted of six statements, out of which the two were negative and four were positive. The respondents’ responses were obtained against each statement in terms of their agreement or disagreement. The positive statements were scored 3, 2 and 1 for agree, undecided and disagree, respectively. Whereas, the scoring system was reverse in case of negative statements. For this variable, the maximum score was 18 and minimum was 6. The respondents were grouped into three categories based on mean and standard deviation as under. To find out the correlation with the dependent variables same score were used.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of economic orientation</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower economic orientation</td>
<td>Up to 15 score</td>
</tr>
<tr>
<td>2</td>
<td>Moderate economic orientation</td>
<td>16 to 17 score</td>
</tr>
<tr>
<td>3</td>
<td>Higher economic orientation</td>
<td>Above 17 score</td>
</tr>
</tbody>
</table>

4.5.2.1.17 Scientific orientation

Scientific orientation is characterised as a belief in science and scientific approach by an individual to solve their regular hindrance and it lead to adopt the innovation. For measuring the variable a scale developed by Supe (1969) was adopted with due modifications. Out of six statements of this scale second one was negative. The responses were measured on three point continuum were agree, undecided and disagree with the score 3, 2 and 1 for positive and was reverse in the case of negative statement. For the variable, the maximum score was 18 and minimum was 6. The farmers were grouped into three categories based on mean and standard deviation for scientific orientation as under. Later, same data were used to know the correlation with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of scientific orientation</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower scientific orientation</td>
<td>Up to 14 score</td>
</tr>
<tr>
<td>2</td>
<td>Moderate scientific orientation</td>
<td>15 to 17 score</td>
</tr>
<tr>
<td>3</td>
<td>Higher scientific orientation</td>
<td>Above 17 score</td>
</tr>
</tbody>
</table>

4.5.2.1.18 Risk Orientation

This variable was operationalised as the degree to which an individual is oriented towards risk and uncertainly and has courage to face the problems in his enterprise. A scale developed by Supe (1969) was used with some modifications.
scale contents six statements. The responses were measured on three point continuum were agree, undecided and disagree with the score 3, 2 and 1 for positive and was reverse in the case of negative statement. For the variable, the maximum score was 18 and minimum was 6. The scores were computed by summing up each response and categorized by using mean and standard deviation in to three categories. Later, the same data were used to find out the correlations with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of risk orientation</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower risk orientation</td>
<td>Up to 12 score</td>
</tr>
<tr>
<td>2</td>
<td>Moderate risk orientation</td>
<td>13 to 16 score</td>
</tr>
<tr>
<td>3</td>
<td>Higher risk orientation</td>
<td>Above 16 score</td>
</tr>
</tbody>
</table>

4.5.2.1.19 Group cohesiveness

Group cohesiveness can be defined as feeling and sense of belongingness developed by the members in a group. For measuring, a structured schedule was developed. The schedule of group cohesiveness consists of ten statements and respondents were asked to respond on three point continuum and for that 3, 2 and 1 score was given. The maximum possible score for this variable was 30 and minimum was 10. The scores were computed by summing up each response and categorized by using mean and standard deviation in to three categories. Later, the same data were used to find out the correlations with dependent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of group cohesiveness</th>
<th>Class range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lower group cohesiveness</td>
<td>Up to 28 score</td>
</tr>
<tr>
<td>2</td>
<td>Moderate group cohesiveness</td>
<td>29 to 30 score</td>
</tr>
<tr>
<td>3</td>
<td>Higher group cohesiveness</td>
<td>Above 30 score</td>
</tr>
</tbody>
</table>

4.5.2.2 Dependent variables

The role perception about market-led-extension, managerial ability for market-led-extension and marketing behaviour towards market-led-extension were incorporated as dependent variables for the present study.

4.5.2.2.1 Role perception about market-led-extension

The researcher made extensive review of literature, held interactions with the farmers, office bearers / staff of the APMC, extension personnel of the line department, academicians and extensionist, economist and market professionals of the NAU, Navsari and AAU, Anand to identify the critical roles of APMC in market-led-extension. As a result finally, 33 roles were identified. These roles were grouped into five heads namely; (i) service, (ii) advisory, (iii) market intelligence, (iv) facilitator and (v) organizer. The response against each item was scored 1 and for no response the zero score was given.
The collected data were separated on the scores obtained by an individual and grouped in to three categories by using mean and standard deviation. Later on, category wise responses were weighted by score to find out the correlation with independent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of role perception</th>
<th>Class range (farmers)</th>
<th>Class range (CM &amp; OB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lower level of role perception</td>
<td>Up to 11 score</td>
<td>Up to 17 score</td>
</tr>
<tr>
<td>2.</td>
<td>Moderate level of role perception</td>
<td>12 to 21 score</td>
<td>18 to 26 score</td>
</tr>
<tr>
<td>3.</td>
<td>Higher level of role perception</td>
<td>Above 21 score</td>
<td>Above 26 score</td>
</tr>
</tbody>
</table>

### 4.5.2.2.2 Managerial ability for market-led-extension

Managerial ability is a challenging job for any one, it requires certain abilities by individual to accomplish the objectives of enterprise. In the present study, managerial ability of respondents was considered as one’s knowledge and ability to use basic principle of management in the activities of farming and marketing. This was conceptualized on the bases of functions performed by the respondents while farming and marketing. Moreover, certain out line were resorted from the scale developed by the Chari (1985). Finally, a teacher made scale was specially developed for the present study with 28 components which were classified under 7 heads (planning, organizing, human relationship, supervision, communication, coordination and control). Every component has three options and was weighted on their importance as 3, 2 and 1. The responses of the respondents against each of them were summed up and grouped in to three categories by using mean and standard deviation. Later on, same scores were used to find out the correlation with independent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of managerial ability</th>
<th>Class range (farmers)</th>
<th>Class range (CM &amp; OB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Fair level of managerial ability</td>
<td>Up to 51 score</td>
<td>Up to 66 score</td>
</tr>
<tr>
<td>2.</td>
<td>Good level of managerial ability</td>
<td>52 to 65 score</td>
<td>67 to 79 score</td>
</tr>
<tr>
<td>3.</td>
<td>Better level of managerial ability</td>
<td>Above 65 score</td>
<td>Above 79 score</td>
</tr>
</tbody>
</table>

### 4.5.2.2.3 Marketing behaviour towards market-led-extension

Marketing behaviour is a broad economic term that refers to the behaviour of farm producer towards marketing. It is often analyzed and used to generate various marketing options aimed to get maximum returns of the produce. In general, it depends upon stock with the producer, type of market, prevailing market demand, future market demand, resources, planning and management of farm and resources.
The marketing behaviour was works with mental as well as physically. Under the mental activities the collection of information, acquiring knowledge about the market situation, making decisions about the crops to be grown, management of resources, crop production technologies to be used, selection of market for sale of farm produce while under physical activities the cultivation of crops, cleaning, grading, sorting, processing, packing, transporting, weighing of farm produce were considered. Considering the importance in context to present study the investigator has developed a scale on marketing behaviour by following steps.

### 4.5.2.2.3.1 Identification of Indicators for Marketing Behavior

All possible items which may probably contribute or affect or reflect the marketing behaviour were collected from the available literatures as well as from the experts as opinion. A list contains 20 key indicators that were identified and circulated among the 55 faculties of extension, agricultural economist and market professionals to seek its extent of appropriateness for the scale (Appendix-I).

The experts were asked to judge by putting tick mark in between 10 to 1 point continuum. The score was ranging from most important to least important. They were also requested to keep the three points in mind while judging against the key indicators; (i) indicator should contribute to economic condition of the farming community, (ii) indicator should measurable quantitatively through statement falling under particular key indicator and (iii) indicator should influence or otherwise indicate in varying degree of marketing behaviour.

Out of total 55, 50 experts replied with their due suggestions. These were compiled. The scores received on each indicator were summed up and on the proportion of each summed score to the maximum possible score was worked out to obtain weighted mean. Those indicators obtained mean score above the average mean value were chosen from the total. These way 10 key indicators were finalized for further procedure.

### 4.5.2.2.3.2 Identification of statements and analysis

For all identified key indicators, 10 statements each were developed by reviewing the literatures. Moreover, the opinions of faculties were also resorted. This way 100 statements were prepared. On the desk of investigator, the criteria suggested by Thurston and Chave (1929), Wong (1932), Likert (1932) and Edward and Kilpatrick (1948) were used for screening the statements. As a result of this process lastly 81 statements were obtained under 10 key indicators.
A schedule contains 81 statements with five continuums was prepared and to convert them in to the item for measuring the marketing behaviour, it was mailed to 125 experts working under different universities located in Gujarat, Maharashtra, Tamil Nadu and West Bengal. The experts were requested to rate each statement on five point continuum which ranging from most relevant, relevant, somewhat relevant, least relevant and not relevant and were scored with 5, 4, 3, 2 and 1 respectively. The relevancy score of each statement was ascertained by adding the score on rating scale for all the responses of 76 judges.

4.5.2.2.3.3 Relevancy test

In next stage, for relevancy test the relevancy score were calculated. For this purpose the Relevancy Percentage (RP), Relevancy Weightage (RW) and Mean Relevancy Scores (MRS) were worked out for all the 81 statements. In relevancy test the judges response obtained on each continuum were taken in to consideration where, Most Relevant Responses denoted as MRR, Relevant Responses as RR, Moderately Relevant Responses as MdRR, Less Relevant Responses as LRR and Not Relevant Responses as NRR.

4.5.2.2.3.3.1 Relevancy Percentage

Relevancy percentage was worked out by summing up the scores of all categories of appropriateness, which were then converted into percentage. The relevancy percentage (RP) was calculated by the below given formula.

\[
RP = \frac{\text{MRR} \times 5 + \text{RR} \times 4 + \text{MdRR} \times 3 + \text{LRR} \times 2 + \text{NRR} \times 1}{380} \times 100
\]

4.5.2.2.3.3.2 Relevancy Weightage

\[
\text{RW} = \frac{\text{MRR} \times 5 + \text{RR} \times 4 + \text{MdRR} \times 3 + \text{LRR} \times 2 + \text{NRR} \times 1}{380} \quad \text{(i.e. maximum possible score 76 X 5)}
\]

4.5.2.2.3.3.3 Mean Relevancy Score

\[
\text{MRS} = \frac{\text{MRR} \times 5 + \text{RR} \times 4 + \text{MdRR} \times 3 + \text{LRR} \times 2 + \text{NRR} \times 1}{\text{Number of judges (i.e. 76)}}
\]

Through this analysis the statements having > 70 RP, > 0.70 RW and > 3.5 MRS were considered as final statements (item) for present study. By this process, 64 statements were obtained in the first stage. Meaningful corrections for statements as suggested by the judges also were incorporated and finalized the same as item (Appendix - II).
4.5.2.2.3 Calculation of ‘t’ values

The paired ‘t’ test was used as determinant for statements to obtain the items for the present study. These statements were subjected to item analysis to delineate the items based on the extent to which they can differentiate the farmers’ holds excellent marketing behaviour than poor marketing behaviour. For this, 40 farmers were selected from non sample area of present study. The farmers were asked to indicate their degree of agreement or disagreement with each statement on the five point continuum. The 5 score was given to strongly agree response, 4 to agree response, 3 to undecided and 2 to disagree, 1 to strongly disagree response for positive statement and for negative statement the scoring pattern was reversed. Based on the total scores, the farmers were arranged in descending order. The top 25 per cent of the farmers with their total scores were considered as the high group and the bottom 25 per cent as the low group, so as these two groups considered as criterion groups in terms of evaluating the individual statements as suggested by (Edward, 1969). Thus out of 40 farmers to whom the items were administered for the item analysis, 10 farmers with highest, 10 with lowest scores were used as criterion groups to evaluate individual items. The critical ratio, that is the ‘t’ value which is a measure of the extent to which a given statement differentiates between the high and low groups of the farmers and for each statements was calculated by using the formula suggested by (Edward, 1969).

\[
t = \frac{X_H - X_L}{\sqrt{\frac{\sum (X_H - X_H)^2 + (X_L - X_L)^2}{n(n-1)}}}
\]

Where:
- \(X_H\) = The mean score on given statement of the high group
- \(X_L\) = The mean score on given statement of the low group
- \(\sum X_H^2\) = Sum of squares of the individual score on a given statement for high group
- \(\sum X_L^2\) = Sum of squares of the individual score on a given statement for low group
- \(\sum X_H\) = Summation of scores on given statement for high group
- \(\sum X_L\) = Summation of scores on given statement for low group
- \(n\) = Number of respondents in each group
- \(t\) = Extent to which a given statement differentiate between the high and low group.
After computing ‘t’ value for all the statements, 39 items with highest ‘t’ value equal to or greater than 2.025 were finally selected and included as a tool (scale) to measure the marketing behaviour of the respondents (Appendix - III).

4.5.2.3.5 Standardization of the scale:

The validity and reliability was ascertained to standardize the scale.

4.5.2.3.5.1 Reliability of the scale

The final set of the 39 items, which represent the marketing behaviour of farmers was administrated on five-point continuum to a fresh group of 30 farmers which were not included in sample area as well as not included in the actual sample. After a period of 15 days the scale was again administered to the same farmers and thus two sets of scores were obtained. The correlation coefficient for the both the sets were worked out. The ‘r’ value (0.796) was highly significant at 0.01 level of probability indicating the marketing behaviour scale was highly suitable for administration to the farmers as the scale was stable and dependable in its measurement. Co-efficient of reliability between these two sets of score was calculated by Rulon’s formula (Guilford 1959).

\[ rtt = 1 - \frac{\sigma^2_d}{\sigma^2_t} \]

Where,
- \[ rtt \] = Coefficient of reliability
- \[ \sigma^2_d \] = Variance of those differences
- \[ \sigma^2_t \] = Variance of the total scores

4.5.2.3.5.2 Validity of the scale

The content validity of the scale was also tested. The content validity is the representative or sampling adequacy of the content, the substance, the matter and the topics of a measuring instrument. This method was used in the present scale to determine the content validity of the scale. As the content of the marketing behaviour was thoroughly covered the entire farming and marketing through literature and expert opinion, it was assumed that present scale satisfies the content validity. As the scale value difference for almost all the statements included had a very high discriminating value, it seemed reasonable to accept the scale as a valid measure of the marketing behaviour. Thus, the process applied to validate the scale ensuring a fair degree of content validity.
4.5.2.3.6 Administering the scale

In context of present study, marketing behaviour was operationally defined as all the mental activities like information collection, gaining knowledge about the market situation, making decisions about the crops to be grown, management of resources, crop production technologies to be used, selection of market for sale of farm produce as well as, physical activities like cultivation of crops and cleaning, grading, sorting, processing, packing, transporting, weighing of farm produce, performed by the farmers. The scale developed on marketing behaviour was administered on the selected respondents.

The respondents were asked to express their reaction in terms of their agreement or disagreement with each item by selecting one of three response categories. The total marketing behaviour score for each respondent was obtained by adding all the scores of their responses of all the statements and on the basis of mean and standard deviation the respondents were grouped into three categories. Later on, same score were used to find out the correlation with independent variables.

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Level of marketing behaviour</th>
<th>Class range (farmers)</th>
<th>Class range (CM &amp; OB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fair marketing behaviour</td>
<td>Up to 89 score</td>
<td>Up to 108 score</td>
</tr>
<tr>
<td>2</td>
<td>Good marketing behaviour</td>
<td>90 to 106 score</td>
<td>109 to 115 score</td>
</tr>
<tr>
<td>3</td>
<td>Better marketing behaviour</td>
<td>Above 106 score</td>
<td>Above 115 score</td>
</tr>
</tbody>
</table>

4.5.3 Relationship between independent and dependent variables

The variable word explicates its nature about varying behaviour. It was observed from the past researches that an individual is behaving differently in different situation and place. Considering this view in mind, the attempt was made to find out the relationship between selected independent and dependent variables. The relationship was worked out by using the correlation co-efficient ($r$).

4.5.4 Measurement of factors influencing marketing behaviour

The respondents were asked to mention the factors they believe / experienced while the marketing their farm produces. The opinions about their factors influencing were summed up and converted into frequency and percentages. Lastly, the rank was given to each factor by putting them in descending order.

4.5.5 Measurement of suggestions

Considering the factors influencing in marketing behaviour of the respondents, they were also asked to give their valuable suggestion to overcome. These responses were summed up and converted into frequency and percentages and lastly the rank was given to each suggestion by putting them in descending order.
4.5.6 Development of strategy

The developmental activity has been initiated by starting different programmes, projects and schemes by the Government. Somehow, it was observed that it is followed with blanket approach or top down approach but not executed according to location. Considering this as a limiting factor for agricultural development, the various extension educationists have suggested to use situation based extension with participatory approach to develop a suitable strategy for working out the development activities in meaningful way. First of all, the major influencing factors and opted suggestions from the respondents were collected. In this regards, the opinions of experts of concern field were also obtained separately. To develop situation based extension strategies a triangulation method was used. The outcomes were presented in the chapter five in form of table to make it more useful to the farmers and those engaged with agriculture marketing to overcome the factors.

4.6 TOOLS AND TECHNIQUES OF DATA COLLECTION

Teacher made scale was utilized to measure the perception about role of APMC in market-led-extension and managerial ability of beneficiaries, committee members and office bearers, while a scale was developed to measure the marketing behavior of all types of respondents covered under the study. Keeping the objectives of the study in mind, a structured interview schedule was prepared by the investigator. All the parts of schedule were prepared with the due consultation with the experts of extension education, agricultural economics, agricultural marketing and members of student advisory committee. Personal interview means face-to-face method was used to collect the data from the all types of respondents.

4.6.1 Construction and pre-testing of interview schedule

A well questionnaire and structured interview schedules consisting relevant statements / questions related with the specific objectives of the study were prepared. Every precaution was taken to keep the language simple, so as to get desired responses from the respondents. Then the schedule was divided in to six parts and converted in to local language, Gujarati for better understanding of the respondents. The first part contained questions related to personal, socio-economic, psychological, situational and communicational variables. The second part related to knowledge about activities of APMC, third part about role perception of APMC in market-led-extension, fourth part was of managerial ability, fifth part was of marketing behavior and sixth part as factors influencing in marketing and suggestions of the respondents were sought out.
The interview schedule so developed was pretested for its accuracy, simplicity and practicability with a group of 30 farmers in 3 villages of Navsari district. Considering the experience of pre-testing, related questions were put together to have consistency in response. The language of few questions / statements were modified for easiness in understanding and elicitation of accurate response. Sufficient number of copies of interview schedule were then prepared and used for collection of data.

4.6.2 Tools of data collection and field procedures

After finalizing the research design and interview schedule, the data were collected by using the personal interview method. To achieve the defined objectives, the field survey method was adopted. Before the interview, the investigator had introduced him to the respondents and explained the purpose/objectives of the study. Respondents were interviewed at their home and at their farms. To avoid misunderstanding, a friendly atmosphere was created. The data collection was done during Jan. to April, 2015. To make a fruitful research, the casual observations, their verbal expressions and their symbolic responses were also recorded.

The secondary data and other relevant information related to the study were gathered from the reference books, bulletins, reports and periodicals, journals, papers presented by different authors in seminar, workshop etc. and post-graduate thesis relevant to the study.

4.7 STATISTICAL FRAMEWORK USED FOR ANALYSIS OF THE DATA

The responses obtained for each of the items in the interview schedule were scored and tabulated into a master sheet. The statistical parameters included were frequency, percentage, rank, mean, standard deviation and co-efficient of correlation. The following statistical methods were used.

4.7.1 Frequency (f)
Number of times a variety value is repeated is called frequency.

4.7.2 Percentage (%)
A proportion in context to hundred.

4.7.3 Rank
An order according to some statistical characteristics.

4.7.4 Mean score
Mean score was calculated for assigning the ranks. The mean score was obtained by total scores of an item divided by the total number of respondents.
**4.7.5 Median**

Median was worked out for obtained score.

**4.7.6 Standard deviation (Sd)**

This was obtained by the square root of the average of the squared deviation from mean.

\[
Sd. = \sqrt{\frac{\sum_{i=1}^{n} (x_i - \bar{X})^2}{n - 1}}
\]

Where,
- Sd. = Standard deviation
- \(\sum\) = Summation
- \(x_i\) = Individual score
- \(\bar{X}\) = Mean
- \(n\) = Total number of respondents

**4.7.7 Correlation coefficient (r)**

Association between dependent and in-dependent variables either positively or negatively was known as correlation of coefficient. The formula of Correlation coefficient is as under.

\[
r = \frac{\sum XY}{\sqrt{(\sum x^2)(\sum y^2)}}
\]

Where,
- \(\sum XY\) = \((X-\bar{X})(Y-\bar{Y})\), sum of the product of deviation of X and y from their mean
- \(\sum X^2\) = \((X-\bar{X})^2\), sum of square of the deviation from the mean
- \(\sum Y^2\) = \((Y-\bar{Y})^2\), sum of squares of the deviation from the mean

**4.7.8 Calculate t value**

\[
t = \frac{X_1 - X_2}{S \sqrt{S_p^2 (1/n_1^2 + 1/n_2^2)}}
\]

at \(n_1 + n_2 - 2\) df

Where,
- \(X_1\) = mean of first sample
- \(n_1\) = number of observations in first sample
- \(X_2\) = mean of second sample
- \(n_2\) = number of observations in second sample
- \(S^2\) = the pooled mean square from the two samples
CHAPTER – V
RESULTS AND DISCUSSION

This chapter deals with the analysis, presentation, discussion and interpretation of the collected data. The information pertinent to this study was collected through personal interview with the help of questionnaire and structured schedules from the respondents. In the light of objectives, the findings of study are presented in the following heads.

5.1 Profile of the respondents
5.2 Role perception about market-led-extension
5.3 Managerial ability for market-led-extension
5.4 Marketing behaviour towards market-led-extension
5.5 Association between profiles with role perception about market-led-extension, managerial ability for market-led-extension and marketing behaviour towards market-led-extension
5.6 Factors influencing in marketing behaviour and their suggestions for market-led-extension
5.7 Location specific and research based extension strategies

5.1 PROFILE OF THE RESPONDENTS

5.1.1 Age

In human, a stage of physical development is characterized by specific regularities of formation of morpho-physiological trait is called age. It is also described as a stage in the biological maturing of an individual in society. In present investigation age refers as the number of years completed by respondents at the time of collection of information for study. The collected data were grouped into three categories viz., (i) young age (up to 36 years), (ii) middle age (37 to 51 years) and (iii) old age (above 51 years). The data about the age are presented in table 3 and fig. 5.

Table 3: Distribution of respondents according to their age

<table>
<thead>
<tr>
<th>Age groups</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs (100.00)</td>
<td>OBs (100.00)</td>
</tr>
<tr>
<td>Young</td>
<td>0 (0.00)</td>
<td>5 (20.83)</td>
<td>2 (16.67)</td>
</tr>
<tr>
<td>Middle</td>
<td>38 (47.50)</td>
<td>19 (79.17)</td>
<td>8 (66.66)</td>
</tr>
<tr>
<td>Old</td>
<td>42 (52.50)</td>
<td>0 (0.00)</td>
<td>2 (16.67)</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>24 (100.00)</td>
<td>12 (100.00)</td>
</tr>
<tr>
<td>Mean</td>
<td>50.91</td>
<td>49.58</td>
<td>47.69</td>
</tr>
<tr>
<td>'t' value</td>
<td>2.4657*</td>
<td>-0.5447</td>
<td></td>
</tr>
</tbody>
</table>
It is clear from the table 3 that more than half (52.50 per cent) of the APMC farmers of non-tribal area belonged to old age group followed by 47.50 per cent belonged to middle age and none were in young age groups. While in case of APMC farmers of tribal area, majority (58.75 per cent) of them were from the middle age group followed by 33.75 and 7.50 per cent belonged to old and young age groups respectively.

The mean value of age of the APMC farmers of the non-tribal area was 50.91 years and 47.69 years of tribal area. The calculated 't' value (2.4657*) was found significant which infers that the farmers from non-tribal area were elder than those in tribal area. This might be due to interest among the middle aged generation and old age farmers might have enough competence and interest in the agriculture.

However, majority (79.17 per cent) of the committee members of APMCs of non-tribal area belonged to middle age group followed by 20.83 per cent belonged to young age and none were in old age group. While in APMCs of tribal area, majority (75.00 per cent) of committee members belonged to middle age group followed by 12.50 per cent each found in old and young age group.

In case of office bearers, majority (66.66 per cent) of them from APMCs of non-tribal area belonged to middle age group followed by 16.67 per cent each found in old and young age groups whereas, majority (66.67 per cent) of them belonged to APMCs of tribal area found in middle age group followed by 25.00 and 8.33 per cent were in young and old age group respectively.

In general, majority (59.48 per cent) of the APMC respondents found in middle age group followed by 32.33 and 8.19 per cent of them were in old and young age group respectively.

This finding has been supported by findings of Amita et al. (2015), De et al. (2014), Kanat et al. (2012), Lahoti and Chole (2010) and Pawar (2009).

5.1.2 Education

Education becomes a pre-requisite in the present era, and without education, one may face difficulties in their routine works. The information collected regarding formal education availed by the respondents were classified into three categories viz; (i) primary education (up to 7th standard), (ii) secondary education (8th
to 12th standard) and (iii) college and above level of education (graduation or post graduation). The data collected about educational level of respondents are presented in table 4 and fig.6.

Table 4: Distribution of respondents according to their level of education (n=232)

<table>
<thead>
<tr>
<th>Level of education</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Primary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>14 (17.50)</td>
<td>0 (0.00)</td>
<td>0 (0.00)</td>
</tr>
<tr>
<td>Secondary</td>
<td>48 (60.00)</td>
<td>15 (62.50)</td>
<td>2 (16.67)</td>
</tr>
<tr>
<td>College and above</td>
<td>18 (22.50)</td>
<td>9 (37.50)</td>
<td>10 (83.33)</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>24 (100.00)</td>
<td>12 (100.00)</td>
</tr>
<tr>
<td>Mean</td>
<td>2.09</td>
<td>2.56</td>
<td>1.64</td>
</tr>
<tr>
<td>'t' value</td>
<td>3.2908**</td>
<td>2.8592**</td>
<td></td>
</tr>
</tbody>
</table>

It is clear from the table 4 that majority (60.00 per cent) of the APMC farmers of non-tribal area had secondary level of education followed by 22.50 and 17.50 per cent had college and above and primary level of education respectively. While in case of APMCs of tribal area, about half (47.50 per cent) of the farmers had primary level of education followed by 36.25 and 16.25 per cent had secondary and college and above level of education respectively.

The mean score of the educational level of APMC farmers of non-tribal area was 2.09 and 1.64 was of tribal area. The calculated 't' value (3.2908**) was highly significant which indicates that the educational level was quite different in both the groups. Thus, it is evident that the APMC farmers of non-tribal area had fairly higher educational level than the farmers of tribal areas. The difference in the educational level of the farmers might be due to difference in the availability of educational facilities and socio-economic conditions of the farmers.

In case of APMC committee members, majority (62.50 per cent) of them of non-tribal area had secondary level followed by 37.50 per cent had college and above level of education and none had primary level of education. While in tribal area, majority (62.50 per cent) of them had secondary level of education followed by 29.17 and 8.33 per cent had primary and college and above level of education respectively.

Among APMC office bearers, majority (83.33 per cent) of them of non-tribal area had education of college and above and 16.67 per cent had secondary level of education, while from tribal area majority (66.67 per cent) of them had
education of college and above level and 33.33 per cent had secondary level of education. However, none of office bearers of both the area found in primary level of education category.

The mean score of the educational level of APMC committee members and office bearer of the non-tribal area was 2.56 and 2.11 was of tribal area. The calculated 't' value (2.8592**) was highly significant. It indicates that there was significant difference in the educational level among the APMC committee members and office bearer of tribal and non-tribal areas. It is thus, evident that the committee members and office bearer from the non-tribal area had fairly higher educational level than it was from tribal area. The difference in the educational level of the APMC committee members and office bearer of tribal and non-tribal areas might be due to difference in the availability of educational facilities and socio-economic conditions of the respondents from respective regions.

The pooled data shows that almost half (48.71 per cent) of the APMC respondents of both the area found in the category of secondary level followed by 25.86 and 25.43 per cent of them were in college and above level and primary level of educational categories respectively.

The finding is in concurrence with the findings reported by Jamadar et al. (2015), Muhammad et al. (2014), Roy et al. (2013) Lahoti and Chole (2010), Salunkhe (2009) and Nirban (2004).

5.1.3 Land holding

Land is an important element in agriculture and land holding determines an individual’s status in ones social periphery. It is observed that an adoption of agriculture practice in farming has been largely depending on size of land holding. This variable referred to the total area owned by the farmers at the time of interview. To confirm this, relevant information was collected through interview schedule from the farmers and grouped into three categories viz., (i) small land holding (group up to 2.00 acre) (ii) medium land holding (2.01 to 5.00 acre) and (iii) big land holding (above 5 acre). The collected data are categorised accordingly and shown in table 5 and in fig 7.

It is evident from table 5 that majority (53.75 per cent) of the farmers of APMCs of non-tribal area belonged to big level of land holding followed by 40.00 and 6.25 per cent belonged to medium and small level of land holding respectively. On the other side, majority (60.00 per cent) of the APMC farmers of tribal area belonged to medium level of land holding followed by 30.00 and 10.00 per cent belonged to small and big level of land holding respectively.
Fig. 5: Distribution of respondents according to their age

Fig. 6: Distribution of respondents according to their level of education

Fig. 7: Distribution of respondents according to their land holding
Table 5: Distribution of respondents according to their land holding (n=160)

<table>
<thead>
<tr>
<th>Land holding</th>
<th>APMC of Non-Tribal area Farmers</th>
<th>CMs</th>
<th>OBs</th>
<th>APMC of Tribal area Farmers</th>
<th>CMs</th>
<th>OBs</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>5 (6.25)</td>
<td>-</td>
<td>-</td>
<td>24 (30.00)</td>
<td>-</td>
<td>-</td>
<td>29 (18.13)</td>
</tr>
<tr>
<td>Medium</td>
<td>32 (40.00)</td>
<td>-</td>
<td>-</td>
<td>48 (60.00)</td>
<td>-</td>
<td>-</td>
<td>80 (50.00)</td>
</tr>
<tr>
<td>Big</td>
<td>43 (53.75)</td>
<td>-</td>
<td>-</td>
<td>8 (10.00)</td>
<td>-</td>
<td>-</td>
<td>51 (31.87)</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>-</td>
<td>-</td>
<td>80 (100.00)</td>
<td>-</td>
<td>-</td>
<td>160 (100.00)</td>
</tr>
<tr>
<td>Mean</td>
<td>7.48</td>
<td>-</td>
<td>-</td>
<td>3.76</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>'t' value</td>
<td>5.2209**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The mean value of land holding of the APMC farmers of non-tribal area was 7.48 acres and 3.76 acres was of tribal area. The calculated 't' value (5.2209**) between the APMC farmers of non-tribal and tribal area was found highly significant. This might be due to the family system and economic condition of the farmers of the respective area.

The pooled data shows that the half (50.00 per cent) of the farmers had medium followed by 31.87 and 18.13 per cent of them had big and small size of land holding respectively.

The present finding is supported by research reported by Amita et al. (2015), De et al. (2014), Rathod et al. (2011), Pawar (2009), Kachhiapatel (2007) and Naik (2006).

5.1.4 Experience

5.1.4.1 Farming experience

Several studies indicated that experience of an enterprise plays significant role in decision making process. This develops an ability of individuals to face varied situations while executing the agriculture / marketing practices. Information in regards was collected from farmers and grouped into three categories viz., (i) lower level of farming experience (group up to 14 years), (ii) medium level of farming experience (15 to 27 years) and (iii) higher level farming experience (above 27 years). The data in this regards are presented in table 6 and fig.8.

The data in table 6 revealed that majority (72.50 per cent) of the APMC farmers of non-tribal area had medium level of farming experience followed by 13.75 per cent each had higher and lower level of farming experience. Whereas majority (63.75 per cent) of the farmers APMC of tribal area had medium level of farming experience followed by 25.00 and 11.25 per cent of them had lower and higher level of farming experience.
Table 6: Distribution of respondents according to their experience

<table>
<thead>
<tr>
<th>Experience</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Lower</td>
<td>11 (13.75)</td>
<td>3 (12.50)</td>
<td>0 (0.00)</td>
</tr>
<tr>
<td>Medium</td>
<td>58 (72.50)</td>
<td>21 (87.50)</td>
<td>6 (50.00)</td>
</tr>
<tr>
<td>Higher</td>
<td>11 (13.75)</td>
<td>0 (0.00)</td>
<td>6 (50.00)</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>24 (100.00)</td>
<td>12 (100.00)</td>
</tr>
</tbody>
</table>

The mean of farming experience of the farmers of APMCs of the non-tribal area was 21.06 years and 20.07 years was of tribal area. The calculated 't' value (0.9089) between APMC farmer of non-tribal and tribal areas about farming experience was non-significant.

5.1.4.2 Working experience

Considering the democratic norms / system prevails in each APMCs the information collected in regards to working experience with APMC of committee members and office bearer and were grouped into three categories as, (i) lower level of experience (group up to 5 years), (ii) medium level of experience (6 to 20 years) and (iii) higher level of experience (above 20 years). The data in this regards are presented in table 6 and fig. 8.

The same table revealed that majority (87.50 per cent) of the APMC committee members of non-tribal area had medium level of experience of working with APMCs followed by 12.50 per cent had lower level of experience and none of them had higher level of experience. On the other hand, majority (87.50 per cent) of the committee members of tribal area had medium level of experience of working with APMCs followed by 8.33 and 4.17 per cent of them had lower and higher level of experience of working with APMCs respectively.

Further, table 6 shows that 50.00 per cent each of the office bearers of APMCs of non-tribal area had medium and higher level of working experience and none of them had lower level of working experience. While majority (83.33 per cent) of the office bearers of APMCs of tribal area had medium level of working experience followed by 16.67 per cent had higher level of working experience and none of them had lower level of working experience with APMCs.

The mean value of experience of working with APMCs of committee members and office bearers of non-tribal area was 12.78 years and 12.39 years was of
tribal area. The calculated 't' value (0.2267) about working experience of APMC committee members and office bearers between non-tribal and tribal areas of was non-significant.

This finding is in conformity with the findings of Shirke et al. (2015), Sani et al. (2014), Usha Rani and Selvaraj (2013), Pawar (2013), Bite (2012), Salunkhe (2009) and Kachhiapatel (2007).

5.1.5 Distance from market

Researches stated that the distance between farm and market place have certain influence. This might be an important determinant therefore, the data in regards were collected from farmers and grouped into three categories as; (i) short market distance (up to 5 km), (ii) moderate market distance (6 to 11 km) and (iii) faraway market distance (above 11 km). The data are presented in table 7 and fig 9.

Table 7: Distribution of respondents according to distance from market

<table>
<thead>
<tr>
<th>Market distance</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Short</td>
<td>10 (12.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Moderate</td>
<td>50 (62.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Faraway</td>
<td>20 (25.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

It is apparent from the table 7 that majority (62.50 per cent) of the farmers of APMCs of non-tribal area found in the moderate market distance category followed by 25.00 and 12.50 per cent of them belonged to faraway market and short market distance categories respectively. Whereas, half (50.00) of the farmers of APMCs of tribal area had short market distance followed by 37.50 and 12.50 per cent had moderate and faraway market distance respectively.

The average distance in non-tribal area was 8.63 km while in tribal area it was 6.87 km. The calculated 't' value (4.0036**) about distance from market among non-tribal and tribal areas APMCs’ was highly significant. The probable reason for this that the farmers may have availability of regulated market in nearby area to sell their farm produce.
In pooled data, half (50.00) of the farmers stated that the market distance from their farm was moderate followed by 31.25 and 18.75 per cent with short and faraway market distance respectively.

The finding is in concurrence with the findings reported by Chhikara et al. (1998), Srinivasan (1997) and Shinde (1997).

5.1.6 Annual income

The income availed by family members of the farmers from different sources throughout the year considered as an annual income. It was considered as a major economic variable by several researchers in social studies. The data in this regards were collected and grouped into three categories as, (i) lower annual income (up to Rs 50,000/-), (ii) medium annual income (Rs 50,001 to 1,00,000/-) and (iii) higher annual income (above Rs 1,00,000/-). The data are shown in table 8 and fig 10.

Table 8: Distribution of respondents according to their annual income (n=160)

<table>
<thead>
<tr>
<th>Annual Income</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Lower</td>
<td>0 (0.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Medium</td>
<td>22 (27.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Higher</td>
<td>58 (72.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mean</td>
<td>2.73</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>'t' value</td>
<td>11.0081**</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The data presented in table 8 indicates that majority (72.50 per cent) of the farmers of APMCs of non-tribal area found in higher annual income category, followed by 27.50 per cent with medium category and none of them found in lower category of annual income. While, about half (47.50 per cent) of the farmers of APMCs of tribal area found in lower annual income category followed by 37.50 and 15.00 per cent had medium and high level of annual income categories respectively.

The average annual income of farmers of APMCs of non-tribal area was 2.73 lacks while in tribal area it was 1.67 lacks. The calculated 't' value (11.0081**) about annual income of APMC farmer among non-tribal and tribal areas was highly significant. This indicates that the farmers from non-tribal area had substantially higher income than the tribal area. This might be due to the difference in possession of land holding, level of education, availability of irrigation facility and cropping intensity between these two areas.
Fig. 8: Distribution of respondents according to their experience

Fig. 9: Distribution of respondents according to distance from market

Fig. 10: Distribution of respondents according to their annual income
This finding has been partially in the line of findings of Boruah et al. (2015), Gulkari et al. (2014), Biswas et al. (2014), Parvez et al. (2013), Singh et al. (2012), Lahoti and Chole (2010), Hanumaniaikar et al. (2008) and Kachhiapatel (2007).

5.1.7 Social participation

Social participation indicates the involvement of an individual in their social organizations. It also carries the frequency of contact / participation of an individual within their social systems. Considering its pivotal role, the information was collected from the farmers and were grouped into four categories viz.; (i) no membership (0 score), (ii) membership in one organization (1 score), (iii) membership in more than one organization (2 score) and (iv) holding position in organization (3 score). Data in this regards are presented in table 9 and fig. 11.

Table 9: Distribution of respondents according to their social participation (n=160)

<table>
<thead>
<tr>
<th>Social participation</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>No mem.</td>
<td>0 (0.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mem. in one</td>
<td>4 (05.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mem. in &gt;1</td>
<td>74 (92.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Holding position</td>
<td>2 (02.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mean</td>
<td>1.97</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>'t' value</td>
<td>2.6566 **</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

The data presented in table 9 reveals that large majority (92.50 per cent) of the farmers of APMCs of non-tribal area had membership in more than one social organization while only 5.00 and 02.50 per cent had membership in one organization and holding position respectively. In case of tribal area, majority (66.25 per cent) of the farmers of APMCs had membership in more than one organization followed by 21.25 per cent had membership in one organization, 07.50 per cent of them were holding the position and 05.00 per cent hadn’t any membership in any organization.

The mean score of social participation of farmers of APMCs of non-tribal area was 1.97 while in tribal area it was 1.76. The calculated 't' value (2.6566**) among non-tribal and tribal area of APMC farmer was highly significant which indicates that the farmers of non-tribal area were having high level of social
participation. This might be due to availability of required resources in such organisation has been more in non-tribal area as compared to tribal area.

In general, majority (79.38 per cent) of the farmers of APMCs were having membership in more than one social organization followed by 13.12, 5.00 and 2.50 per cent of them had membership in one organisation, holding the position and do not having membership in any social organisation respectively.


5.1.8 Extension contact

Approaching to extension personnel by the farmers for getting required information of their farming called as extension contact. This is made by contacting subject matter specialist, extension personnel or an agency. It is functional activity of farmer which is based on need and interest. This was measured by counting the frequency that the farmer has had during the year. The information on this aspect was collected and categorized as; (i) lower extension contact (up to 8 score), (ii) moderate extension contact (9 to 11 score) and (iii) higher extension contact (above 11 score). The information in this regard is presented in table 10 and fig. 12.

Table 10: Distribution of respondents according to their extension contact

<table>
<thead>
<tr>
<th>Extension contact</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Lower</td>
<td>19 (23.75)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Moderate</td>
<td>58 (72.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Higher</td>
<td>3 (03.75)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mean</td>
<td>9.34</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The data presented in table 10 reveals that majority (72.50 per cent) of the farmers of APMCs of non-tribal area had moderate level of extension contact followed by 23.75 per cent of them had lower level of extension contact and only 3.75 per cent had higher level of extension contact. In case of farmers of APMCs of tribal area, majority (85.00 per cent) of them had moderate level of extension contact followed by 12.50 per cent had lower level of extension contact and only 2.50 per cent had higher level of extension contact.
The mean score of extension contact of farmers of APMCs of non-tribal area was 9.34 while in tribal area it was 9.81. The calculated 't' value (-2.7683**) among non-tribal and tribal area of APMC farmer was negatively highly significant which indicates that the farmers of non-tribal area possessing significantly different level of extension contact as compared to tribal area. This might be due to their farming experience and knowledge about the place of availability of specific resources for their farming.

The pooled data shows that majority (78.75 per cent) of the farmers of APMCs had moderate level of extension contact followed by 18.13 and 03.12 per cent of them had lower and higher level of extension contact respectively.

The finding is in line with the findings reported by Boruah et al. (2015) Bharamagoudar et al. (2014), Usha Rani and Selvaraj (2013), Dalvi (2009) and Nirban (2004).

5.1.9 Sources of information

In present era, information and source to avail required information are playing pivotal role in the development of agriculture. Recommendation and message are being considered as information in farming community. The government has developed several out-lets to disseminate the useful information for the farming community. In present study, a structured schedule was specially constructed to get the data in regards and categorized as; (i) hardly assess the information (up to 11 score), (ii) frequently assess the information (12 to 13 score) and (iii) regularly assess the information (above 13 score). The data are presented in table 11 and fig.13.

<table>
<thead>
<tr>
<th>Source of information</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Hardly assess</td>
<td>32</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(40.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequently assess</td>
<td>40</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(50.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regularly assess</td>
<td>8</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(10.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>(100.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>11.90</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>'t' value</td>
<td>1.0010</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 11: Distribution of respondents according to their sources of information (n=160)

Data in the table 11 revealed that the half (50.00 per cent) of the farmers of APMCs of non-tribal area were frequently assessed their sources of information followed by 40.00 and 10.00 per cent of them had hardly and regularly assessed the sources of information respectively. In case of farmers of APMCs of
Fig. 11: Distribution of respondents according to their social participation

Fig. 12: Distribution of respondents according to their extension contact

Fig. 13: Distribution of respondents according to their source of information
tribal area, majority (56.25 per cent) of them were frequently assessed the sources of information followed by 41.25 and 2.50 per cent were hardly and regularly assessed the sources of information respectively.

The mean value of sources of information of farmers of APMCs of non-tribal area were 11.90 and for tribal area 11.72. The calculated 't' value (1.0010) among non-tribal and tribal area of APMC farmer was non- significant.

The overall data shows that majority (53.13 per cent) of the APMC farmer were frequently accessed the sources of information followed by 40.62 and 6.25 per cent of them had hardly and regularly assessed the sources of information respectively.

The finding is in line with the findings reported by Shelke et al. (2015), Patel et al. (2014), Lawrence and Ganguli (2012), Kachhiapatel (2007), Patil (2001) and Singh et al. (2000).

5.1.10 Training received

Training is a process of knowledge acquisition and competencies as a result an individual improves his capability, productivity and performance. The data regarding number of training received by the respondents was collected and classified according to level of training as; (i) training not received (0 score) (ii) insufficient training received (1 to 3 score) and (iii) sufficient training received (above 3 score) and presented in table 12 and fig. 14.

Table 12: Distribution of respondents according to training received

<table>
<thead>
<tr>
<th>Training received</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Trg. not received</td>
<td>61(76.25)</td>
<td>21(87.50)</td>
<td>8 (66.67)</td>
</tr>
<tr>
<td>Insufficient trg.</td>
<td>19 (23.75)</td>
<td>3 (12.50)</td>
<td>0 (0.00)</td>
</tr>
<tr>
<td>Sufficient trg.</td>
<td>0 (0.00)</td>
<td>0 (0.00)</td>
<td>4 (33.33)</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>24 (100.00)</td>
<td>12 (100.00)</td>
</tr>
<tr>
<td>Mean</td>
<td>0.25</td>
<td>0.83</td>
<td>2.12</td>
</tr>
<tr>
<td>'t' value</td>
<td>-6.9518**</td>
<td>0.6140</td>
<td></td>
</tr>
</tbody>
</table>

The data presented in table 12 revealed that majority (76.25 per cent) of the farmers of APMCs of non-tribal area had not received any training followed by 23.75 per cent had insufficient training and none of them had received sufficient training. In case of farmers of APMCs of tribal area, majority (51.25 per cent) of them received insufficient training, while 26.25 and 22.50 per cent of them not received training and sufficient training received respectively.
The mean score of training received by the farmers of APMCs of non-tribal area was 0.25 and for tribal area it was 2.12. The calculated 't' value (-6.9518**) among non-tribal and tribal area was negative and highly significant. This indicates that the farmers of tribal area had substantially received more training than the non-tribal area. This might be due to the initiatives taken by KVKs, ATMA, NGOs and Line departments in tribal area resulted to change the nature and out-look of farmers to get required information from different sources.

Further, majority (87.50 per cent) of the committee members of APMCs of non-tribal area had not received any training followed by 12.50 per cent of them had received insufficient training and none of the remaining had sufficient training. Whereas, majority (79.17 per cent) of the committee members of APMCs of tribal area had not received any training followed by 20.83 per cent of them had received insufficient training and none of the remaining had sufficient training.

In case of office bearers of APMCs of non-tribal and tribal areas, majority (66.67 per cent) of them had not received any training followed by 33.33 per cent had received sufficient training and no one found in the category of insufficient training.

The mean score of training received by the APMCs committee members and office bearers of non-tribal area was 0.83 and for tribal area it was 0.67. The, calculated 't' value (0.6140) among committee members and office bearers of APMCs of non-tribal and tribal area was non-significant.


5.1.11 Cropping pattern

Cropping pattern refers to the proportion of area under different crops. It is the yearly sequence and spatial arrangements of crops and fallow on a given area by the respondents at the time of interview. It also denotes the crops grown by the respondents in kharif, rabi and summer season, as well as annual and perennial crops. The responses on the basis of score distributed in three categories viz.; (i) good cropping pattern (up to 3 score), (ii) better cropping pattern (4 to 7 score) and (iii) best cropping pattern (above 7 score). In this regard the data are presented in the table 13 and fig. 15.
Data presented in table 13 regarding cropping pattern revealed that majority (72.50 per cent) of the farmers of APMCs of non-tribal area had better cropping pattern followed by 17.50 and 10.00 per cent of them had good and best cropping pattern respectively. While in tribal area, nearly half (47.50 per cent) of the farmers had better cropping pattern followed by 45.00 and 07.50 per cent had good and best cropping pattern respectively.

The mean score for cropping pattern followed by the farmers of non-tribal area was 5.22 and 4.40 of tribal area. The calculated 't' value (2.4804*) among farmers of non-tribal and tribal area APMCs was significant. It is evident from the result that the farmers of non-tribal area had better cropping pattern than the farmers from tribal area. This might be due to the availability of different type of resources and size of land holding.

The pooled data shows that majority (60.00 per cent) of the APMC farmer possessed better cropping pattern followed by 31.25 per cent of them possessed good cropping pattern and 08.75 per cent of them possessed best cropping pattern.

The finding is in line with the findings reported by Parmar (2015), Katre (2013), Shinde (1997) and Chavan (1997).

### 5.1.12 Cropping intensity

Cropping intensity is a ratio of actual cropped area to net cultivated area with the farmer. This variable helps to predict the production per unit area of farmer’s field and considered as favourable to marketing behaviour. The responses in this regards were collected and score was allotted lastly, these data were categorized as; (i) fair cropping intensity (up to 6 score), (ii) good cropping intensity (7 to 11 score) and (iii) better cropping intensity (above 11 score). The data regarding cropping intensity of farmers of study area is presented in the table 14 and fig. 16.
**Fig. 14:** Distribution of respondents according to training received

**Fig. 15:** Distribution of respondents according to their cropping pattern

**Fig. 16:** Distribution of respondents according to their cropping intensity
Table 14: Distribution of respondents according to their cropping intensity (n=160)

<table>
<thead>
<tr>
<th>Cropping intensity</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Fair</td>
<td>1 (01.25)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Good</td>
<td>64 (80.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Better</td>
<td>15 (18.75)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mean</td>
<td>10.36</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>'t' value</td>
<td>14.1067**</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Data presented in the table 14 regarding cropping intensity indicates that majority (80.00 per cent) of the farmers of APMCs of non-tribal had good cropping intensity followed by 18.75 and 01.25 per cent had better and fair cropping intensity respectively. In case of farmers of APMCs of tribal area, majority (56.25 per cent) of them had good cropping intensity followed by 41.25 and 02.50 per cent had fair and better cropping intensity respectively.

The mean score of cropping intensity of farmers of APMCs of non-tribal area was 10.36 while it was 6.97 of tribal area. The calculated 't' value (14.1067**) among non-tribal and tribal area APMC farmers was highly significant, which indicated that the farmers from non-tribal area had better cropping intensity than the farmers from tribal area. This might be due to availability of different type of resources, size of land holding and irrigation facilities.

The pooled data shows that majority (68.13 per cent) of the APMC farmer possessed good cropping intensity followed by 21.25 per cent of them possessed fair cropping intensity and 10.62 per cent of them possessed better cropping intensity.


5.1.13 Marketable surplus

Marketable surplus referred as the quantity of the produce which was made available to the non-farm population by the farmers after meeting his requirements for their family consumption, farm needs as a seed, as a feed for their cattle, payment to labour, artisans, landlord and social, religious payments in kind.

The responses in this regards were collected through structured schedule and converted in to percentage lastly, the responses were categorized as presented in the table 15 and fig. 17.
Table 15: Distribution of respondents according to their marketable surplus

<table>
<thead>
<tr>
<th>Marketable surplus</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>up to 25%</td>
<td>16 (20.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>26 to 50%</td>
<td>4 (05.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>51 to 75%</td>
<td>13 (16.25)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>above 75%</td>
<td>47 (58.75)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80 (100.00)</strong></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The data presented in table 15 shows that majority (58.75 per cent) of the farmers of APMCs of non-tribal area had more than 75% of marketable surplus followed by 20.00, 16.25 and 05.00 per cent of them had up to 25%, between 51 to 75% and 26 to 50% of marketable surplus respectively. Whereas, half (50.00 per cent) of the farmers of APMCs of tribal area had more than 75% of marketable surplus followed by 33.75, 12.50 and 03.75 per cent were having marketable surplus between 51 to 75%, 26 to 50% and up to 25% respectively.

The mean score of marketable surplus of farmers of APMCs of non-tribal and tribal area were 67.41 and 69.99 respectively. The calculated 't' value (-0.5621) among non-tribal and tribal area APMC farmers about marketable surplus was non-significant.

In the pooled, majority (54.38 per cent) of the farmers had more than 75% of marketable surplus followed by 25.00, 11.87 and 08.75 per cent of them had marketable surplus between 51 to 75%, up to 25% and 26 to 50% respectively.

The finding is in line with the findings reported by Malik *et al.* (2013), Mistry *et al.* (2011), Goal and Singh (1998) and Chavan (1997).

5.1.14 Marketed surplus

Marketed surplus referred as the quantity of the produce actually sold by the farmers in the market, irrespective of his/her requirements for their family consumption, farm needs as a seed, as a feed for their cattle and other payments. The responses in this regards were collected and on the basis of percentage categorized in four groups. The responses in this regards were collected through structured schedule and converted in to percentage lastly, the responses were categorized as presented in the table 16 and fig. 18.
Table 16: Distribution of respondents according to their marketed surplus

<table>
<thead>
<tr>
<th>Marketed surplus</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td>(up to 25%)</td>
<td>16 (20.00)</td>
<td>3 (03.75)</td>
<td>19 (11.87)</td>
</tr>
<tr>
<td>(26 to 50%)</td>
<td>4 (05.00)</td>
<td>-</td>
<td>14 (08.75)</td>
</tr>
<tr>
<td>(51 to 75%)</td>
<td>13 (16.25)</td>
<td>10 (12.50)</td>
<td>40 (25.00)</td>
</tr>
<tr>
<td>(above 75%)</td>
<td>47 (58.75)</td>
<td>-</td>
<td>87 (54.38)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>80 (100.00)</td>
<td>80 (100.00)</td>
<td>160 (100.00)</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>67.19</td>
<td>69.90</td>
<td></td>
</tr>
<tr>
<td>'t' value</td>
<td>- 0.5949</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

The data presented in table 16 shows that majority (58.75 per cent) of the farmers of APMCs of non-tribal area had more than 75% of marketed surplus followed by 20.00, 16.25 and 05.00 per cent of them had up to 25%, between 51 to 75% and 26 to 50% of marketed surplus respectively. Whereas, half (50.00 per cent) of the farmers of APMCs of tribal area had more than 75% of marketed surplus followed by 33.75, 12.50 and 03.75 per cent were having marketed surplus between 51 to 75%, 26 to 50% and up to 25% respectively.

The mean score of marketed surplus of farmers of APMCs of non-tribal and tribal area were 67.19 and 69.90 respectively. The calculated 't' value (-0.5949) among non-tribal and tribal area APMC farmers about marketed surplus was non-significant.

In the pooled, majority (54.38 per cent) of the farmers of APMCs had more than 75% of marketed surplus followed by 25.00, 11.87 and 08.75 per cent of them had marketed surplus between 51 to 75%, up to 25% and 26 to 50% respectively.

The finding is in line with the findings reported by Mistry et al. (2011), Kumar (1999), Rangarajan (1997) and Chavan (1997).

5.1.15 Knowledge about the statutory activities of APMC

The activities of APMC are conceptualised by the policy makers and government has provided statutory support to sustain farmers’ interest. It is working as platform for the farmers to market their commodity in fair conditions. The farmers, traders, commission agents and other market functionaries are the major stockholders of each APMC. A structured schedule was specially developed to collect the information on knowledge about the statutory activities of APMC from the farmers. Their responses were converted in scores and categorized as (i) poor level of
knowledge (up to 14 score), (ii) adequate level of knowledge (15 to 25 score) and (iii) authoritative level of knowledge (above 25 score). The data in respect of overall knowledge level of the farmers under the study are presented in table 17 and fig. 19.

Table 17: Distribution of respondents according to their Knowledge about the statutory activities of APMC

<table>
<thead>
<tr>
<th>Level of Knowledge</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Poor</td>
<td>15 (18.75)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Adequate</td>
<td>47 (58.75)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Authoritative</td>
<td>18 (22.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mean</td>
<td>20.12</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>'t' value</td>
<td>1.6801</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The data presented in table 17 shows that majority (58.75 per cent) of the farmers of APMC of non-tribal area had adequate knowledge about the statutory activities of APMC followed by 22.50 and 18.75 per cent had authoritative and poor level of knowledge respectively. While in tribal area, majority (75.00 per cent) of the farmers of APMC had adequate knowledge about the statutory activities of APMC followed by 18.75 and 6.25 per cent had poor and authoritative knowledge about the statutory activities of APMC respectively.

The mean value of knowledge about the statutory activities of APMC by the farmers of non-tribal area was 20.12 and 18.56 for the farmers of tribal area. The calculated 't' value (1.6801) among non-tribal and tribal area APMC farmers about knowledge was non-significant.

In the pooled data, majority (66.88 per cent) of the farmers of APMC had adequate knowledge about the statutory activities of APMC followed by 18.75 and 14.37 per cent had poor and authoritative level of knowledge about the statutory activities of APMC respectively.

The finding is in line with the findings reported by Pawar (2002), Sundaresan et al. (2000), Sukhsanjam et al. (2000) and Srinivasan (1997).

5.1.16 Economic orientation

Economically motivated farmers are more oriented towards maximization their profit from farming. It can be considered as indicator that how much level of willingness for profit maximization and risk reduction the farmer possessed. This may differ from individual to individual therefore; it was felt appropriate for the present study.
Fig. 17: Distribution of respondents according to their marketable surplus

Fig. 18: Distribution of respondents according to their marketed surplus

Fig. 19: Distribution of respondents according to their knowledge about the statutory activities of APMC
The data in this regard were collected from the APMC farmer and grouped into three categories viz., (i) lower level of economic orientation (up to 15 score), (ii) moderate level of economic orientation (16 to 17 score) and (iii) higher level of economic orientation (above 17 score). The data in regards are presented in table 18 and fig. 20.

Table 18: Distribution of respondents according to their economic orientation (n=160)

<table>
<thead>
<tr>
<th>Economic orientation</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Lower</td>
<td>16 (20.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Moderate</td>
<td>50 (62.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Higher</td>
<td>14 (17.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mean</td>
<td>16.40</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>'t' value</td>
<td>1.4805</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The data presented in the table 18 shows that majority of the farmers of APMCs of non-tribal area (62.50 per cent) and tribal area (58.75 per cent) had moderate level of economic orientation followed by 20.00 per cent of non-tribal area and 27.50 per cent of tribal area had lower level of economic orientation and 17.50 per cent of non-tribal area and 13.75 per cent of tribal area had higher level of economic orientation.

The mean value of economic orientation of non-tribal area was 16.40 and 16.14 for the farmers of tribal area. The calculated 't' value (1.4805) among non-tribal and tribal area APMC farmers about economic orientation was non-significant.

The overall data shows that majority (60.63 per cent) of the farmers of APMCs had moderate level of economic orientation followed by 23.75 and 15.62 per cent of them had lower and higher level of economic orientation respectively.

This finding is in line with those reported by Mewara and Pandya (2007), Singh et al. (2008), Sadanshiv et al. (2008), Pawar (2009) and Tala (2013).

5.1.17 Scientific orientation

Scientific orientation is characterized as one's belief in science and scientific approach to solve their routine difficulties in agriculture. This may leads to consequences in adoption of an innovation also. The collected information regarding scientific orientation from the APMC farmer were classified as; (i) lower level of scientific orientation (up to 14 score), (ii) moderate level of scientific orientation (15
to 17 score), and (iii) higher level of scientific orientation (above 17 score). The data are presented in table 19 and fig. 21.

**Table 19: Distribution of respondents according to their scientific orientation**

<table>
<thead>
<tr>
<th>Scientific orientation</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Lower</td>
<td>21 (26.25)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Moderate</td>
<td>57 (71.25)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Higher</td>
<td>2 (02.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mean</td>
<td>15.44</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

It is observed from table 19 that majority (71.25 per cent) of the farmers of APMCs of non-tribal area had moderate level of scientific orientation followed by 26.25 and 02.50 per cent of them had lower and higher level of scientific orientation respectively. While, majority (62.50 per cent) of the farmers of APMCs of tribal area had moderate level of scientific orientation followed by 30.00 and 07.50 per cent of them had lower and higher level of scientific orientation respectively.

The mean value of scientific orientation of non-tribal area was 15.44 and 15.12 for the farmers of tribal area. The calculated 't' value (1.3922) among non-tribal and tribal area APMC farmers about scientific orientation was non-significant.

The overall data shows that majority (66.88 per cent) of the farmers of APMCs had moderate level of scientific orientation followed by 28.12 and 05.00 per cent of them had lower and higher level of scientific orientation.


### 5.1.18 Risk orientation

Farming in general is characterized by many uncontrollable variables such as rainfall, pest, diseases and unpredictable price fluctuation in the market therefore; the farmers somehow hesitate and show different behaviour while taking risk. The data in this regard were collected from the APMC farmer and grouped into three categories viz., (i) lower level of risk orientation (up to 12 score), (ii) moderate level of risk orientation (13 to 16 score) and (iii) higher level of risk orientation (above 16 score). These data are shown in table 20 and fig. 22.
Table 20: Distribution of respondents according to their risk orientation

<table>
<thead>
<tr>
<th>Risk orientation</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Lower</td>
<td>5 (06.25)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Moderate</td>
<td>70 (87.50)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Higher</td>
<td>5 (06.25)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Mean 14.44 - 13.60

’t’ value 3.3007**

It is evident from table 20 that majority (87.50 per cent) of the farmers of APMCs of non-tribal area had moderate level of risk orientation followed by 06.25 per cent each were found in lower and higher level of risk orientation categories. While farmers of APMCs of tribal area, majority (73.75 per cent) of them had moderate level of risk orientation followed by 22.50 and 03.75 per cent had lower and higher level of risk orientation respectively.

The mean score of risk orientation of non-tribal area was 14.44 and 13.60 for the farmers of tribal area. The calculated 't' value (3.3007**) among non-tribal and tribal area farmers about risk orientation was highly significant. It indicated that farmers from non-tribal area had significantly higher level of risk orientation as compared to tribal area. This might be due to larger land holding, good economic condition and ability to mobilise the resources in time.

The pooled data shows that majority (80.63 per cent) of the farmers of APMCs had moderate level of risk orientation followed by 14.37 and 05.00 per cent of them had lower and higher level of risk orientation respectively.

This finding is in conformity with that of findings of Darandale et al. (2015), Warawdekar (2014), Patel et al. (2014), Tala (2013), Singh et al. (2011), Saha and Bahal (2010), Singh et al. (2008), Kachhiapatel (2007), Kaur and Kaur (2005) and Patel (2005, b).

5.1.19 Group cohesiveness

Group cohesiveness is the act of making different people or things work together for specific goal. The working in group may be beneficial for their farming and marketing of produce. Moreover, in context to APMCs of both the areas, the committee members and office bearer are basically representatives of farmer groups hence, they were also considered as group and part of respondents for the study. They normally engaged in coordinating activities of each APMC.
Fig. 20: Distribution of respondents according to their economic orientation

Fig. 21: Distribution of respondents according to their scientific orientation

Fig. 22: Distribution of respondents according to their risk orientation
The information in regards was collected by using structured schedule. The responses of the respondents were categorized as; (i) lower level of group cohesiveness (up to 28 score), (ii) moderate level of group cohesiveness (29 to 30 score) and (iii) higher level of group cohesiveness (above 30 score) and presented in table 21.

Table 21: Distribution of respondents according to their level of cohesiveness (n=232)

<table>
<thead>
<tr>
<th>Group Cohesiveness</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Lower</td>
<td>15 (18.75)</td>
<td>6 (25.00)</td>
<td>1 (8.33)</td>
</tr>
<tr>
<td>Moderate</td>
<td>61 (76.25)</td>
<td>18 (75.00)</td>
<td>11 (91.67)</td>
</tr>
<tr>
<td>Higher</td>
<td>4 (5.00)</td>
<td>0 (0.00)</td>
<td>0 (0.00)</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>24 (100.00)</td>
<td>12 (100.00)</td>
</tr>
<tr>
<td>Mean</td>
<td>26.93</td>
<td>29.31</td>
<td>28.29</td>
</tr>
<tr>
<td>'t' value</td>
<td>-0.9183</td>
<td>-0.5125</td>
<td></td>
</tr>
</tbody>
</table>

The data of table 21 revealed that majority (76.25 per cent) of the farmers of APMCs from non-tribal area had moderate level of group cohesiveness followed by 18.75 and 05.00 per cent of them had lower and higher level of group cohesiveness respectively. In case of farmers of APMCs of tribal area, majority (86.25 per cent) of them had moderate level of group cohesiveness followed by 08.75 and 05.00 per cent of them had higher and lower level of group cohesiveness respectively. The mean score of group cohesiveness of farmers of non-tribal area was 26.93 and 28.29 for the farmers of tribal area. The calculated 't' value (-0.9183) among non-tribal and tribal area APMC farmers about group cohesiveness was non-significant.

Regarding committee members of APMCs of non-tribal and tribal areas, revealed that majority (75.00 per cent) of them had moderate level of group cohesiveness followed by 25.00 per cent of them had lower level of group cohesiveness and none were in the category of higher group cohesiveness respectively in both.

Same table shows that majority (91.67 per cent) of the office bearers of APMCs of non-tribal area had moderate level of group cohesiveness followed by 08.33 per cent had lower level of group cohesiveness and none were in the category of higher group cohesiveness respectively. While, all (100.00 per cent) the office bearers of APMCs of tribal area had moderate level of group cohesiveness and none of them were in the categories of lower and higher group cohesiveness.
The mean score of group cohesiveness of committee members and office bearers of non-tribal area was 29.31 and 29.44 for the tribal area. The calculated ‘t’ value (-0.5125) among committee members and office bearers of non-tribal and tribal area about group cohesiveness was non-significant.

The pooled data shows that majority (81.47 per cent) of the respondents had moderate level of group cohesiveness followed by 13.79 and 4.74 per cent of them had lower and higher level of group cohesiveness respectively.

Similar result was also confirmed by Vohra and Timbadia (2015), Singh et al. (2014), Gardhariya (2013), Shinde (2013), Mehta and Sonawane (2012), Rai (2011), Baria (2010), Wankhade et al. (2009), Khalche et al. (2008), Naik (2006) and Prajapati et al. (2005).

5.2 ROLE PERCEPTION ABOUT MARKET-LED-EXTENSION

Perception is a cognitive process by which individuals organize, interpret, and understand their surroundings and environment which also includes impressions formed objects, events, and people. In the process of role perception, you must fully understand the situation along with its facts to arrive at resolution. Without understanding all these it may spoil the effort or an activity.

The APMCs have very consciously clarified the roles for market-led-extension for each and every involved individual. Considering this fact the investigator has tried to know the specific and overall role perception about market-led-extension. Firstly, the specific role perceived by the APMC farmers and by the APMC committee members and office bearers were discussed and secondly, their overall role perception was discussed separately as role perception about market-led-extension by the APMC farmers and committee members and office bearers.

5.2.1 Specific role perception about market-led-extension

5.2.1.1 Specific role perception about market-led-extension of farmers

The responses about specific role perception about market-led-extension by the APMC farmers are presented in table 22.

The data regarding specific role perception about market-led-extension are depicted in table 22 revealed that under the service role, all the farmers (100.00 per cent) from non-tribal area perceived that APMC should provide service of weighing of farm produce followed by storage of farm produce (96.25 per cent), storage of perishable farm produce (90.00 per cent), grading of farm produce (85.00 per cent), laboratory for testing the produce (37.50 per cent), packaging of farm produce (21.25 per cent), supply of agricultural inputs (17.50) and processing of farm produce (02.50). While farmers from tribal area perceived that APMC should provide
service of weighing of farm produce (100.00 per cent), storage of farm produce (100.00 per cent), grading of farm produce (61.25 per cent), storage of perishable farm produce (51.25 per cent), packaging of farm produce (33.75 per cent), laboratory for testing the produce (18.75 per cent), processing of farm produce (06.25) and supply of agricultural inputs (02.50).

Table 22: Distribution of APMC farmers according to their specific role perception about market-led-extension

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Roles</th>
<th>Non-tribal (80)</th>
<th>Tribal (80)</th>
<th>Pooled (n=160)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Supply of agricultural inputs</td>
<td>14  17.50</td>
<td>02  02.50</td>
<td>016 10.00</td>
</tr>
<tr>
<td>2</td>
<td>Grading of farm produce</td>
<td>68  85.00</td>
<td>49  61.25</td>
<td>117 73.13</td>
</tr>
<tr>
<td>3</td>
<td>Packaging of farm produce</td>
<td>17  21.25</td>
<td>27  33.75</td>
<td>044 27.50</td>
</tr>
<tr>
<td>4</td>
<td>Weighing of farm produce</td>
<td>80  100.00</td>
<td>80  100.00</td>
<td>160 100.00</td>
</tr>
<tr>
<td>5</td>
<td>Storage of farm produce</td>
<td>77  96.25</td>
<td>80  100.00</td>
<td>157 98.13</td>
</tr>
<tr>
<td>6</td>
<td>Storage of perishable farm produce</td>
<td>72  90.00</td>
<td>41  51.25</td>
<td>113 70.63</td>
</tr>
<tr>
<td>7</td>
<td>Processing of farm produce</td>
<td>02  02.50</td>
<td>05  06.25</td>
<td>007 04.38</td>
</tr>
<tr>
<td>8</td>
<td>Laboratory for testing the produce</td>
<td>30  37.50</td>
<td>15  18.75</td>
<td>045 28.13</td>
</tr>
<tr>
<td>II</td>
<td>Advisory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Crop production technology</td>
<td>18  22.50</td>
<td>01  01.25</td>
<td>019 11.88</td>
</tr>
<tr>
<td>2</td>
<td>Post harvest technology of crops</td>
<td>64  80.00</td>
<td>36  45.00</td>
<td>100 62.50</td>
</tr>
<tr>
<td>3</td>
<td>High quality farm produce</td>
<td>56  70.00</td>
<td>57  71.25</td>
<td>113 70.63</td>
</tr>
<tr>
<td>4</td>
<td>Avoiding post harvest losses of crops</td>
<td>77  96.25</td>
<td>74  92.50</td>
<td>151 94.38</td>
</tr>
<tr>
<td>5</td>
<td>Crop advise as per market demand</td>
<td>63  78.75</td>
<td>43  53.75</td>
<td>106 66.25</td>
</tr>
<tr>
<td>6</td>
<td>Legal aspects of marketing &amp; export</td>
<td>40  50.00</td>
<td>53  66.25</td>
<td>093 58.13</td>
</tr>
<tr>
<td>7</td>
<td>Export oriented farming</td>
<td>40  50.00</td>
<td>36  45.00</td>
<td>076 47.50</td>
</tr>
<tr>
<td>8</td>
<td>Export of farm produce</td>
<td>09  11.25</td>
<td>00  00.00</td>
<td>009 05.63</td>
</tr>
<tr>
<td>III</td>
<td>Market intelligence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Availability of markets</td>
<td>33  41.25</td>
<td>32  40.00</td>
<td>065 40.63</td>
</tr>
<tr>
<td>2</td>
<td>Current rates in different markets</td>
<td>71  88.75</td>
<td>73  91.25</td>
<td>144 90.00</td>
</tr>
<tr>
<td>3</td>
<td>Maintaining record of the farmers</td>
<td>14  17.50</td>
<td>19  23.75</td>
<td>033 20.63</td>
</tr>
<tr>
<td>4</td>
<td>Considering record of the farmers</td>
<td>12  15.00</td>
<td>03  03.75</td>
<td>015 09.38</td>
</tr>
<tr>
<td>5</td>
<td>Anticipate and communicate possible</td>
<td>56  70.00</td>
<td>64  80.00</td>
<td>120 75.00</td>
</tr>
<tr>
<td>IV</td>
<td>Facilitator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Communicate about Govt. policies</td>
<td>65  81.25</td>
<td>78  97.50</td>
<td>143 89.38</td>
</tr>
<tr>
<td>2</td>
<td>Credit to farmers for farm production</td>
<td>05  06.25</td>
<td>17  21.25</td>
<td>022 13.75</td>
</tr>
<tr>
<td>3</td>
<td>Insurance for farm produce</td>
<td>55  68.75</td>
<td>52  65.00</td>
<td>107 66.88</td>
</tr>
<tr>
<td>4</td>
<td>Subsidies to farmers</td>
<td>43  53.75</td>
<td>25  31.25</td>
<td>068 42.50</td>
</tr>
<tr>
<td>5</td>
<td>Liaison with agro-service providers</td>
<td>06  07.50</td>
<td>00  00.00</td>
<td>006 03.75</td>
</tr>
<tr>
<td>6</td>
<td>Organise meet among stockholders</td>
<td>55  68.75</td>
<td>37  46.25</td>
<td>092 57.50</td>
</tr>
<tr>
<td>7</td>
<td>Communicate problems to concerned</td>
<td>51  63.75</td>
<td>68  85.00</td>
<td>119 74.38</td>
</tr>
<tr>
<td>V</td>
<td>Organizer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Form the cooperative societies</td>
<td>31  38.75</td>
<td>26  32.50</td>
<td>057 35.63</td>
</tr>
<tr>
<td>2</td>
<td>Establish commodity wise SHGs</td>
<td>24  30.00</td>
<td>38  47.50</td>
<td>062 38.75</td>
</tr>
<tr>
<td>3</td>
<td>Consumers organizations</td>
<td>04  05.00</td>
<td>02  02.50</td>
<td>006 03.75</td>
</tr>
<tr>
<td>4</td>
<td>Sale of farm produce under trade name</td>
<td>25  31.25</td>
<td>35  43.75</td>
<td>060 37.50</td>
</tr>
<tr>
<td>5</td>
<td>Award the producers on quality produce</td>
<td>37  46.25</td>
<td>50  62.50</td>
<td>087 54.38</td>
</tr>
</tbody>
</table>
Under the advisory role, large majority of the farmers (96.25 per cent) from non-tribal area perceived that APMC should provide advice on avoiding post harvest losses of crops followed by post harvest technology of crops (80.00 per cent), crop advise as per market demand (78.75 per cent), high quality farm produce (70.00 per cent), legal aspects of marketing and export (50.00 per cent), export oriented farming (50.00 per cent), crop production technology (22.50 per cent) and export of farm produce (11.25 per cent). While farmers from tribal area perceived that APMC should provide advice on avoiding post harvest losses of crops (92.50 per cent) followed by high quality farm produce (71.25 per cent), legal aspects of marketing and export (66.25 per cent), crop advise as per market demand (53.75 per cent), post harvest technology of crops (45.00 per cent), export oriented farming (45.00 per cent) and crop production technology (01.25).

Regarding market intelligence, farmers from non-tribal area perceived that APMC should play role on updating the farmers regarding current rates in different markets (88.75 per cent) followed by anticipate and communicate possible changes of markets (70.00 per cent), availability of markets (41.25 per cent), maintaining record of the farmers producing specific goods (17.50 per cent) and survey on consumers preference (15.00 per cent). While farmers from tribal area perceived that APMC should play role on updating the farmers regarding current rates in different markets (91.25 per cent), anticipate and communicate possible changes of markets (80.00 per cent), availability of markets (40.00 per cent), maintaining record of the farmers producing specific goods (23.75 per cent) and survey on consumers preference (03.75 per cent).

Under the facilitator role, farmers from non-tribal area perceived that APMC should facilitate the farmers to communicate about Government policies (81.25 per cent) followed by insurance for farm produce (68.75 per cent), organise meet among stockholders (68.75 per cent), communicate problems to concerned (63.75 per cent), subsidies to farmers (53.75 per cent), liaison with agro-service providers (07.50 per cent) and credit to farmers for farm production (06.25 per cent). While farmers from tribal area perceived that APMC should facilitate the farmers to communicate about Government policies (97.50 per cent), communicate problems to concerned (85.00 per cent), insurance for farm produce (65.00 per cent), organise meet among stockholders (46.25 per cent), subsidies to farmers (31.25 per cent) and credit to farmers for farm production (21.25 per cent).
Regarding organizer role, farmers from non-tribal area perceived that APMC should organize awards the producers on quality produce (46.25 per cent), form the cooperative societies (38.75 per cent), sale of farm produce under trade name (31.25 per cent), establish commodity wise SHGs (30.00 per cent) and consumers organizations (05.00 per cent). While farmers from tribal area perceived that APMC should organize award the producers on quality produce (62.50 per cent), establish commodity wise SHGs (47.50 per cent), sale of farm produce under trade name (43.75 per cent), form the cooperative societies (32.50 per cent) and consumers organizations (02.50 per cent).

The pooled data shows that the APMC farmers perceived the weighing of farm produce as prime role under services (100.00 per cent) followed by storage of farm produce (98.13 per cent) and grading of farm produce (73.13 per cent). Under the advisory role, avoiding post harvest losses of crops (94.30 per cent) followed by high quality farm produce (70.63 per cent) and crop advice as per market demand (66.25 per cent). About the market intelligence role, current rates in different markets was the prime role (90.00 per cent) followed by anticipate and communicate possible changes of markets (75.00 per cent) and availability of markets (40.63 per cent). As facilitator, communicate about government policies (89.38 per cent) followed by communicate problems to concerned (74.38 per cent) and insurance for farm produce (66.88 per cent). Under the organizer role of APMC, award the producers on quality produce as prime role (54.38 per cent) followed by establish commodity wise SHGs (38.75 per cent) and sale of farm produce under trade name (37.50 per cent).

5.2.1.2 Specific role perception about market-led-extension of APMC committee members and office bearers

The roles perception about market-led-extension responses of APMC committee members and office bearers in reference to specific are shown in table 23.

The data of table 23 regarding specific role perception revealed that under service role, all the committee members and office bearers (100.00 per cent) of non-tribal area perceived that the APMC should provide service of weighing of farm produce followed by storage of farm produce (97.22 per cent), storage of perishable farm produce (94.44 per cent), grading of farm produce (88.89 per cent), laboratory for testing the produce (88.89 per cent), packaging of farm produce (80.56 per cent), processing of farm produce (47.22 per cent) and supply of agricultural inputs (25.00 per cent). While committee members and office bearers of tribal area perceived that the APMC should provide service of weighing of farm produce (100.00 per cent),
storage of farm produce (100.00 per cent), grading of farm produce (94.44 per cent),
laboratory for testing the produce (66.67 per cent), storage of perishable farm
produce (61.11 per cent), packaging of farm produce (55.56 per cent), processing of
farm produce (25.00 per cent) and supply of agricultural inputs (08.33 per cent).

Table 23: Distribution of APMC committee members and office bearers
according to their specific role perception about market-led-extension

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Roles</th>
<th>Non-tribal (36)</th>
<th>Tribal (36)</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>I</td>
<td>Service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Supply of agricultural inputs</td>
<td>09</td>
<td>25.00</td>
<td>03</td>
</tr>
<tr>
<td>2</td>
<td>Grading of farm produce</td>
<td>32</td>
<td>88.89</td>
<td>34</td>
</tr>
<tr>
<td>3</td>
<td>Packaging of farm produce</td>
<td>29</td>
<td>80.56</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Weighing of farm produce</td>
<td>36</td>
<td>100.00</td>
<td>36</td>
</tr>
<tr>
<td>5</td>
<td>Storage of farm produce</td>
<td>35</td>
<td>97.22</td>
<td>36</td>
</tr>
<tr>
<td>6</td>
<td>Storage of perishable farm produce</td>
<td>34</td>
<td>94.44</td>
<td>22</td>
</tr>
<tr>
<td>7</td>
<td>Processing of farm produce</td>
<td>17</td>
<td>47.22</td>
<td>09</td>
</tr>
<tr>
<td>8</td>
<td>Laboratory for testing the produce</td>
<td>32</td>
<td>88.89</td>
<td>24</td>
</tr>
<tr>
<td>II</td>
<td>Advisory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Crop production technology</td>
<td>09</td>
<td>25.00</td>
<td>03</td>
</tr>
<tr>
<td>2</td>
<td>Post harvest technology of crops</td>
<td>21</td>
<td>58.33</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>High quality farm produce</td>
<td>24</td>
<td>66.67</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>Avoiding post harvest losses of crops</td>
<td>36</td>
<td>100.00</td>
<td>36</td>
</tr>
<tr>
<td>5</td>
<td>Crop advise on market demand</td>
<td>25</td>
<td>69.44</td>
<td>23</td>
</tr>
<tr>
<td>6</td>
<td>Legal aspects of marketing &amp; export</td>
<td>32</td>
<td>88.89</td>
<td>25</td>
</tr>
<tr>
<td>7</td>
<td>Export oriented farming</td>
<td>36</td>
<td>100.00</td>
<td>32</td>
</tr>
<tr>
<td>8</td>
<td>Export of farm produce</td>
<td>26</td>
<td>72.22</td>
<td>04</td>
</tr>
<tr>
<td>III</td>
<td>Market intelligence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Availability of markets</td>
<td>36</td>
<td>100.00</td>
<td>36</td>
</tr>
<tr>
<td>2</td>
<td>Current rates in different markets</td>
<td>36</td>
<td>100.00</td>
<td>36</td>
</tr>
<tr>
<td>3</td>
<td>Maintaining record of the farmers producing specific goods</td>
<td>20</td>
<td>55.56</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>Survey on consumers preference</td>
<td>14</td>
<td>38.89</td>
<td>03</td>
</tr>
<tr>
<td>5</td>
<td>Anticipate and communicate possible changes of markets</td>
<td>36</td>
<td>100.00</td>
<td>36</td>
</tr>
<tr>
<td>IV</td>
<td>Facilitator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Communicate about Govt. policies</td>
<td>36</td>
<td>100.00</td>
<td>35</td>
</tr>
<tr>
<td>2</td>
<td>Credit to farmers for farm production</td>
<td>01</td>
<td>02.78</td>
<td>01</td>
</tr>
<tr>
<td>3</td>
<td>Insurance for farm produce</td>
<td>12</td>
<td>33.33</td>
<td>06</td>
</tr>
<tr>
<td>4</td>
<td>Subsidies to farmers</td>
<td>16</td>
<td>44.44</td>
<td>06</td>
</tr>
<tr>
<td>5</td>
<td>Liaison with agro-service providers</td>
<td>07</td>
<td>19.44</td>
<td>00</td>
</tr>
<tr>
<td>6</td>
<td>Organise meet among stockholders</td>
<td>36</td>
<td>100.00</td>
<td>36</td>
</tr>
<tr>
<td>7</td>
<td>Communicate problems to concerned</td>
<td>34</td>
<td>94.44</td>
<td>33</td>
</tr>
<tr>
<td>V</td>
<td>Organizer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Form the cooperative societies</td>
<td>34</td>
<td>94.44</td>
<td>32</td>
</tr>
<tr>
<td>2</td>
<td>Establish commodity wise SHGs</td>
<td>09</td>
<td>25.00</td>
<td>04</td>
</tr>
<tr>
<td>3</td>
<td>Consumers organizations</td>
<td>14</td>
<td>38.89</td>
<td>01</td>
</tr>
<tr>
<td>4</td>
<td>Sale of farm produce under trade name</td>
<td>34</td>
<td>94.44</td>
<td>31</td>
</tr>
<tr>
<td>5</td>
<td>Award the producers on quality produce</td>
<td>36</td>
<td>100.00</td>
<td>33</td>
</tr>
</tbody>
</table>
Under the advisory role, all the committee members and office bearers (100.00 per cent) from non-tribal area perceived that APMC should provide advice on avoiding post harvest losses of crops followed by export oriented farming (100.00 per cent), legal aspects of marketing and export (88.89 per cent), export of farm produce (72.22 per cent), crop advise on market demands (69.44 per cent), high quality farm produce (66.67 per cent), post harvest technology of crops (58.33 per cent) and crop production technology (25.00 per cent). While committee members and office bearers from tribal area perceived that APMC should provide advice on avoiding post harvest losses of crops (100.00 per cent) followed by export oriented farming (88.89 per cent), legal aspects of marketing and export (69.44 per cent), crop advice on market demands (63.89 per cent), post harvest technology of crops (50.00 per cent), high quality farm produce (47.22 per cent), export of farm produce (11.11 per cent) and crop production technology (08.33 per cent).

Regarding market intelligence, committee members and office bearers from non-tribal area perceived that APMC should play role on updating the farmers regarding availability of markets (100.00 per cent), current rates in different markets (100.00 per cent) and anticipate and communicate possible changes of markets (100.00 per cent) followed by maintaining record of the farmers producing specific goods (55.56 per cent) and survey on consumers preference (38.89 per cent). While committee members and office bearers from tribal area perceived that APMC should play role on updating the farmers regarding current rates in different markets (100.00 per cent), anticipate and communicate possible changes of markets (100.00 per cent) and availability of markets (100.00 per cent) followed by maintaining record of the farmers producing specific goods (52.78 per cent) and survey on consumers preference (08.33 per cent).

Under the facilitator role, committee members and office bearers from non-tribal area perceived that APMC should facilitate the farmers to communicate about Government policies (100.00 per cent) and organise meet among stockholders (100.00 per cent) followed by communicate problems to concerned (94.44 per cent), subsidies to farmers (44.44 per cent), insurance for farm produce (33.33 per cent), liaison with agro-service providers (19.44 per cent) and credit to farmers for farm production (02.78 per cent). While committee members and office bearers from tribal area perceived that APMC should facilitate the farmers to organise meet among stockholders (100.00 per cent) followed by communicate about Government policies (97.22 per cent), communicate problems to concerned (91.67 per cent), subsidies to
farmers (16.67 per cent), insurance for farm produce (16.67 per cent) and credit to farmers for farm production (02.78 per cent).

Regarding organizer role, committee members and office bearers from non-tribal area perceived that APMC should organize award the producers of quality produce (100.00 per cent) followed by form the cooperative societies (94.44 per cent), sale of farm produce under trade name (94.44 per cent), consumers organizations (38.89 per cent) and establish commodity wise SHGs (25.00 per cent). While committee members and office bearers from tribal area perceived that APMC should organize award the producers on quality produce (91.67 per cent) followed by form the cooperative societies (88.89 per cent), sale of farm produce under trade name (86.11 per cent), establish commodity wise SHGs (11.11 per cent) and consumers organizations (02.78 per cent).

The pooled data shows that the APMCs committee members and office bearers had perceived the weighing of farm produce as prime role under services of APMCs (100.00 per cent) followed by storage of farm produce (98.61 per cent) and grading of farm produce (91.67 per cent). Under advisory role, avoiding post harvest losses of crops (100.00 per cent) followed by export oriented farming (94.44 per cent) and legal aspects of marketing and export (79.17 per cent) were perceived. About market intelligence role, current rates in different markets was the prime role (100.00 per cent) followed by anticipate and communicate possible changes of markets (100.00 per cent) and availability of markets (100.00 per cent). As facilitator, all (100.00 per cent) of the committee members and office bearers considered organize meet among stockholders as prime role followed by communicate about Govt. policies (98.61 per cent) and communicate problems to concerned (93.06 per cent).

For the organizer role of APMCs, award the producers on quality produce as prime role (95.83 per cent) followed by form the cooperative societies (91.67 per cent) and sale of farm produce under trade name (90.28 per cent).

5.2.2 Overall role perception about market-led-extension

The APMCs are established as regulated markets in the districts of South Gujarat region. They have to perform such roles about market-led-extension. The perception among the APMC farmers about roles in regards has prime important which helps to change the behaviour about marketing of their produces. An attempt was made in the present investigation to know the perception about the role of APMC in Market-Led-Extension.
5.2.2.1 Overall role perception of APMC farmers about market-led-extension

The data in this regard were collected from the APMC farmers about market-led-extension through structured schedule and grouped into three categories viz., (i) lower level of role perception (up to 11 score), (ii) moderate level of role perception (12 to 21 score) and (iii) higher level of role perception (above 21 score). The responses got are presented in table 24 and fig. 23.

Table 24: Distribution of respondents according to their overall role perception about market-led-extension (n=232)

<table>
<thead>
<tr>
<th>Role perception</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Lower</td>
<td>15 (18.75)</td>
<td>5 (20.83)</td>
<td>0 (0.00)</td>
</tr>
<tr>
<td>Moderate</td>
<td>52 (65.00)</td>
<td>13 (54.17)</td>
<td>6 (50.00)</td>
</tr>
<tr>
<td>Higher</td>
<td>13 (16.25)</td>
<td>6 (25.00)</td>
<td>6 (50.00)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>80 (100.00)</strong></td>
<td><strong>24 (100.00)</strong></td>
<td><strong>12 (100.00)</strong></td>
</tr>
<tr>
<td>'t' value</td>
<td>1.6030</td>
<td>4.3547**</td>
<td></td>
</tr>
</tbody>
</table>

It is evident from the table 24 that majority of the APMC farmer of non-tribal area (65.00 per cent) and tribal area (68.75 per cent) had moderately perceived their roles about market-led-extension followed by 18.75 and 23.75 per cent of them had lower level of role perception and 16.25 and 7.50 per cent of them had higher level of role perception about market-led-extension respectively.

The mean score of role perception about market-led-extension of non-tribal area was 16.43 and 15.23 for the farmers of tribal area. The calculated 't' value (1.6030) among the APMC farmers of non-tribal and tribal area regarding role perception about market-led-extension was non-significant.

5.2.2.2 Overall role perception about market-led-extension by APMC committee members and office bearers

In fact in each organization every involved personnel have clear perception regarding their roles. In present study, there were two types of respondents. About APMC farmers, it was presented in forgoing discussion and under this head the investigator had tried to collect the data from the APMC committee members and office bearers regarding their role perception about market-led-extension and grouped into three categories viz., (i) lower level of role perception (up to 17 score), (ii) moderate level of role perception (18 to 26 score) and (iii) higher
level of role perception (above 26 score). The responses got are presented in table 24 and fig. 23.

Further, the same table shows about the role perception about market-led-extension of APMC committee members of non-tribal area and revealed that majority (54.17 per cent) of them had moderate level of role perception about market-led-extension followed by 25.00 and 20.83 per cent of them had higher and lower level of role perception. Whereas, about the committee members of APMCs of tribal area majority (50.00 per cent) of them had moderate level of role perception about market-led-extension followed by 45.83 and 04.17 per cent of them had lower and higher level of role perception respectively.

Same table shows that half (50.00 per cent) of the APMC office bearers of non-tribal area had moderate and higher level of role perception about market-led-extension and none were in the category of lower level of role perception. Whereas, about the office bearers of APMCs of tribal area majority (83.34 per cent) had moderate level of role perception about market-led-extension and 8.33 per cent each of them had lower and higher level of role perception respectively.

The average score of role perception about market-led-extension of APMC committee members and office bearers of non-tribal area was 23.44 and 19.17 for the tribal area. The calculated ‘t’ value (4.3547**) among non-tribal and tribal area of APMC committee members and office bearers about role perception was highly significant. It infers that the APMC committee members and office bearers of non-tribal area had much more clearly perceived the role about market-led-extension as compared to the committee members and office bearers of tribal area. This might be due to training received and their regular involvement in different market-led-extension activities for the farmers.

The same table shows that in pooled data, majority (63.79 per cent) of the respondents of APMCs had moderately perceived their roles about market-led-extension followed by 21.98 and 14.23 per cent of them had lower and higher level of role perception respectively.

This finding is in conformity with that of findings of Sangappa (2014), Joshi (2014), Kumar (2010), Rajendran and Thamilmani (2009), Nirban (2004), Singh and Singh (2003) and Sukhsanjam et al. (2000).

5.3 MANAGERIAL ABILITY FOR MARKET-LED-EXTENSION

Ones efficiency to manage the enterprise plays significant role in managerial ability. It is considered as inbuilt power of an individual. Considering the importance of market-led-extension and role of APMCs, this variable was chosen under the study. Under the managerial ability for market-led-extension, the planning,
organizing, human relationship, supervision, communication, coordination and control were considered as components while developing the scale by Chari (1985). It was used with some modifications and in the light of objective of the study 28 items were finalized. The structured schedule was used to collect the data and was analyzed.

5.3.1 Managerial ability of APMC farmers for market-led-extension

The data regarding managerial ability of APMC farmers for market-led-extension were collected and grouped into three categories viz., (i) fair level of managerial ability (up to 51 score), (ii) good level of managerial ability (52 to 65 score) and (iii) better level of managerial ability (above 65 score). The data in regards are presented in table 25 and fig. 24.

Table 25: Distribution of respondents according to their managerial ability for market-led-extension

<table>
<thead>
<tr>
<th>Managerial ability</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Fair</td>
<td>10</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(12.50)</td>
<td>(41.67)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Good</td>
<td>57</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>(71.25)</td>
<td>(45.83)</td>
<td>(41.67)</td>
</tr>
<tr>
<td>Better</td>
<td>13</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>(100.00)</td>
<td>(100.00)</td>
<td>(100.00)</td>
</tr>
<tr>
<td>Mean</td>
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<td>73.75</td>
<td>57.96</td>
</tr>
<tr>
<td>'t' value</td>
<td>0.4270</td>
<td>1.8549</td>
<td></td>
</tr>
</tbody>
</table>

The data shown in table 25 revealed that majority (71.25 per cent) of the APMC farmer of non-tribal area had good level of managerial ability for market-led-extension followed by 16.25 and 12.50 per cent had better and fair managerial ability respectively. While in case of APMC farmer of tribal area, majority (57.50 per cent) of them had good level of managerial ability for market-led-extension followed by 23.75 and 18.75 per cent had fair and better managerial ability respectively.

The mean score of managerial ability for market-led-extension of non-tribal and tribal areas were 58.44 and 57.96 respectively. The calculated 't' value (0.4270) among the APMC farmer of non-tribal and tribal areas about managerial ability for market-led-extension was non-significant.

5.3.2 Managerial ability for market-led-extension by committee members and office bearers

As compare to APMC farmers, the committee members and office bearers has to work with some other type of managerial abilities for market-led-extension therefore, the data in regards collected separately collected and categorized according to score obtained as; (i) fair level of managerial ability (up to 66 score), (ii)
good level of managerial ability (67 to 79 score) and (iii) better level of managerial ability (above 79 score). The data in regards are presented in table 25 and fig. 24.

The same table shows that the two fifth (45.83 per cent) of the APMCs committee members of non-tribal area had good level of managerial ability for market-led-extension followed by 41.67 and 12.50 per cent had fair and better level of managerial ability respectively. Whereas, half (50.00 per cent) of them of tribal area had fair level of managerial ability for market-led-extension followed by 45.83 and 04.17 per cent of them had good and better level of managerial ability respectively.

Same way in the case of APMC office bearers of non-tribal area, majority (58.33 per cent) of them had better level of managerial ability for market-led-extension followed by 41.67 per cent had good level of managerial ability and none were in the category of fair level of managerial ability. Whereas, majority (91.67 per cent) of the APMCs office bearers of tribal area had good level of managerial ability for market-led-extension followed by 8.33 per cent had better level of managerial ability and none were in the category of fair level of managerial ability.

The average score of managerial ability for market-led-extension of committee members and office bearers of non-tribal and tribal areas were 73.75 and 70.97 respectively. The calculated 't' value (1.8549) among the committee members and office bearers of APMCs located in non-tribal and tribal area about managerial ability for market-led-extension was non-significant.

The pooled data shows that majority (60.78 per cent) of the respondents of APMCs of both the areas possessed good managerial ability for market-led-extension followed by 21.98 per cent of them possessed fair level of managerial ability and 17.24 per cent of them had better level of managerial ability.


5.4 MARKETING BEHAVIOUR TOWARDS MARKET-LED-EXTENSION

In fact, a number of components are playing in marketing behaviour towards market-led-extension. Marketing behaviour legitimates the activities of market-led-extension therefore; a scale was developed by the investigator. The developed scale was used to know the marketing behaviour of APMC farmers, committee members and office bearers of non-tribal and tribal areas of South Gujarat.
Fig. 23: Distribution of respondents according to their role perception

Fig. 24: Distribution of respondents according to their managerial ability

Fig. 25: Distribution of respondents according to their marketing behaviour
5.4.1 Marketing behaviour towards market-led-extension of APMC farmers

Firstly, the marketing behaviour towards market-led-extension of APMC farmers of non-tribal and tribal areas was discussed under this head. The responses in this regards was collected separately and converted in to score for each farmers. On the basis of total score obtained, they were classified into three categories viz., (i) fair marketing behaviour (up to 89 score), (ii) good marketing behaviour (90 to 106 score) and (iii) better marketing behaviour (above 106 score). The data in regards are presented in table 26 and fig. 25.

Table 26: Distribution of respondents according to their marketing behaviour towards market-led-extension (n=232)

<table>
<thead>
<tr>
<th>Marketing behaviour</th>
<th>APMC of Non-Tribal area</th>
<th>APMC of Tribal area</th>
<th>Pooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Farmers</td>
<td>CMs</td>
<td>OBs</td>
</tr>
<tr>
<td>Fair</td>
<td>5 (6.25)</td>
<td>7 (29.17)</td>
<td>0 (0.00)</td>
</tr>
<tr>
<td>Good</td>
<td>60 (75.00)</td>
<td>10 (41.66)</td>
<td>6 (50.00)</td>
</tr>
<tr>
<td>Better</td>
<td>15 (18.75)</td>
<td>7 (29.17)</td>
<td>6 (50.00)</td>
</tr>
<tr>
<td>Total</td>
<td>80 (100.00)</td>
<td>24 (100.00)</td>
<td>12 (100.00)</td>
</tr>
<tr>
<td>Mean</td>
<td>99.09</td>
<td>112.69</td>
<td>95.59</td>
</tr>
<tr>
<td>'t' value</td>
<td>2.5587*</td>
<td>2.6285*</td>
<td></td>
</tr>
</tbody>
</table>

The data presented in table 26 revealed that majority (75.00 per cent) of the APMC farmers of non-tribal area had good level of marketing behaviour towards market-led-extension followed by 18.75 and 6.25 per cent of them had better and fair level of marketing behaviour respectively. While in case of APMC farmers of tribal area, majority (55.00 per cent) of them had good level of marketing behaviour towards market-led-extension followed by 27.50 and 17.50 per cent had fair and better level of marketing behaviour respectively.

The mean score of marketing behaviour towards market-led-extension of non-tribal and tribal areas farmers were 99.09 and 95.59 respectively. The calculated 't' value (2.5587*) among the APMC farmers of non-tribal and tribal area about marketing behaviour was significant. This infers that the farmers from non-tribal area had significantly higher level of marketing behaviour towards market-led-extension than the farmers from tribal area. This might be due to their level of education, land holding, economic orientation, risk orientation and availability of infrastructure facilities.
5.4.2 Marketing behaviour towards market-led-extension of APMC committee member and office bearers

The data collected from the APMC committee members and office bearers regarding marketing behaviour towards market-led-extension was classified into three categories viz., (i) fair marketing behaviour (up to 108 score), (ii) good marketing behaviour (109 to 115 score) and (iii) better marketing behaviour (above 115 score). The data in regards are presented in table 26 and fig. 25.

The same table shows that more than two-fifth (41.67 per cent) of committee members of APMCs of non-tribal area had good level of marketing behaviour towards market-led-extension followed by 29.17 per cent each had better and fair level of marketing behaviour. Whereas, majority (54.17 per cent) of the committee members of APMCs of tribal area had fair level of marketing behaviour towards market-led-extension followed by 45.83 per cent of them had good level of marketing behaviour and none were in the category of better level of marketing behaviour.

Further, same table shows that half (50.00 per cent) of the office bearers each of APMCs of non-tribal area had good and better level of marketing behaviour and none were in the category of fair level of marketing behaviour towards market-led-extension. Whereas, majority (58.34 per cent) the office bearers of APMCs of tribal area had good level of marketing behaviour towards market-led-extension followed by 33.33 and 8.33 per cent of them had better and fair level of marketing behaviour respectively.

The average score of marketing behaviour towards market-led-extension of committee members and office bearers of non-tribal and tribal areas were 112.69 and 110.47 respectively. The calculated 't' value (2.6285*) was significant. This indicates that there is significant difference among the APMC areas about marketing behaviour towards market-led-extension. The committee members and office bearers of non-tribal area possessed significantly higher level of marketing behaviour towards market-led-extension than the tribal area. The level of education, working experience, role perception, managerial ability and availability of facilities at APMC might be the reason for this outcome.

In the pooled data, majority (59.48 per cent) of the respondents of APMCs of both the areas had good level of marketing behaviour towards market-led-extension followed by 20.69 and 19.83 per cent of them had fair and better level of marketing behaviour respectively.

5.5 ASSOCIATION BETWEEN PROFILES WITH ROLE PERCEPTION ABOUT MARKET-LED-EXTENSION, MANAGERIAL ABILITY FOR MARKET-LED-EXTENSION AND MARKETING BEHAVIOUR TOWARDS MARKET-LED-EXTENSION

5.5.1 Association between profiles and role perception about market-led-extension of APMC farmers

Perception about an organization, identifying the information and individual’s interpretation ability helps to behave in the prevailing situation. In the present study aim, objectives and reforms of APMC are the basic determinants. The association between the age, education, land holding, farming experience, distance from market, annual income, social participation, extension contact, source of information on marketing, training received, cropping pattern, cropping intensity, marketable surplus, marketed surplus, knowledge about the statutory activities of APMCs, economic orientation, scientific orientation, risk orientation and perception of role of APMC by the farmers about market-led-extension were worked out to know the association through coefficient of correlation. The findings are presented in table 27, fig. 26 and empirical paradigm as fig. 29.

The data manifested in table 27 revealed that the knowledge about the statutory activities of APMC (0.53360**), scientific orientation (0.45939**) and risk orientation (0.40032**) among the APMC farmer of non-tribal area were found highly significantly associated with their role perception about market-led-extension. Further, land holding (0.27004*), extension contact (0.25532*) and distance from market (-0.28352*) found significantly associated with their role perception about market-led-extension. However, age (-0.04852), education (0.10824), farming experience (0.01070), annual income (-0.16545), social participation (0.19312), source of information on marketing (0.13250), training received (0.14379), cropping pattern (0.00912), cropping intensity (0.10599), marketable surplus (-0.13876), marketed surplus (-0.13851), economic orientation (0.20688) and group cohesiveness
(0.14361) were not associated with role perception about market-led-extension among the APMC farmers of non-tribal area.

**Table 27: Relationship between profile of the APMC farmers and role perception about market-led-extension**

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Profile of the farmers</th>
<th>Coefficient of correlation (‘r’ value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Non Tribal area</td>
</tr>
<tr>
<td>1.</td>
<td>Age</td>
<td>-0.04852</td>
</tr>
<tr>
<td>2.</td>
<td>Education</td>
<td>0.10824</td>
</tr>
<tr>
<td>3.</td>
<td>Land holding</td>
<td>0.27004*</td>
</tr>
<tr>
<td>4.</td>
<td>Farming experience</td>
<td>0.01070</td>
</tr>
<tr>
<td>5.</td>
<td>Distance from market</td>
<td>-0.28352*</td>
</tr>
<tr>
<td>6.</td>
<td>Annual income</td>
<td>-0.16545</td>
</tr>
<tr>
<td>7.</td>
<td>Social participation</td>
<td>0.19312</td>
</tr>
<tr>
<td>8.</td>
<td>Extension contact</td>
<td>0.25532*</td>
</tr>
<tr>
<td>9.</td>
<td>Source of information on marketing</td>
<td>0.13250</td>
</tr>
<tr>
<td>10.</td>
<td>Training received</td>
<td>0.14379</td>
</tr>
<tr>
<td>11.</td>
<td>Cropping pattern</td>
<td>0.00912</td>
</tr>
<tr>
<td>12.</td>
<td>Cropping intensity</td>
<td>0.10599</td>
</tr>
<tr>
<td>13.</td>
<td>Marketable surplus</td>
<td>-0.13876</td>
</tr>
<tr>
<td>14.</td>
<td>Marketed surplus</td>
<td>-0.13851</td>
</tr>
<tr>
<td>15.</td>
<td>Knowledge about the statutory activities of APMC</td>
<td>0.53360**</td>
</tr>
<tr>
<td>16.</td>
<td>Economic orientation</td>
<td>0.20688</td>
</tr>
<tr>
<td>17.</td>
<td>Scientific orientation</td>
<td>0.45939**</td>
</tr>
<tr>
<td>18.</td>
<td>Risk orientation</td>
<td>0.40032**</td>
</tr>
<tr>
<td>19.</td>
<td>Group cohesiveness</td>
<td>0.14361</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level   * Correlation is significant at the 0.05 level

Among the APMC farmer of tribal area, the distance from market (0.29483), extension contact (0.47364**), training received (0.46751**), knowledge about the statutory activities of APMC (0.48389**), economic orientation (0.53622**), scientific orientation (0.62219**) and risk orientation (0.49075**) found highly significantly associated with the role perception about market-led-extension. Whereas, education (0.25086*), annual income (0.27401*), source of information on marketing (0.24519*) and cropping pattern (0.27428*) were significantly associated, however, age (-0.12911), land holding (0.04979), farming experience (-0.12118), social participation (0.12458), cropping intensity (0.18086), marketable surplus (0.14554), marketed surplus (0.15407) and group cohesiveness (0.13209) were not have significant association with the role perception about market-led-extension.
The overall data indicates that the land holding (0.22704**), extension contact (0.31278**), training received (0.20698**), knowledge about the statutory activities of APMC (0.51924**), economic orientation (0.37174**), scientific orientation (0.53187**) and risk orientation (0.45120**) of the APMC farmer had highly significant association with role perception about market-led-extension. Whereas, education (0.20138*), source of information on marketing (0.18024*) and cropping intensity (0.18688*) were significantly associated, however, age (-0.06003), farming experience (-0.04082), distance from market (0.0288), annual income (0.14156), social participation (0.15215), cropping pattern (0.15508), marketable surplus (-0.06042), marketed surplus (-0.05805) and group cohesiveness (0.13714) were non-significantly associated with the role perception about market-led-extension.

From above findings, the hypothesis (Ho1) was partially accepted and partially rejected.

This finding is in conformity with those of Sundaresan et al. (2000).

5.5.1.2 Association between profiles and role perception about market-led-extension of APMC committee members and office bearers

The associations between the profile of APMC committee members and office bearers with their role perception about market-led-extension were worked out by using coefficient of correlation and findings are presented in table 28.

The data in table 28 revealed that the group cohesiveness (0.46382**) found highly significant of APMC committee members and office bearers of non-tribal area with role perception about market-led-extension while, age (0.04730), education (0.29553), experience (0.29302) and training received (0.22601) were non-significantly associated with the role perception about market-led-extension.

Table 28: Relationship between profile of the APMC committee members and office bearer and role perception about market-led-extension (n=72)

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Profile of committee members and office bearers</th>
<th>Coefficient of correlation (’r’ value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Non Tribal area</td>
</tr>
<tr>
<td>1.</td>
<td>Age</td>
<td>0.04730</td>
</tr>
<tr>
<td>2.</td>
<td>Education</td>
<td>0.29553</td>
</tr>
<tr>
<td>3.</td>
<td>Experience</td>
<td>0.29302</td>
</tr>
<tr>
<td>4.</td>
<td>Training received</td>
<td>0.22601</td>
</tr>
<tr>
<td>5.</td>
<td>Group cohesiveness</td>
<td>0.46382**</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level  * Correlation is significant at the 0.05 level
Fig. 26: Relationship between profile of the APMC farmers and role perception about market-led-extension
Among the committee members and office bearers of APMCs of tribal area the experience (0.57375**) found highly significant, education (0.36887*) found significantly and age (0.21444), training received (0.13438) and group cohesiveness (0.12027) were non-significantly associated with the role perception about market-led-extension.

In case of overall, the education (0.41737**) and experience (0.36418**) found highly significant, group cohesiveness (0.24747*) found significant and age (0.07844) as well as training received (0.18821) were found non-significantly associated with the role perception about market-led-extension.

From above findings, the hypothesis (Ho1) was partially accepted and partially rejected.

This finding is in conformity with those of Sundaresan et al. (2000).

5.5.2 Association between profiles and managerial ability for market-led-extension

5.5.2.1 Association between profiles and managerial ability for market-led-extension of APMC farmers

Management is a challenging job. It requires certain abilities to accomplish such a challenge. Thus, essential abilities which every manager needs for doing a better management are called as managerial ability for market-led-extension. Managerial ability is always based on managers’ efficiency. A farmer always used his ability while planning, scheduling, guiding, supervising and organizing their resources.

Several researchers noted that the socio-economic factors have had significant influence on the individual’s ability to work as a manager with farming and marketing. Considering as important aspect of the study the association between the age, education, land holding, farming experience, distance from market, annual income, social participation, extension contact, source of information on marketing, training received, cropping pattern, cropping intensity, marketable surplus, marketed surplus, knowledge about the statutory activities of APMC, economic orientation, scientific orientation, risk orientation with managerial ability for market-led-extension of APMC farmers were worked out by using coefficient of correlation. The findings are presented in table 29, fig. 27 and empirical paradigm as fig. 29.

The data presented in table 29 shows that the age (-0.33768**), education (0.40329**), farming experience (-0.31842**), extension contact (0.41899**), source of information on marketing (0.34804**), training received (0.38696**), knowledge about the statutory activities of APMC (0.47043**)
economic orientation (0.58402**), scientific orientation (0.63661**) and risk orientation (0.69580**) among the APMC farmers of non-tribal area were found highly significantly associated and group cohesiveness (0.28351*) was found significantly associated with their managerial ability for market-led-extension of APMC farmers of non-tribal area. However, the land holding (0.13885), distance from market (0.01076), annual income (-0.01494), social participation (0.17303), cropping pattern (-0.02938), cropping intensity (0.20571), marketable surplus (-0.10957) and marketed surplus (-0.11562) were not associated with managerial ability for market-led-extension of the APMC farmers of non-tribal area.

Table 29: Relationship between profile of the APMC farmers and managerial ability for market-led-extension

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Profile of the farmers</th>
<th>Coefficient of correlation ('r' value)</th>
<th>Non Tribal area</th>
<th>Tribal area</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Age</td>
<td>-0.33768**</td>
<td>-0.13366</td>
<td>-0.20495**</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Education</td>
<td>0.40329**</td>
<td>0.64615**</td>
<td>0.54138**</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Land holding</td>
<td>0.13885</td>
<td>0.15101</td>
<td>0.1394</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Farming experience</td>
<td>-0.31842**</td>
<td>-0.14262</td>
<td>-0.21510**</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Distance from market</td>
<td>0.01076</td>
<td>0.21368</td>
<td>0.13108</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Annual income</td>
<td>-0.01494</td>
<td>0.39488**</td>
<td>0.21258**</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Social participation</td>
<td>0.17303</td>
<td>0.22366*</td>
<td>0.20379**</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Extension contact</td>
<td>0.41899**</td>
<td>0.48420**</td>
<td>0.43497**</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Source of information on marketing</td>
<td>0.34804**</td>
<td>0.37600**</td>
<td>0.34856**</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Training received</td>
<td>0.38696**</td>
<td>0.61130**</td>
<td>0.42848**</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Cropping pattern</td>
<td>-0.02938</td>
<td>0.30130**</td>
<td>0.16563*</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Cropping intensity</td>
<td>0.20571</td>
<td>0.27687*</td>
<td>0.19164*</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Marketable surplus</td>
<td>-0.10957</td>
<td>0.42152**</td>
<td>0.08229</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Marketed surplus</td>
<td>-0.11562</td>
<td>0.42748**</td>
<td>0.08112</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Knowledge about the statutory activities of APMC</td>
<td>0.47043**</td>
<td>0.35027**</td>
<td>0.39498**</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Economic orientation</td>
<td>0.58402**</td>
<td>0.70844**</td>
<td>0.65723**</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Scientific orientation</td>
<td>0.63661**</td>
<td>0.71580**</td>
<td>0.68360**</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Risk orientation</td>
<td>0.69580**</td>
<td>0.62093**</td>
<td>0.63911**</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Group cohesiveness</td>
<td>0.28351*</td>
<td>0.24157*</td>
<td>0.17275*</td>
<td></td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level

In the case of APMC farmers of tribal area, the education (0.64615**), annual income (0.39488**), extension contact (0.48420**), source of information on marketing (0.37600**), training received (0.61130**), cropping pattern (0.30130**), marketable surplus (0.42152**), marketed surplus (0.42748**), knowledge about the statutory activities of APMC (0.35027**), economic orientation (0.70844**),
scientific orientation (0.71580**) and risk orientation (0.62093**) found highly significantly associated with managerial ability and social participation (0.22366*), cropping intensity (0.27687*) and group cohesiveness (0.24157*) were significantly associated. However, age (-0.13366), land holding (0.15101), farming experience (-0.14262) and distance from market (0.21368) were not have any significant association with managerial ability for market-led-extension.

The overall data indicate that the age (-0.20495**), education (0.54138**), farming experience (-0.21510**), annual income (0.21258**), social participation (0.20379**), extension contact (0.43497**), source of information on marketing (0.34856**), training received (0.42848**), knowledge about the statutory activities of APMC (0.39498**), economic orientation (0.65723**), scientific orientation (0.68360**) and risk orientation (0.63911**) of the APMC farmers had highly significant association and cropping pattern (0.16563*), cropping intensity (0.19164*) and group cohesiveness (0.17275*) were significantly associated with managerial ability. However, land holding (0.1394), distance from market (0.13108), marketable surplus (0.08229) and marketed surplus (0.08112) were non-significantly associated with the managerial ability for market-led-extension of APMC farmers.

From the above findings, the hypothesis (Ho2) was partially accepted and partially rejected.

This finding is in conformity with those of Darandale and Bhatt (2011) and Chari and Nandapurkar (1987).

5.5.2.2 Association between profiles and managerial ability for market-led-extension of APMC committee members and office bearers

The association between the profile with managerial ability for market-led-extension of APMC committee members and office bearers of both the areas were worked out by using coefficient of correlation and findings are presented in table 30.

Table 30: Relationship between profile of the APMC committee members and office bearer and managerial ability for market-led-extension (n=72)

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Profile of committee members and office bearers</th>
<th>Coefficient of correlation ('r' value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Non Tribal area</td>
</tr>
<tr>
<td>1.</td>
<td>Age</td>
<td>-0.17566</td>
</tr>
<tr>
<td>2.</td>
<td>Education</td>
<td>0.59756**</td>
</tr>
<tr>
<td>3.</td>
<td>Experience</td>
<td>0.41023*</td>
</tr>
<tr>
<td>4.</td>
<td>Training received</td>
<td>0.30454</td>
</tr>
<tr>
<td>5.</td>
<td>Group cohesiveness</td>
<td>0.47805**</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level  * Correlation is significant at the 0.05 level
Fig. 27: Relationship between profile of the APMC farmers and managerial ability for market-led-extension
The data given in table 30 revealed that the education (0.59756**) and group cohesiveness (0.47805**) found highly significant and working experience (0.41023*) found significantly associated with managerial ability for market-led-extension. Whereas, age (-0.17566) and training received (0.30454) were non-significantly associated with managerial ability for market-led-extension of the committee members and office bearers of APMCs of non-tribal area.

Further, the education (0.73304**) committee members and office bearers of APMCs of tribal area found highly significantly associated with their managerial ability for market-led-extension and training received (0.41983*) found significantly with their managerial ability for market-led-extension. However, age (-0.09755), experience (0.32095) and group cohesiveness (0.28559) were not found any significant association with managerial ability for market-led-extension of committee members and office bearers of APMCs of tribal area.

**In case of overall**, education (0.67825**), experience (0.36955**), training received (0.34921**) and group cohesiveness (0.36257**) found highly significant with their managerial ability for market-led-extension and age (-0.14546) was non-significantly associated with managerial ability for market-led-extension of committee members and office bearers of APMCs.

From the above findings, the hypothesis (Ho2) was partially accepted and partially rejected.

This finding is in conformity with those of Darandale and Bhatt (2011) and Chari and Nandapurkar (1987).

5.5.3 Association between profiles and marketing behaviour towards market-led-extension of APMC farmers

The marketing behaviour can be said as mental activities which play according to market situation. Collection of market information, gaining knowledge about the market, making decisions about the crops to be grown, resource management, use of crop production technologies, selection of market to sale the farm produce moreover activities like, cultivation of crops, cleaning, grading, sorting, processing, storage, weighing of farm produce, packing, transporting, performed by the farmers.

It is well established fact that socio-economic factors have significant influence on the individual’s behaviour therefore, the association between the age, education, land holding, farming experience, distance from market, annual income,
social participation, extension contact, source of information on marketing, training received, cropping pattern, cropping intensity, marketable surplus, marketed surplus, knowledge about the statutory activities of APMC, economic orientation, scientific orientation, risk orientation and marketing behaviour towards market-led-extension of the farmers were worked out by using coefficient of correlation. The findings in regards are presented in table 31, fig. 28 and empirical paradigm as fig. 29.

Table 31: Relationship between profile of APMC farmers and marketing behaviour towards market-led-extension

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Profile of the farmers</th>
<th>Coefficient of correlation ('r' value)</th>
<th>Non Tribal area</th>
<th>Tribal area</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Age</td>
<td>-0.30953**</td>
<td>0.23189**</td>
<td>-0.21202**</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Education</td>
<td>0.43732**</td>
<td>0.62875**</td>
<td>0.58127**</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Land holding</td>
<td>0.29829**</td>
<td>0.18987</td>
<td>0.28522**</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Farming experience</td>
<td>-0.31566**</td>
<td>-0.22913*</td>
<td>-0.24199**</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Distance from market</td>
<td>0.09436</td>
<td>0.19248</td>
<td>0.20323**</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Annual income</td>
<td>-0.00419</td>
<td>0.41763**</td>
<td>0.34167**</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Social participation</td>
<td>0.28206*</td>
<td>0.21955</td>
<td>0.25938**</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Extension contact</td>
<td>0.53072**</td>
<td>0.55155**</td>
<td>0.47091**</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Source of information on marketing</td>
<td>0.47926**</td>
<td>0.50075**</td>
<td>0.47577**</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Training received</td>
<td>0.46180**</td>
<td>0.51122**</td>
<td>0.29563**</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Cropping pattern</td>
<td>0.00038</td>
<td>0.25680*</td>
<td>0.18894*</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Cropping intensity</td>
<td>0.22739*</td>
<td>0.27324*</td>
<td>0.31712**</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Marketable surplus</td>
<td>-0.04343</td>
<td>0.31544**</td>
<td>0.08135</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Marketed surplus</td>
<td>-0.05341</td>
<td>0.32227**</td>
<td>0.07834</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Knowledge about the statutory activities of APMC</td>
<td>0.32036**</td>
<td>0.51524**</td>
<td>0.38432**</td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Economic orientation</td>
<td>0.56213**</td>
<td>0.77708**</td>
<td>0.70058**</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Scientific orientation</td>
<td>0.68730**</td>
<td>0.76295**</td>
<td>0.73969**</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Risk orientation</td>
<td>0.67558**</td>
<td>0.60380**</td>
<td>0.64723**</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Group cohesiveness</td>
<td>0.260313*</td>
<td>0.20274</td>
<td>0.33657**</td>
<td></td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level      * Correlation is significant at the 0.05 level

The data presented in table 31 indicated that the age (-0.30953**), and farming experience (-0.31566**) of APMC farmers of non-tribal area found negatively but highly significantly associated with their marketing behaviour towards market-led-extension. These might be due to that the old age farmers of non-tribal area were having traditionally bound thinking and reluctant to adopt new innovation in marketing.

Further, education (0.43732**), land holding (0.29829**), extension contact (0.53072**), source of information on marketing (0.49726**), training received (0.46180**), knowledge about the statutory activities of APMC (0.32036**), economic orientation (0.56213**), scientific orientation (0.68730**) and risk
orientation (0.67558**) of APMC farmers of non-tribal area were highly significantly associated with their marketing behaviour towards market-led-extension. The social participation (0.28206*), cropping intensity (0.22739*) and group cohesiveness (0.260313*) found significantly associated with their marketing behaviour. However, distance from market (0.09436), annual income (-0.00419), cropping pattern (0.00038), marketable surplus (-0.04343) and marketed surplus (-0.05341) were not associated with marketing behaviour of the APMC farmers of non-tribal area.

In case of APMC farmers of tribal area, the education (0.62875**), annual income (0.41763**), extension contact (0.55155**), source of information on marketing (0.50075**), training received (0.51122**), marketable surplus (0.31544**), marketed surplus (0.32227**), knowledge about the statutory activities of APMC (0.51524**), economic orientation (0.77708**), scientific orientation (0.76295**) and risk orientation (0.60380**) found highly significantly associated with marketing behaviour towards market-led-extension.

Whereas, age (-0.23189*), farming experience (-0.22913*) were negatively but significantly associated with marketing behaviour towards market-led-extension of APMC farmers of tribal area. These might be due to that the old age farmers of tribal area were having traditionally bound thinking and reluctant to adopt new innovation in marketing.

Further, cropping pattern (0.25680*) and cropping intensity (0.27324*) were significantly associated with marketing behaviour of APMC farmers of tribal area. However, land holding (0.18987), distance from market (0.19248), social participation (0.21955) and group cohesiveness (0.20274) were not have significant association with marketing behaviour towards market-led-extension of APMC farmers of tribal area.

The overall association indicates that the age (-0.21202**), education (0.58127**), land holding (0.28522**), farming experience (-0.2419**), distance from market (0.20323**), annual income (0.34167**), social participation (0.25938**), extension contact (0.47091**), source of information on marketing (0.47577**), training received (0.29563**), cropping intensity (0.31712**), knowledge about the statutory activities of APMC (0.38432**), economic orientation (0.70058**), scientific orientation (0.73969**), risk orientation (0.64723**) and group cohesiveness (0.33657**) of APMC farmers had highly significant association with marketing behaviour towards market-led-extension of APMC farmers of both the areas. Whereas, only cropping pattern (0.18894*) was significantly associated, however, marketable surplus (0.08135) and marketed surplus (0.07834) were non-
significantly associated with marketing behaviour towards market-led-extension of APMC farmers of both the areas.

From above findings, the hypothesis (Ho₃) was partially accepted and partially rejected.

This finding is in conformity with those of Joshi (2012), Chorge (2009), Govindarajan et al. (2006), Nirban (2004), Pennings and Leuthold (2000), Musser et al. (1996) and Smidts (1990).

5.5.3.2 Association between profiles and marketing behaviour towards market-led-extension of APMC committee members and office bearers

The associations between the profile of committee members and office bearers with marketing behaviour towards market-led-extension were worked out by using coefficient of correlation and findings are presented in table 32.

Table 32: Relationship between profile of APMC committee members and office bearer and marketing behaviour towards market-led-extension

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Profile of committee members and office bearers</th>
<th>Coefficient of correlation (‘r’ value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Non Tribal area</td>
</tr>
<tr>
<td>1.</td>
<td>Age</td>
<td>-0.00494</td>
</tr>
<tr>
<td>2.</td>
<td>Education</td>
<td>0.36206*</td>
</tr>
<tr>
<td>3.</td>
<td>Experience</td>
<td>0.28443</td>
</tr>
<tr>
<td>4.</td>
<td>Training received</td>
<td>-0.06327</td>
</tr>
<tr>
<td>5.</td>
<td>Group cohesiveness</td>
<td>0.50365**</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level  * Correlation is significant at the 0.05 level

The data depicted in table 32 revealed that the group cohesiveness (0.50365**) of APMC committee members and office bearers of non-tribal area found highly significant whereas, education (0.36206*) found significantly associated. However, age (-0.00494), experience (0.28443) and training received (-0.06327) were non-significantly associated with marketing behaviour towards market-led-extension of APMC committee members and office bearers of non-tribal area.

Further, the education (0.55099**) of APMC committee members and office bearers of tribal area found highly significant with marketing behaviour towards market-led-extension and working experience (0.40661*) found significantly with marketing behaviour. However, age (-0.08906), training received (0.15758) and group cohesiveness (0.29429) were non-significantly associated with the marketing behaviour towards market-led-extension of APMC committee members and office bearers of tribal area.
Fig. 28: Relationship between profile of the APMC farmers and marketing behaviour towards market-led-extension
INDEPENDENT VARIABLES OF APMC FARMERS:
- Age
- Education
- Land holding
- Farming experience
- Distance from market
- Annual income
- Social participation
- Extension contact
- Source of information
- Training received
- Cropping pattern
- Cropping intensity
- Marketable surplus
- Marketed surplus
- Knowledge of activities
- Economic orientation
- Scientific orientation
- Risk orientation
- Group cohesiveness

DEPENDENT VARIABLES:
- Role perception
- Managerial ability
- Marketing behaviour

INDEPENDENT VARIABLES OF APMC CM & OB:
- Age
- Education
- Experience
- Training received
- Group cohesiveness

Fig. 29: Empirical paradigm showing association between independent and dependent variables
In case of overall, the education (0.51248**) and experience (0.32692**) and group cohesiveness (0.36368**) found highly significant with the marketing behaviour towards market-led-extension of APMC committee members and office bearers of both the areas. However, age (-0.06561) and training received (0.03794) were found non-significantly associated with the marketing behaviour towards market-led-extension of APMC committee members and office bearers of both the areas.

From above findings, the hypothesis (Ho₃) was partially accepted and partially rejected.

This finding is in conformity with those of Joshi (2012), Chorge (2009), Govindarajan et al. (2006), Nirban (2004), Pennings and Leuthold (2000), Musser et al. (1996) and Smidts (1990).

5.5.4 Multiple linear regression

Considering the significances of different independent variables with marketing behaviour the investigator motivated to go for multiple linear regression analysis. Multiple linear regression analysis shows the level of contribution on the dependant variable. The observations are presented as under.

5.5.4.1 Multiple linear regression of APMC farmers

Multiple linear regression analysis of selected variables of the APMC farmers was carried out to know the contribution on marketing behaviour and the observations are presented in table 33.

It is clear from the table 33 that the value of $R^2$ in case of APMC farmers of non-tribal area was 0.761 infers that 76.10 per cent variation in the marketing behaviour of these farmers was explained by the fourteen independent variables. It was further observed that out of fourteen variables, source of information on marketing, training received, knowledge about the statutory activities of APMC, scientific orientation and risk orientation had contributed significantly in marketing behaviour of the APMC farmers of non-tribal area.

The 't' values of source of information on marketing (2.848**), training received (2.935**), knowledge about the statutory activities of APMC (2.857**), scientific orientation (3.078**) and risk orientation (3.993**) were highly significant. Thus, it can be concluded that said five variables could be considered as good predictors of the marketing behaviour of the farmers.
Table 33: Multiple linear regression analysis of independent variables with marketing behaviour of farmers 

(\(n=160\))

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Characteristics</th>
<th>Non-Tribal area (80)</th>
<th>Tribal area (80)</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Regression coefficient</td>
<td>'t' value</td>
<td>Regression coefficient</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25.717</td>
<td>2.062</td>
<td>-29.400</td>
</tr>
<tr>
<td>1.</td>
<td>Age</td>
<td>0.093</td>
<td>0.581</td>
<td>0.421</td>
</tr>
<tr>
<td>2.</td>
<td>Education</td>
<td>0.579</td>
<td>0.687</td>
<td>1.468</td>
</tr>
<tr>
<td>3.</td>
<td>Land holding</td>
<td>0.114</td>
<td>1.147</td>
<td>--</td>
</tr>
<tr>
<td>4.</td>
<td>Farming experience</td>
<td>-0.181</td>
<td>-1.035</td>
<td>-0.350</td>
</tr>
<tr>
<td>5.</td>
<td>Distance from market</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>6.</td>
<td>Annual income</td>
<td>--</td>
<td>--</td>
<td>-0.411</td>
</tr>
<tr>
<td>7.</td>
<td>Social participation</td>
<td>2.812</td>
<td>1.547</td>
<td>--</td>
</tr>
<tr>
<td>8.</td>
<td>Extension contact</td>
<td>-0.108</td>
<td>-0.182</td>
<td>0.039</td>
</tr>
<tr>
<td>9.</td>
<td>Source of information on marketing</td>
<td>1.232</td>
<td>2.848**</td>
<td>3.005</td>
</tr>
<tr>
<td>10.</td>
<td>Training received</td>
<td>3.314</td>
<td>2.935**</td>
<td>0.251</td>
</tr>
<tr>
<td>11.</td>
<td>Cropping pattern</td>
<td>--</td>
<td>--</td>
<td>-0.469</td>
</tr>
<tr>
<td>12.</td>
<td>Cropping intensity</td>
<td>0.417</td>
<td>0.942</td>
<td>0.831</td>
</tr>
<tr>
<td>13.</td>
<td>Marketable surplus</td>
<td>--</td>
<td>--</td>
<td>-0.994</td>
</tr>
<tr>
<td>14.</td>
<td>Marketed surplus</td>
<td>--</td>
<td>--</td>
<td>1.093</td>
</tr>
<tr>
<td>15.</td>
<td>Knowledge about the statutory activities of APMC</td>
<td>0.195</td>
<td>2.857**</td>
<td>0.569</td>
</tr>
<tr>
<td>16.</td>
<td>Economic orientation</td>
<td>-0.497</td>
<td>-0.783</td>
<td>1.687</td>
</tr>
<tr>
<td>17.</td>
<td>Scientific orientation</td>
<td>1.706</td>
<td>3.078**</td>
<td>2.190</td>
</tr>
<tr>
<td>18.</td>
<td>Risk orientation</td>
<td>1.660</td>
<td>3.993**</td>
<td>-0.547</td>
</tr>
<tr>
<td>19.</td>
<td>Group cohesiveness</td>
<td>0.104</td>
<td>0.728</td>
<td>--</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R²</th>
<th>0.761</th>
<th>0.792</th>
<th>0.739</th>
</tr>
</thead>
<tbody>
<tr>
<td>F value</td>
<td>16.162</td>
<td>16.257</td>
<td>25.284</td>
</tr>
</tbody>
</table>

In case of APMC farmers of tribal area, fifteen variables had explained 79.20 per cent variation (\(R^2=0.792\)) in the marketing behaviour. Four variables namely source of information on marketing, cropping intensity, knowledge about the statutory activities of APMC and scientific orientation contributed most to explain the variation in the marketing behaviour of these farmers. A close observation of regression coefficients in case of the farmers from tribal area revealed that when the source of information on marketing, cropping intensity, knowledge about the statutory activities of APMC and scientific orientation of these farmers increased by one unit their marketing behaviour enhanced by 3.005, 0.831, 0.569 and 2.190 respectively. These findings imply that these variables should be considered while predicting the marketing behaviour of the APMC farmers of tribal area.

At overall level, out of seventeen independent variables, four variables viz., education (3.241**), source of information on marketing (4.110**), knowledge about the statutory activities of APMC (3.294**) and scientific orientation (3.680**) found highly significant and four variables were viz., age (2.137*), training received
(2.026*), cropping intensity (2.125*) and risk orientation (2.178*) were significantly contributing in the marketing behaviour of the farmers. The seventeen variables together had contributed 73.90 per cent ($R^2$=0.739) of the marketing behaviour of the farmers.

Further, adding all these nineteen variables under study has been explained about three fourth variation in the marketing behaviour of farmers from non-tribal area and tribal area thus, there seem to be other unidentified variables which may explain the remaining one fourth variation in the marketing behaviour of these farmers.

This finding is in conformity with those of Joshi (2012), Chorge (2009), Govindarajan et al. (2006), Nirban (2004), Pennings and Leuthold (2000), Musser et al. (1996) and Smidts (1990).

5.5.4.2 Multiple linear regression of APMC committee members and office bearers

Multiple linear regression analysis was carried out to know the contribution of selected independent variables into the marketing behaviour (dependent variable) of the APMC committee members and office bearers and the observations are presented in table 34.

**Table 34: Multiple linear regression analysis of independent variables with marketing behaviour towards market-led-extension of APMC committee members and office bearers**

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Variables</th>
<th>Non-Tribal area</th>
<th>Tribal area</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Regression</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>coefficient</td>
<td>'t' value</td>
<td>Regression</td>
</tr>
<tr>
<td></td>
<td>Intercept</td>
<td>63.834</td>
<td>4.696</td>
<td>87.828</td>
</tr>
<tr>
<td>1.</td>
<td>Education</td>
<td>1.005</td>
<td>0.992</td>
<td>2.317</td>
</tr>
<tr>
<td>2.</td>
<td>Experience</td>
<td>0.124</td>
<td>1.881</td>
<td>0.177</td>
</tr>
<tr>
<td>3.</td>
<td>Group cohesiveness</td>
<td>1.525</td>
<td>3.167**</td>
<td>0.549</td>
</tr>
</tbody>
</table>

The data presented in the table 34 clearly indicate that the value of $R^2$ in case of committee members and office bearers of APMCs of non-tribal area was 0.370 infers that the 37.00 per cent variation in the marketing behaviour of these was explained by the three independent variables. It was further observed that out of three variables, one variable namely group cohesiveness (3.167**) had highly significantly contributed towards marketing behaviour of the committee members and office bearers from non-tribal area. Thus, it can be concluded that it should be considered as good predictor of the marketing behaviour.
In case of committee members and office bearers of APMCs of tribal area, three variables had explained 44.80 per cent variation ($R^2=0.448$) in the marketing behaviour. Two variables namely education (3.604**) and experience (2.107*) contributed most to explain the variation in the marketing behaviour of these respondents. These findings imply that these variables should be considered for predicting the marketing behaviour of the committee members and office bearers of APMCs of tribal area.

At overall level, all the three independent variables education (3.493**), experience (2.296*) and group cohesiveness (3.250**) were significantly contributing in the marketing behaviour of the committee members and office bearers. The three variables together had contributed 44.00 per cent ($R^2=0.440$) of the marketing behaviour. A close observation of regression coefficients revealed that when the education, experience and group cohesiveness of these committee members and office bearers increased by one unit their marketing behaviour improved by 1.883, 0.111 and 0.988 respectively.

Further, by adding all these three variables under study has been explained about two fifth variation in the marketing behaviour of the committee members and office bearers of APMCs of non-tribal area and tribal area thus, it seem to be other unidentified variables which may explain the remaining three fifth variation in the marketing behaviour.

### 5.6 FACTORS INFLUENCING IN MARKETING BEHAVIOUR AND THEIR SUGGESTIONS FOR MARKET-LED-EXTENSION

#### 5.6.1 Factors influencing in marketing behaviour for market-led-extension

Factors influencing refers as situation or circumstances which impede, confine or restrict the activity or performance of an individual. This objective of the present study was focused on factors influencing in market-led-extension which may also in form of difficulties, constraints, and bottleneck of APMC activities. These may enforce the farmers to take certain decisions in the process of farming and marketing. Farm planning, planning of production, post harvest management, APMC rules, market demand, market situation, farmers need, whether to sell produce or not, when sell, time, choice of place, marketing channel and others were taken in to account during the analysing the factors influencing in marketing behaviour.
It was noted by researchers that several factors play a vital role in the adoption of any innovation or idea in farming and marketing of farm produce. In this study, it was operationalised as the item of difficulties faced by the farmers in availing the information or in adoption of recommended package of practices and while marketing. There might be a number of factors and they may vary in nature and careful efforts may help to overcome therefore, it was felt imperative to identify these factors. The farmers were asked to mention the factors that influenced them while farming and marketing of their farm produce. These were noted and their intensity was assessed in terms of their frequencies and the ranked were assigned. The information regarding the same aspect is presented in Table 35 and Fig. 30.

**Table 35: Distribution of factors influencing the APMC farmers while farming and marketing of farm produce** (n=160)

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Influencing factors</th>
<th>f</th>
<th>%</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>High cost of inputs</td>
<td>142</td>
<td>88.75</td>
<td>I</td>
</tr>
<tr>
<td>2.</td>
<td>Monopolistic characteristics of traders / middlemen</td>
<td>133</td>
<td>83.13</td>
<td>II</td>
</tr>
<tr>
<td>3.</td>
<td>Shortage of labourers</td>
<td>132</td>
<td>82.50</td>
<td>III</td>
</tr>
<tr>
<td>4.</td>
<td>Less price/profit due to low market rate/production cost</td>
<td>128</td>
<td>80.00</td>
<td>IV</td>
</tr>
<tr>
<td>5.</td>
<td>Fluctuation in market price</td>
<td>118</td>
<td>73.75</td>
<td>V</td>
</tr>
<tr>
<td>6.</td>
<td>Shortage of irrigation</td>
<td>92</td>
<td>57.50</td>
<td>VI</td>
</tr>
<tr>
<td>7.</td>
<td>Lack of open auction</td>
<td>91</td>
<td>56.88</td>
<td>VII</td>
</tr>
<tr>
<td>8.</td>
<td>High labour charges/wages</td>
<td>84</td>
<td>52.50</td>
<td>VIII</td>
</tr>
<tr>
<td>9.</td>
<td>Inadequate physical facilities / market infrastructure</td>
<td>80</td>
<td>50.00</td>
<td>IX</td>
</tr>
<tr>
<td>10.</td>
<td>Lack of unity among the farmers</td>
<td>79</td>
<td>49.38</td>
<td>X</td>
</tr>
<tr>
<td>11.</td>
<td>Middlemen manipulate the situation / distress sale</td>
<td>72</td>
<td>45.00</td>
<td>XI</td>
</tr>
<tr>
<td>12.</td>
<td>Loss of produce due to climate change</td>
<td>69</td>
<td>43.13</td>
<td>XII</td>
</tr>
<tr>
<td>13.</td>
<td>Non-availability of market information in time</td>
<td>66</td>
<td>41.25</td>
<td>XIII</td>
</tr>
<tr>
<td>14.</td>
<td>Inadequate / absence of storage facilities</td>
<td>66</td>
<td>41.25</td>
<td>XIII</td>
</tr>
<tr>
<td>15.</td>
<td>Poor economic condition / Lack of credit facilities</td>
<td>55</td>
<td>34.38</td>
<td>XIV</td>
</tr>
<tr>
<td>16.</td>
<td>Collusion among the traders</td>
<td>49</td>
<td>30.63</td>
<td>XV</td>
</tr>
<tr>
<td>17.</td>
<td>Insufficient space of APMC</td>
<td>27</td>
<td>16.88</td>
<td>XVI</td>
</tr>
<tr>
<td>18.</td>
<td>Illegal deduction while selling</td>
<td>25</td>
<td>15.63</td>
<td>XVII</td>
</tr>
<tr>
<td>19.</td>
<td>Wastage of time due to waiting in open auction</td>
<td>21</td>
<td>13.13</td>
<td>XVIII</td>
</tr>
<tr>
<td>20.</td>
<td>Inadequate supply of electricity</td>
<td>20</td>
<td>12.50</td>
<td>XIX</td>
</tr>
</tbody>
</table>

The data presented in Table 35 indicates that out of several influencing factors while farming and marketing, the high cost of inputs (88.75 per cent) was considered as major and ranked first followed by monopolistic characteristics of traders / middlemen (83.13 per cent) as second, shortage of labourers (82.50 per cent) as third, less price/profit due to low market rate/production cost (80.00 per cent) as fourth and fluctuation in market price (73.75 per cent) was as fifth.
Fig. 30: Distribution of factors influence on the APMC farmers while farming and marketing of farm produce

- Inadequate supply of electricity
- Wastage of time due to waiting in open auction
- Illegal deduction while selling
- Insufficient space of APMC
- Collusion among the traders
- Poor economic condition / Lack of credit facilities
- Inadequate / absence of storage facilities
- Non-availability of market information in time
- Loss of produce due to climate change
- Middlemen manipulate the situation / distress sale
- Lack of unity among the farmers
- Inadequate physical facilities / market infrastructure
- High labour charges/wages
- Lack of open auction
- Shortage of irrigation
- Fluctuation in market price
- Less price/profit due to low market rate/production cost
- Shortage of labourers
- Monopolistic characteristics of traders / middlemen
- High cost of inputs
Further, the shortage of irrigation (57.50 per cent) was ranked sixth by the farmers followed by lack of open auction (56.88 per cent) as seventh, high labour charges/wages (52.50 per cent) as eighth, inadequate physical facilities/market infrastructure (50.00 per cent) as ninth, lack of unity among the farmers (49.38 per cent) as tenth, middlemen manipulate the situation/distress sale (45.00 per cent) as eleventh, loss of produce due to climate change (43.13 per cent) as twelfth, non-availability of market information in time (41.25 per cent) and inadequate/absence of storage facilities (41.25 per cent) as thirteenth, poor economic condition/ lack of credit facilities (34.38 per cent) as fourteenth, collusion among the traders (30.63 per cent) as fifteenth, insufficient space of APMC (16.88 per cent) as sixteenth, illegal deduction while selling (15.63 per cent) as seventeenth, wastage of time due to waiting in open auction (13.13 per cent) as eighteenth and inadequate supply of electricity (12.50 per cent) ranked as nineteenth.

From the forgoing discussion it could be concluded that high cost of inputs, monopoly of traders/middlemen, shortage of labours, low market rate for the produce and fluctuation of market rates were majorly pursuing factors while farming and marketing by the farmers in the study area.

5.6.2 Suggestions of APMC farmers to overcome the factors influencing in market-led-extension

Suggestion refers as an idea, plan that you mention for else to think about. In present study, suggestions were opted from the APMC farmers to overcome the factors influencing in market-led-extension. This process was done to develop the location specific and research based extension strategies. It is essential to seek the suggestions from the APMC farmers who directly involved in farming and marketing of farm produce. Some time involved farmer taking such decisions on the base of opinion of friends and neighbours, relatives, family members or traditionally and in such cases certain factors were conceived imaginary or due to lack of co-ordination at different levels. Hence, in this study, all the farmers were requested to offer their valued suggestion on their suggested factors to avoid misconceptions in regards.

The suggestions to overcome the influencing factors perceived by the APMC farmers were collected separately and are presented in the table 36.

Data of table 36 indicates the suggestions offered by APMC farmers to overcome the factors influencing in market-led-extension were collected and ordered on their intensity with rank order. Majority of the farmers reported that inputs should be subsidised and ranked first followed by more buyers should be in open auction as
second, promote low cost farm mechanization as third, MSP should be fixed on cost of production as fourth and margin and assure the farmers on MSP under promotion of marketing reforms was ranked fifth.

**Table 36: Distribution of suggestions made by APMC farmers to overcome the factors influencing in market-led-extension**

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Suggestions to overcome the factors influence</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Inputs should be subsidised</td>
<td>I</td>
</tr>
<tr>
<td>2.</td>
<td>More buyers should be in open auction</td>
<td>II</td>
</tr>
<tr>
<td>3.</td>
<td>Promote low cost farm mechanization</td>
<td>III</td>
</tr>
<tr>
<td>4.</td>
<td>MSP should be fixed on cost of production and margin</td>
<td>IV</td>
</tr>
<tr>
<td>5.</td>
<td>Assure the farmers on MSP under promotion of marketing reforms</td>
<td>V</td>
</tr>
<tr>
<td>6.</td>
<td>Irrigation canal should be extended up to unreached area</td>
<td>VI</td>
</tr>
<tr>
<td>7.</td>
<td>Open auction should allowed</td>
<td>VII</td>
</tr>
<tr>
<td>8.</td>
<td>Invent/promote substitute farm machinery with new idea</td>
<td>VIII</td>
</tr>
<tr>
<td>9.</td>
<td>Create market infrastructure facilities</td>
<td>IX</td>
</tr>
<tr>
<td>10.</td>
<td>Promote farmers organization</td>
<td>X</td>
</tr>
<tr>
<td>11.</td>
<td>Facilities should be available for direct marketing</td>
<td>XI</td>
</tr>
<tr>
<td>12.</td>
<td>Claiming of crop insurance should be easier due in natural calamity</td>
<td>XII</td>
</tr>
<tr>
<td>13.</td>
<td>Use of ICT to offer marketing information &amp; extension activities</td>
<td>XIII</td>
</tr>
<tr>
<td>14.</td>
<td>Godown facilities should made available</td>
<td>XIV</td>
</tr>
<tr>
<td>15.</td>
<td>Crop loan/credit facilities should be easily available</td>
<td>XV</td>
</tr>
<tr>
<td>16.</td>
<td>Enforce the market reforms at each APMC</td>
<td>XVI</td>
</tr>
<tr>
<td>17.</td>
<td>Provide more land to APMC for infrastructure development</td>
<td>XVII</td>
</tr>
<tr>
<td>18.</td>
<td>APMC should monitor and assure charges as per norms</td>
<td>XVIII</td>
</tr>
<tr>
<td>19.</td>
<td>Develop infrastructure on the basis of requirement at APMC</td>
<td>XIX</td>
</tr>
<tr>
<td>20.</td>
<td>As per allotted time slot DGVCL should supply electricity</td>
<td>XX</td>
</tr>
</tbody>
</table>

Further, the same table shows that the Irrigation canal should be extended up to unreached area, Open auction should allowed, Invent/promote substitute farm machinery with new idea, Create market infrastructure facilities, Promote farmers organization, Facilities should be available for direct marketing, Claiming of crop insurance should be easier due in natural calamity, Use of ICT to offer marketing information & extension activities, Godown facilities should made available, Crop loan/credit facilities should be easily available, Enforce the market reforms at each APMC, Provide more land to APMC for infrastructure development, APMC should monitor and assure charges as per norms, Develop infrastructure on the basis of requirement at APMC and As per allotted time slot DGVCL should supply electricity were ranked sixth to twentieth.
5.7 LOCATION SPECIFIC AND RESEARCH BASED EXTENSION STRATEGIES

The factors may vary from person to person and place to place. Before evolving and developing any extension strategy for intended users or in study area, it is necessary to obtain feedback based suggestions from the respondents along with the technical option from the competent experts. Considering the factors as a limiting to individual development, the extension educationists have suggested to use of Situation Based Extension with Participatory Approach (SBEA) to overcome the same in effective way.

The APMC farmers were consulted for experience based suggestion on their factors having influence. The opinion of technical experts on the same and suggestions offered by the farmers was screened out separately and a triangulation method was used to propose the strategy for first five factors. The data are presented in table 37.

Table 37: Proposed location specific and research based extension strategies to overcome the problem/constraints

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Constraints</th>
<th>Suggestion from farmers</th>
<th>Options from Experts</th>
<th>Proposed strategy based on triangulation</th>
<th>Who will execute</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High cost of inputs</td>
<td>Inputs should be subsidised</td>
<td>Inputs should be supplied through government agencies</td>
<td>Govt. should identify the agencies so, in affordable price farmers may purchase.</td>
<td>APMC, Coop. sector &amp; Line Dept.</td>
</tr>
<tr>
<td>2</td>
<td>Monopoly of traders / middlemen</td>
<td>More buyers should be there in open auction</td>
<td>Farmers market/ direct marketing should be promoted</td>
<td>Infrastructure facilities should be provided by Govt. for farmers market</td>
<td>Govt. through APMC</td>
</tr>
<tr>
<td>3</td>
<td>Shortage of labourers</td>
<td>Promote low cost farm mechanization</td>
<td>FIG/ CIG should be supported for mechanization</td>
<td>APMC should initiate custom hiring</td>
<td>APMC &amp; ATMA</td>
</tr>
<tr>
<td>4</td>
<td>Less price than production cost / less profit due to low market rate</td>
<td>MSP should be fixed on the basis of cost of production and margin</td>
<td>Govt. should assure that produce being purchased on MSP</td>
<td>Govt. should take initiatives in regards with special division.</td>
<td>APMC GoI &amp; CWC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Fluctuation in market price</td>
<td>Govt. should assure the MSP throughout the season</td>
<td>Promotion of farmers organization and direct marketing</td>
<td>APMC should take lead to form the farmers organization</td>
<td>APMC and Commodity based groups</td>
</tr>
</tbody>
</table>
CHAPTER-VI
SUMMARY AND CONCLUSION

This chapter is nutshell description of the present study covering the summary of major findings, conclusions and suggestions with future strategy for its implications.

6.1 BACKGROUND

Markets are the primary drivers for development. Agricultural markets are as important as the actual farming itself. Large number of fragmented landholding restricts the framers to adopt innovative technologies and unregulated markets are not giving the remunerative price of their produce. The APMCs established with a view to protect the interests of the farmers in general and small and marginal farmers in particular. The aim of regulated markets are to prevent exploitation of farmers by removing the hurdles in the marketing, to improve the marketing system for getting better prices of their produce and the goods are made available to consumers at reasonable prices. In this context, market-led-extension approach in the APMC activities play important role to enhance the marketing behaviour of farmers. This approach establishes its importance by realising the high returns to the farmers for their produce, minimize the production costs, reduce the post harvest loses and improves the product value with marketability. With this conceptualisation, the study was framed on ‘Strategic analysis of market-led-extension activities of APMCs of South Gujarat’ with following specific objectives.

6.2. OBJECTIVES OF THE STUDY

6.2.1 To study the personal, socio-economic, psychological, communicational and situational characteristics of office bearers, committee members and beneficiaries of APMC

6.2.2 To assess the perception of beneficiaries, office bearers and committee members about the role of APMC in market-led-extension

6.2.3 To study the managerial ability of beneficiaries, office bearers and committee members of APMC in market-led-extension activities

6.2.4 To analyze the marketing behaviour of beneficiaries, office bearers and committee members of APMC towards market-led-extension

6.2.5 To find out the association between selected characteristics with role perception, managerial ability and marketing behaviour towards market-led-extension of office bearers, committee members and beneficiaries of APMC and
To identify the factors influencing the marketing behaviour of APMC beneficiaries and obtain their strategic suggestions for enhancing the market-led-extension activities

**HYPOTHESES OF THE STUDY**

6.3.1 $H_0_1$ There is no relationship between profile of the respondents and role perception about market-led-extension.

6.3.2 $H_0_2$ There is no relationship between profile of the respondents and managerial ability for market-led-extension.

6.3.3 $H_0_3$ There is no relationship between profile of the respondents and marketing behaviour towards market-led-extension.

**REVIEW OF LITERATURE**

The comprehensive reviews of literatures having direct and indirect bearing on the study were narrated under following heads.

6.4.1 Profiles

6.4.2 Role perception

6.4.3 Managerial ability

6.4.4 Marketing behaviour

6.4.5 Association between profiles with perception of role, managerial ability and marketing behaviour

6.4.6 Factors influencing in marketing behaviour and their suggestions

6.4.7 Strategy

**METHODOLOGY**

The ex-post-facto as well as exploratory research designs were adopted in the present investigation. The area of seven districts of South Gujarat were bifurcated in to tribal area and non-tribal area and from both, 4 APMCs were randomly selected. For the study, respondents were of three types and from each APMC were taken in to account with a ratio of 20:6:3. One village each fell within the distances of 5 km and 5 to 10 km per APMC as well as from selected villages, 10 farmers as respondents were randomly selected which made the total of 160 farmers. Further, 6 committee members and 3 office bearers were also randomly selected as respondents from each APMC which made total of 48 committee members and 24 office bearers. Three dependent and nineteen independent variables were included for the present study. A scale developed to measure marketing behaviour, structure schedule prepared for knowing the role of APMC in market-led-extension and for managerial ability, the scale developed by the Chari (1985) was used. The collected data were analyzed with advocated statistical tools by the statistician.
6.6 **MAJOR FINDING**

6.6.1 Majority (59.48 per cent) of the APMC respondents were found in middle age group.

6.6.2 Nearly half (48.71 per cent) of the APMC respondents had secondary level of education.

6.6.3 Majority (50.00 per cent) of the farmers of APMCs belonged to medium size of land holding.

6.6.4 Majority (71.98 per cent) of the APMC respondents had medium level of farming as well as working experience.

6.6.5 Majority (81.25 per cent) of the APMC farmers found in the moderate to short market distance categories.

6.6.6 More than two fifth (43.75 per cent) of the APMC farmers found in higher annual income category.

6.6.7 Majority (79.38 per cent) of the farmers of APMCs were having membership in more than one social organization.

6.6.8 Majority (78.75 per cent) of the farmers of APMCs had moderate level of extension contact.

6.6.9 Majority (53.13 per cent) of the APMC farmers were frequently accessed the sources of information.

6.6.10 Majority (59.48 per cent) of the APMC respondents had not received any type of training.

6.6.11 Majority (60.00 per cent) of the APMC farmers had better cropping pattern.

6.6.12 Majority (68.13 per cent) of the APMC farmers had good cropping intensity.

6.6.13 Majority (54.38 per cent) of the APMC farmers had more than 75 per cent of marketable surplus.

6.6.14 Majority (54.38 per cent) of the APMC farmers had more than 75 per cent of marketed surplus

6.6.15 Majority (66.88 per cent) of the APMC farmers had adequate knowledge about the statutory activities of APMC.

6.6.16 Majority (60.63 per cent) of the APMC farmers had moderate level of economic orientation.

6.6.17 Majority (66.88 per cent) of the APMC farmers had moderate level of scientific orientation.
6.6.18 Majority (80.63 per cent) of the APMC farmers had moderate level of risk orientation.

6.6.19 Majority (81.47 per cent) of the respondents had moderate level of group cohesiveness.

6.6.20 Majority (63.79 per cent) of the respondents of APMCs had moderately perceived the roles of APMC in market-led-extension.

6.6.21 Majority (60.78 per cent) of the respondents of APMCs possessed good managerial ability for market-led-extension.

6.6.22 Majority (59.48 per cent) of the respondents of APMCs had good level of marketing behaviour towards market-led-extension.

6.6.23 The farmers' land holding (0.22704**), extension contact (0.31278**), training received (0.20698**), knowledge about the statutory activities of APMC (0.51924**), economic orientation (0.37174**), scientific orientation (0.53187**) and risk orientation (0.45120**) had highly significant association with role perception about market-led-extension. Whereas, education (0.20138*), source of information on marketing (0.18024*) and cropping intensity (0.18688*) were significantly associated with role perception about market-led-extension.

6.6.24 The APMC committee members' and office bearers' education (0.41737**) and working experience (0.36418**) found highly significant and group cohesiveness (0.24747*) was significantly associated with the role perception about market-led-extension.

6.6.25 The farmers' age (-0.20495**) and farming experience (-0.21510**) had highly significant but negative association with the managerial ability for market-led-extension. The education (0.54138**), annual income (0.21258**), social participation (0.20379**), extension contact (0.43497**), source of information on marketing (0.34856**), training received (0.42848**), knowledge about the statutory activities of APMC (0.39498**), economic orientation (0.65723**), scientific orientation (0.68360**) and risk orientation (0.63911**) of the APMC farmers had highly significant association and cropping pattern (0.16563*), cropping intensity (0.19164*) and group cohesiveness (0.17275*) were significantly associated with managerial ability for market-led-extension.
Regarding committee members and office bearers of APMCs the education (0.67825**), working experience (0.36955**), training received (0.34921**) and group cohesiveness (0.36257**) found highly significant with their managerial ability for market-led-extension.

The age (-0.21202**) and farming experience (-0.2419**) of APMC farmers had highly significant but negative association with marketing behaviour towards market-led-extension. The education (0.58127**), land holding (0.28522**), distance from market (0.20323**), annual income (0.34167**), social participation (0.25938**), extension contact (0.47091**), source of information on marketing (0.47577**), training received (0.29563**), cropping intensity (0.31712**), knowledge about the statutory activities of APMC (0.38432**), economic orientation (0.70058**), scientific orientation (0.73969**), risk orientation (0.64723**) and group cohesiveness (0.33657**) of APMC farmers had highly significant association and cropping pattern (0.18894*) was significantly associated with marketing behaviour towards market-led-extension of APMC farmers.

The high cost of inputs (88.75 per cent) was considered as major influencing factors in marketing behaviour and ranked first followed by monopolistic characteristics of traders / middlemen (83.13 per cent) as second, shortage of labourers (82.50 per cent) as third, less price/profit due to low market rate/production cost (80.00 per cent) as fourth and fluctuation in market price (73.75 per cent) was as fifth. Further, the shortage of irrigation (57.50 per cent) was ranked sixth by the farmers followed by lack of open auction (56.88 per cent) as seventh, high labour charges/wages (52.50 per cent) as eighth, inadequate physical facilities/market infrastructure (50.00 per cent) as ninth and lack of unity among the farmers (49.38 per cent) ranked tenth.
Majority of the farmers suggested that inputs should be subsidised and ranked first followed by more buyers should be in open auction as second, promote low cost farm mechanization as third, MSP should be fixed on cost of production and margin as fourth and assure the farmers on MSP under promotion of marketing reforms was ranked fifth. Further, the irrigation canal should be extended up to unreached area, open auction should allowed, invent/promote substitute farm machinery with new idea, create market infrastructure facilities and promote farmers organization.

6.7 CONCLUSIONS

6.7.1 It can be concluded that majority of the APMC respondents were found in middle age group, had secondary level of education, belonged medium size of land holding, had medium level of experience, found in the moderate to short market distance categories, found in higher annual income category, having membership in more than one social organization, had moderate level of extension contact, frequently accessed the sources of information, not received any type of training, had better cropping pattern, good cropping intensity, had more than 75 per cent of marketable and marketed surplus, adequate knowledge about the statutory activities of APMC, moderate level of economic orientation, scientific orientation, risk orientation and moderate level of group cohesiveness.

6.7.2 Majority of the respondents of APMCs had moderately perceived the roles of APMC in market-led-extension.

6.7.3 Majority of the respondents of APMCs possessed good managerial ability for market-led-extension.

6.7.4 Majority of the respondents of APMCs had good level of marketing behaviour towards market-led-extension.

6.7.5 The land holding, extension contact, training received, knowledge about the statutory activities of APMC, economic orientation, scientific orientation and risk orientation of APMC farmers were found highly significantly associated with the role perception about market-led-extension. Whereas, education, source of information on marketing and cropping intensity were found significantly associated with role perception about market-led-extension.
The education and working experience of committee members and office bearers of APMCs found highly significant and group cohesiveness was significantly associated with the role perception about market-led-extension.

The age and farming experience of the APMC farmers had highly significant but negatively associated with the managerial ability for market-led-extension. The education, annual income, social participation, extension contact, source of information on marketing, training received, knowledge about the statutory activities of APMC, economic orientation, scientific orientation and risk orientation of the APMC farmers were found highly significant association and cropping pattern, cropping intensity and group cohesiveness were significantly associated with managerial ability for market-led-extension.

The age and farming experience of APMC farmers had highly significant but negatively associated with marketing behaviour towards market-led-extension. The education, land holding, distance from market, annual income, social participation, extension contact, source of information on marketing, training received, cropping intensity, knowledge about the statutory activities of APMC, economic orientation, scientific orientation, risk orientation and group cohesiveness of APMC farmers were found highly significant association and cropping pattern was significantly associated with marketing behaviour towards market-led-extension of APMC farmers.

The high cost of inputs, monopolistic characteristics of traders / middlemen, shortage of labourers, less price/profit due to low market rate/production cost, fluctuation in market price, the shortage of irrigation, lack of open auction, high labour charges/wages, inadequate physical facilities/market infrastructure and lack of unity among the farmers were found as the major influencing factors in marketing behaviour of the farmers.
Inputs should be subsidised, more buyers should be in open auction, promote low cost farm mechanization, MSP should be fixed on cost of production and margin, assure the farmers on MSP under promotion of marketing reforms, the irrigation canal should be extended up to unreached area, open auction should allowed, invent/promote substitute farm machinery with new idea, create market infrastructure facilities and promote farmers organization were the suggestions offered by APMC farmers to overcome the influencing factors in market behaviour.

6.8 IMPLICATIONS OF THE STUDY

The implications emerged from the present study regarding market-led-extension on the responses of respondents are reported in this section. These may be useful to policy makers, administrators, researchers, extension workers and social workers in promoting the marketing behaviour of the farmers, to make remunerative and profitable farming.

6.8.1 The findings of the present investigation revealed that a majority of the farmers not received training on scientific farming and marketing aspects. The APMCs should organize training and extension activities in collaboration with other institutes to empower with knowledge and skill regarding good marketing practices.

6.8.2 Majority of the farmers had moderately perceived the roles of APMC about market-led-extension therefore, it was suggested that systematic efforts on the part of APMC required conducting the awareness activities among the farmers regarding reforms in regulated markets and role to be played by APMC and their personnel in market-led-extension.

6.8.3 The marketing behaviour of APMC farmers found to be influenced by certain characteristics. The APMC and concern extension agencies may use these findings for improving the marketing behaviour of the farmers. Moreover, they may consider these variables while planning and executing the programmers for promoting and conducting activities to disseminate the information about marketing of farm produce.
6.8.4 The researchers engaged in agricultural extension and agricultural economics may use the scale of marketing behaviour of the farmers for their endowments.

6.8.5 Association between profile and role perception about market-led-extension of APMC, managerial ability for market-led-extension and marketing behaviour towards market-led-extension may help in selection of farmers to change the marketing behaviour and make them more market oriented.

6.8.6 The farmers expressed major constraints as high cost of inputs, monopolistic characteristics of traders/middlemen, less price/profit due to low market rate, fluctuation in market price, inadequate physical facilities/market infrastructure and lack of unity among the farmers were considered as major influencing factors. By elimination, the performance of APMC in the market-led-extension may enhance.

6.8.7 It was suggested that the features like updating farmers with market information, collective purchasing, facilitating selling, organizing and supporting for marketing may pave the way for betterment of the farming community and can make farming more profitable.

6.9 SUGGESTIONS FOR FUTURE RESEARCH
The present study throws the light on new areas in which research works are to be needed which are as;

6.9.1 Similar studies may be conducted in other geographical areas by adding or deleting the independent and dependent variables in order to strengthen the results of this study.

6.9.2 Strategy developed under this study may used to promote the marketing behaviour of the farmers of Gujarat state to make agriculture more remunerative and profitable.

6.9.3 The present study may be repeated after a period of five years so, assessment can help to develop and strengthen the strategies.
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Thurston, L. L. and Chave, E. J. (1929). The measurement of Attitude. Chicago Univ. Chicago Press.


Sir,

One of my Ph.D. students, Mr. S. D. Kavad has undertaken the research study entitled “Strategic analysis of Market-Led-Extension activities of APMCs of South Gujarat”. Under this study he would like to develop and standardize a scale on measuring the marketing behaviour of farmers.

As you know that the marketing behaviour is operationalised as, it is mental activities like collecting information, gaining knowledge about the market situation, decisions about the crops to be grown, management of resources, crop production technologies to be used, selection of market for sale of farm produce, as well as, physical activities like cultivation of crops and cleaning, grading, sorting, processing, packing, transporting, weighing of farm produce performed by the farmers.

Mr. Kavad has identified some key indicators from different marketing reviews for marketing behaviour. I know, you have enough experience with expertise in this field therefore, I request you to give your judgement on the continuum given against each indicator. If you feel any more indicators beyond the listed one, you can add it and judge accordingly.

It will be highly appreciated if you spare some time for the same and after judging, kindly send it to this office.

Thanking you,

Sincerely yours

Encl: As above

To,

Dr. …………………………………………….......... (R. D. Pandya)
Key indicators in Marketing behaviour
of the APMC farmers, Committee members and Office bearers

Please, put a tick (✓) on appropriate column to show your proper response according to your consideration

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Key Indicators</th>
<th>Continuum shows its importance as indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>“10” indicate most - “1” indicate least important</td>
</tr>
<tr>
<td>1</td>
<td>Marketing information</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Market Intelligence</td>
<td>9</td>
</tr>
<tr>
<td>3</td>
<td>Farm planning</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>Production planning</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>Marketing planning</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>Finance management</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>Marketing Skill</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>Communicability</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>Professionalism</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Traditional wisdom</td>
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<td>12</td>
<td>Market behaviour</td>
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<tr>
<td>13</td>
<td>Export orientation</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Marketing channels</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Post harvest management</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Storage</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Mode of transport</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Method of price fixation</td>
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<td>19</td>
<td>Market reforms</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Government assistance</td>
<td></td>
</tr>
</tbody>
</table>
Dear Sir,

Mr. S. D. Kavad is inservice scholar and has undertaken a research study on “Strategic analysis of Market-Led-Extension activities of APMCs of South Gujarat”. As a part and partial requirement of his endowment he would like to develop and standardizing a scale to measure the marketing behaviour of farmers, office bearers and committee members of APMCs.

In general, the marketing behaviour is comprise of different activities like collecting information, availing knowledge about the market situation, decisions about the crop to be grown, management of resources, crop production technologies to be used, selection of market for sale of farm produce, cultivation of crop along with different physical activities performed by the farmers on the farm produce.

In this connection, Mr. Kavad has developed a number of items, which are covers the aspect of marketing behaviour of the farmers.

Considering your vast experience and contribution in our field, I feel privileged in taking your help for standardizing the said scale. I request you to go through the annexure critically and examine each of the items and indicate its relevancy on five points continuum ranging from ‘most relevant’ to ‘not relevant’ by putting ( √ ) mark in the appropriate column.

I know that you are busy with your own schedule but, I am sure that you will spare your valuable time with the feeling as a part of faculty improver. Moreover, I am requesting you to return the duly filled in appendix to Mr. Kavad at your earliest in attached self-addressed envelope.

Thanking you,

Sincerely yours

Encl: As above

To,

Dr. .................................................

.................................................

.................................................

(R. D. Pandya)
## SCALE CONSTRUCTION FOR MEASURING

### MARKETING BEHAVIOUR OF FARMERS, COMMITTEE MEMBERS AND OFFICE BEARERS OF APMCs

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Statement</th>
<th>Relevance</th>
<th>RW</th>
<th>MRS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&gt;70 %</td>
<td>&gt;0.7</td>
<td>&gt;3.5</td>
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<tr>
<td>1</td>
<td><strong>Marketing information</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Market news about commodity price is very useful to the farmers.</td>
<td>93.95</td>
<td>0.939</td>
<td>4.70</td>
</tr>
<tr>
<td>1.2</td>
<td>Farmer should seek the market information before selling his produce.</td>
<td>91.84</td>
<td>0.918</td>
<td>4.59</td>
</tr>
<tr>
<td>1.3</td>
<td>Knowing the trend of local market is advisable while selling the produce.</td>
<td>86.05</td>
<td>0.861</td>
<td>4.30</td>
</tr>
<tr>
<td>1.4</td>
<td>Farmer should use social network for collecting market information.</td>
<td>76.84</td>
<td>0.768</td>
<td>3.84</td>
</tr>
<tr>
<td>1.5</td>
<td>Information about commodity market in the vicinity is necessary for farmer.</td>
<td>78.95</td>
<td>0.789</td>
<td>3.95</td>
</tr>
<tr>
<td>1.6</td>
<td>One should use various sources for collecting market information.</td>
<td>82.63</td>
<td>0.826</td>
<td>4.13</td>
</tr>
<tr>
<td>1.7</td>
<td>Knowledge about export &amp; import of commodities is necessary for farmer.</td>
<td>68.42</td>
<td>0.684</td>
<td>3.42</td>
</tr>
<tr>
<td>1.8</td>
<td>One should be aware about marketing channel for his produce.</td>
<td>85.79</td>
<td>0.858</td>
<td>4.29</td>
</tr>
<tr>
<td>1.9</td>
<td>The seller should be aware about the market charges.</td>
<td>84.21</td>
<td>0.842</td>
<td>4.21</td>
</tr>
<tr>
<td>1.10</td>
<td>Farmer should be aware about the WTO.</td>
<td>60.26</td>
<td>0.603</td>
<td>3.01</td>
</tr>
<tr>
<td>2</td>
<td><strong>Market Intelligence</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>An ability to assess market demand is important for planning the cultivation of crop.</td>
<td>85.00</td>
<td>0.850</td>
<td>4.25</td>
</tr>
<tr>
<td>2.2</td>
<td>An ability to browse ICT apparatus to develop awareness about market is important.</td>
<td>71.32</td>
<td>0.713</td>
<td>3.57</td>
</tr>
<tr>
<td>2.3</td>
<td>Information about agencies / agents engaged in marketing of farm produce is required by seller.</td>
<td>77.37</td>
<td>0.774</td>
<td>3.87</td>
</tr>
<tr>
<td>2.4</td>
<td>Knowledge about products preferences is important matter for seller.</td>
<td>87.63</td>
<td>0.876</td>
<td>4.38</td>
</tr>
<tr>
<td>2.5</td>
<td>Agent / farmer should be aware of Sanitary &amp; Phyto-sanitary measure.</td>
<td>73.95</td>
<td>0.739</td>
<td>3.70</td>
</tr>
<tr>
<td>2.6</td>
<td>The seller should aware about different market grades and standards.</td>
<td>84.21</td>
<td>0.842</td>
<td>4.21</td>
</tr>
<tr>
<td>2.7</td>
<td>Agency / agent should provide information about export procedure to the farmers.</td>
<td>64.74</td>
<td>0.647</td>
<td>3.24</td>
</tr>
<tr>
<td>2.8</td>
<td>The market prices should be fixed season wise by the group of farmers and agency.</td>
<td>65.26</td>
<td>0.653</td>
<td>3.26</td>
</tr>
<tr>
<td>2.9</td>
<td>Weather, market fluctuation and government intervention should be counted by farmer while fixing the price to reduce the risk.</td>
<td>68.16</td>
<td>0.682</td>
<td>3.41</td>
</tr>
<tr>
<td>2.10</td>
<td>Commodity wise forecasting of price helps the farmers.</td>
<td>82.89</td>
<td>0.829</td>
<td>4.14</td>
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<tr>
<td>3</td>
<td>Farm planning</td>
<td>Score 1</td>
<td>Score 2</td>
<td>Score 3</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>3.1</td>
<td>One should choose crop diversification as per the availability of natural resources.</td>
<td>77.37</td>
<td>0.774</td>
<td>3.87</td>
</tr>
<tr>
<td>3.2</td>
<td>For increasing the farm yield, development of farm production plan is important.</td>
<td>81.32</td>
<td>0.813</td>
<td>4.07</td>
</tr>
<tr>
<td>3.3</td>
<td>An assessment about available resources is to be needed before cultivation of crop.</td>
<td>83.95</td>
<td>0.839</td>
<td>4.20</td>
</tr>
<tr>
<td>3.4</td>
<td>Planning for timely procurement of inputs is required.</td>
<td>83.42</td>
<td>0.834</td>
<td>4.17</td>
</tr>
<tr>
<td>3.5</td>
<td>Off season cultivation assist in good economic return.</td>
<td>82.37</td>
<td>0.824</td>
<td>4.12</td>
</tr>
<tr>
<td>3.6</td>
<td>One should plan his farm production according to forecasting made by APMC.</td>
<td>68.95</td>
<td>0.689</td>
<td>3.45</td>
</tr>
<tr>
<td>3.7</td>
<td>One should have alternate plan to overcome the problem of crop failure.</td>
<td>78.42</td>
<td>0.784</td>
<td>3.92</td>
</tr>
<tr>
<td>3.8</td>
<td>Long term planning is advisable for the success of enterprise.</td>
<td>82.11</td>
<td>0.821</td>
<td>4.11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>Production planning</th>
<th>Score 1</th>
<th>Score 2</th>
<th>Score 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Critical inputs are to be identified before cultivation of crop.</td>
<td>78.16</td>
<td>0.782</td>
<td>3.91</td>
</tr>
<tr>
<td>4.2</td>
<td>One should estimate the probable cost of cultivation before growing crop.</td>
<td>84.21</td>
<td>0.842</td>
<td>4.21</td>
</tr>
<tr>
<td>4.3</td>
<td>It is necessary to consider market demand about particular variety of produce before cultivation.</td>
<td>85.79</td>
<td>0.858</td>
<td>4.29</td>
</tr>
<tr>
<td>4.4</td>
<td>Every time one should consult the expert to plan the produce in agricultural enterprise.</td>
<td>65.53</td>
<td>0.655</td>
<td>3.28</td>
</tr>
<tr>
<td>4.5</td>
<td>Modern technology should be adopted to get maximum profit from the produce.</td>
<td>81.32</td>
<td>0.813</td>
<td>4.07</td>
</tr>
<tr>
<td>4.6</td>
<td>Farmers should recognize the need based change in the crop cultivation practices for more profit.</td>
<td>82.37</td>
<td>0.824</td>
<td>4.12</td>
</tr>
<tr>
<td>4.7</td>
<td>One should take prior decision for different crop cultivation practices.</td>
<td>73.42</td>
<td>0.734</td>
<td>3.67</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5</th>
<th>Marketing planning</th>
<th>Score 1</th>
<th>Score 2</th>
<th>Score 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>Before marketing the produce one should review the demand.</td>
<td>87.37</td>
<td>0.874</td>
<td>4.37</td>
</tr>
<tr>
<td>5.2</td>
<td>Awareness about market reforms of APMC helps the farmer to get remunerative prices for his produce.</td>
<td>79.74</td>
<td>0.797</td>
<td>3.99</td>
</tr>
<tr>
<td>5.3</td>
<td>One should avail nearby APMC godown / storage facilities for better marketing.</td>
<td>74.21</td>
<td>0.742</td>
<td>3.71</td>
</tr>
<tr>
<td>5.4</td>
<td>Before planning for market one has to understand distribution system of farm produce.</td>
<td>68.68</td>
<td>0.687</td>
<td>3.43</td>
</tr>
<tr>
<td>5.5</td>
<td>Understanding about consumers’ needs is required before plan to cultivate crop.</td>
<td>81.32</td>
<td>0.813</td>
<td>4.07</td>
</tr>
<tr>
<td>5.6</td>
<td>Farmer should aware about buying and selling methods of APMC market.</td>
<td>85.79</td>
<td>0.858</td>
<td>4.29</td>
</tr>
<tr>
<td>5.7</td>
<td>Awareness about alternative marketing methods for selling of produce helps in better return.</td>
<td>86.84</td>
<td>0.868</td>
<td>4.34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6</th>
<th>Finance management</th>
<th>Score 1</th>
<th>Score 2</th>
<th>Score 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Farming should be aimed at maximum net return.</td>
<td>88.16</td>
<td>0.882</td>
<td>4.41</td>
</tr>
<tr>
<td>6.2</td>
<td>Believing in economic aspects are important in selection of crop &amp; variety for farmer.</td>
<td>81.05</td>
<td>0.811</td>
<td>4.05</td>
</tr>
<tr>
<td>6.3</td>
<td>Cautious to workout relative advantage at each farm</td>
<td>66.84</td>
<td>0.668</td>
<td>3.34</td>
</tr>
</tbody>
</table>
operation resulted in higher return.

6.4 Keeping farm records is very important especially for financial aspects.  
6.5 Assessment and availability of required credit is important to raise the crops.  
6.6 One should identify and arrange important sources of credit for crop cultivation.  
6.7 Borrowing finances from local money lenders is advisable.  
6.8 Awareness regarding pledge loan helps the farmers to overcome economic problems.  
6.9 Financial risk is advisable in agriculture enterprise.

7 Marketing skill

7.1 An ability to analyse and determinate market information helps in decision making.  
7.2 An art of marketing skill helps to get better return.  
7.3 An ability of negotiation skill helps the farmer to get good price.  
7.4 Skill to interpret recorded data about market trends helps to get expected price of produce.  
7.5 One should able to understand the factors which determine the market prices and opportunities.  
7.6 An ability to learn new skills of market is very important.  
7.7 One should have knowledge about quality standard of respective country for export opportunity.  
7.8 One should have knowledge regarding agencies deals with export of produce.  
7.9 Group approach is more beneficial for getting better price for the produce from the market.  
7.10 Knowledge about produce / product, price & promotion is necessary for marketing.  
7.11 Knowledge of alternative market practices of graded produce.  
7.12 I believe that training can improve the marketing skill of producers.

8 Entrepreneurship

8.1 One should consider farming as an enterprise.  
8.2 I prefer to take risks by adopting new crop, variety and other modern technologies in my farming for better return.  
8.3 One should have ability to make quick analysis of problem and sort out it with advisable solution.  
8.4 Farmer should have ability to apply SWOT analysis for his farming.  
8.5 Membership of different market related organizations helps in better running of farming enterprise.  
8.6 Sale of farm produce immediately after harvest is not advisable for better return.  
8.7 Quality produce is more important to get advantage of globalization.
### Marketing channels

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Value 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1</td>
<td>One should decide the appropriate marketing channel for getting maximum profit.</td>
<td>82.37</td>
<td>0.824</td>
<td>4.12</td>
</tr>
<tr>
<td>9.2</td>
<td>Knowledge about marketing margins at various levels is required by each farmer.</td>
<td>71.32</td>
<td>0.713</td>
<td>3.57</td>
</tr>
<tr>
<td>9.3</td>
<td>One should sell his produce to the nearest local market irrespective of price.</td>
<td>48.95</td>
<td>0.489</td>
<td>2.45</td>
</tr>
<tr>
<td>9.4</td>
<td>Export of produce is more profitable for big farmers only.</td>
<td>57.63</td>
<td>0.576</td>
<td>2.88</td>
</tr>
<tr>
<td>9.5</td>
<td>Knowledge about short marketing channels are always profitable.</td>
<td>65.26</td>
<td>0.653</td>
<td>3.26</td>
</tr>
<tr>
<td>9.6</td>
<td>Knowledge of different marketing channels should be tested by the farmers.</td>
<td>61.58</td>
<td>0.616</td>
<td>3.08</td>
</tr>
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</table>

### Post harvest management

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Value 1</th>
<th>Value 2</th>
<th>Value 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1</td>
<td>One can get better price by grading his produce</td>
<td>91.58</td>
<td>0.916</td>
<td>4.58</td>
</tr>
<tr>
<td>10.2</td>
<td>Storage facilities can ensure better return of produce.</td>
<td>87.63</td>
<td>0.876</td>
<td>4.38</td>
</tr>
<tr>
<td>10.3</td>
<td>Godown and cold storage can help in getting higher prices of produce by selling the produce at right time</td>
<td>89.21</td>
<td>0.892</td>
<td>4.46</td>
</tr>
<tr>
<td>10.4</td>
<td>Selling produce after value addition is more profitable</td>
<td>92.63</td>
<td>0.926</td>
<td>4.63</td>
</tr>
<tr>
<td>10.5</td>
<td>Knowledge of packing &amp; packaging is helpful in getting better price for the produce</td>
<td>90.79</td>
<td>0.908</td>
<td>4.54</td>
</tr>
</tbody>
</table>
### APPENDIX–III

**MARKETING BEHAVIOUR OF FARMERS, COMMITTEE MEMBERS AND OFFICE BEARERS OF APMCs**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Statement</th>
<th>&quot;t&quot; value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td><strong>Marketing information</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Market news about commodity price is very useful to the farmers.</td>
<td>2.976</td>
</tr>
<tr>
<td>2</td>
<td>Farmer should seek the market information before selling his produce.</td>
<td>3.908</td>
</tr>
<tr>
<td>3</td>
<td>Knowing the trend of local market is advisable while selling the produce.</td>
<td>3.616</td>
</tr>
<tr>
<td>4</td>
<td>One should use various sources for collecting market information.</td>
<td>3.707</td>
</tr>
<tr>
<td>5</td>
<td>One should be aware about marketing channel for his produce.</td>
<td>3.512</td>
</tr>
<tr>
<td>6</td>
<td>The seller should be aware about the market charges.</td>
<td>3.368</td>
</tr>
<tr>
<td>II</td>
<td><strong>Market Intelligence</strong></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>An ability to assess market demand is important for planning the cultivation of crop.</td>
<td>4.615</td>
</tr>
<tr>
<td>8</td>
<td>Knowledge about products preferences is important matter for seller.</td>
<td>4.068</td>
</tr>
<tr>
<td>9</td>
<td>The seller should aware about different market grades and standards.</td>
<td>3.512</td>
</tr>
<tr>
<td>10</td>
<td>Commodity wise forecasting of price helps the farmers.</td>
<td>4.222</td>
</tr>
<tr>
<td>III</td>
<td><strong>Farm planning</strong></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>For increasing the farm yield, development of farm production plan is important.</td>
<td>3.909</td>
</tr>
<tr>
<td>12</td>
<td>An assessment about available resources is to be needed before cultivation of crop.</td>
<td>3.584</td>
</tr>
<tr>
<td>13</td>
<td>Planning for timely procurement of inputs is required.</td>
<td>2.551</td>
</tr>
<tr>
<td>14</td>
<td>Off season cultivation assist in good economic return.</td>
<td>3.901</td>
</tr>
<tr>
<td>15</td>
<td>Long term planning is advisable for the success of enterprise.</td>
<td>3.157</td>
</tr>
<tr>
<td>IV</td>
<td><strong>Production planning</strong></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>One should estimate the probable cost of cultivation before growing crop.</td>
<td>2.545</td>
</tr>
<tr>
<td>17</td>
<td>It is necessary to consider market demand about particular variety of produce before cultivation.</td>
<td>3.781</td>
</tr>
<tr>
<td>18</td>
<td>Modern technology should be adopted to get maximum profit from the produce.</td>
<td>3.722</td>
</tr>
<tr>
<td>19</td>
<td>Farmers should recognize the need based change in the crop cultivation practices for more profit.</td>
<td>3.247</td>
</tr>
<tr>
<td>V</td>
<td><strong>Marketing planning</strong></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Before marketing the produce one should review the demand.</td>
<td>3.432</td>
</tr>
<tr>
<td>21</td>
<td>Understanding about consumers’ needs is required before plan to cultivate crop.</td>
<td>3.753</td>
</tr>
<tr>
<td>22</td>
<td>Farmer should aware about buying and selling methods of APMC market.</td>
<td>4.702</td>
</tr>
<tr>
<td>23</td>
<td>Awareness about alternative marketing methods for selling of produce helps in better return.</td>
<td>3.855</td>
</tr>
<tr>
<td>Page</td>
<td>Finance management</td>
<td>VII Marketing skill</td>
</tr>
<tr>
<td>------</td>
<td>--------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>24</td>
<td>Farming should be aimed at maximum net return.</td>
<td>4.175</td>
</tr>
<tr>
<td>25</td>
<td>Believing in economic aspects are important in selection of crop &amp; variety for farmer.</td>
<td>3.434</td>
</tr>
<tr>
<td>26</td>
<td>Keeping farm records is very important especially for financial aspects.</td>
<td>3.272</td>
</tr>
<tr>
<td>27</td>
<td>An art of marketing skill helps to get better return.</td>
<td>3.512</td>
</tr>
<tr>
<td>28</td>
<td>Skill to interpret recorded data about market trends helps to get expected price of produce.</td>
<td>2.602</td>
</tr>
<tr>
<td>29</td>
<td>An ability to learn new skills of market is very important.</td>
<td>3.272</td>
</tr>
<tr>
<td>30</td>
<td>Group approach is more beneficial for getting better price for the produce from the market.</td>
<td>2.794</td>
</tr>
<tr>
<td>31</td>
<td>I believe that training can improve the marketing skill of producers.</td>
<td>3.753</td>
</tr>
<tr>
<td>32</td>
<td>One should consider farming as an enterprise.</td>
<td>3.667</td>
</tr>
<tr>
<td>33</td>
<td>Quality produce is more important to get advantage of globalization</td>
<td>3.498</td>
</tr>
<tr>
<td>34</td>
<td>One should decide the appropriate marketing channel for getting maximum profit.</td>
<td>2.691</td>
</tr>
<tr>
<td>35</td>
<td>One can get better price by grading his produce</td>
<td>2.603</td>
</tr>
<tr>
<td>36</td>
<td>Storage facilities can ensure better return of produce.</td>
<td>2.491</td>
</tr>
<tr>
<td>37</td>
<td>Godown and cold storage can help in getting higher prices of produce by selling the produce at right time</td>
<td>2.301</td>
</tr>
<tr>
<td>38</td>
<td>Selling produce after value addition is more profitable</td>
<td>2.082</td>
</tr>
<tr>
<td>39</td>
<td>Knowledge of packing &amp; packaging is helpful in getting better price for the produce</td>
<td>2.551</td>
</tr>
</tbody>
</table>
APPENDIX–IV

INTERVIEW SCHEDULE FOR THE FARMERS

'Strategic analysis of Market-Led-Extension activities of APMCs of South Gujarat'

Interviewee No.:…………… Date:………………

PART-I

Personal, socio-economic, psychological, communicational and situational characteristics of respondents

1. Basic information:
   i Name of the respondent :……………………………………………………
   ii Village :……………………... iii Taluka :…………………………
   iv District :……………………... v Mobile no. : …………
   vi Age in year :………………… vii Education :………………………
   viii Cast :………………

2. Occupation: Annual Income (Rs.)
   i Main occupation :
   ii Subsidiary occupation :
   iii Any other :

3. Land holding: (ha)

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of source</th>
<th>Lifting device (HP)</th>
<th>Area irrigated (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Well</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tube well</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Canal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source of irrigation:

Method of irrigation: Flood / Drip / Sprinkler / other

4. Information regarding livestock possessed by respondents:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Animals</th>
<th>Number</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Deshi</td>
<td>Cross breed</td>
</tr>
<tr>
<td>1</td>
<td>Cow</td>
<td></td>
<td>Milk……..lit/day/animal</td>
</tr>
<tr>
<td>2</td>
<td>Heifer / Calves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Buffaloes</td>
<td></td>
<td>Milk……..lit/day/animal</td>
</tr>
<tr>
<td>4</td>
<td>Bullocks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Goat</td>
<td></td>
<td>Milk……..lit/day/animal</td>
</tr>
<tr>
<td>6</td>
<td>Poultry (Birds)</td>
<td></td>
<td>………Egg/yr/bird</td>
</tr>
<tr>
<td>7</td>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. Information regarding social participation of respondent:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the organizations</th>
<th>Membership</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agricultural Co-operative society</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Milk Co-operative society</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Sugar Co-operative society</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Village/Taluka/District Panchayat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Youth club/Mahila mandal/Farmers club</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Religious organization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>school committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>APMC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Any other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. Information seeking behaviour:

(a) Extension contact by the respondents

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Name of Extension person</th>
<th>Frequency of use</th>
</tr>
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<tr>
<td></td>
<td></td>
<td>Regular</td>
</tr>
<tr>
<td>1</td>
<td>Village Extension Worker</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Agriculture Extension Officer</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Assistant Director of Agriculture District Agriculture Officer</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>APMC staff</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Scientists of KVK</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Scientists of NAU</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Any other</td>
<td></td>
</tr>
</tbody>
</table>

(b) Source of information

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Name of Sources</th>
<th>Frequency of use</th>
</tr>
</thead>
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<td></td>
<td>Regular</td>
</tr>
<tr>
<td>1</td>
<td>Friends</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Neighbours</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Relatives</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Progressive farmers</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Village leader</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Input dealers</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>NGOs</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Mandi</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Co-operative/ mandli</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Any other</td>
<td></td>
</tr>
</tbody>
</table>

7. Training received:

Have you received any training related to farming / marketing? Yes / No
If yes, please give the information in detail …..

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the training programme</th>
<th>Place</th>
<th>Duration (days)</th>
<th>Year</th>
<th>Organizer</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
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<td>3</td>
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<tr>
<td>4</td>
<td></td>
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</tbody>
</table>

8. Farming experience: ............... years
9. Cropping pattern and cropping intensity:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Crop</th>
<th>Variety</th>
<th>Area (acre)</th>
<th>Production (Quintal)</th>
<th>Rate (Rs/quintal)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Irrigated</td>
<td>Rainfed</td>
<td>Total</td>
</tr>
<tr>
<td>(A)</td>
<td>Kharif</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
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<td>3</td>
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<td>4</td>
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<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total (A)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(B)</td>
<td>Rabi</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>2</td>
<td></td>
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<td>4</td>
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<td>5</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total (B)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(C)</td>
<td>Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
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<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total (C)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(D)</td>
<td>Annual / Perennial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total (D)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Grand Total (A+B+C+D)</td>
<td></td>
<td></td>
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</tbody>
</table>

10. Marketable and marketed surplus

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particulars</th>
<th>Quantity of produce (quintal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A)</td>
<td>Total production</td>
<td></td>
</tr>
<tr>
<td>(B)</td>
<td>Domestic consumption</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Home consumption</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Seed</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cattle / poultry feed</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Labourers</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Artisans</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Landlord’s share</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Religious functions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total (B)</td>
<td></td>
</tr>
<tr>
<td>(C)</td>
<td>Marketable surplus (A-B)</td>
<td></td>
</tr>
<tr>
<td>(D)</td>
<td>Marketed surplus</td>
<td></td>
</tr>
</tbody>
</table>
# Marketing activities performance aspects (Situational characteristics)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Post harvest management</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Cleaning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Traditional grading</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Improved / mechanized grading</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. Improved / mechanized packing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e. Value addition</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><strong>Place of storage of produce</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Part of house</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Farm house</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Rat proof godown</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. Warehouse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e. Cold storage</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><strong>Mode of transport</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Public transport (increase the wastages in loading and unloading)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Private transport (very costly)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Own vehicle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. Agency’s vehicle</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e. Farm gate (selling at the farm)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><strong>Method of price fixation</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Under cover of cloth method</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Moghum sale method</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. Tender (close/open) method</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. Open auction</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td><strong>Time of sale of farm produce</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. Immediately after the harvest (reason)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>i. Quality was not good</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii. Highly perishable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii. No cold storage facilities available</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iv. Financial urgency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>v. Indebtedness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. After initial storage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. After considerable period of storage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. When the demand is high</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td><strong>Whom (agency) do you sell the produce</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. To village level trader</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. To the wholesaler through commission agents in the regular market yard (<em>katcha / pacca arhatiya</em>)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. To the traders through co-operative societies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. To the Govt. agencies such as hostels</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e. Directly to the consumer/ Direct marketing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f. Pre-harvest contractor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>g. Contract farming</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td><strong>Reasons to sell to a particular agency</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a. The agency is very familiar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b. Low marketing cost</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c. The agency is credit worthy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d. Immediate cash payment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e. Previous agreement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>f. Better price</td>
<td></td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Statement</td>
<td>A</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>1</td>
<td>A farmer should work towards larger yields and economic profits</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The most successful farmer is one who makes the most profit</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>A farmer should cultivate cash crop than cereal crop to get more profit</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>A farmer should adopt advanced method to increase monetary profits</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>It is difficult to raise the educational standard of children without the economic stability of a farmer</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>A farmer must earn his living but the most important thing in life cannot be defined in economic terms</td>
<td></td>
</tr>
</tbody>
</table>

12. Economic orientation:

13. Scientific orientation:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Statement</th>
<th>A</th>
<th>UD</th>
<th>DA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>New method of farming gives better results to a farmer than the old method</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The way a farmer’s forefathers farmed is still the best way to farm today</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Even a farmer with lots of experience should use new method in agriculture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Though it takes time for a farmer to learn new method in agriculture, it is worth the efforts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>A good farmer experiments with new ideas in farming</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Traditional method of farming has to be changed in order to raise the level of living of a farmer</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 14. Risk Orientation:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A farmer should rather take more of a chance in making a big profit than to be content with a smaller but less risky profit</td>
</tr>
<tr>
<td>2</td>
<td>A farmer who is willing to take greater risk than the average farmer usually does better financially</td>
</tr>
<tr>
<td>3</td>
<td>It is good for a farmer to take risk when he knows his chance of success is fairly high</td>
</tr>
<tr>
<td>4</td>
<td>It is better for a farmer not to try new farming methods unless most other farmers have used them with success</td>
</tr>
<tr>
<td>5</td>
<td>A farmer should grow more of crops to avoid greater risk involved in growing one or two crops</td>
</tr>
<tr>
<td>6</td>
<td>Trying on entirely new method in farming by a farmer involves risk but, it is worthy</td>
</tr>
</tbody>
</table>

### 15. Group cohesiveness:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Items</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How friendly are the members of your group among themselves?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Members are very friendly ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Members are somewhat friendly ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Members are indifferent ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>2</td>
<td>To what extent do the members have trust and confidence in each other?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Members are very much trust each other ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Members have very little trust in each other ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Members do not have trust in each other ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>3</td>
<td>How are the interpersonal relations among the members of your group?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Members work cooperatively with each other ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Members do not have good relation with each other ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Members tend to pull down each other ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>4</td>
<td>How often discussions are free and open at the meetings?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Always ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Sometimes ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Never ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>5</td>
<td>How often consideration is given to every one's opinion and suggestion before making a decision?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Always ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Sometimes ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Never ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>6</td>
<td>How often decisions are taken in the interest of all members rather than a particular group of members or an individual?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Always ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Sometimes ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Never ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>7</td>
<td>How often opinion differences lead to conflict in the meetings?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Always ( )</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>Sometimes ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Never ( )</td>
<td>(3)</td>
</tr>
<tr>
<td>8</td>
<td>How far the group is conscious to improve farmers' economy through marketing?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very much conscious ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Somewhat conscious ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Not at all conscious ( )</td>
<td>(1)</td>
</tr>
</tbody>
</table>
9. How much do you feel satisfied by working as a member of the group?  
   Very much satisfied (    )  
   Somewhat satisfied (    )  
   Not at all satisfied (    )  

10. How do the members feel about an inspection remark if adverse?  
    Most of the members feel unconcerned for it (    )  
    Most of the members feel sorry for it but do not try to overcome weakness (    )  
    Most of the members feel it seriously and try collectively to overcome weakness (    )  

| PART-II | Knowledge about market-led-extension activities of APMC |

16. **No. of years in contact with APMC:** ........................................

   Please state the number of visits made by you to the APMC during the last one year:...........

17. **Distance from market:** ................. km

18. **Knowledge of APMC activities:**

   Are you aware of the activities of the APMC ?

   Please furnish the information in the following table:

A. **Provision of marketing facilities:**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Activities / Facilities</th>
<th>Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>I</strong></td>
<td><strong>Trading facilities</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Covered auction hall</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Open auction platform</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Drying platform</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Traders modules</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Auction hall</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Godown</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Retailers’ shops</td>
<td></td>
</tr>
<tr>
<td><strong>II</strong></td>
<td><strong>Ancillary trading facilities</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Storage godowns</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Cold storage</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Processing unit</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Weighing equipments</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Grading equipments</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Pledge finance</td>
<td></td>
</tr>
<tr>
<td><strong>III</strong></td>
<td><strong>Administrative facilities</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Bank</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Post office</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Police post</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Security post</td>
<td></td>
</tr>
<tr>
<td><strong>IV</strong></td>
<td><strong>Farmers’ facilities</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Farmers’ rest house</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Dormitories</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Agri-input shops</td>
<td></td>
</tr>
</tbody>
</table>
### Common facilities

1. Bathrooms
2. Toilets
3. Urinals
4. Daily needs
5. Tea shops
6. Canteen
7. Recreation hall

### Water and other facilities

1. Open wells / Tubewells
2. Municipal water supply
3. Electric pump sets
4. Electric light
5. Drinking water taps
6. Water for animals

### Parking and traffic facilities

1. Area for loading / unloading and parking
2. Internal roads
3. Boundary walls
4. Shade trees
5. Platform / sitting benches

### Garbage disposal and drainage system

1. Garbage disposal
2. Drainage system

### B. Publicity and Communication

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Activities / Facilities</th>
<th>Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>1</td>
<td>Rate display board</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Public address system</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Public telephone</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Fax</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Internet services</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>SMS services</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Information bulletin</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Leaflet on Act and reforms</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Distribution of booklets on market practices</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Information center</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>CD / electronic material</td>
<td></td>
</tr>
</tbody>
</table>

### C. Human Resource Development (HRD):

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Activities / Facilities</th>
<th>Knowledge</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>1</td>
<td>Training to farmers</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Training to office bearer and committee members</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Khedut shibir</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Exposure visit of farmers</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Interactions</td>
<td></td>
</tr>
</tbody>
</table>
PART-III

Perception about the role of APMC in market-led-extension

19. **Role of APMC in Market-led-extension**

Do you think that the APMCs should perform Market-led-extension role? Y / N

If yes, what kind of role should be performed by the APMCs?

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Role</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Service</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Supply of agricultural inputs</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Grading of farm produce</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Packaging of farm produce</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Weighing of farm produce</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Storage of farm produce</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Storage of perishable farm produce</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Processing of farm produce</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Laboratory for testing quality of farm produce</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Advisory</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Crop production technology</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Post harvest technology of crops</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>High quality farm produce</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Avoiding post harvest losses of crops</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Crop production according to market demands</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Legal aspects related to marketing and export of farm produce</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Export oriented farming</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Export of farm produce</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Market intelligence</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Availability of markets</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Current rates in different markets</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Maintaining record of the farmers producing specific goods</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Survey of consumers preference for farm produce</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Anticipating and communicating possible changes in the markets to the farmers</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Facilitator</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Communicate Government policies regarding agriculture and agricultural marketing to farmers</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Credit to farmers for farm production</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Insurance for farm produce</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Subsidies to farmers</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Liaison with agro-service centers and rendering their information to farmers</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Holding dialogue between the farmers, scientists, traders, extension workers and office bearers of APMCs</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Communicate farmers’ problems to the concerned</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Organizer</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Cooperative societies of producer farmers</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Commodity wise self help groups of farmers</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Consumers organizations</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Sale of farm produce under trade name</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Awards to the producers of quality farm produce</td>
<td></td>
</tr>
</tbody>
</table>
### 20. Managerial ability:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Planning</strong></td>
</tr>
<tr>
<td></td>
<td>a  What are the objectives in planning for management of farm and marketing?</td>
</tr>
<tr>
<td></td>
<td>i  To get more income per year</td>
</tr>
<tr>
<td></td>
<td>ii To maximize overall production</td>
</tr>
<tr>
<td></td>
<td>iii To minimize the total cost</td>
</tr>
<tr>
<td></td>
<td>b  Which type of forecast you made in relation to farming and marketing?</td>
</tr>
<tr>
<td></td>
<td>i  About rainfall</td>
</tr>
<tr>
<td></td>
<td>ii About the natural calamity i.e. wind, storm, frost</td>
</tr>
<tr>
<td></td>
<td>iii About outbreak of disease and pest</td>
</tr>
<tr>
<td></td>
<td>c  To whom do you consult while planning for farming and marketing (Developing programmes)?</td>
</tr>
<tr>
<td></td>
<td>i  Agricultural expert</td>
</tr>
<tr>
<td></td>
<td>ii APMC</td>
</tr>
<tr>
<td></td>
<td>iii Progressive farmers</td>
</tr>
<tr>
<td></td>
<td>iv Family members</td>
</tr>
<tr>
<td></td>
<td>d  What are main strategies do you think while planning for farming and marketing?</td>
</tr>
<tr>
<td></td>
<td>i  Considering market demand</td>
</tr>
<tr>
<td></td>
<td>ii Value addition</td>
</tr>
<tr>
<td></td>
<td>iii Grading</td>
</tr>
<tr>
<td></td>
<td>iv As usual</td>
</tr>
<tr>
<td></td>
<td>e  Which points you are considering while planning for farming and marketing (Budget)?</td>
</tr>
<tr>
<td></td>
<td>i  Price for particular commodity</td>
</tr>
<tr>
<td></td>
<td>ii Availability of capital</td>
</tr>
<tr>
<td></td>
<td>iii Availability of resources</td>
</tr>
</tbody>
</table>

#### Organizing

<table>
<thead>
<tr>
<th>2</th>
<th><strong>Organizing</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a  How do you carry out the activities (Identification of work)</td>
</tr>
<tr>
<td></td>
<td>i  Based on the importance of work</td>
</tr>
<tr>
<td></td>
<td>ii Based on information of given by marketing people / expert</td>
</tr>
<tr>
<td></td>
<td>iii Based on past experience</td>
</tr>
<tr>
<td></td>
<td>b  Do you always group the various farming and marketing activities?</td>
</tr>
<tr>
<td></td>
<td>i  Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
<tr>
<td></td>
<td>c  Do you delegate the responsibility to perform a job?</td>
</tr>
<tr>
<td></td>
<td>i  Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
<tr>
<td></td>
<td>d  Do you delegate the authority to perform a job?</td>
</tr>
<tr>
<td></td>
<td>i  Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
</tbody>
</table>
### 3 Human relationship

- **a** Do you recognize and appreciate the work done by people working under you? (Individual recognition)
  - i. Always
  - ii. Rarely
  - iii. Never

- **b** Do you try to know the habit of the people working under you? (Understanding personality)
  - i. Always
  - ii. Rarely
  - iii. Never

- **c** Do you listen the suggestions given by people working under you? (Listening)
  - i. Always
  - ii. Rarely
  - iii. Never

- **d** During the act of listening, do you avoid undesirable arguments? (Avoiding arguments)
  - i. Always
  - ii. Rarely
  - iii. Never

### 4 Supervision

- **a** How do you supervise the activities in your field/work? (Personal interest)
  - i. With personal interest
  - ii. Indirect supervision
  - iii. No interest at all

- **b** Do you supervise your work with right intensity?
  - i. Always
  - ii. Rarely
  - iii. Never

- **c** To whom you consult while taking the decision?
  - i. Consult market experts
  - ii. Consult the progressive farmers
  - iii. Consult family members

- **d** Do you assess the information regarding marketing?
  - i. Always
  - ii. Rarely
  - iii. Never

- **e** What are the new innovations do you want to incorporate in your field/work? (Broader interest)
  - i. Recommendation regarding the new marketing practices
  - ii. Use of new scientific practices
  - iii. Use of information sources

### 5 Communication

- **a** Do you give clear cut instructions to the labour/subordinate regarding quality production? (Downward)
  - i. Always
  - ii. Sometimes
  - iii. Never
b  Do you hear the suggestion from other? (Upward)
   i  Always
   ii  Sometimes
   iii  Never

   Do you consult other for the problems which are faced by you in marketing? (Horizontal)
   i  Always
   ii  Sometimes
   iii  Never

6  Coordination
   a  Do you give the equal weightage to the all activities? (Balancing of acti.)
      i  Always
      ii  Rarely
      iii  Never

   b  Do you set a calendar for various operations? (Timing of acti.)
      i  Always
      ii  Sometimes
      iii  Never

   c  Are you able to get all diversified interest for effective management? (Integration of acti.)
      i  Always
      ii  Rarely
      iii  Never

7  Control
   a  What type of labour do you prefer?
      i  Skilled
      ii  Semi skilled
      iii  Unskilled

   b  Do you maintain various records pertaining to marketing? (Inventory cost)
      i  Yes
      ii  No

   c  How do you pay the wages to labour working under you? (Wage rate)
      i  As per the Govt. approved rates
      ii  As per the rate commonly followed in village
      iii  Minimum

   d  Do you have equipment or bring implement on hire? (Equipment rental)
      i  Always
      ii  Rarely
      iii  Never
21. **Marketing behaviour:**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Indicator / item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Marketing information</strong></td>
</tr>
<tr>
<td>1.1</td>
<td>Market news about commodity price is very useful to the farmers.</td>
</tr>
<tr>
<td>1.2</td>
<td>Farmer should seek the market information before selling his produce.</td>
</tr>
<tr>
<td>1.3</td>
<td>Knowing the trend of local market is advisable while selling the produce.</td>
</tr>
<tr>
<td>1.4</td>
<td>One should use various sources for collecting market information.</td>
</tr>
<tr>
<td>1.5</td>
<td>One should be aware about marketing channel for his produce.</td>
</tr>
<tr>
<td>1.6</td>
<td>The seller should be aware about the market charges.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Market Intelligence</strong></td>
</tr>
<tr>
<td>2.1</td>
<td>An ability to assess market demand is important for planning the cultivation of crop.</td>
</tr>
<tr>
<td>2.2</td>
<td>Knowledge about products preferences is important matter for seller.</td>
</tr>
<tr>
<td>2.3</td>
<td>The seller should aware about different market grades and standards.</td>
</tr>
<tr>
<td>2.4</td>
<td>Commodity wise forecasting of price helps the farmers.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Farm planning</strong></td>
</tr>
<tr>
<td>3.1</td>
<td>For increasing the farm yield, development of farm production plan is important.</td>
</tr>
<tr>
<td>3.2</td>
<td>An assessment about available resources is to be needed before cultivation of crop.</td>
</tr>
<tr>
<td>3.3</td>
<td>Planning for timely procurement of inputs is required.</td>
</tr>
<tr>
<td>3.4</td>
<td>Off season cultivation assist in good economic return.</td>
</tr>
<tr>
<td>3.5</td>
<td>Long term planning is advisable for the success of enterprise.</td>
</tr>
<tr>
<td>4</td>
<td><strong>Production planning</strong></td>
</tr>
<tr>
<td>4.1</td>
<td>One should estimate the probable cost of cultivation before growing crop.</td>
</tr>
<tr>
<td>4.2</td>
<td>It is necessary to consider market demand about particular variety of produce before cultivation.</td>
</tr>
<tr>
<td>4.3</td>
<td>Modern technology should be adopted to get maximum profit from the produce.</td>
</tr>
<tr>
<td>4.4</td>
<td>Farmers should recognize the need based change in the crop cultivation practices for more profit.</td>
</tr>
<tr>
<td>Chapter</td>
<td>Section</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>5</td>
<td>Marketing planning</td>
</tr>
<tr>
<td>5.1</td>
<td>Before marketing the produce one should review the demand.</td>
</tr>
<tr>
<td>5.2</td>
<td>Understanding about consumers’ needs is required before plan to cultivate crop.</td>
</tr>
<tr>
<td>5.3</td>
<td>Farmer should aware about buying and selling methods of APMC market.</td>
</tr>
<tr>
<td>5.4</td>
<td>Awareness about alternative marketing methods for selling of produce helps in better return.</td>
</tr>
<tr>
<td>6</td>
<td>Finance management</td>
</tr>
<tr>
<td>6.1</td>
<td>Farming should be aimed at maximum net return.</td>
</tr>
<tr>
<td>6.2</td>
<td>Believing in economic aspects are important in selection of crop &amp; variety for farmer.</td>
</tr>
<tr>
<td>6.3</td>
<td>Keeping farm records is very important especially for financial aspects.</td>
</tr>
<tr>
<td>7</td>
<td>Marketing skill</td>
</tr>
<tr>
<td>7.1</td>
<td>An art of marketing skill helps to get better return.</td>
</tr>
<tr>
<td>7.2</td>
<td>Skill to interpret recorded data about market trends helps to get expected price of produce.</td>
</tr>
<tr>
<td>7.3</td>
<td>An ability to learn new skills of market is very important.</td>
</tr>
<tr>
<td>7.4</td>
<td>Group approach is more beneficial for getting better price for the produce from the market.</td>
</tr>
<tr>
<td>7.5</td>
<td>I believe that training can improve the marketing skill of producers.</td>
</tr>
<tr>
<td>8</td>
<td>Entrepreneurship</td>
</tr>
<tr>
<td>8.1</td>
<td>One should consider farming as an enterprise.</td>
</tr>
<tr>
<td>8.2</td>
<td>Quality produce is more important to get advantage of globalization</td>
</tr>
<tr>
<td>9</td>
<td>Marketing channels</td>
</tr>
<tr>
<td>9.1</td>
<td>One should decide the appropriate marketing channel for getting maximum profit.</td>
</tr>
<tr>
<td>10</td>
<td>Post harvest management</td>
</tr>
<tr>
<td>10.1</td>
<td>One can get better price by grading his produce</td>
</tr>
<tr>
<td>10.2</td>
<td>Storage facilities can ensure better return of produce.</td>
</tr>
<tr>
<td>10.3</td>
<td>Godown and cold storage can help in getting higher prices of produce by selling the produce at right time</td>
</tr>
<tr>
<td>10.4</td>
<td>Selling produce after value addition is more profitable</td>
</tr>
<tr>
<td>10.5</td>
<td>Knowledge of packing &amp; packaging is helpful in getting better price for the produce</td>
</tr>
</tbody>
</table>
22. **Marketing problems**

Do you face any kind of problem while marketing your farm produce? Y / N, If Yes, please indicate them.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Problem</th>
<th>Suggestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open auction sale fetches low price for farm produce</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Low market rate / lack of remunerative price</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Non-availability of market information</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Monopolistic characteristics of traders / middlemen</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Malpractice intervention of intermediaries / traders</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Collusion among the traders</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Inadequate transportation facilities</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Lack of credit facilities</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Market are far away</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>High cost of transportation</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Fluctuation in market price</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>High commission charges</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>High labour charges</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Delayed cash payment</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Malpractices in weighing</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Illegal deduction while selling</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Inadequate / absence of storage facilities</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>No grading facilities</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Inadequate physical facilities / market infrastructure</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Lack of processing facilities</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Lack of unity among the farmers</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Middlemen manipulate the situation / distress sale</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Any other (please specify)</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX–V

INTERVIEW SCHEDULE FOR COMMITTEE MEMBERS AND OFFICE BEARERS

'Strategic analysis of Market-Led-Extension activities of APMCs of South Gujarat'

Interviewee No:…………… Date:……………………

PART-I

General information of respondents

1. Name :………………………………………………………………………

   Mobile no. ……………………

2. Residential address: Village:………………… Taluka:………………District:…………

3. Age :………… years

4. Education:………………

5. Name APMC : ………………………………………………………………

   Phone number (office) :…………………………………………………………….

6. Post / position:…………

7. Experience:…………

8. Details of training:

   a) Have you received training on agricultural marketing? Yes / No
   b) If yes, please give the details:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the training programme</th>
<th>Place</th>
<th>Duration (days)</th>
<th>Year</th>
<th>Organizer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
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<tr>
<td>2</td>
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<td>4</td>
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<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
9. Group cohesiveness

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Items</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>How friendly are the members of your committee / office among themselves?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Members are very friendly ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Members are somewhat friendly ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Members are indifferent ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>2.</td>
<td>To what extent do the members have trust and confidence in each other?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Members are very much trust each other ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Members have very little trust in each other ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Members do not have trust in each other ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>3.</td>
<td>How are the interpersonal relations among the members of your committee / office?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Members work cooperatively with each other ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Members do not have good relation with each other ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Members tend to pull down each other ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>4.</td>
<td>How often discussions are free and open at the meetings?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Always ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Sometimes ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Never ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>5.</td>
<td>How often consideration is given to every one's opinion and suggestion before making a decision?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Always ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Sometimes ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Never ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>6.</td>
<td>How often decisions are taken in the interest of all members of farming community rather than a particular group of members or an individual?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Always ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Sometimes ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Never ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>7.</td>
<td>How often opinion differences lead to conflict in the meetings?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Always ( )</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>Sometimes ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Never ( )</td>
<td>(3)</td>
</tr>
<tr>
<td>8.</td>
<td>How far the committee / office is conscious to improve farmers' economy through marketing?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very much conscious ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Somewhat conscious ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Not at all conscious ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>9.</td>
<td>How much do you feel satisfied by working as a member of the committee / office?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very much satisfied ( )</td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>Somewhat satisfied ( )</td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>Not at all satisfied ( )</td>
<td>(1)</td>
</tr>
<tr>
<td>10.</td>
<td>How do the members feel about an inspection remark if adverse?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Most of the members feel unconcerned for it ( )</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>Most of the members feel sorry for it but do not try to overcome weakness ( )</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Most of the members feel it seriously and try collectively to overcome weakness ( )</td>
<td>(2)</td>
</tr>
</tbody>
</table>
PART-II
Perception about the role of APMC in market-led-extension

10. Role of APMC in Market-led-extension
Do you think that the APMCs should perform Market-led-extension role? Y / N
If yes, what kind of role should be performed by the APMCs?

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Role</th>
<th>(√)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Service</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Supply of agricultural inputs</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Grading of farm produce</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Packaging of farm produce</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Weighing of farm produce</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Storage of farm produce</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Storage of perishable farm produce</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Processing of farm produce</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Laboratory for testing quality of farm produce</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Advisory</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Crop production technology</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Post harvest technology of crops</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>High quality farm produce</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Avoiding post harvest losses of crops</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Crop production according to market demands</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Legal aspects related to marketing and export of farm produce</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Export oriented farming</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Export of farm produce</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>Market intelligence</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Availability of markets</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Current rates in different markets</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Maintaining record of the farmers producing specific goods</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Survey of consumers preference for farm produce</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Anticipating and communicating possible changes in the markets to the farmers</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Facilitator</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Communicate Government policies regarding agriculture and agricultural marketing to farmers</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Credit to farmers for farm production</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Insurance for farm produce</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Subsidies to farmers</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Liaison with agro-service centers and rendering their information to farmers</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Holding dialogue between the farmers, scientists, traders, extension workers and office bearers of APMCs</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Communicate farmers’ problems to the concerned</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>Organizer</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Cooperative societies of producer farmers</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Commodity wise self help groups of farmers</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Consumers organizations</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Sale of farm produce under trade name</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Awards to the producers of quality farm produce</td>
<td></td>
</tr>
</tbody>
</table>
### Managerial ability:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Planning</strong></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>What are the objectives in planning for management of farm and marketing?</td>
</tr>
<tr>
<td></td>
<td>i To get more income per year</td>
</tr>
<tr>
<td></td>
<td>ii To maximize overall production</td>
</tr>
<tr>
<td></td>
<td>iii To minimize the total cost</td>
</tr>
<tr>
<td>b</td>
<td>Which type of forecast you made in relation to farming and marketing?</td>
</tr>
<tr>
<td></td>
<td>i About rainfall</td>
</tr>
<tr>
<td></td>
<td>ii About the natural calamity i.e. wind, storm, frost</td>
</tr>
<tr>
<td></td>
<td>iii About outbreak of disease and pest</td>
</tr>
<tr>
<td>c</td>
<td>To whom do you consult while planning for farming and marketing (Developing programmes)?</td>
</tr>
<tr>
<td></td>
<td>i Agricultural expert</td>
</tr>
<tr>
<td></td>
<td>ii APMC</td>
</tr>
<tr>
<td></td>
<td>iii Progressive farmers</td>
</tr>
<tr>
<td></td>
<td>iv Family members</td>
</tr>
<tr>
<td>d</td>
<td>What are main strategies do you think while planning for farming and marketing?</td>
</tr>
<tr>
<td></td>
<td>i Considering market demand</td>
</tr>
<tr>
<td></td>
<td>ii Value addition</td>
</tr>
<tr>
<td></td>
<td>iii Grading</td>
</tr>
<tr>
<td></td>
<td>iv As usual</td>
</tr>
<tr>
<td>e</td>
<td>Which points you are considering while planning for farming and marketing (Budget)?</td>
</tr>
<tr>
<td></td>
<td>i Price for particular commodity</td>
</tr>
<tr>
<td></td>
<td>ii Availability of capital</td>
</tr>
<tr>
<td></td>
<td>iii Availability of resources</td>
</tr>
</tbody>
</table>

**2 Organizing**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How do you carry out the activities (Identification of work)</td>
</tr>
<tr>
<td></td>
<td>i Based on the importance of work</td>
</tr>
<tr>
<td></td>
<td>ii Based on information of given by marketing people / expert</td>
</tr>
<tr>
<td></td>
<td>iii Based on past experience</td>
</tr>
<tr>
<td>b</td>
<td>Do you always group the various farming and marketing activities?</td>
</tr>
<tr>
<td></td>
<td>i Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
<tr>
<td>c</td>
<td>Do you delegate the responsibility to perform a job?</td>
</tr>
<tr>
<td></td>
<td>i Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
<tr>
<td>d</td>
<td>Do you delegate the authority to perform a job?</td>
</tr>
<tr>
<td></td>
<td>i Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
<tr>
<td>3</td>
<td>Human relationship</td>
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</tr>
<tr>
<td>a</td>
<td>Do you recognize and appreciate the work done by people working under you? (Individual recognition)</td>
</tr>
<tr>
<td></td>
<td>i Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
<tr>
<td>b</td>
<td>Do you try to know the habit of the people working under you? (Understanding personality)</td>
</tr>
<tr>
<td></td>
<td>i Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
<tr>
<td>c</td>
<td>Do you listen the suggestions given by people working under you? (Listening)</td>
</tr>
<tr>
<td></td>
<td>i Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
<tr>
<td>d</td>
<td>During the act of listening, do you avoid undesirable arguments? (Avoiding arguments)</td>
</tr>
<tr>
<td></td>
<td>i Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>4</th>
<th>Supervision</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>How do you supervise the activities in your field/work? (Personal interest)</td>
</tr>
<tr>
<td></td>
<td>i With personal interest</td>
</tr>
<tr>
<td></td>
<td>ii Indirect supervision</td>
</tr>
<tr>
<td></td>
<td>iii No interest at all</td>
</tr>
<tr>
<td>b</td>
<td>Do you supervise your work with right intensity?</td>
</tr>
<tr>
<td></td>
<td>i Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
<tr>
<td>c</td>
<td>To whom you consult while taking the decision?</td>
</tr>
<tr>
<td></td>
<td>i Consult market experts</td>
</tr>
<tr>
<td></td>
<td>ii Consult the progressive farmers</td>
</tr>
<tr>
<td></td>
<td>iii Consult family members</td>
</tr>
<tr>
<td>d</td>
<td>Do you assess the information regarding marketing?</td>
</tr>
<tr>
<td></td>
<td>i Always</td>
</tr>
<tr>
<td></td>
<td>ii Rarely</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
<tr>
<td>e</td>
<td>What are the new innovations do you want to incorporate in your field/work? (Broader interest)</td>
</tr>
<tr>
<td></td>
<td>i Recommendation regarding the new marketing practices</td>
</tr>
<tr>
<td></td>
<td>ii Use of new scientific practices</td>
</tr>
<tr>
<td></td>
<td>iii Use of information sources</td>
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</table>

<table>
<thead>
<tr>
<th>5</th>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Do you give clear cut instructions to the labour/subordinate regarding quality production? (Downward)</td>
</tr>
<tr>
<td></td>
<td>i Always</td>
</tr>
<tr>
<td></td>
<td>ii Sometimes</td>
</tr>
<tr>
<td></td>
<td>iii Never</td>
</tr>
<tr>
<td></td>
<td>Do you hear the suggestion from other? (Upward)</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>i</td>
<td>Always</td>
</tr>
<tr>
<td>ii</td>
<td>Sometimes</td>
</tr>
<tr>
<td>iii</td>
<td>Never</td>
</tr>
<tr>
<td></td>
<td>Do you consult other for the problems which are faced by you in marketing? (Horizontal)</td>
</tr>
<tr>
<td>i</td>
<td>Always</td>
</tr>
<tr>
<td>ii</td>
<td>Sometimes</td>
</tr>
<tr>
<td>iii</td>
<td>Never</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>Coordination</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Do you give the equal weightage to the all activities? (Balancing of acti.)</td>
</tr>
<tr>
<td>i</td>
<td>Always</td>
</tr>
<tr>
<td>ii</td>
<td>Rarely</td>
</tr>
<tr>
<td>iii</td>
<td>Never</td>
</tr>
<tr>
<td>b</td>
<td>Do you set a calendar for various operations? (Timing of acti.)</td>
</tr>
<tr>
<td>i</td>
<td>Always</td>
</tr>
<tr>
<td>ii</td>
<td>Sometimes</td>
</tr>
<tr>
<td>iii</td>
<td>Never</td>
</tr>
<tr>
<td>c</td>
<td>Are you able to get all diversified interest for effective management? (Integration of acti.)</td>
</tr>
<tr>
<td>i</td>
<td>Always</td>
</tr>
<tr>
<td>ii</td>
<td>Rarely</td>
</tr>
<tr>
<td>iii</td>
<td>Never</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>Control</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>What type of labour do you prefer?</td>
</tr>
<tr>
<td>i</td>
<td>Skilled</td>
</tr>
<tr>
<td>ii</td>
<td>Semi skilled</td>
</tr>
<tr>
<td>iii</td>
<td>Unskilled</td>
</tr>
<tr>
<td>b</td>
<td>Do you maintain various records pertaining to marketing? (Inventory cost)</td>
</tr>
<tr>
<td>i</td>
<td>Yes</td>
</tr>
<tr>
<td>ii</td>
<td>No</td>
</tr>
<tr>
<td>c</td>
<td>How do you pay the wages to labour working under you? (Wage rate)</td>
</tr>
<tr>
<td>i</td>
<td>As per the Govt. approved rates</td>
</tr>
<tr>
<td>ii</td>
<td>As per the rate commonly followed in village</td>
</tr>
<tr>
<td>iii</td>
<td>Minimum</td>
</tr>
<tr>
<td>d</td>
<td>Do you have equipment or bring implement on hire? (Equipment rental)</td>
</tr>
<tr>
<td>i</td>
<td>Always</td>
</tr>
<tr>
<td>ii</td>
<td>Rarely</td>
</tr>
<tr>
<td>iii</td>
<td>Never</td>
</tr>
</tbody>
</table>
12. **Marketing behaviour:**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Indicator / item</th>
<th>A</th>
<th>UD</th>
<th>DA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td><strong>Marketing information</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Market news about commodity price is very useful to the farmers.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1.2</td>
<td>Farmer should seek the market information before selling his produce.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1.3</td>
<td>Knowing the trend of local market is advisable while selling the produce.</td>
<td></td>
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<tr>
<td>1.4</td>
<td>One should use various sources for collecting market information.</td>
<td></td>
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</tr>
<tr>
<td>1.5</td>
<td>One should be aware about marketing channel for his produce.</td>
<td></td>
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<tr>
<td>1.6</td>
<td>The seller should be aware about the market charges.</td>
<td></td>
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</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>Market Intelligence</strong></td>
<td></td>
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</tr>
<tr>
<td>2.1</td>
<td>An ability to assess market demand is important for planning the cultivation of crop.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Knowledge about products preferences is important matter for seller.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>The seller should be aware about different market grades and standards.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2.4</td>
<td>Commodity wise forecasting of price helps the farmers.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3</strong></td>
<td><strong>Farm planning</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>For increasing the farm yield, development of farm production plan is important.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3.2</td>
<td>An assessment about available resources is to be needed before cultivation of crop.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3.3</td>
<td>Planning for timely procurement of inputs is required.</td>
<td></td>
<td></td>
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<tr>
<td>3.4</td>
<td>Off season cultivation assist in good economic return.</td>
<td></td>
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<tr>
<td>3.5</td>
<td>Long term planning is advisable for the success of enterprise.</td>
<td></td>
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</tr>
<tr>
<td><strong>4</strong></td>
<td><strong>Production planning</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4.1</td>
<td>One should estimate the probable cost of cultivation before growing crop.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4.2</td>
<td>It is necessary to consider market demand about particular variety of produce before cultivation.</td>
<td></td>
<td></td>
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<tr>
<td>4.3</td>
<td>Modern technology should be adopted to get maximum profit from the produce.</td>
<td></td>
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<tr>
<td>4.4</td>
<td>Farmers should recognize the need based change in the crop cultivation practices for more profit.</td>
<td></td>
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<tr>
<td></td>
<td>Marketing planning</td>
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<tr>
<td>5.1</td>
<td>Before marketing the produce one should review the demand.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5.2</td>
<td>Understanding about consumers’ needs is required before plan to cultivate crop.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.3</td>
<td>Farmer should aware about buying and selling methods of APMC market.</td>
<td></td>
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</tr>
<tr>
<td>5.4</td>
<td>Awareness about alternative marketing methods for selling of produce helps in better return.</td>
<td></td>
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<tr>
<td></td>
<td>Finance management</td>
<td></td>
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<tr>
<td>6.1</td>
<td>Farming should be aimed at maximum net return.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6.2</td>
<td>Believing in economic aspects are important in selection of crop &amp; variety for farmer.</td>
<td></td>
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</tr>
<tr>
<td>6.3</td>
<td>Keeping farm records is very important especially for financial aspects.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Marketing skill</td>
<td></td>
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<tr>
<td>7.1</td>
<td>An art of marketing skill helps to get better return.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7.2</td>
<td>Skill to interpret recorded data about market trends helps to get expected price of produce.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7.3</td>
<td>An ability to learn new skills of market is very important.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7.4</td>
<td>Group approach is more beneficial for getting better price for the produce from the market.</td>
<td></td>
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<tr>
<td>7.5</td>
<td>I believe that training can improve the marketing skill of producers.</td>
<td></td>
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<tr>
<td></td>
<td>Entrepreneurship</td>
<td></td>
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<tr>
<td>8.1</td>
<td>One should consider farming as an enterprise.</td>
<td></td>
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</tr>
<tr>
<td>8.2</td>
<td>Quality produce is more important to get advantage of globalization</td>
<td></td>
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<tr>
<td></td>
<td>Marketing channels</td>
<td></td>
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<tr>
<td>9.1</td>
<td>One should decide the appropriate marketing channel for getting maximum profit.</td>
<td></td>
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<tr>
<td></td>
<td>Post harvest management</td>
<td></td>
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</tr>
<tr>
<td>10.1</td>
<td>One can get better price by grading his produce</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10.2</td>
<td>Storage facilities can ensure better return of produce.</td>
<td></td>
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</tr>
<tr>
<td>10.3</td>
<td>Godown and cold storage can help in getting higher prices of produce by selling the produce at right time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.4</td>
<td>Selling produce after value addition is more profitable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.5</td>
<td>Knowledge of packing &amp; packaging is helpful in getting better price for the produce</td>
<td></td>
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</tbody>
</table>
This is to certify that I have no objection for supplying only one copy or any part of this thesis to any scientist at a time through reprographic process if necessary for rendering reference service in a library or documentation centre.

Place: Navsari

Date: 03 November, 2015  
(Kavad S. D.)