SUPPLY CHAIN ANALYSIS OF PAPAYA IN MAJOR MARKETS OF HYDERABAD

BY

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B.Sc. (CA&BM)

RESEARCH REPORT SUBMITTED TO
PROFESSOR JAYASHANKAR TELANGANA STATE AGRICULTURAL UNIVERSITY
IN PARTIAL FULFILMENT OF THE REQUIREMENTS
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(AGRIBUSINESS MANAGEMENT)

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2015

DECLARATION

I, **S.NARENDRA,** hereby declare that the project report entitled **"SUPLLY CHAIN ANALYSIS OF PAPAYA IN MAJOR MARKETS OF HYDERABAD"** submitted to the **Professor Jayashankar Telangana State Agricultural University** for the degree of **Master of Business Administration** in School of Agribusiness Management in the major field of **Agribusiness Management** is the result of the original research work done by me. I also declare that no material contained in the report has been published earlier in any manner.

Place: Hyderabad **(S.NARENDRA)**

Date: **I. D. NO. RMBA/13-29**

CERTIFICATE

Mr. S.NARENDRA has satisfactorily prosecuted the course of research and that project report entitled **"SUPPLY CHAIN ANALYSIS OF PAPAYA IN MAJOR MARKETS OF HYDERABAD"** submitted is the result of original research work and is of sufficiently high standard to warrant its presentation to the examination. I also certify that neither the project nor its part thereof has been previously submitted for a degree of any university.

Date: **(Dr. B. GANESH KUMAR)**

Place: Hyderabad **Chairperson**

CERTIFICATE

This is to certify that the project report entitled **"SUPPLY CHAIN ANALYSIS OF PAPAYA IN MAJOR MARKETS OF HYDERABAD"** submitted in partial fulfillment of the requirements for the degree of 'Masters of Business Administration' of the Professor Jayashankar Telangana State Agricultural University, Hyderabad, is a record of the bonafide original research work carried out by **Mr. S.NARENDRA** under our guidance and supervision.

No part of the project report has been submitted by the student for any other degree or diploma. The published part and all assistance received during the course of investigations have been duly acknowledged by the author of the project report.

Thesis approved by the Student Advisory Committee

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Date:

Place: Hyderabad (**S.NARENDRA)**

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LIST OF SYMBOLS AND ABBREVIATIONS

&	:	And
PJTSAU	:	Professor Jayashankar Telangana State Agriculture University
et al.	:	and other people
etc.	:	and so on
Ha	:	Hectare
i.e.,	:	That is
sq.km.	:	Square Kilometer
kg	:	Kilogram
CV	:	Coefficient of Variation
Rs.	:	Rupee
MT	:	Metric Tonne
viz.	:	namely
NHM	:	National Horticulture Mission
NHB	:	National Horticulture Board
CAGR	:	Compound Annual Growth Rate
MIS	:	Market Information Syatem
Qtl	:	Quintal
%	:	Percentage
IHDB	:	Indian Horticultural Data Base

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Title of the thesis:		**SUPPLY CHAIN ANALYSIS OF PAPAYAQ IN MAJOR MARKETS OF HYDERABA**
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Department	:	**AGRIBUSINESS MANAGEMENT**
Major Advisor	:	**Dr. B. GANESH KUMAR** **Principal Scientist** **Agri Business Management Division** **National Academy of Agricultural Research Management, Hyderabad – 500030.**
University	:	**PROFESSOR JAYASHANKAR TELANGANA STATE AGRICULTURAL UNIVERSITY**
Year of submission	:	**2015**

ABSTRACT

India is the major producer of papaya. India is first largest country followed by Brazil in papaya production and contributes about 42.6 percent of world papaya production. In India the area, production and productivity were 132.2 ha, 5382 Mt and 40.7 t/ha respectively for the year 2012-13. Andhra Pradesh is the leading state in both area and production followed by Gujarat. Assam stands first in productivity wise with 191.9 Mt per hectare. Hyderabad is the 6th largest metropolitan city in India. 74% of populations are literates and they are having the high awareness regarding the consumption of fruits. According to the Annual Report - 2013-14 published by the Government of India is stating that increased per capita availability of fruits from 158gm/day/person in 2007-08 to 179 gm/day/person in 2012-13. Per capita income of the people in the city is higher than any other city in the state. Because of the wide diversity of the people, the income levels are varied across the different locations of the Hyderabad. Besides, the city has many number of organized retailer stores, unorganized retail stores, platform sellers and push cart vendors

are involving fruit selling activities. The present study entitled "Supply chain analysis of papaya in major markets of Hyderabad" was studied with following objectives:

1 Trends in wholesale prices and volumes traded in Gaddiannaram market

2 Socio Economic Characteristics of the wholesalers

3. Socio economic characteristics of the retailers, platform sellers and push cart vendors

4. Business strategies of the retailers, platform sellers and push cart vendors

The data was primarily collected through personal interview with the help of a pre-tested questionnaire designed especially for the purpose. The required secondary data was also collected from various sources. Different analytical tools were employed for analysis of collected data. Tabular analysis was done by working out simple averages and percentages. For evaluating the trends of area, production, yield and exports of India and Andhra Pradesh and trends of wholesale prices and volumes traded in papaya Gaddiannaram market, Hyderabad, Compound Annual Growth Rate (CAGR) was used. To identify the constraints faced by wholesalers, retailers, Platform sellers and push cart vendors in trading of papaya in different wholesale markets and local markets Likert scaling and Garrett Ranking Techniques technique was used.

Out of five years' time period, there is no remarkable increase in the price per quintal of papaya from Rs.1224 in 2009 to Rs.1881 in 2011-12 and Rs.1484 in 2013-14, thus it showing that there is only a price difference of Rs.680 per quintal from past five years. The overall increase in the wholesale prices of papaya for the year 2013-14 over the year 2009-10 showed positive growth of 34.25 per cent. The compound growth rates of wholesale prices of papaya in the Gaddiannaram market over the period of time was significant, i.e. 3.53., it is concluded that trend in wholesale price is positive. The overall increase in the arrival of papaya for the year 2013-14 over the year 2009-10 showed positive growth of 277.92 per cent. The compound growth rates of wholesalers volume of papaya in Gaddiannaram market over the period of time was significant, i.e. 10.465. It is concluded that trend in volumes is positive.

Papaya brought to the market by farmers, commission agents and produce was sold by auction. Pricing depends on the demand raised by the purchaser and is highly influenced by many other factors like quantity of produce, quality, variety etc.

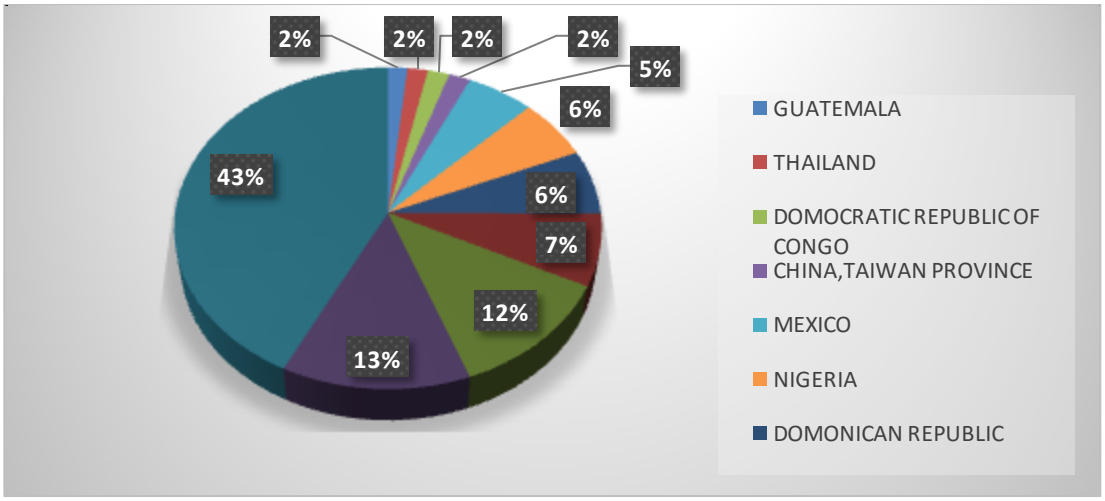
The marketing cost and marketing efficiency in channel – I (Producer – Wholesaler – Retailer – Consumer), Channel – II (Producer – Wholesaler – Platform sellers– Consumer), Channel – III (Producer – Wholesaler – Push cart vendors – Consumer) are 4.82, 5, 5.06 and 0.34, 0.44, 0.39 respectively. Major constraints faced by wholesalers are credit availability and malpractices in the auction. Major constraints faced by retailers, platform sellers and push cart vendors are transportation and price fluctuation of produce, perishability and traffic police, transportation and perishability. Farmers and market participants are satisfied with the facilities provided at market yard. Facilities like grading, equipments to load, unload and for weighments, payment process, physical infrastructures and labor availability require upgrading.

Chapter I

INTRODUCTION

In India agriculture has undergone spectacular technological changes during the last five decades. These changes have been boon to farmers so far as agriculture output and productivity are concerned. However, this has been unable to ensure stable income to farmers. The benefits of new production technology will not sustain for a longer period unless simultaneous efforts are made in improving the marketing system as a whole. The basic function of marketing is not only to bring about synchronization between the demand and supply of agricultural commodity but also to ensure reasonable prices for both producers and the consumers. Marketing of agricultural commodities has assumed a greater importance with gradual switching over from subsistence farming to commercial farming. No incentive to increase production will attract the farmers without improving` marketing system. Only stable farm prices, better returns and attractive terms of trade would motivate farmers to produce more and promote larger proportion of their produce to the market.

India is the major producer of papaya. Besides India, it is grown mainly in Brazil, Indonesia, Dominican of Republic, Nigeria, Mexico, Democratic Republic of Congo, China, Taiwan province, Thailand and Guatemala. India is first largest country followed by Brazil in papaya production and contributes about 42.6 percent of world papaya production.



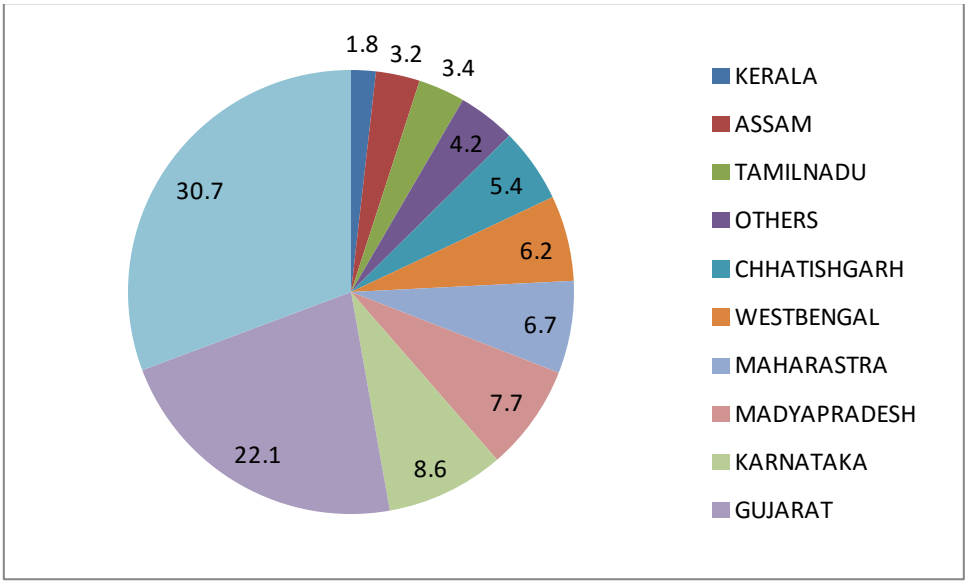
(Source: http://nhb.gov.in/, 2012-13)

Figure 1.1. Papaya production (percentages) in the world for 2012-13

Papaya (*Carica papaya*) has originated in Mexico and gradually it spread all over the tropical and sub-tropical countries of the world. Papaya is a giant herbaceous plant resembling a tree but not woody. The name "papaya" also refers to the fruit of other *Carica* species, including *C. pubescens* and *C. stipulata*, and their some hybrids sometimes called paw-paw. The papaya plant has a hollow, green or purple stem, and can grow 1.8 to 3 m in a year, eventually reaching heights of 6 to 9 m.

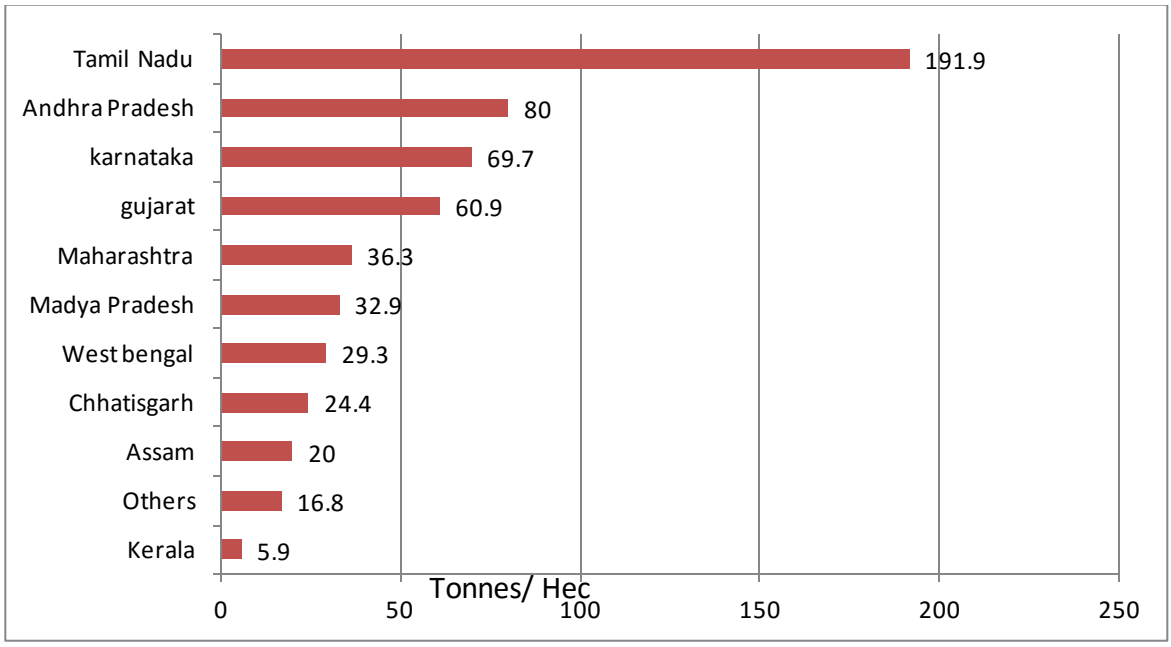
The fruit that develops varies in shape depending on the flower type. The fruits, can weigh up to 9 kg although common commercial cultivars generally produce fruits that weigh 0.5kg to 2.25kg. The flesh of the fruit varies from yellow to orange to red, and is thick and juicy, with a central cavity filled with many small black seeds.

In India the area, production and productivity were 132.2 ha, 5382 Mt and 40.7 t/ha respectively for the year 2012-13 (http://nhb.gov.in/). The papaya growing regions may be broadly classified into two agro climatic regions, viz subtropical and tropical. The subtropical zone includes West Bengal, Jharkhand, and Madhya Pradesh. The tropical zone includes Maharashtra, Andhra Pradesh, Tamil Nadu, Assam, Gujarat and Karnataka. These nine are the most important papaya producing states. Andhra Pradesh leads among these states in both area and production followed by Gujarat. Tamil Nadu stands first in productivity with 191.9.



(Source: http://nhb.gov.in/ 2012-13)

Figure 1.2. State wise Papaya production (percentages) for 2012-13



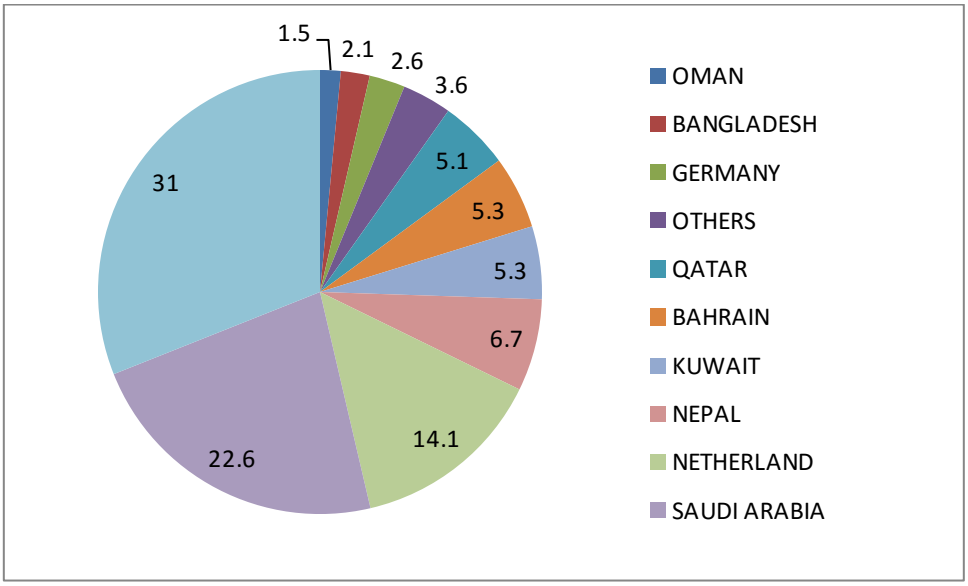
(Source: http://nhb.gov.in/ 2012-13)

Figure 1.3. State wise yield of Papaya in India (tonnes per hectare) for 2012-13

In India there is less market potential for papaya fruit. Farmers are facing the problems in selling their produce for remunerative prices in the markets. The marketing channels are clogged with middlemen. There is no transparent pricing mechanism in markets. Government of India has not included any of horticultural crops in the list of minimum support price commodities. Marketing system is also highly inefficient in case of fruits in general and papaya in particular.

Hyderabad is the 6th largest metropolitan city in India. According to the 2011 census, the population in the city is 7,749,334. Out of this, 74 per cent population is literate and they are having high awareness regarding the consumption of fruits. According to the Annual Report - 2013-14 published by the Government of India there is an increase of per capita availability of fruits from 158gm/day/person in 2007-08 to 179 gm/day/person in 2012-13. Per capita income of the people in the city is higher than any other city in the state. Because of the wide diversity of the people, the income levels are varied across the different locations of the Hyderabad. Hence the city is chosen for the study. Besides the city has many number of organized retailer stores, unorganized retail stores, platform sellers and push cart vendors are who involved in selling fruits.

Export potential of papaya



(Source: http://nhb.gov.in/ 2012-13)

Figure 1.4.Country wise share of exports of papaya from India in 2012-13.

Papaya is exported from India. As per the data published in the Indian Horticulture data base-2013, there is gradual decrease in the volume of export but the value of exports is increasing i.e. in 2010-11the volume and value are 17176 Mt and Rs.1931 lakhs, whereas in 2012-13 volume and value are 16491 Mt and 3329 lakhs. The United Arab Emirates is the largest importer (31%) followed by Saudi Arabia (22.6%) from the India.

The study on papaya is taken up as it is produced in large quantities in Andhra-Pradesh, and papaya reaches the final consumer through various market intermediaries. farmers are producing and they are marketing it through different channels. In order to know different marketing channels, net margins and constraints faced by the channel members and other market intermediaries, the study has been taken up.

Objectives of the investigation

1. To assess the trends in market arrivals of papaya for the period from 2009-2014 in Gudimalkapur market of Hyderabad.
2. To study the business strategy of wholesale traders in major fruit markets in Hyderabad.
3. To study the marketing strategy of retailers, platform sellers and push cart vendors dealing with papaya in Hyderabad.

Scope of the study

The study was conducted in Hyderabad region of Telangana State. The study mainly concentrated on understanding various supply chains and constraints involved in marketing of papaya and hence costs and margins in papaya marketing are studied. The results of the study would throw light on efficiency of marketing channels in the case of papaya.

Limitations of the study

As there is no recent survey regarding the area under production of papaya done by national level agency, the data regarding area and production is only estimated data given by National Horticulture Board, Government of India.

As most of the papaya marketing channel members were illiterate, it was difficult to get accurate data with regards to costs and revenues. The market functionaries also were not maintaining any records, making the researcher mostly depend on the recall memory of the sample.

Structure of the project report:

The study is presented in five chapters as follows:

Introduction: The importance of the study, problem setting and objectives are covered.

Review of literature: The available and relevant literature is thoroughly reviewed.

Material and Methods: The methods and materials encompassing sampling, data collection, analytical tools, concepts and terms are explained.

Results and Discussion: The results and discussion covering the important aspects such as costs and returns, constraints in processing are covered.

Summary and Conclusions: Summary and conclusions are presented along with suggestions for improving the economy.

Chapter II

REVIEW OF LITERATURE

An extensive survey of literature was undertaken in order to have in-depth knowledge about the various aspects related to the study. Careful study of the earlier studies conducted in India and abroad on marketing of papaya provided guidance and clarity. In this chapter, an attempt has been made to review the literature of the past research work. The review has been presented under the following heads:

2.1 Trends in market arrivals of Horticultural produce

2.2 Marketing of Horticultural produce

2.1 Trends in market arrivals of Horticultural produce

Korde *et al.* (1991) attempted to explain the behavior of arrivals and prices for oranges in producing as well as consuming market in Maharashtra for the period 1986-87. The seasonal and cyclical fluctuations were studied according to two marketing seasons locally "Ambia" and "Mrig". Simple tabular and percentage analysis were employed for studying the arrivals for explaining seasonal variation. The results showed that "Mrigbahar" received 60-66% of the total arrivals.

Handiganur and Kunnal (1999) concluded in their study 'An analysis of arrivals and prices of chickpea in regulated markets of Karnataka' that chickpea arrivals witnessed a continuous upward movement in all the six markets studied except Bhalki. Indices of arrivals were higher in the months of February, March, April, and May as these months coincided with the post-harvest period.

Chavan *et al.* (2001) made a study on marketing of banana in Parbhani market of Maharashtra state. He examined the peak arrivals in the market and their maximum and minimum prices. The bulk of produce was available for marketing during the months from June to December which accounted for 80.53 percent of total arrivals during the year. The arrivals were maximum to the extent 16.76 percent in the November.

Kumar *et al.* (2001) studied the trends and seasonal variations in arrivals and prices of jaggery and groundnut in Ankapalle market, Andhra Pradesh during the period 1982-1996 and indicated that the arrivals showed a mixed trend where as prices showed an increasing trend. There existed an inverse relationship between seasonal indices of arrivals and prices of the above commodities.

Rama Krishnudu (2003) studying the seasonal behavior of prices of tomato concluded that the price of tomato in Madanapalle market of Chitoor district of Andhra Pradesh was highest during June (150.08) followed by November (132.55) and July (126.22). The price indices were low during the period from January to April, June and July being off season months they exhibited high prices, whereas August and September were the months of peak arrivals, therefore the indices touched 87.80 and 93.60.

Virendrer *et al.* (2006) examined the variability pattern of market arrivals and prices of potato in four metropolitan markets of Delhi, Mumbai, Bangalore and Kolkata and examined the relationship between market arrivals and prices in these markets over 1990-2001 period. The results revealed that as regards the market arrivals in Bangalore market the variability was higher than that in Delhi and Mumbai markets. The price variability was maximum during August-September in Delhi and Bangalore markets, during July-October in Mumbai and during May-July in Kolkata market. The wholesale potato price was generally lower in Kolkata and Delhi markets, except for August- October in case of Delhi market as against that in Bangalore and Mumbai markets. While the relationship between market arrivals and prices in Delhi market was found to be positive, it was negative for Mumbai, Bangalore and Kolkata markets.

Pawar (2007) stated with respect to trends and variations in arrivals and prices of green gram in Marathwasda region of Maharashtra that a positive significant relationship between arrivals and prices exits in Partur market and positive but non-significant relationship exists in Sillod, Paithan and Bhokardan markets. A negative relationship was seen in Aurangabad, Vaijapur, Jalna and Ambad markets but was non-significant. Thus both types of relationship (negative and positive) were observed in selected markets during study period.

Mohan Kumar *et al.* (2009) studied the seasonality in arrivals and prices of important vegetable crops such as green chilly, onion, potato and tomato in Bangalore market. The study indicated that in all the crops with respect to arrivals and prices, there was a presence of seasonality within a year and seasonal pattern did not change over years in the market except in onion prices. Direct relationship existed between arrivals and prices in the case of green chilly, onion and tomato indicating that prices lead arrivals. Heavy arrivals in these vegetable crops attracted more buyers from long distance like Andhra Pradesh, Tamil Nadu, Maharashtra and Kerala.

Rajur *et al.* (2009) computed coefficient of variation (CV) to study the variation in market arrivals of chilly. The coefficient of variation of arrivals was found to be highest in Hubli followed by Raichur, Gulberga, Bijapur and Byadagi markets of Karnataka.

Shrish Sharma *et al.* (2013) conducted the investigation with the objective to study the seasonal price behavior and relationship between market arrivals and price of soybean crop in Kota region of Rajasthan. As regards the seasonal pattern, the wholesaler's price remained the lowest in the month of October and highest in the month of June in Kota region as a whole during the study period. In the study area, the intra year price raise was around 24-38 percent. The small magnitude of CV revealed that there was greater consistency in the monthly price of soybean in the selected markets of region.

2.2 Marketing of Horticultural produce

Radha Rani (2000) in her study on marketing of Sweet orange reported that the gross marketing cost of Channel 1 (Producer - Distant wholesaler - cum - Commission agent - Retailer - consumer was Rs.1,856.18 as against Rs.1,914.04 in Channel II (Producer - Pre harvest contractor - Distant wholesaler - cum - Commission agent - Retailer - Consumer). Pre harvest contractor incurred the maximum in Channel II and producer incurred the maximum in Channel I. The producer's share in the consumer's rupee was 61.25 per cent and 51.99 per cent in Channel I and Channel II respectively. The net price received by the producer was higher at Rs.5. 268.81 in Channel I compared to Rs. 4,500.25 in Channel II.

Srivastava and Mishra (2001) in their study on price spread and marketing channels of mango in Varanasi district of Uttar Pradesh, identified two marketing channels viz., Channel-I (Producer — Pre-harvest contractor —Wholesaler - Retailer — consumer) and Channel-II (Producer — Wholesaler — Retailer — Consumer). They observed that the producer's share in the consumer's rupee was only 43.86 per cent when the mango was marketed to distant market of Calcutta through Channel- I as against 62.93 per cent in case of sale of mango in local markets (Channel II). Marketing efficiency is higher (1.69) in channel II as compared to only 0.78 in Channel I. This is mainly because of higher total cost of marketing in Channel I (Rs.56/ box of 15 kg) as compared to only (Rs.23/ box of 15 kg) in Channel II.

Reddy *et al.* (2002) studied the mode of marketing and transportation losses in mango and identified that the losses during the harvesting and the transportation of

Totapuri and Alphanso varieties of mango in Karnataka, India. With the improvement of pre harvest contractors, harvesting losses reached 3.39 percent (approximately 15435 rupees) for Totapuri and 2.0 percent (approximately 4725 rupees) for Alphanso. With the farmers, harvesting losses reached 3.62 percent (22095 rupees) for Totapuri and 2.0 percent (7154 rupees) for Alphanso.

Ladaniya *el al.* (2003) in their study on marketing pattern of "Mosambi" Sweet orange found out that most of the orchardists sold their produce through pre harvest contractor which was as high as 86.6 per cent followed by produce sold through commission agent which stood at 13.4 per cent. In the channel: (Producer - Commission agent (distant market) - Retailer – Consumer), the producer's share in consumer's rupee was 49.42 per cent while in a channel where preharvest contractor was involved, the producer's share in consumer's rupee was 30 per cent only. The marketing efficiency was maximum (0.97) when farmer sold his produce directly through commission agent as observed in Pune market. When the fruit was sold through preharvest contractor, market efficiency was less (0.43). Cost of marketing also increased due to trader's margin in this channel.

Khira Sagar *et al.* (2003) studied marketing of mango in South Konkan region in Tahsils viz., Ratnagiri, Deogad and Vengurle to identify different channels and to estimate marketing cost of mango. Marketing channel followed by most of the farmers was Producer - Vashi market - Wholesaler - Mumbai retailer - Consumer. The percent marketing cost was highest for Alphonso produced in Deoaad, followed by Vengurle and Ratnagiri.

Zuniga *et al.* (2006) conducted studies on bargaining power in mango supply chains through experimental gaming approach and found that transactions between producers, traders, retailers and consumers in supply chain were characterized by contractual arrangement concerning outlet choice, price, volume, quantity and frequency.

Nirgude *et al.* (2007) while studying the marketing of sapota in Thane district concluded that 96 percent of the total quantity was marketed by the sapota growers. Among the five channels identified in the marketing of sapota, Channel –I was observed to be the major since about 46 percent of the quantity was marketed through this Channel – I. The average per quintal cost incurred through Channel-I was Rs325.27 and price realized was Rs.881.14, about 20.68 percent quantity was sold through Channel – II. The per quintal average cost incurred through this channel was Rs.122.68 and per quintal price realized was Rs 614.74. The total quantity marketed through Channel – III was 23.94 percent and the cost incurred and the average price realized in this channel was 23.94 percent and the cost

incurred and the average price realized in this channel was Rs 208.39 and Rs 813.78 per quintal, respectively. The producers share in consumer's rupee was 57.42 and 55 percent in channel – I, II and III respectively.

Kuldeep Kumar *et al.* (2011) studied various economic aspects of coriander such as assessment of compound growth, price spread, producer's share in consumer's rupee, marketing cost and margins, marketing practices, channels involved in marketing of coriander and problems faced by the growers in marketing of coriander in the Jhalarapatan thasils. The compound growth rates of area, production and productivity of coriander in Jhalawar district were 1.309, 0.531 and -0.771 per cent per annum, respectively during the period 1998-99 to 2007-08. Following four marketing channels were identified in the study area for marketing of coriander Channel I: (Producer - Commission agent - Wholesaler - Retailer – Consumer), Channel- II (producer - Commission mission agent cum wholesaler - Retailer – Consumer) Channel III: (Producer - Retailer - consumer), Channel IV: (Producer – Consumer). Among these channels, 80 per cent quantity of coriander moved through Channel-1, 18.62 per cent through Channel-II, 1.25 per cent through Channel-Ill and 0.13 per cent quantity was moved through Channel-IV. Marketing cost in the sale of coriander was Rs. 811.38, Rs. 723.88, Rs. 226.16 and Rs.136.38 per quintal in Channel-I, Channel-1I Channel-Ill and Channel-1V respectively. As such marketing cost was the lowest in Channel-IV and the highest in Channel-I.

Patel *et al.* (2013) study was carried out with a view to estimate the marketing costs, margins, price spread and marketing efficiency for lemon grown in Mehsana district of Gujarat. The data were collected by survey method for the year 2010-11. The highest disposal of lemon produce was in the month of July (16.57 per cent) and the lowest was in the month of March (1.91 per cent). About 90 per cent of the quantity of lemon produce was sold through Channel I and only 8.09 and 2.02 per cent of produce were sold through Channel-II and Channel-III respectively in Mehsana district. The net price received by the growers was Rs. 1511.78 qt1, which accounted for 66.12 per cent producer's share in consumer's rupee. The average expenses incurred in the marketing of lemon by the producers, wholesalers and retailers were 5.63, 5.70 and 8.22 per cent respectively. The total price spread was 33.88 per cent of consumer's price when produce was sold through wholesalers and retailers.

Shiv Prakash Sharan and Singh (2002) while studying marketing of Kinnow in Rajasthan, identified two marketing channels for kinnow i.e. Channel-I (Producer-Preharvest contractor- Commission agent- Wholesaler- Retailer- Consumer) and Channel-II (Producer-Direct consumer) in Sri Ganganagar and Kesari Singhpur markets to see the efficiency of different markets. In Channel-I the net price received by the producer worked out to be Rs. 210.12 per quintal and Rs. 185.12 per quintal accounting 24.72 per cent and 21.04 per cent of consumer's rupee at Sri Ganganagar and Kesari, Singhpur markets, respectively. In Channel-II, no intermediaries between producer and consumer was involved. The net price received by the farmer worked out to be Rs. 366.03 and Rs. 356.25 per quintal accounting 91.50 percent of the consumer's rupee in case of both the markets respectively.

Gondalia and Patel (2007) studied marketing of aonla (*Emblica officinalis*) in Gujarat and revealed that, on an average marketable surplus was 97.76 percent of total production. Among the various marketing channels, Channel-I (Producers –Wholesalers – Retailers – Consumers) was the most popular among the farmers as about 91 percent was marketed through this channel. The total marketing cost and margins came to Rs. 240.37 and Rs. 507.33 per quintal respectively. The producers share in consumer's rupee was 58.26 percent. The market efficiency was 1.40. This implies that aonla marketing system was working with reasonable efficiency looking to the perishable nature of the crop.

Lokanadhan (2007) made a study on supply chain management of tomato from farm to modern retail outlets. Vendors were appointed to procure tomato from growers and quality checks were implemented at the consolidation centers. Grading as small, medium and big fruits were done and packed in consumer desirable quantities and transported to different modern outlets in Bangalore city. The involvement of top level management was high in the modern retail outlet and spoilage during storage/transportation and shelf life was less. The information was used at all the levels of management and it ensured transparency in all the marketing transactions.

Tofanelli *et al.* (2007) has made an attempt to study fresh fruit losses at retail markets in Mineiros and examined that 3.2 percent of the volume of fruits commercialized in Mineiroes were lost weekly and that supermarkets, being the main retail markets, were predominant in the volumes of losses. The retail markets had cited the inadequate storage (refrigeration lack) and the bad conditions of transport (highways under bad conditions of

conservation) as the main causes for the loss of fresh fruits. Supply control, the education of the consumer, and fruit quality improvement are priority measures to be taken by the retail markets.

Karutagi *et al. (*2009) conducted study in Belgaum and Dharwad districts of Northern Karnataka on sapota cultivation and marketing. Two marketing channels, namely Channel I: (Producer - Commission agent- Retailer-Consumer) and Channel II: (Producer - Pre- harvest contractor- cum -Wholesaler- Retailer- Consumer) were found. Major item of marketing cost incurred by producers was commission charges at the rate of 10 per cent of the value constituting more than 52 per cent of the total marketing cost. Producer's share in consumer's rupee in Channel I was higher (59.58%) than in the Channel- II (48.14%). Similarly, price spread in Channel I was less (26.32%) compared to Channel- II (42.11%). Major marketing problems were higher commission charges, lack of nearest markets and lack of storage facilities.

Chapter III

MATERIAL AND METHODS

The present study was carried out in Hyderabad region of Telangana State. The study pertains to understanding the costs and profits and constraints involved in the marketing of papaya. This chapter presents the sampling design, nature and methods of data collection and analytical tools applied in attaining the specific objectives of the study. The chapter is presented under the following sub heads.

3.1 Sampling procedure

3.2 Description of study area

3.3 Collection and sources of data

3.4 Details of estimation

3.5 Tools and techniques used for analysis

3.1 SAMPLING PROCEDURE

Purposive and random sampling techniques were used to select wholesalers, retailers, platform sellers and push cart vendors.

3.1.1. Selection of Region of Study

Hyderabad region of Telangana State was purposively selected for the study as it stands as one of the largest metropolitan city in India as well as having higher per capita income and high literacy rate.

3.1.2. Selection of locations in the study area

In Hyderabad region, there is one major wholesale market for papaya. For this study, wholesaler sample is selected from the Gudimalakapur market and retailer sample from the different locations of metropolitan city of Hyderabad *viz.*, Mozzam jahi, Afzal Gunz and Charminar markets. These markets are selected randomly. To collect information from push cart vendors and platform seller's, sample was selected from different locations of Hyderabad *viz.*, Banjara hills, Kukatapally and Mehdipatnam. Banjara hills location is selected based on the fact that it is an urban commercial centre where as Kukatpally and Mehdipatnam are selected based on the fact these are the major residential and commercial suburb in the Hyderabad region.

3.1.3. Selection of wholesalers

For the study, papaya selling wholesalers were selected from the single market, viz Gaddiannaram market. From this market wholesalers were selected proportionately from small, medium and large wholesalers. A total sample of 15 wholesalers were selected randomly for conducting the study.

3.1.4. Selection of retailers

For the study, papaya selling retailers were selected from three locations in the study area. From each location 10 samples were selected proportionately from small, medium and large retailers. Hence 30 retailers were surveyed to collect the data.

3.1.5. Selection of push cart vendors and platform sellers

For the study, papaya selling pushcart vendors and platform sellers were selected from three locations in the study area. From each study location, a sample of ten pushcart vendors and platform sellers each were selected proportionately from small, medium and large retailers. Hence a total of sixty, platform sellers and push cart vendors formed the sample.

3.2 DESCRIPTION OF STUDY AREA

The study was done in the Hyderabad region of Telangana state.

3.2.1 Description of Hyderabad region

Hyderabad is the one of the largest metropolitan cities in the India. The city is having cosmopolitan population with wide range of cultures, traditions, food habits. With huge population the demand for fruits in high and various forms of retailing are adopted to see that the produce reaches the final consumer.

3.2.1.1 Location

The Hyderabad city lies at 17.366° N latitude and 78.476° E longitude.

3.2.1.2 Demographics

According to census India- 2011, Hyderabad had a population of 7,749,334, of this males constitute 51.42 per cent and females were 48.58 per cent. Hyderabad had an average literacy rate of 82.92 per cent, of this 53.41 per cent were males and 46.59 per cent were females and 10.72 per cent people of the population is under six years of age.

3.2.1.3 Geography

Hyderabad has an area of 260 sq km according to the census of 2011. It is located on the bank of river Musi. It has an average elevation of 536 meters.

3.2.1.4 Climate

The climate of Hyderabad remains fairly warm through the year. With the onset of winter in North and central parts of India, temperatures marginally come down in the months of December and January and the nights become quite cool in and around the Hyderabad city. During the summer months, the mercury goes as high as 42°C while in winters the minimum temperature may come down to as low as 12°C. June to November are the months of monsoons, accompanied by rains.

3.2.1.5 Land and Land Use Pattern

As far as the agriculture production is concerned, the region has less potential but most of the land is under real estate and industrial area.

3.2.1.6 Economy

The economy is mainly dependent on manufacturing and service sector. A few industries like oil refineries and detergent manufacturing are also present. It is also centre for retail sector.

3.2.1.7 Major Local Markets for papaya

Gaddiannaram is major fruit market for papaya as well as for many other fruits. This is one of the largest fruit markets in the state with presence of major wholesalers and Agriculture Marketing Committee (2013). The papaya was transported to other states through trucks mainly to Orissa, West Bengal, Madhya Pradesh, Maharashtra, Jharkhand, Kerala, Karnataka and Bihar from this market.

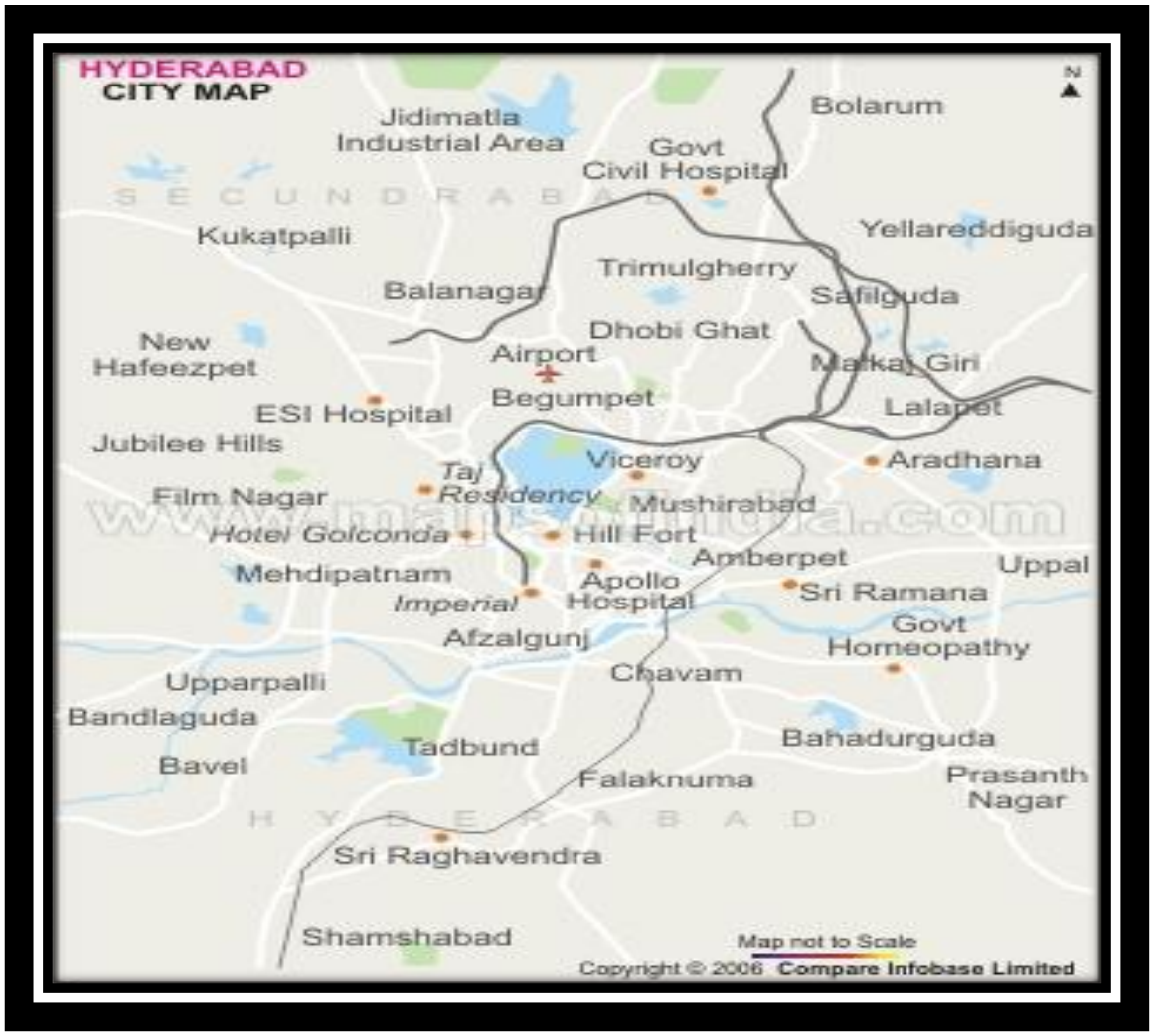


Fig.3.1 Map of Hyderabad

3.3 COLLECTION OF DATA

Primary data was collected from the selected wholesalers, retailers, platform sellers and push cart vendors in the study area through survey method with the help of pre-tested schedule specially designed for the purpose. Secondary data was collected from Agricultural marketing information network, journals, magazines and Government and other authentic websites.

3.4 DETAILS OF ESTIMATIONS

3.4.1 Estimation of Compound Annual Growth Rate (CAGR):

Compound Growth Rat**e** is used to analyze changes in arrivals and prices of papaya during the period 2009-2014 and the formula is given below. Keeping in view the objective of the study, growth rates of arrivals and prices in Gaddi annaram market in Hyderabad region of Telangana state were calculated by fitting exponential function of the form

$$Y=AB^t$$

(or)

$$\text{Log } Y= \text{Log } A + t \text{ Log } B$$

Where,

Y = Area under cultivation

t = Time in years (1, 2, 3…. …6)

A = Constant and

B = Regression coefficient

The above equations can be fitted by using the least squares method of estimation. That equation also enables to obtain the Compound Growth Rate (CGR in %) as follows

Compound Growth Rate= (Antilog of B-1) * 100

3.4.2 Marketing aspects of papaya

The information pertaining to marketing aspects of papaya was collected from commission agents, wholesalers cum commission agents, retailers, push cart vendors and platform sellers on the quantity sold or purchased, the price paid or received, expenditure on labor, transport, taxes and other incidental charges. Gross marketing margin includes the sum of margins of the various intermediaries involved in papaya marketing**.**

3.4.3 Marketing Costs

These include weighing, loading, unloading, commission of the commission agent, market fee etc., which were paid by the marketing functionaries. The total cost incurred on marketing, in cash or in kind, by the producer-seller and by various intermediaries involved in the sale and purchase of the commodity till the commodity reaches the ultimate consumer was computed as follows.

$$C = C_f + C_m1 + C_m2 + C_m3 + \ldots\ldots\ldots\ldots\ldots Cm_n$$

Where,

C = total cost of marketing of the commodity

C_f = cost paid by the producer from the time, the produce leaves the farm till sale.

Cm_n = cost incurred by the nth middleman in the process of buying and selling the product.

3.4.4 Marketing margins

Marketing margin of a market intermediary is the difference between the price paid (marketing cost plus purchasing price) by the intermediary and the sale price for same amount of the produce.

Absolute margin of the ith middleman (Ami)

$$(Ami) = P_{Ri} - (Pp_i + Cm_i)$$

Where,

P_{R_i} = Total value of receipts per unit (sale price)

Pp_i = Purchase value of goods per unit (purchase price)

Cm_i = Cost incurred on marketing per unit

3.4.5 Price spread

Price spread is the difference between the price paid by the consumer and the price received by the producer. The price spread was worked out by using following method

$$\text{Price spread} = P_p - P_f$$

Where,

P_p = price paid by the consumer

P_f = price received by the farmer

3.4.6 Middlemen

In this study, different types of middlemen were considered. They are

(i) Wholesalers: The merchant middlemen who buy and sell agricultural commodities in large quantities. They may buy either directly from farmers or from other intermediaries in the channel.

(ii) Retailers: Retailers buy goods from wholesalers and sell them to consumers in small quantities.

(iii) Commission agent: The commission agents are the ones who act as an agent between one intermediary and the other.

(iv) Platform sellers: The platform sellers are the ones who buys the produce from the wholesalers and sell to the consumer in the required quantity.

(v) Push cart vendors: The platform sellers are the ones who buys the produce from the wholesalers and sell to the consumer by moving in the city.

3.5 TOOLS OF ANALYSIS

For analyzing the data collected, the following tools and techniques were used.

3.5.1 Tabular Analysis

This was done by working out simple averages and percentages. Simple averages were used to estimate cost of transportation of papaya, average quantity sold, marketing costs, profit margin, and margins of various intermediaries under different marketing channels. Comparisons were made based on the percentages calculated.

3.5.2Marketing Efficiency

Marketing efficiency is a measure of market performance. The movement of goods from producers to the ultimate consumers at the lowest possible cost consistent with the provision of service desired by the consumers is termed as efficient marketing. Marketing efficiency is essentially the degree of market performance.

According to Kohl's and Uhl (1980), marketing efficiency is the ratio of market output (satisfaction) and marketing input (cost of resources). An increase in the ratio indicates an increased efficiency and a decrease represents a decreased efficiency.

An alternative measure was suggested by Acharya. He suggested that an ideal measure of efficiency particularly for comparing the efficiency of alternate marketing channels, should include,

Total marketing costs (MC)

Net marketing margins (MM)

Net prices received by the farmer (FP)

Price paid by the consumer (CP)

Here the marketing efficiency is calculated using the following formula,

$$MME = FP / (MC + MM)$$

Where, MME is modified marketing efficiency.

3.5.3 Garrett Ranking Method

The Garrett ranking technique was used to study the opinion of the farmers, processors and market intermediaries regarding the constraints faced by them in marketing of papaya.

The ranking given by the respondents to various attributes has been subjected to Garrett ranking. Garrett percentages were calculated by using the following formulae.

$$\text{Per cent position} = \frac{100\ (R_{ij} - 0.5)}{N_j}$$

Where,

R_{ij} = Rank given for the i^{th} items by the j^{th} individual.

N_j = Number of items ranked by the j^{th} individual.

By using score card prepared by Garret, scores were allocated to the percentage values. Mean of Garret scores was calculated for each attribute. Attribute with highest mean score is considered as a major constraint faced by the farmers.

Chapter IV

RESULTS AND DISCUSSION

In accordance with the determined objectives of the study, this chapter deals with the presentation and description of results of the study. For easy understanding and convenience, this chapter is presented under the following sub-heads:

4.1 Trends in wholesale prices and volumes traded in Gaddiannaram market

4.2 Socio economic characteristics of the wholesalers

4.3. Socio economic characteristics of the retailers, platform sellers and push cart vendors

4.4. Business strategies of the retailers, platform sellers and push cart vendors

4.1 TRENDS IN WHOLESALE PRICES AND VOLUMES TRADED IN GADDIANNARAM MARKET IN THE STUDY AREA.

4.1.1 Trend in wholesale prices of papaya in Gaddiannaram market

In this section, an attempt has been made to analyse the Compound Growth Rate (CGR) and per cent change in wholesale prices in Gaddiannaram market and the data pertaining to it was accessed from National Horticultural Board (NHB), Government of India for a period of five years (2009-10 to 2013-14).

From Table 4.1 it is observed that, wholesale price of papaya was Rs.1224 in 2008-09 which decreased to Rs.1207 per quintal, i.e. by 1.42 per cent in the year 2009-10. In the next year there was tremendous increase in the wholesale price of papaya by 31.57 per cent, i.e. to Rs.1587 per quintal. Decreasing trend was observed for next two years, i.e. 2011-12 and 2012-13 a decrease of 18.51 and 34.11 per cent respectively. Again in the year 2013-14 the wholesale price increased by 19.70 per cent, i.e. Rs.1484 per quintal. Out of five years' time period, there is no remarkable increase in the price per quintal of papaya from Rs.1224 in 2009 to Rs.1881 in 2011-12 and Rs.1484 in 2013-14, thus the data is showing that there is only a price difference of Rs.680 per quintal from past five years. The overall increase in the wholesale prices of papaya for the year 2013-14 over the year 2009-10 showed positive growth of 34.25 per cent.

The compound growth rates of wholesale prices of papaya in the Gaddiannaram market over the period of time was significant, i.e. 3.53. From the study, it is concluded that trend in wholesale price is positive.

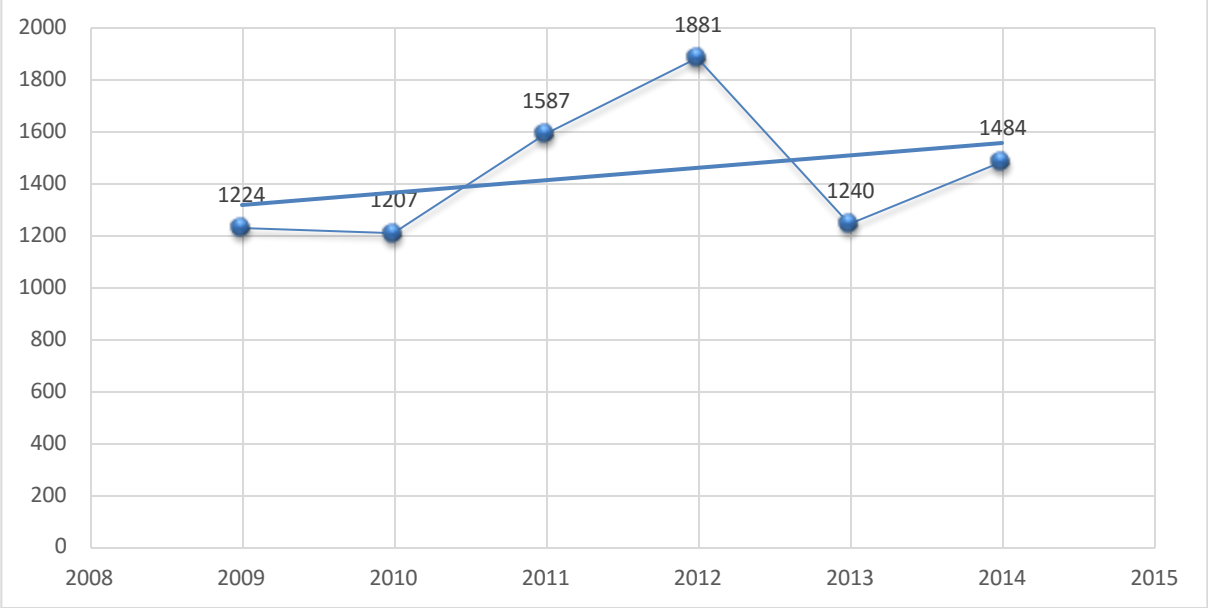
Table 4.1 Trend in wholesale prices of papaya in Gaddiannaram market

Year	Wholesale price (Rs./Qtl)	% change over previous year
2008-09	1224	
2009-10	1207	-1.42
2010-11	1587	31.57
2011-12	1881	18.51
2012-13	1240	-34.11
2013-14	1484	19.70
2009-10 to 2013-14	**-**	**34.25**
CGR	**3.53***	

Source: National Horticultural Board (NHB), 2014, Government of India.

Note: *Significant at 1 per cent level of probability; CGR: Compound Growth Rate.

Fig.4.1 Trend in wholesale prices of papaya



Source: National Horticultural Board (NHB), 2014, Government of India.

4.1.2 Trend in volumes of papaya tradrd in Gaddiannaram market

In this section, an attempt has been made to analyse the Compound Growth Rate (CGR) and per cent change in volumes of papaya traded in Gaddiannaaram market and the data pertaining to it was accessed from National Horticultural Board (NHB), Government of India for a period of five years (2009-10 to 2013-14).

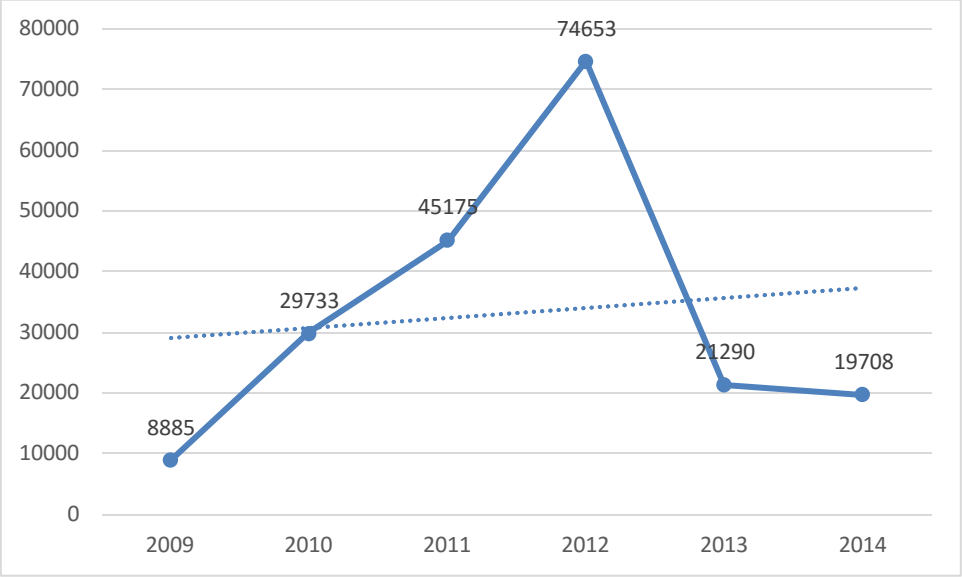
From table 4.2 it is observed that, in 2008-09 arrivals of papaya was 8885 tons (t), which increased tremendously in the year 2009-10 to 29733t, i.e. an increase of 234.64%. The increasing trend is continued for the next two years, i.e. in 2010-11 and 2011-12 45175t and 74653t respectively. The per cent change over previous year was 51.94 per cent and 65.25 per cent. In the next two years there was drastic decrease in the arrivals of papaya to the market. In 2012-13 and 2013-14 the arrivals are 21290t and 19708t and per cent decrease was 71.48 and -7.43 respectively. Altogether the arrivals in the market are showing the downward trend. The data shows that there is a difference of 65768t of arrivals during the last five years. The overall increase in the volumes of papaya for the year 2013-14 over the year 2009-10 showed positive growth of 277.92 per cent.

The compound growth rates of volume of papaya traded in Gaddiannaram market over the period of time was significant, i.e. 10.465. From the study, it is concluded that trend in volumes of papaya arrivals is positive.

Table 4.2 Trend in Volumes of papaya marketed in Gaddiannaram market

Year	Volume (tons)	% change over previous year
2008-09	8885	
2009-10	29733	234.64
2010-11	45175	51.94
2011-12	74653	65.25
2012-13	21290	-71.48
2013-14	19708	-7.43
2009-10 to 2013-14	**405**	**277.92**
CGR	**10.465***	

Source: National Horticultural Board (NHB), 2014, Government of India.Note: *Significant at 1 per cent level of probability; CGR: Compound Growth Rate.



Source: National Horticultural Board (NHB), 2014, Government of India.

Fig.4.2 Trends in volume of papaya traded in Gaddiannaram market

4.2 SOCIO ECONOMIC CHARACTERISTICS OF THE WHOLESALERS

The socio- economic characteristics of the wholesalers include age and educational status of the wholesalers. Analysis of socio economic characteristics is required to have comprehensive view about the wholesalers.

4.2.1 Educational Status of the Wholesalers

Particulars regarding the educational status are presented in table 4.3. It is observed that out of 15 wholesalers 3 wholesalers were illiterate. The number of farmers who pursued primary education were 4. The total number of farmers who pursued secondary education were 5. The total number of farmers who pursued higher education is 3. The total number of farmers who were either illiterate or having primary education were 7 in number which was about 46.66 per cent of the total population. So the level of education was very less among papaya marketing wholesalers in the study area.

Table 4.3. Educational Status of the wholesalers

S.NO.	Particulars	No. of respondents	Percentage
1	Illiterate	3	20.00
2	Primary(I to V)	4	26.66
3	Secondary (VI to X)	5	33.33
4	Above X	3	20.00
	Total	15	100

(Source: Field survey, 2015)

4.2.2. Age Profile of the Wholesalers

It is observed from the table 4.4 that among the total number of wholesalers (15), 2 wholesalers fall in between 25-30 age group. A total of 4 wholesalers belong to 31-35 age group, while 5 wholesalers fall in the age group of 36-40 and in the age group of 41-45, there were 3 wholesalers. Only 1 wholesaler was aged 46 and above. Wholesalers in the age group of 36-40 years are more and constituted nearly 33.33 per cent. Hence most of the wholesalers were found middle aged having good number of years of experience in papaya marketing.

Table 4.4. Age profile of sample wholesalers

S.NO.	Particulars	No. of respondents	Percentage
1	25-30	2	13.33
2	31-35	4	26.66
3	36-40	5	33.33
4	41-45	3	20.00
5	46 and above	1	6.66
	Total	15	100

(Source: Field survey, 2015)

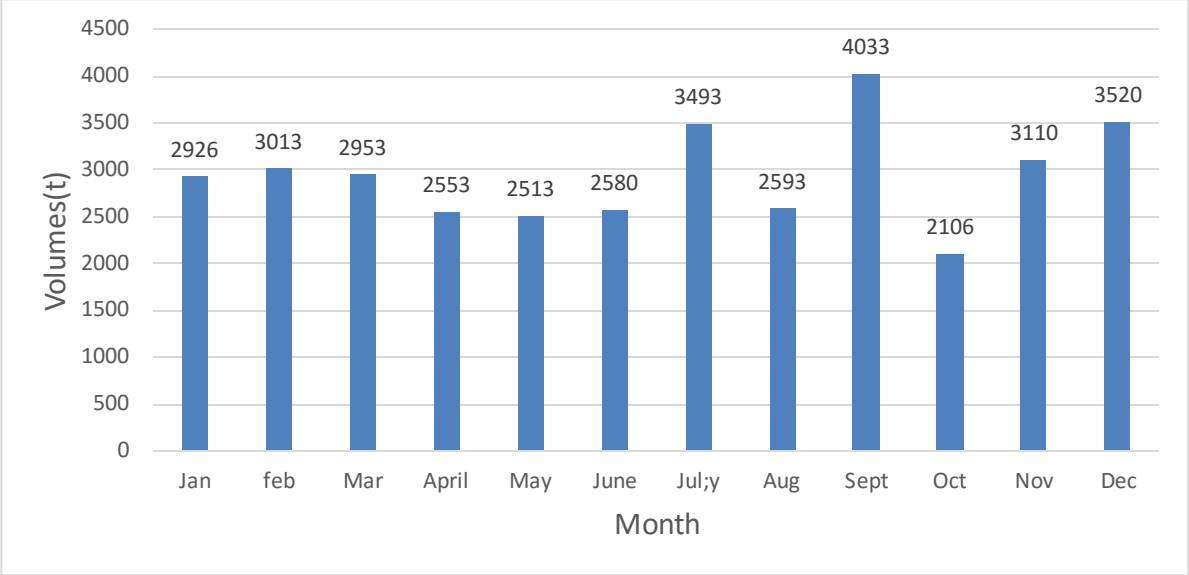
4.2.3. Location of Business Operation

Wholesalers were found doing their business operations in the Gaddiannaram market area. This is the major business area for them.

4.2.4. Volume of Business

From the data in figure 4.3 Wholesalers were found doing their business throughout the year. In this study, we attempted to assess the volume of the business they are doing annually. The data was collected on monthly basis. From the survey data, the maximum volumes of 4033 t and a minimum volume of 2106t business occurred. There is no

significant trend in the volume of the business done by wholesalers and it is difficult to identify the peak arrivals to the market from the volume of the business. January, February and March months are almost showing a steady volume of business.



(Source: Field survey, 2015)

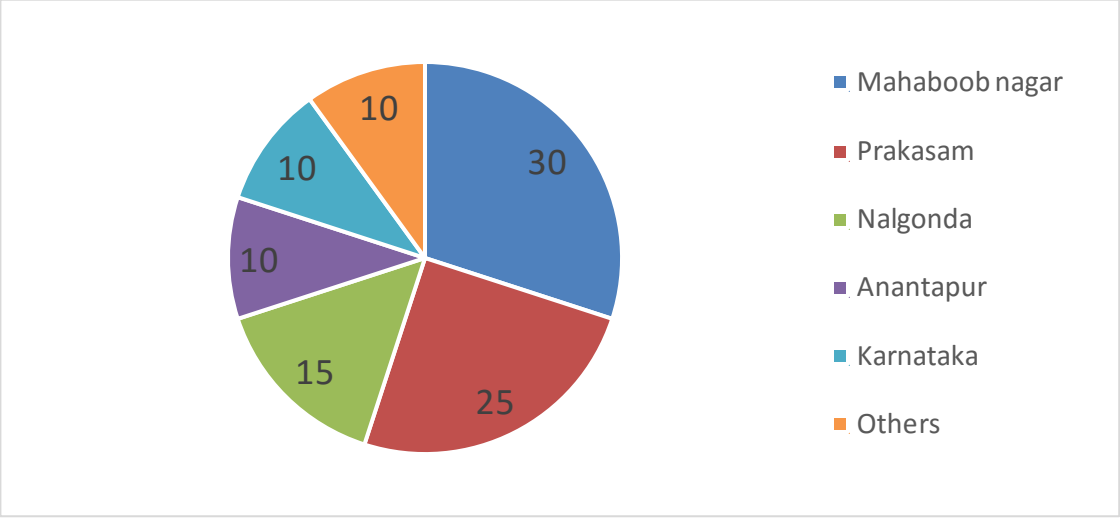
Figure 4.3. Volume of business in papaya done by wholesalers

4.2.5. Operating Hours

The wholesalers were found operating business from early morning 5:00 am till 12:00 noon. These operating hours varied with the arrivals coming to the market.

4.2.6. Source of Procurement

The arrivals were coming to the market from different locations of the state and parts of the arrivals were also coming from the neighbouring state of Karnataka. Arrivals from different locations shows different proportions. Mahaboobnagar district (30%) had the major share of arrivals to the market followed by Prakasam, Nalgonda, Anantapur and Karnataka which had supplied 25%, 15%, 10% and 10% respectively.(Figure 4.4)



(Source: Field survey, 2015)

Figure 4.4. Percentage share of supply of papaya by various sources

The persons who bring the produce to the market depends on the type of contract existing between the farmer and preharvest contractor. If preharvest contractor has contract with farmer, contractor bears all the expenses of transport and brings produce to the market. If there is no contract between farmer and preharvest contractor, farmer himself bears all expenses and brings produce to the market.

4.2.7. Mode of Transport

It is observed that, 70-75 per cent of farmers or preharvest contractors were using truck having a capacity of 3.5 t – 4 t to transport the for produce and 25-30 per cent were using the auto trolley which is for shorter distances and for less volumes i.e. 1.5 t - 2 t.

4.2.8. Storage Facilities

Papaya is a perishable fruit and even then, no sophisticated storage facilities are used as in the case of other fruits like apple. No wholesaler is using any kind of storage facilities. Leftover produce is stored in normal locations and on the next day produce is sold off.

4.2.9. Pricing Mechanism

In papaya marketing, auction procedure is adopted and pricing is determined on the basis of grade of the fruit. If the preharvest contractor is involved in contract with the farmer, then pricing is based on the nature of the fruit. The entire 15 sample of wholesalers adopted the same pricing mechanism.

4.2.10. Credit Facilities

Wholesalers are depending on the different types of credit support channels. Broadly three categories of support systems are identified. Among three systems 60 per cent of the wholesalers depend on the money lenders, 30-33 per cent are depending on relatives and 7-10 per cent are depending on formal financial institutions. This indicates that government had very less share in credit support to the wholesalers.

4.2.11. Marketing cost

Channel - I

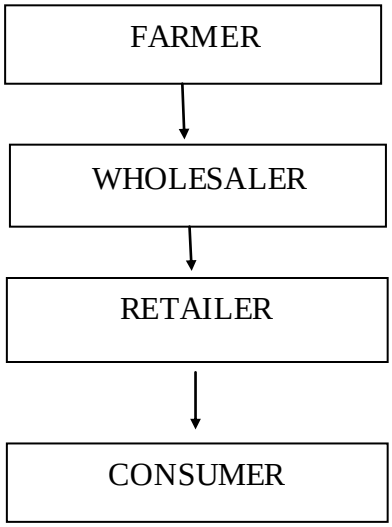


Figure 4.5. Marketing of papaya– Channel-I

The Channel I includes farmer, wholesaler, retailer and consumer. In this channel farmer directly brings the produce to the market. In some channels the preharvest contractor brought the produce to the market. Wholesalers purchase papaya from farmer and then wholesaler sells papaya to retailers in required quantities. Retailers sell papaya to consumers in small quantities of 1 kg and in multiples of 1 kg.

The Channel - I (Figure 4.5) comprises the farmer - wholesaler – retailer - consumer. The price spread of the papaya marketing in the Channel I is discussed in table 4.5. Average price received by the farmer (producer's price) is Rs.6.07/kg which is 25.86 per cent in the consumer rupee. The farmer incurs the average marketing cost of Rs.3.12/kg, which includes transportation, loading and unloading, commission, packaging, hamali charges, spoilage etc. The average price paid by the wholesaler to the farmer was

Rs.9.20/kg which was 39.15 per cent in the consumer price. Hence, the net price received by the farmer was Rs.6.04/kg. The average marketing cost of the wholesaler's includes sorting and grading, spoilage, loading and unloading, market fee, etc. that amounted to Rs. 0.48. The wholesaler margin in the channel was Rs.7.81/kg. The average price paid by the retailer to the wholesaler was Rs.17.5/kg which was 74.47 per cent in the consumer rupee. The average marketing cost of the retailer was Rs.1.22/kg that included transportation, hamali charges, spoilage etc. The average retailer margin in this channel was Rs.4.77/kg, thus the retailers sells the produce to the consumer at Rs.23.50/kg. Finally, it could be seen that the producer's share in consumer rupee was 25.85 per cent and the marketing efficiency was estimated to be 0.34.

Table 4.5. Price spread in papaya marketing through Channel-I (Producer – Wholesaler – Retailer – Consumer)

Particulars	**Rs/Kg**	**% in consumer price**
Gross Price received by the farmer	6.07	25.83
Marketing cost of the farmer		0.00
i) Transportation	1.9	8.09
ii) Loading and Unloading	0.1	0.43
iii) Commission	0.382	1.63
iv) Packaging	0.55	2.34
v) Spoilage	0.956	4.07
vi) Miscellaneous	0.95	4.04
Total marketing cost of farmer	3.12	13.28
Net price received by the farmer	6.07	25.83
Price paid by the Wholesaler	9.2	39.15
Marketing cost of the wholesaler		
i) Sorting and grading	0.1	0.43
ii) Spoilage	0.09	0.38
iii) Loading and unloading	0.1	0.43
iv) Marketing fee	0.09	0.38
v) Miscellaneous	0.09	0.38
Total marketing cost of wholesaler	0.48	2.04
Wholesalers Margin	7.81	33.23
Price received by wholesalers	17.5	74.47
Marketing Cost of retailer		
i) Transportation	0.55	2.34
ii) Hamali charges	0.2	0.85
iii) Spoilage	0.38	1.62
iv) Miscellaneous	0.09	0.38
Total marketing cost of Retailer	1.22	5.19
Retailer's margin	4.77	20.30
Price paid by the consumer	23.5	100.00
Producer's Share in consumer rupee (%)	25.85	
Marketing Efficiency (Acharya's Approach)	0.34	

(Source: Field survey, 2015)

4.2.12. Constraints faced by wholesalers in marketing of papaya

Constraints in procurement and marketing were identified after discussion and interaction with the wholesalers. Garret Ranking Technique has been used for quantification of rank and overall ranks are presented in table 4.6.

Eleven per cent of the respondents considered credit availability as major constraint. Most of the wholesalers were doing business operation in small scale because of which they were not having sufficient working capital for day to day payments to the farmers and for other miscellaneous purposes and most of the business runs on credit basis.

Ten per cent of total respondents mentioned that malpractices during the auction process of papaya were a major constraint. Since many were not aware about the process of the auction and the large scale wholesalers were becoming a cartel, the situation leads to the high prices of the produce.

Nine per cent of total respondents considered repayment of credit as constraint. Wholesalers were not able to recover get the credit provided to the retailer.

Nine per cent of total respondents considered high market fees as major constraints. Many small and medium wholesalers were paying high market fees, besides giving the additional amount to the officials of market.

Eight per cent of total respondents quoted that hamali as constraint. Availability of hamali people is decreasing day by day in the market and they are forming into unions, thus increasing the hamali charges.

Seven point five per cent of total respondents considered price fluctuation as constraint. Changes in arrivals to the market and environmental factors are leading to the price fluctuations.

Seven per cent of total respondents reported that the pilferage was the constraint. The produce brought to the market was not sold on the day itself and the produce had to be stored to be sold the next day. In the night time and also during business time, pilferage is occurring in the area.

Six per cent of total respondents reported that the transportation was the constraint. Wholesalers involved in preharvest contract with the farmers located in the distant places were facing the problem.

Table 4.6. Constraints perceived by wholesalers in marketing of papaya

S.No.	Constraints	Score	Garret Ranking
1	Credit availability	11.5	I
2	Malpractices in auction	10.04	II
3	Credit repayment	9.84	III
4	High market fee	9.74	IV
5	Hamali problem	8.60	V
6	Price fluctuation of produce	7.56	VI
7	Pilferage	7.14	VII
8	Transportation	6.80	VIII
9	Weighment	6.76	IX
10	Disposal	5.89	X
11	In adequate facilities	5.04	XI
12	Packaging	4.78	XII
13	Lack of MIS	3.77	XIII
14	Storage	2.94	XIV

(Source: Field survey, 2015)

Six per cent of total respondents reported faulty weighing as a constraint. Despite having electric weighing machines which are more accurate in weighing, some commission agents were deceiving by means of faulty weighing.

Five per cent of total respondents considered disposal of produce as a minor constraint. The produce arrivals to the market were in higher volumes then the disposal of produce.

Five per cent of total respondents considered inadequate facilities as constraint. The facilities such as parking and produce selling platform and hygiene facilities were not properly maintained by the market committee.

Four per cent of total respondents considered packing as a constraint. It is considered as a minor constraint.

Three per cent of total respondents considered lack of market information system as constraint. It is considered as a minor constraint.

Two per cent of total respondents considered storage as a constraint. It is considered as a minor constraint because papaya fruit does not require highly sophisticated storage facilities.

4.3. SOCIO ECONOMIC CHARACTERISTICS OF THE RETAILERS, PLATFORM SELLERS AND PUSH CART VENDORS

The socio- economic characteristics of the retailers include age and educational status. Analysis of socio economic characteristics is required to have comprehensive view about the retailers and to understand their business operations.

4.3.1. Educational Status of the retailers

Particulars regarding the educational status of the retailers are presented in the table 4.7. It is observed that out of 30 retailers seven retailers are illiterate, of which two (6.7 per cent) are in Afzal Gunz, three (10 per cent) are in Charminar and two (6.7 per cent) are in Mozamjahi markets. The number of retailers who pursued primary education are seven, of which three (10 per cent) are in Afzal Gunz, two (6.7 per cent) are in Charminar and two (6.7 per cent) are in Mozamjahi markets. The total number of retailers who pursued secondary education are seven, of which two (6.7 per cent) are in Afzal Gunz, two (10 per cent) are in Charminar and three (10 per cent) are in Mozamjahi markets. The total number of retailers who pursued higher education is nine, of which three (10per cent) are in Afzal Gunz, three (10 per cent) are in Charminar and three (10per cent) are in Mozamjahi markets. The total number of retailers who pursued higher education are nine in number which is about 30 per cent of the total population. So the level of education is not so high among the retailers.

Table 4.7. Educational Status of the retailers

Particulars	No of Retailers			Total
	Afzal Gunz	Charminar	Mozamjahi	
Illiterate	2 (6.7)	3 (10.0)	2 (6.7)	7 (23.4)
Primary (I to V)	3 (10.0)	2 (6.7)	2 (6.7)	7 (23.4)
Secondary (VI to X)	2 (6.7)	2 (6.7)	3 (10.0)	7 (23.4)
Above X	3 (10.0)	3 (10.0)	3 (10.0)	9 (30)
Total	10	10	10	100

(Source: Field survey, 2015)

Figure in parenthesis indicate percentage to grand total

4.3.2. Educational Status of the platform sellers

Particulars regarding the educational status of the platform sellers are presented in the Table 4.8. It is observed that out of 30 platform sellers, nine are illiterate, of which three (10 per cent) are in Banjara hills, four (13.3 per cent) are in Kukatpally and two (6.7 per cent) are in Mehdipatnam. The number of platform sellers who pursued primary education are three, of which one (3.3 per cent) are in Banjara hills, one (3.3 per cent) are in Kukatpally and one (3.3per cent) are in Mehdipatnam. The total number of platform sellers who pursued secondary education are eight, of which two (6.7per cent) are in Banjara hills, three (10 per cent) are in Kukatpally and three (10 per cent) are in Mehdipatnam. The total number of platform sellers who pursued higher education is ten, of which four (13.3 per cent) are in Banjara hills, two (6.7 per cent) are in Kukatpally and four (13.3 per cent) are in Mehdipatnam. The total number of platform sellers who perused higher education are ten in number which is about 33 per cent of the total population. So the level of education is not so high and illiterates are also nine in number, constituting 30% of the study area.

Table 4.8. Educational Status of the platform sellers

Particulars	Platform sellers			Total
	Banjara hills	Kukataplly	Mehdipatnam	
Illiterate	3 (10.0)	4 (13.3)	2 (6.7)	9 (30)
Primary (1st to 5th)	1 (3.3)	1 (3.3)	1 (3.3)	3 (9.9)
Secondary (6^{th} to 10^{th})	2 (6.7)	3 (10.0)	3 (10.0)	8 (26.7)
Higher (Above 10^{th})	4 (13.3)	2 (6.7)	4 (13.3)	10 (33.3)
Total	10	10	10	

(Source: Field survey, 2015)

Figure in parenthesis indicate percentage to grand total

4.3.3 Educational Status of the push cart vendors

Particulars regarding the educational status of push cart vendors are presented in the table 4.9. It is observed that out of thirty push cart vendors, six are illiterate, of which two (6.7 per cent) are in Banjara hills, two (6.7 per cent) are in Kukatpally and two (6.7 per

cent) are in Mehdipatnam. The number of push cart vendors who pursued primary education is six, of which three (10 per cent) are in Banjara hills, two (6.7 per cent) are in Kukatpally and one (3.3per cent) are in Mehdipatnam. The total number of push cart vendors who pursued secondary education are ten, of which three (10 per cent) are in Banjara hills, three (10 per cent) are in Kukatpally and four (13.3per cent) are in Mehdipatnam. The total number of push cart vendors who pursued higher education are eight, of which two (6.7 per cent) are in Banjara hills, three (10 per cent) are in Kukatpally and three (10 per cent) are in Mehdipatnam. The total number of push cart vendors who perused secondary education are ten in number which is about 33 per cent of the total population. So the level of education is not so high and those who pursued higher education are eight in number, constituting 26 % of the study area.

Table 4.9. Educational Status of the push cart vendors

Particulars	Push cart vendors			Total
	Banjarahills	Kukatpally	Mehdi patm	
Illiterate	2 (6.7)	2 (6.7)	2 (6.7)	6 (20.1)
Primary (1^{st} to 5^{th})	3 (10.0)	2 (6.7)	1 (3.3)	6 (20.1)
Secondary (6^{th} to 10^{th})	3 (10.0)	3 (10.0)	4 (13.3)	10 (33.3)
Above 10^{th}	2 (6.7)	3 (10.0)	3 (10.0)	8 (26.7)
Total	10	10	10	30

(Source: Field survey, 2015)
Figure in parenthesis indicate percentage to grand total

4.3.4. Age profile of the retailers

It is observed from table 4.10 that among the total number of thirty retailers, ten are from each market namely Afzal Gunz, Charminar, and Mozamjahi markets. A total number of five retailers fall in between 25-30 age group, of which one (3.3 per cent) is in Afzal Gunz, three (10per cent) are in Charminar and one (3.3 per cent) is in Mozamjahi markets. A total of eight retailers fall in the range of 31-35 age group, of which three (10 per cent) are in Afzal Gunz, three (10per cent) are in Charminar and two (6.7 per cent) are in Mozamjahi market. A total of six retailers fall in the age group of 36-40, of which two (6.7

per cent) are in Afzal Gunz, and four (13.3 per cent) are in Mozamjahi market. In case of age group of 41-45 years, four retailers fell under this, of which one (3.3 per cent) is in Afzal Gunz, two (6.7 per cent) are in Charminar and one (3.3 per cent) is in Mozamjahi market. In case of age group of 46 and above, seven retailers fall under this category, of which three (10 per cent) are in Afzal Gunz, two (6.7 per cent) are in Charminar and two (6.7 per cent) are in Mozamjahi market. Retailers in the age group of 31-35 are more and constitute nearly 26.7 per cent of the total sample. Hence most of the retailers are middle aged having good number of years of experience in papaya marketing.

Table 4.10. Age profile of retailers

Age (Years)	Retailers			Total
	Afzal Gunz	Charminar	Mozamjahi	
25-30	1 (3.3)	3 (10.0)	1 (3.3)	5 (16.6)
31-35	3 (10.0)	3 (10.0)	2 (6.7)	8 (26.7)
36-40	2 (6.7)	0 (0.0)	4 (13.3)	6 (20)
41-45	1 (3.3)	2 (6.7)	1 (3.3)	4 (13.3)
46 and above	3 (10.0)	2 (6.7)	2 (6.7)	7 (23.4)
Total	10	10	10	30

(Source: Field survey, 2015)
Figure in parenthesis indicate percentage to grand total

4.3.5. Age profile of the platform sellers

From the data, in table 4.11, it is observed a total number of three platform sellers fall in between 25-30 age group, of which one (3.3 per cent) is in Banjara hills, and two (6.7 per cent) are in Mehdipatnam market. A total of six platform sellers fall in the range of 31-35 age group, of which two (6.7 per cent) are in Banjara hills, three (10per cent) are in Kukatpally and one (3.3 per cent) is in Mehdipatnam markets. A total of nine platform sellers fall in the age group of 36-40, of which four (13.3 per cent) are in Banjara hills, two (6.7 per cent) are in Kukatpally and three (10 per cent) are in Mehdipatnam markets. In case of age group of 41-45, seven platform sellers fall under this, of which two (6.7 per

cent) are in Banjara hills, three (10 per cent) are in Kukatpally and two (6.7 per cent) are in Mehdipatnam markets. In case of age group of 46 and above, five platform sellers fall under this, of which one (3.3. per cent) is in Banjara hills, two (6.7 per cent) are in Kukatpally and two (6.7 per cent) are in Mehdipatnam market. Platform sellers in the age group of 36-40 are more and constitute nearly 30 per cent of the total sample. Hence most of the platform sellers are middle aged having good number of years of experience in papaya marketing.

Table 4.11. Age profile of platform sellers

Age (Years)	Platform sellers			Total
	Banjara hills	Kukatpally	Mehdipatnm	
25-30	1 (3.3)	0 (0.0)	2 (6.7)	3 (10)
31-35	2 (6.7)	3 (10.0)	1 (3.3)	6 (20)
36-40	4 (13.3)	2 (6.7)	3 (10.0)	9 (30)
41-45	2 (6.7)	3 (10.0)	2 (6.7)	7 (23.4)
46 and above	1 (3.3)	2 (6.7)	2 (6.7)	5 (16.7)
Total	10	10	10	30

(Source: Field survey, 2015)

Figure in parenthesis indicate percentage to grand total

4.3.6. Age profile of the push cart vendors

From the data in table 4.12, it can be noted that among the total number of 30 push cart vendors, a total number of six push cart vendors fall in between 25-30 age group, of which two (6.7 per cent) are in Banjara hills, two (6.7 per cent) are in Kukatpally and two (6.7 per cent) are in Mehdipatnam market. A total of three push cart vendors fall in the range of 31-35 age group, of which one (3.3 per cent) is in Banjara hills, one (3.3 per cent) is in Kukatpally and one (3.3 per cent) is in Mehdipatnam markets. A total of eight push cart vendors fall in the age group of 36-40, of which three (10 per cent) are in Banjara hills, three (10 per cent) are in Kukatpally and two (6.7 per cent) are in Mehdipatnam markets. In case of age group of 41-45 years, eight push cart vendors fall under this, of which two (6.7 per cent) are in Banjara hills, three (10 per cent) are in Kukatpally and three (10 per cent)

are in Mehdipatnam markets. In case of age group of 46 and above, five push cart vendors fall under this, of which two (6.7 per cent) are in Banjara hills, one (3.3 per cent) is in Kukatpally and two (6.7 per cent) are in Mehdipatnam markets. Push cart vendors in the age group of 36-45 are more and constitute nearly fifty three per cent market wise. Hence most of the push cart vendors are middle aged having good number of years of experience in papaya marketing.

Table 4.12. Age profile of push cart vendors

Age (Years)	Push cart vendors			Total
	Banjara hills	Kukatpally	Mehdi patnam	
25-30	2 (6.7)	2 (6.7)	2 (6.7)	6 (20.1)
31-35	1 (3.3)	1 (3.3)	1 (3.3)	3 (9.9)
36-40	3 (10.0)	3 (10.0)	2 (6.7)	8 (26.7)
41-45	2 (6.7)	3 (10.0)	3 (10.0)	8 (26.7)
46 and above	2 (6.7)	1 (3.3)	2 (6.7)	5 (16.7)
Total	10	10	10	30

(Source: Field survey, 2015)
Figure in parenthesis indicate percentage to grand total

4.4. BUSINESS STRATEGIES OF THE RETAILERS, PLATFORM SELLERS AND PUSH CART VENDORS

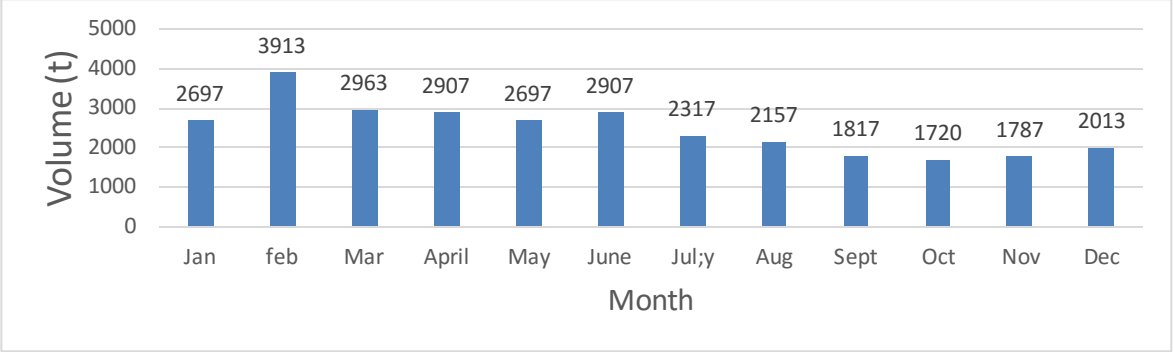
4.4.1 Location of business operation

Sample retailers are doing their business operations in the three major market area i.e Afzal Gunz, Charminar and Mozamjahi, whereas sample platform sellers and push cart vendors are operating their business in the area of Banjara hills, Kukatpally and Mehdipatnam.

4.4.2. Volumes sold by retailers

Retailers were doing business throughout the year. From the survey data which is depicted in figure 4.5 it can be noted that maximum volume of 3913 t and a minimum volume of 1720 t business was done by the retailers. The average volume of business

ranged between 1700 and 2200 t depending on the location they are operating in a month. January, February and March months are showing static volume of business.

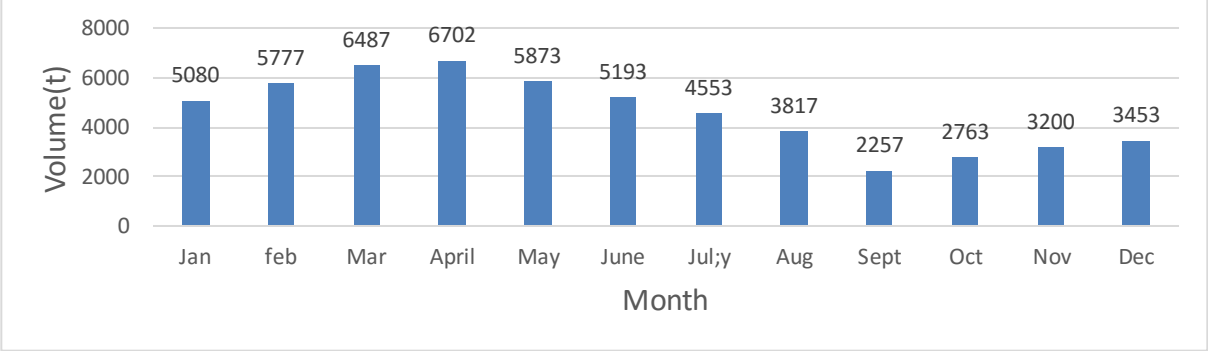


(Source: Field survey, 2015)

Figure 4.6. Volumes sold by retailers

4.4.3. Volumes sold by platform sellers

Platform sellers were doing business throughout the year. From the survey data and figure 4.6 it can be noted that the maximum volume of 6702 t and a minimum volume of 2257 t business done by platform sellers in a month. The average volume of business ranged between 4000 and 5000 t depending on the location they were operating. There is a significant increasing trend of volumes of the business and slight decrease in the volumes and again in the increasing phase.



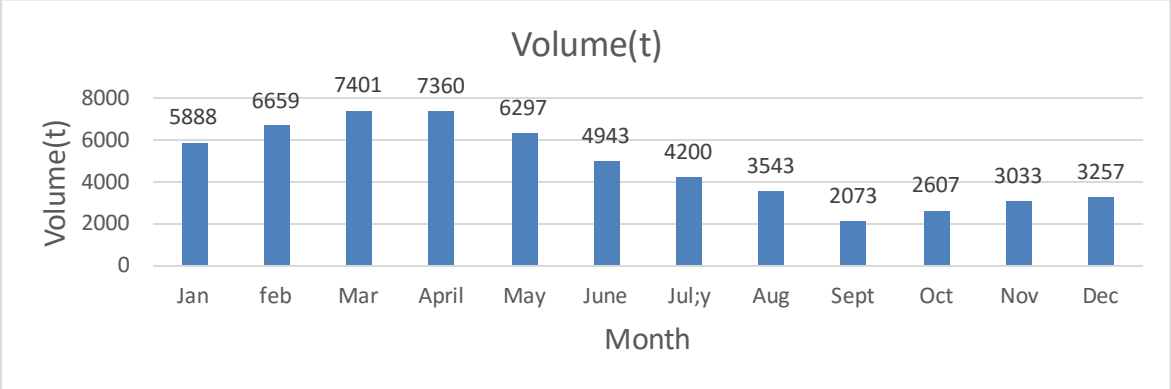
(Source: Estimates from the survey data of the study, 2015)

Figure 4.7. Volumes sold by platform sellers

4.4.4. Volumes sold by push cart vendors

Push cart vendors were doing business throughout the year. From the figure 4.7 it can be noted that the maximum volume of 7401 t and a minimum volume of 2073 t was

sold by the push cart vendors. The average volume of business ranged between 3200 t and 5000 t depending on the location they are operating. There is a significant increasing trend of volumes from January to March and then there is a decreasing trend till September and a slow increase is seen from October to November.



(Source: Field survey, 2015)

Figure 4.8. Volume of sales of pushcart vendors business

4.4.5. Operating hours

The retailers and platform sellers are operating business from 8:00 am to till 09:00 pm. The push cart vendors are adopting different business hours. They start by 7:30 am and do the business till the early evening hours. The push cart vendors are mobile and they roam in a locality and cover all the corners of their business area.

4.4.6. Source of procurement

The arrivals come from the different locations of the states and part of the arrivals also come from the neighbouring states of Karnataka. Most of the retailers and push cart vendors and platform sellers procure the produce directly from the Gaddiannaaram market. Out of the 60 respondents of platform sellers and push cart vendors. 13 persons were procuring the produce from farms located in the Zahirabad, Medak district.

4.4.7. Mode of transport

In general all the retailers and platform sellers were using the auto trolley because they carry in small volumes. Push cart vendors were purchasing in high volumes. These people formed into a group and pooled the transport vehicles.

4.4.8. Storage facilities

Retailers, platform sellers and push cart vendors were not using any kind of the storage facilities. The leftover produce is stored in normal locations and on the next day produce is sold.

4.4.9. Pricing mechanism

In papaya marketing pricing mechanism is a unique practise. All the sample retailers, platform sellers and push cart vendors (90) are following the auction price and grade wise pricing. There is no remarkable price difference between two methods of pricing mechanism, and it is only Rs. 1-2 /Kg and the price is more in case of graded produce.

4.4.10. Credit facilities

From the table 4.13 it can be noted that ninty respondents belonging to the three categories were borrowing from the money lenders, of which retailers are fourteen (46.6 per cent), platform sellers are sixteen (53.3 per cent) and push cart vendors are eighteen (60 per cent). From relatives, thirty two respondents, of which retailers are nine (30 per cent), platform sellers are eleven (36.6 per cent) and push cart vendors are twelve (40 per cent) are borrowing. On bank, ten respondents were dependent of which retailers were seven (23.3 per cent) and platform sellers are three (10 per cent). It is indicating that most of them were taking the credit from the money lenders and very less proportion from the banks. In the case of push cart vendors, none of them are taking credit from bank.

Table 4.13. Credit facilities

Source	**No of respondents**		
	Retailers	**Platform sellers**	**Push cart vendors**
Money lenders	14 (46.6)	16 (53.3)	18 (60)
Relatives	9 (30)	11 (36.6)	12 (40)
Bank assistance	7 (23.3)	3 (10.0)	0 (0.0)

(Source: Field survey, 2015)
Figure in parenthesis indicate percentage to grand total

4.4.11. Artificial Ripeners

None of the respondent are using the artificial ripeners. They are very conscious about the negative impact of artificial ripeners and legal rules and regulation and they are also aware about the consequence of using artificial ripeners.

4.4.12. Distance covered by them to do the business

Only the push cart vendors are moving to all the localities in their business area. 19 members have said that they move a distance of 10-12 Km in a day, whereas 11 members are said that they moved a distance of 4-5Km in a day.

4.4.13. Daily sale quantity

From the table 4.14. it can be noted that push cart vendors sold produce to approximately 50 customers. Out of that, 8 purchased 1 kg, 6 purchased 2 kg, 9 purchased 3kg, 10 purchased 4kg, 12 purchased 5 kg, 5 purchased more than 5 kg, their per centages being 16, 12, 18, 20, 24,and 15 respectively.

Table 4.14. Daily sale quantity

S.No	Quantity(kg)	No of consumers	% of consumers
1	1	8	16
2	2	6	12
3	3	9	18
4	4	10	20
5	5	12	24
6	More than 5	5	10

(Source: Field survey, 2015)

4.4.14. Promotional strategies

Retailers are not willing to provide the credit to the customer which is a risky factor to them, but only six members are providing credit as they maintain good relation with the customers. Majority of platform sellers are also not providing credit. Only 5 members were offering credit. Push cart vendors were providing credit comparatively to good number people as 12 members are offering credit and they are also selling other fruits along with papaya.

4.2.15. Marketing cost

Channel - II

The Channel - II contains the farmer - wholesaler – platform sellers- consumer. The price spread of the papaya marketing in the Channel II is discussed in table 4.15. Average price received by the farmer (producer's price) is Rs.6.07/kg which is 27.01 per cent of the consumer rupee. The farmer incurs the average marketing cost of Rs.3.12/kg, which includes transportation, loading and unloading, commission, packaging, hamali, spoilage etc. The average price paid by the wholesaler to the farmer was Rs.9.20/kg which was 40.89 per cent of the consumer price. Hence, the net price received by the farmer was Rs.6.04/kg. The average marketing cost of the wholesaler's includes sorting and grading, spoilage, loading and unloading, market fee, etc. that amounted to Rs. 0.48. The average wholesaler margin in the channel was Rs.7.31/kg. Then, the average price paid by the platform seller to the wholesaler was Rs.17/kg which was 75.56 per cent in the consumer rupee. The average marketing cost of the platform seller was Rs.1.40/kg that included transportation, hamali, spoilage etc. The platform sellers margin in this channel was Rs.4.14/kg, thus the platform sellers sell the produce to the consumer at average price Rs.22.50/kg. Finally, it could be seen that the producer's share in consumer rupee was 27.0 per cent and the marketing efficiency was estimated to be 0.44.

Table 4.15. Price spread in papaya marketing through Channel-II (Producer – Wholesaler – Platform sellers – Consumer)

Particulars	**Rs/Kg**	**% in consumer price**
Gross Price received by the farmer	6.07	26.98
Marketing cost of the farmer		
i) Transportation	1.9	8.44
ii) Loading and Unloading	0.1	0.44
iii) Commission	0.382	1.70
iv) Packaging	0.55	2.44
v) Spoilage	0.956	4.25
vi) Miscellaneous	0.95	4.22
Total marketing cost of farmer	3.12	13.87
Net price received by the farmer	6.07	26.98
Price paid by the wholesaler	9.2	40.89
Marketing cost of the wholesaler		
i) Sorting and grading	0.1	0.44
ii) Spoilage	0.09	0.40
iii) Loading and unloading	0.1	0.44
iv) Marketing fee	0.09	0.40
v) Miscellaneous	0.09	0.40
Total marketing cost of Wholesaler	0.48	2.13
Wholesalers Margin	7.81	34.71
Price received by wholesalers	17.5	77.78
Marketing cost of plat form sellers		0.00
i) Transportation	0.7	3.11
ii) Hamali	0.2	0.89
iii) Spoilage	0.4	1.78
iv) Miscellaneous	0.1	0.44
Total marketing cost of plat form sllers	1.4	6.22
Platform sellers margin	4.14	18.40
Price paid by the consumer	22.5	100.00
Producer's Share in consumer rupee (%)	27	
Marketing Efficiency (Acharya's Approach)	0.44	

(Source: Field survey, 2015)

Channel - III

The Channel - III contains the farmer - wholesaler – push cart vendors - consumer. The price spread of the papaya marketing in the Channel III is discussed table 4.16. average price received by the farmer (producer's price) is Rs.6.07/kg which is 28.26 per cent in the consumer rupee. The farmer incurs the average marketing cost of Rs.3.12/kg, which includes transportation, loading and unloading, commission, packaging, hamali, spoilage etc. The average price paid by the wholesaler to the farmer was Rs.9.20/kg which was 42.79 per cent in the consumer price. Hence, the net price received by the farmer was Rs.6.04/kg. The average marketing cost of the wholesaler's includes sorting and grading, spoilage, loading and unloading, market fee, etc. that amounted to Rs. 0.49. The average wholesaler margin in the channel was Rs.6.81/kg. Then, the average price paid by the push cart vendors to the wholesaler was Rs.16.50/kg which was 76.74 per cent of the consumer rupee. The average marketing cost of the push cart vendors was Rs.1.46/kg that included transportation, hamali, spoilage etc. The push cart vendors margin in this channel was Rs.3.53/kg, thus the push cart vendors sell the produce to the consumer at an average of Rs.21.50/kg. Finally, it could be seen that the producer's share in consumer rupee was 28.26 per cent and the marketing efficiency was estimated to be 0.39.

Table 4.16. Price spread in papaya marketing through Channel-III (Producer – Wholesaler – Push cart vendors– Consumer)

Particulars	**Rs/Kg**	**% in consumer price**
Gross Price received by the farmer	6.07	28.23
Marketing cost of the farmer		
i) Transportation	1.9	8.84
ii) Loading and Unloading	0.1	0.47
iii) Commission	0.382	1.78
iv) Packaging	0.55	2.56
v) Spoilage	0.956	4.45
vi) Miscellaneous	0.95	4.42
Total marketing cost of farmer	3.12	14.51
Net price received by the farmer	6.07	28.23
Price paid by the wholesaler	9.2	42.79
Marketing cost of the wholesaler		0.00
i) Sorting and grading	0.1	0.47
ii) Spoilage	0.09	0.42
iii) Loading and unloading	0.1	0.47
iv) Marketing fee	0.09	0.42
v) Miscellaneous	0.09	0.42
Total marketing cost of wholesaler	0.48	2.23
Wholesalers Margin	7.81	36.33
Price received by wholesalers	17.5	81.40
Marketing cost of push cart vendors		
i) Transportation	0.79	3.67
ii) Hamali	0.2	0.93
iii) Spoilage	0.382	1.78
iv) Miscellaneous	0.09	0.42
Total marketing cost of push cart vendors	1.46	6.79
Pushcart vendors margin	3.53	16.42
Price paid by the consumer	21.5	100.00
Producer's Share in consumer rupee (%)	28.26	
Marketing Efficiency (Acharya's Approach)	0.39	

(Source: Field survey, 2015)

4.4.16. Constraints faced by retailers in marketing of papaya

The problems faced by retailers in marketing of papaya are analysed and the results are presented in table 4.17.

Nineteen per cent of total respondents considered transportation as a constraint. For bringing the produce from the market to the retailer's location, transportation is the problem. The transport charges account for major cost of marketing for the retailers.

Eighteen per cent of total respondents considered price fluctuation as a constraint. Because of changes in arrival quantities to the market, there is high fluctuation in the prices. If produce is in less volume they are charging high price and vice versa.

Table 4.17. Constraints faced by retailers in marketing of papaya

S.No.	Constraints	Score	Garret Ranking
1	Transportation	19.96	I
2	Price fluctuation	18.86	II
3	Perishability	18.03	III
4	Storage	15.77	IV
5	Weighment	14.55	V
6	Bargaining	13.78	VI
7	Traffic police	9.67	VII
8	Packaging	9.29	VIII
9	Bribing	8.87	IX
10	MIS	8.69	X

(Source: Field survey, 2015)

Eighteen per cent of total respondents considered perishability as a constraint. Papaya is fresh fruit and highly perishable if retailer is not able to dispose the produce in time, the losses will be high.

Fifteen per cent of total respondents considered storage as a constraint. In the retailers point of view commercial space in the shop is very important factor. If produce is not disposed the storage of the produce is a problem.

Fourteen per cent of total respondents considered weighment as a constraint. Despite having electric weighing machines, some commission agents deceived by means of faulty weighing.

Thirteen per cent of total respondents considered bargaining as a constraint. Unlike in the organised retailer's store, the unorganised retailer's are not having control on the prices because of high bargaining of the customers.

Nine per cent of total respondents considered traffic police as a constraint because most of the unorganised retailer's stores are located in the main locations. The police demand favour either in the form of cash or kind from the retailers but it is mentioned as a minor constraint.

Nine per cent of total respondents considered packaging as a constraint. It is considered as a minor constraint because if the fruits were not properly wrapped by the wholesaler then the retailer has to do.

Nine per cent of total respondents considered bribing as a constraint. It is considered as a minor constraint because they are giving bribing to the police for not creating problems to the business activities.

Eight point five per cent of total respondents considered lack of market information system as constraint and it is considered as a minor constraint.

4.4.17. Constraints faced by platform sellers in selling of papaya

The problems faced by platform sellers in marketing of papaya are tabulated and the results are presented in table 4.18.

Twenty eighty per cent of total respondents considered perishability as a constraint. Papaya is available round the year. These people like the retailers store produce not sold in a day and the accumulated produce gets spoiled as the produce is not segregated based on ripeness which leads to ripeness of all the fruits.

Twenty per cent of total respondents considered traffic police as a constraint. Because most of these sellers sells the produce on the platform which cause problems to the traffic and the traffic police does not allow them to do the business on the platform.

Nineteen per cent of total respondents considered bargaining as a constraint. There is no value addition to the produce which is sold on the platform and this gives higher bargaining advantage to the customers.

Eighteen per cent of total respondents considered transportation as a constraint. For bringing the produce from the market to the platform sellers' location, transportation is the problem. The transport charges are a major cost for the retailer.

Table 4.18. Constraints faced by platform sellers in marketing of papaya

S.No.	Constraints	Score	Garret Ranking
1	Perishability	28	I
2	Traffic police	19.72	II
3	Bargaining	19.53	III
4	Transportation	18.04	IV
5	Weighment	15.54	V
6	Price fluctuation	14.88	VI
7	Storage	12.48	VII
8	Packaging	10.80	VIII
9	MIS	6.67	IX
10	Bribing	5.04	X

(Source: Field survey, 2015)

About sixteen per cent of total respondents considered weighment as constraint. Some commission agents deceived them by means of faulty weighing, inspite of use of electronic weighing machine.

Fourteen per cent of total respondents considered price fluctuation as a constraint, because changes in arrival quantities to the market cause the higher fluctuation in the prices.

Twelve per cent of total respondents considered storage as a constraint. They are keeping the produce on the platforms after the business is closed as bringing it to their home is not feasible as it is an additional cost. Pilferage is also a problem because of this situation.

Ten per cent of total respondents considered packaging as constraint.

Six per cent of total respondents considered lack of market information system as a minor constraint.

Five per cent of total respondents considered bribing as a constraint. It is considered as a major constraint because they are giving bribing to the police for not creating problems to the business activities in the highly population areas.

4.4.18. Constraints faced by push cart vendors in selling of papaya

The problems faced by push cart vendors in marketing of papaya are analysed and the results are presented in table 4.19.

Twenty per cent of total respondents considered transportation as a constraint. For bringing the produce from the market to the retailer's location, transportation is the problem as the transport charges are high.

Twenty two per cent of total respondents considered perishability as a constraint. Papaya is fresh fruit and highly perishable. If retailer is not able to dispose the produce, perishability is high.

Table 4.19. Constraints faced by push cart vendors in marketing of papaya

S.No.	Constraints	Score	Garret Ranking
1	Transportation	24.25	I
2	Perishability	22.84	II
3	Bargaining	18.91	III
4	Storage	16.26	IV
5	Traffic police	15.09	V
6	Price fluctuation	14.58	VI
7	Weighment	10.73	VII
8	Packaging	9.81	VIII
9	MIS	7.39	IX
10	Bribing	6.48	X

(Source: Field survey, 2015)

Eighteen per cent of total respondents considered bargaining as a constraint. Like in the organised retailer's store, unorganised retailers are not having control on the prices because of high bargaining of the customers.

Sixteen per cent of total respondents considered storage as a constraint. In the retailer's point of view, commercial space in the shop is very important factor. If produce is not disposed the storage of the produce is the problem.

Fifteen per cent of total respondents considered traffic police as a constraint. Because most of the unorganised retailers stores are located in the main locations, the police people are giving trouble to the retailers but it is the minor constraint.

Fourteen per cent of total respondents considered price fluctuation as a constraint, because changes in arrival quantities to the market cause high fluctuation in the prices.

Ten per cent of total respondents considered weighment as constraint. Some commission agents deceived by means of faulty weighing, inspite of using electronic weighing machine.

Nine per cent of total respondents considered packaging as constraint.

Seven per cent of total respondents considered lack of market information system as a constraint.

Six per cent of total respondents considered bribing as a constraint. It is considered as a minor constraint because they are giving bribing to the police for not creating problems to the business activities.

To conclude the constraints, wholesalers are had the major constraints credit availability, malpractices in the auction, credit payment and minor constraints are packaging, lack of MIS (Market information system) and storage. Retailers are facing transportation, price fluctuation and perishability are major and packaging, bribing and MIS (Market information system) are the minor constraints. Platform sellers problems are perishability, traffic police and transportation whereas minor are Packaging, MIS and bribing. Push cart vendors are had the transportation, perishability and bargaining and minor are packaging, MIS and bribing.

Chapter V

SUMMARY AND CONCLUSIONS

5.1 SUMMARY

In India agriculture has undergone spectacular technological changes during the last five decades. These changes have been boon to farmers so far as agriculture output and productivity are concerned. However, this has been unable to ensure stable income to farmers. The benefits of new production technology will not sustain for a longer period unless simultaneous efforts are made in improving the marketing system as a whole. The basic function of marketing is not only to bring about synchronization between the demand and supply of agricultural commodity but also to ensure reasonable prices for both producers and the consumers. Marketing of agricultural commodities has assumed a greater importance with gradual switching over from subsistence farming to commercial farming. No incentive to increase production will attract the farmers without improving` marketing system. Only stable farm prices, better returns and attractive terms of trade would motivate farmers to produce more and promote larger proportion of their produce to the market.

In India there is less market potential for papaya fruit. Farmers are facing the problems in selling their produce for remunerative prices in the markets. The marketing channels are clogged with middlemen. There is no transparent pricing mechanism in markets. Government of India has not included any of horticultural crops in the list of minimum support price commodities. Marketing system is also highly inefficient in case of fruits in general and papaya in particular.

Papaya is exported from India. As per the data published in the Indian Horticulture data base-2013, there is gradual decrease in the volume of export but the value of exports is increasing i.e. in 2010-11the volume and value are 17176 Mt and Rs.1931 lakhs, whereas in 2012-13 volume and value are 16491 Mt and 3329 lakhs. The United Arab Emirates is the largest importer (31%) followed by Saudi Arabia (22.6%) from the India.

The study on papaya is taken up as it is produced in large quantities in Andhra-Pradesh. Farmers are marketing it through different channels. In order to know different marketing channels, costs, margins and constraints faced by the market functionaries the study has been taken up with the following objectives, namely i) To assess the trends in market arrivals of papaya for the period from 2009-2014 in Gaddiannaram market of Hyderabad, ii) To study the business strategy of wholesale traders in major fruit markets in

Hyderabad and iii) To study the marketing strategy of retailers, plat form sellers and push cart vendors dealing with papaya in Hyderabad.

The study was conducted in Hyderabad region of Telangana State. The study mainly concentrates on various supply chains and constraints involved in marketing of papaya. The results of the study would throw light on and efficiency of marketing channels for papaya in Hyderabad.

Analysis of collected data was done by various tools and techniques. Tabular analysis was done by working out simple averages and percentages. Marketing efficiency was calculated by Acharya method. Marketing cost, marketing margin and price spread of different channels were calculated. Garrett ranking method was used for constraints in processing and marketing of papaya.

The Compound Growth Rate for arrivals and prices of papaya in Gaddiannaram market during 2008-09 to 2013-14 was 10.47 percent and 3.53 percent respectively. Growth rate is not significant for all three variables.

The age groups of 31-35 and 36-40 are more in number. This shows that they had the good number of years' experience in the marketing of papaya. Based on the overall data the more number of the channel members are having higher education. These indicating the educational levels are high.

Wholesalers are in Gaddiannaram market and retailers area in Afzul Gunz, Mozamjahi and Charminar market. Push cart vendors and platform sellers are in Mehdipatnam, Banjara hills and Kukatpally.

The volume of business was highest in the case of push cart vendors, followed by platform sellers, wholesalers and retailer. The arrivals are maximum from the Mahaboobnagar location and which was nearest location to that area in the case of wholesalers whereas rest all players from Gaddiannaram market. Push cart vendors are working for more number of business hours platform sellers, followed by wholesalers and retailers.

All the channel members are mostly using the trolley as a transport vehicle which is convenient for the small quantities. Most of the channel members are expressed that storage is so important element in the process of marketing of papaya.

All the players are following the practice of auction and quality of the produce. Regarding the credit support to the channel members mostly they are depending on the money lenders and on relatives lesser percent and very least percent on the bank assistance.

Three marketing channels were identified in papaya marketing in the study area

Channel I: Producer -Wholesaler-Retailer-Consumer

Channel II: Producer-Wholesaler-Platform sellers - Consumer

Channel III: Producer - Wholesalers – Push cart vendors - Consumer

Producers share in consumer rupee is highest in the Channel- III and market efficiency is highest in Channel – II, lowest in channel – I and Channel – I respectively.

Push cart vendors daily covers a distance of 5-6 km in a day. Maximum numbers of customers are purchasing a quantity of 5 kg and minimum numbers of customers are purchasing a volume more than 5 kg.

Wholesalers are had the major constraints credit availability, malpractices in the auction, credit payment and minor constraints are packaging, lack of MIS (Market information system) and storage. Retailers are facing transportation, price fluctuation and perishability are major and packaging, bribing and MIS (Market information system) are the minor constraints. Platform sellers problems are perishability, traffic police and transportation whereas minor are Packaging, MIS and bribing. Push cart vendors are had the transportation, perishability and bargaining and minor are packaging, MIS and bribing.

5.2 CONCLUSIONS

It may be concluded from the study that there is an immense scope for expansion of area, production and productivity of papaya in Andhra Pradesh as well as in other suitable parts of India. The system of marketing reveals that the farmers not getting good share of price paid by consumers. Out of the three channels of papaya marketing, Channel III i.e. Producer - Wholesalers - Push cart vendors - Consumer was the more efficient from producer as well as consumer point of view as the producer could get 28.26 per cent of the consumer’s rupee. Further, it is found that marketing channel efficiency index was higher in Channel II (0.44) than Channel III (0.39) and Channel I (0.34 percent). The major problems faced by market intermediaries are fluctuation in price, lack of transportation facilities, perishability and bargaining etc.

SUGGESTIONS AND POLICY IMPLICATIONS

1. Since the state of Telangana has the potential of producing papaya in high productivity, the fruit should be promoted vigorously. Besides, the state is well connected to the major importers in Gulf, and hence papaya cultivation should be encouraged.

2. As there is scope of improving the marketing efficiency tremendously in case of this fruit, better regulatory mechanism should be in place in wholesale markets such as price display board, auction supervision by Agriculture department officials, electronic balance, etc. so as to bring in transparency in pricing mechanism for papaya particularly.

3. Subsidy can be given to the retailers, platform sellers and pushcart vendors selling papaya on weigh balance, packing material and protective sheets, etc, after getting them registered by Agriculture/ Horticultural department.

4. As a long term solution, minimum support price can be announced for major fruits in general and papaya in particular.

Literature cited

Chavan, A. A., Kalyankar, S.P., Sinde, S.V and Wakle, P.K.2001. A study on marketing of banana in Parbhani market of Maharashtra state. *The Bihar Journal of Agricultural Marketing*. 9(3):316-319.

Gondalia, V.K and Patel, G.N. 2007. Marketing of Alona (*Emblica officinalis G.)* in Gujarat. *Indian Journal of Agricultural Marketing 21(2):114-124.*

Handiganur, S. S and Kunaal, L. B. 1999. An analysis of arrivals and prices of chickpea in regulated markets of Karnataka. *Agricultural Marketing*. 42(3):45.

Kuldeep Kumar and Burark, S.S. 2011. Marketing of coriander in Jhalawar District of Rajasthan. *Indian Journal of Agricultural Marketing 25(2):*

Kumar, K.N., Sreelakshmi. K., Raju, V.T. 2001. Trends in arrivals and prices of selected commodities in Ankapalle regulated market of Andhra Pradesh. *Agricultural Marketing*. 43(4):26-33.

Kerutagi, V.A, Ramachandra, V.A, Kunnal, L.B Mahajan shetti, and Shirol, A.M. 2009. Marketing of sapota in Northern Karnataka. *Indian Journal of Agricultural Marketing 23(2):57-65.*

Khira Sagar P J, Rana A A, bagade S R and Patil B P 2003. Marketing of mamgo in South Konkan region. *Indian Journal of Marketing 33(7):28-30.*

Korde M D, Koranne V M, Yenpreddiwar and Gore N F 1991. Behaviour of arrivals and prices in orange markets. Agricultural Marketing 33(4): 27-30.

Ladaniya, M and Vinod Wanjari. 2003. Marketing pattern of "mosambi" Swwet orange in selected districts of Maharashtra. *Indian Journal of Agricultural Marketing 17(1):52-62.*

Lokanandhan, k. 2007. Supply chain management analysis of tomato from farm to modern outlets. *Indian journal of agricultural marketing.* 21(3): 65-71.

Mohan kumar, T.L., Munirajappa, R., Chandra Shekar, H and Surendra, H.S. 2009. Seasonality in arrivals and prices of important vegetable crops in Bangalore market. *Mysore Journal of Agricultural Sciences.*43 (4):738-743.

Nirgude, R.R, Shendagean, P.N and Jadhav, K.L. 2007. Marketing of sapota in Thane district. *Indian Journal of Agricultural Marketing 21(2):171-180.*

Patel, R. R., Patel, A.J, Patel, R. M, 2013. Marketing of lemon in Mehsana district of North Gujarat. *Indian Journal of Agricultural Marketing 27(1):190-198.*

Pawar, N.D. 2007. Trends and variations in arrivals and prices of green gram in Martahwada region of Maharashtra. *Agricultural Marketing*. 50(3):44-47.

Radha Rani, M. 2000. An economic analysis of production and marketing of sweet orange in Ananthapur district of Andhra Pradesh .M.Sc. (Ag.) thesis , Acharya N.G. Ranga Agricultural University, Hyderabad

Rajur, B. C, Patil, B. L and Basavaraj, H. 2009. Market arrivals of chilli in Karnataka – An economic analysis. Agricultural situation in India LXV (11):671-673.

Rama Krishnudu, S. 2003. Economics of production and marketing of Tomato crop in Chittor district of Andhra Pradesh. *M.Sc(Ag) Thesis* submitted to ANGR Agricultural University: 149-154.

Reddy, R. N.S., Reddy, N.S., Krishnappa, K.S and Anjanappa, M. 2002. Comparative study of mode of marketing and transportation losses in mango. *Current Research University of Agricultural Sciences Bangalore* 31 (9/10): 144-146

Shirish Sharma, and Singh, I.P. 2013. Price behaviour of soybean in Kota region of Rajasthan. *Indian Journal of Agricultural Marketing 27(1):7-22*

*Statisticalinformation.*http://censusindia.gov.in/2011-provresults/paper2/data_files/india2/Million_Plus_UAs_Cities_2011.pdf

Statisticalinformation.http://nhb.gov.in/OnlineClient/MonthlyPriceAndArrivalReport.aspx?enc=3ZOO8K5CzcdC/Yq6HcdIxJ4o5jmAcGG5QGUXX3BlAP4=

Statisticalinformation. http://nhb.gov.in/area-pro/Indian%20Horticulture%202013.pdf

Srivastava, S.C and Mishra, R.R. 2001. Price spread and marketing channels of mango in Varanasi district of Uttar Pradesh. *The Bihar Journal of Marketing 9(3):273-280.*

Shiv Prakash Sharan and Singh, V.k. 2002. Marketing of Kinnow in Rajasthan. *Agricultural Marketing 45(3):2-4.*

Tofanelli, M. D., Fernandes, M. de. S., Martins Filho. O. B and Carrijo, N. S. 2007. Fresh fruit losses at retail markets in Mineiros, state of Goias, Brazil. *Revista Brasileria de Frauticultura.* 29 (3): 513-517.

Virendrer Kumar, Sharma, H.R., and Sharma, R.K.2006. Market arrivals and price behaviour of potato A study of four Metropolitan markets.*Indian Journal of Agricultural Marketing 20(1):78-89*

Zuniga, Arias, G., Meijer, S., Ruben, R. and Hofstadter, G. J. 2006. Bargaining power in mango supply chains; an experimental gaining approach. *International Agricultural food chains and Networks*; *Management and Organization*. 231-235.