

AN ANALYSIS OF ARRIVALS AND PRICES OF BEANS – A CASE STUDY OF BANGALORE RAITHARSANTHE MARKET.

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ABSTRACT

Beans belong to the family Leguminosae. They are considered as nutritious vegetables as they contain high amounts of vegetable proteins besides carbohydrates and vitamins. In India beans are grown in almost all the states. The major beans producing belts are Andhra Pradesh, Karnataka, West Bengal, Tamil Nadu, Maharashtra, Gujarat, Orissa and Punjab. Karnataka is one of the important state producing beans. The major districts producing beans in Karnataka are Belgaum, Dharwar, Bijapur, Hassan, Mysore, Kolar and Bangalore rural. There is regular supply of beans in the market. In view of this an attempt is made to study arrivals and prices of beans in Bangalore rural. The study is based on secondary data. It is collected from the records of the Raitharasanthe market, Yelahanka, Bangalore rural. Raitharsanthe is the first farmers market established in 2002 in Karnataka. The time period is between 2014 to 2016 across a period of 36 months. Simple statistical tools i.e., Pearson's correlation method were used to analyze the relationship between arrivals and price of beans. It is understood that the arrivals were at their peak during September, November, and July. Next peak of arrival were in the months of August and October. The lowest arrivals were observed in the months of April, January and May. The months of high arrivals incidence were obviously associated with the low prices in the market under study. Similarly, the incidence of lower arrivals was associated with the high prices in the market. This clearly indicates that the operation of law of demand in the market, attributing to seasonality of perishable commodities.

Keywords: Arrivals and Prices of Beans, Leguminosae, Soyabean seeds, Bangalore Raitharsanthe Market

INTRODUCTION

Beans belong to the family Leguminosae. They are considered as nutritious vegetables as they contain high amounts of vegetable proteins besides carbohydrates and vitamins. The green tender pods are used as vegetable and also the dry seeds. The dry seeds are excellent food and

used extensively in preparation of various dishes in India. The beans for drying are grown till the seeds are large enough and pods begins to dry. The pods are shelled and seeds are separated. The shelled dry beans have good market and itself is an industry. The Soyabean seeds are now in use to manufacture products like Nutrella and also milk.

The various beans cultivated in India are French bean, Cow pea, Cluster bean, Broad bean, Lima bean, Soya bean and Garden bean. The Sword bean, velvet bean and Ridge bean are the other types of beans grown in south and north eastern India. In India beans are grown in almost all the states. The major beans producing belts are Andhra Pradesh, Karnataka, West Bengal, Tamil Nadu, Maharashtra, Gujarat, Orissa and Punjab. Karnataka is one of the important state producing beans. The major districts producing beans in Karnataka are Belgaum, Dharwad, Bijapur, Hassan, Mysore, Kolar and Bangalore rural. There is regular supply of beans in the market. . In view of this an attempt in this study is made to study arrivals and prices of beans in Bangalore rural.

REVIEW OF LITERATURE

Shivaraya and Hugar (2002) inferred that the prices of onion and potato increased with increase in arrivals in Belgaum, Hubli, Raichur and Gulbarga markets. However, reverse trend was observed in other markets. The correlation co-efficient between arrivals and prices of onion showed negative association in storage cost in Dharwad, Bijapur and Raichur markets and potato only in Dharwad market. This clearly indicated that the prices of onion and potato were mainly influenced by their arrivals in these markets in accordance with the law of demand and supply. The substantial quantity of arrivals during post harvest months of the year led to decline in prices. The development of warehousing facilities and provision of credit to the farmers against warehouse receipts would go a long way in reducing the variation in arrivals and prices. This also calls for dissemination of market information relating to arrivals, prices, etc, by the respective Agricultural Produce Market Committees.

Chahal *et al.* (2004) studied the price behavior of Green peas in Hoshiarpur and Ludhiana (Punjab) markets from 1994 to 2002 and found that correlation co-efficient of arrivals of pea in Ludhiana market was positive, where as in Hoshiarpur market it was negative. Also found that correlation co-efficient of prices of both the markets were positive.

Shelke (2009), in his article titled, "Economics of Price Spreads in Marketing of Major Vegetables in Parbhani Market" conducted a study in Parbhani area of Maharashtra. The data on arrivals, prices, marketing costs and marketing margins were collected for the period June 2007-May 2008 from APMC, Parbhani. The vegetables selected were spinach, okra, bean, cabbage and bitter gourd. The difference between per kg wholesale and retail price was maximum (1.43)

in the case of bitter gourd followed by okra (1.38), cabbage (1.37) and bean (0.84) respectively. The study concluded that during the peak period of arrivals of the vegetables, the wholesale and retail prices were much lowered.

Singh et al. (2010), in their article titled, "A Study on Behaviour of Arrivals and Prices of Green Chillies in Punjab" have studied the behaviour of arrivals and prices of green chillies in Punjab particularly in two selected districts, i.e., Amritsar and Patiala, which had recorded the highest market arrivals during the last three years. The results revealed that the prices of chillies registered an increase over a period of time in Amritsar market, whereas in Patiala market it showed a declining trend. This happened due to the reason that Patiala market is limited and meeting the local demand only, whereas Amritsar market acts as an assembling and distributing point for neighbouring states. It has also been found that the seasonal nature of chilly crop has created glut in the market that leads to sharp fall in prices during the post-harvest season.

Kurkute et al. (2010), in their study, have made an attempt to identify the trends in arrivals and prices in major markets in the marketing of banana in Junnar tehsil of Pune district of Maharashtra. The time series data on monthly arrivals and prices of banana from Mumbai and Pune markets for the period 1991-92 to 2005-06 were collected from the office of respective APMCs. The results revealed that the seasonal indices of arrivals and prices of banana in Mumbai market were higher during July to January, whereas February to June was characterized by low prices with low arrivals. In Pune market, higher arrivals with low prices were during August to January and vice-versa during the months of February to July. There was significant growth in arrivals and prices in both Mumbai and Pune markets. But significant increase in arrivals was seen only in Pune market during the 15 years period. The study suggested that in order to take advantage of higher prices, the banana growers should sell their produce during March to August in Pune market and August to December in Mumbai market by adjusting their planting time. The studies reviewed above fail to look into the relationship between production, market arrivals and prices.

A number of studies have been conducted at the all India level and at the state level regarding seasonal behaviour of fruit and vegetable crops. The studies by Kesar et al. (1996), Mipramapavar and Gummagolmath (1998), Shelke (2009), Kurkute et al. (2010) relate to the states of Maharashtra and Karnataka. A unanimous finding of these research works is prevalence of inverse relationship between market arrivals and prices. The lowest price and highest market arrivals are recorded during the peak (post-harvest) season, while the lowest market arrivals and relatively higher market prices are recorded during the lean season. Similar result is presented by Anwarul Haq (2005) in the case of Bangladesh for potato. Further, at the Punjab level, the studies by Singla (1967), Bhikhan (1976), Sidhu and Chahal (1988), Singh (2005), Singh et al.

(2010) have been reviewed. The results of these studies are similar to those which reveal that low prices are received by the farmers in the post-harvest season because of heavy arrivals in the case of both fruits and vegetables

Research gap: Several studies were made by the researchers on arrivals and prices of vegetables and fruits in India. They are related to potato, onion, spinach, okra, green peas, cabbage, bitter gourd, green chillies, banana in the states like Karnataka, Maharashtra, and Punjab at Agricultural Produce Market Committees. The study on arrivals and prices of beans at farmers market is scarce. In this context the present study has been designed with the following specific objective.

Objectives of the study: To study the relationship between arrivals and prices of beans at Raitharsanthe

Hypothesis: There is inverse relationship between arrivals and prices of beans

METHODOLOGY

The study is based on secondary data. It is collected from the records of the Raitharsanthe market, Yelahanka, Bangalore rural. Raitharsanthe is the first farmers market established in 2002 in Karnataka. The Raithara Santhe covers the village of both Bangalore urban and Bangalore rural districts. For 2000 farmer's identity cards were issued based on crops grown, area, irrigation sources etc, The time period is between 2014 to 2016 across a period of 36 months. Simple statistical tools i.e., Pearson's correlation method were used to analyze the relationship between arrivals and price of beans.

The arrivals and prices of vegetables in markets has by and large a cause effect relationship, though to a significant extent depends on the demand and supply factors. The arrivals and prices of beans have been analysed using secondary information on monthly total quantity and monthly average price for a period of 36 months. This analysis is carried out for Raithara santhe

Pattern of Arrivals and Prices of Vegetables and Fruits in Raithara Santhe

Time series analysis has been attempted to study the extent and pattern of variations in the arrivals and prices of beans. The data on monthly arrivals and prices of beans for the period January- December, 2014 to 2016 were used in this study. The year wise results of the study are presented below.

Arrivals and Prices of Beans

Monthly average arrivals and prices of beans during January-December, 2014 in Yelahanka Raitharasanthe are presented in Table 1.

The data reveal that the bulk arrivals of beans were recorded in the months of November, March and February; and the lowest arrivals were in April and June. The highest arrival was in the month of November (2648.80 quintals); and the least was in April (1495 quintals). With regard to price of beans, the higher prices were reported in the months of May (Rs. 35.68/ kg) and April (Rs 33.69/ kg). The reason for the highest price in the month of May attributed to the lowest arrivals of beans during the month. On the contrary, the lowest prices were recorded in the months of July (Rs.13.78) and August (Rs.14.38). For annual average arrival and price of beans for the year 2014, it was 2145.88 quintals and Rs.20.77/ kg respectively. The instability coefficient for arrival and price were 17.81 % and 35.36% which shows the prevailing seasonal variability during the year.

**Table 1: Average Monthly Arrivals and Prices of Beans
(Raithara Santhe, Yelahanka) during 2014**

Sl. No	Period	Arrival (Qtl.)	Price (Rs./Kg)
1	January 2014	1788.15	21.67
2	February	2478.75	15.79
3	March	2642.31	14.85
4	April	1495.00	33.69
5	May	2402.40	35.68
6	June	1605.77	24.08
7	July	2122.96	13.78
8	August	2051.92	14.38
9	September	2327.69	17.69
10	October	2235.00	17.35
11	November	2648.80	16.92
12	December	1951.85	23.41
	Average	2145.88	20.77
	SD	382.26	7.35
	CV (%)	17.81	35.36

Average monthly arrivals and prices of beans during January-December 2015 in Yelahanka Raitharasanthe are presented in Table 2.

From the data, it is clear that arrivals of beans recorded maximum during the months of September and March. The minimum arrival was recorded in the months of January and December. The arrival was maximum in the month of September (2782.69 quintals), and the minimum was in January (1906.80 quintals). Whereas the price of beans is concerned, higher prices were observed in the months of June (Rs.27.85/kg), and January (Rs.25/kg). During the month of June price recorded highest due to fewer arrivals of beans compare to the previous month May. On the opposite, the lowest prices were observed in the months of July (Rs.11.62/kg) and August (Rs.11.15/kg). For the year 2015, the average arrivals and price of beans were 2414.75 quintals and Rs.18.39/kg respectively. The resulting co-efficient of variations in arrival and prices were 10.87% and 27.87% respectively for the period 2015.

**Table 2: Average Monthly Arrivals and Prices of Beans
(Raithara Santhe, Yelahanka) During 2015**

Sl. No	Period	Arrival (Qtl.)	Price (Rs./Kg)
1	January, 2015	1906.80	25.00
2	February	2400.40	17.48
3	March	2739.38	14.81
4	April	2271.54	17.00
5	May	2521.15	24.15
6	June	2296.15	27.85
7	July	2692.31	11.15
8	August	2630.77	11.62
9	September	2782.69	16.31
10	October	2292.31	19.12
11	November	2234.62	19.54
12	December	2208.93	16.71
	Average	2414.75	18.39
	SD	262.57	5.13
	CV (%)	10.87	27.87

The co-efficient of variation for arrivals were found to be lower as compared to prices. This indicates that the arrivals and prices were instable over the period.

Table No. 3 represents the average monthly arrivals and prices of beans during January-December 2016 in Yelahanka Raitharasanthe. It was noticed that, average arrivals of beans

reached peak in the month of August followed by September, October and November. Arrivals of beans reached low in the months of April, May, and June. In the month of August arrivals of beans was (2855.56 quintals), and next highest observed in the month of September (2853.85 quintals). Seasonal factors were responsible for more arrivals during these months. Against to this, in April arrivals was noticed very low (1489.60 quintals), followed by June (1511.54 quintals) and in May (1666.67 quintals). With reference to price, the average price of beans were highest in the months of June (Rs.41.92 / kg) followed by the months April (Rs.37.11/ kg) and May (Rs.35.04 / kg) respectively. It was observed that the prices of beans started to rise significantly during the months of April, May and June due to lower quantum of arrivals of beans. The price of beans observed lowest in the month of February (Rs.17.44 / kg), followed by the months January (RS.19.08 / kg), December (Rs.19.31/ kg), and October (Rs.19.50/kg) respectively. There is a slighter variation of prices of beans during the months January,

**Table 3: Average Monthly Arrivals and Prices of Beans
(Raithara Santhe, Yelahanka) during 2016**

Sl. No	Period	Arrival (Qtl.)	Price (Rs./Kg)
1	January 2016	2003.85	19.08
2	February	1924.00	17.44
3	March	1816.67	31.07
4	April	1489.60	35.04
5	May	1666.67	37.11
6	June	1511.54	41.92
7	July	1791.54	22.04
8	August	2855.56	22.19
9	September	2853.85	22.04
10	October	2638.46	19.50
11	November	2376.92	23.42
12	December	2357.69	19.31
	Average	2107.19	25.85
	SD	494.87	8.23
	CV (%)	23.48	31.84

December and October. Compare to these months variation of price of beans is higher during the month of February. From the above table, it is evident that during the reference period, the estimated average annual arrivals of beans were 2107.19 quintals and the average annual price

was Rs.25.85 per kg. The results of variations in arrivals and prices of beans during 2012 were 31.84 and 23.48 respectively. The co-efficient of variation for arrivals were found to be higher than the prices. This shows that arrivals and prices of beans were instable during the period.

For the whole study period (2014-16), the highest average annual arrivals of beans was in 2015 (2414.75 quintals) and the lowest was in 2016(2107.19 quintals). Likewise, in the case of price of beans, the highest and the lowest annual average price were reported to be (Rs.25.85/ kg) and (Rs.18.38/ kg) in 2016 and 2015 respectively.

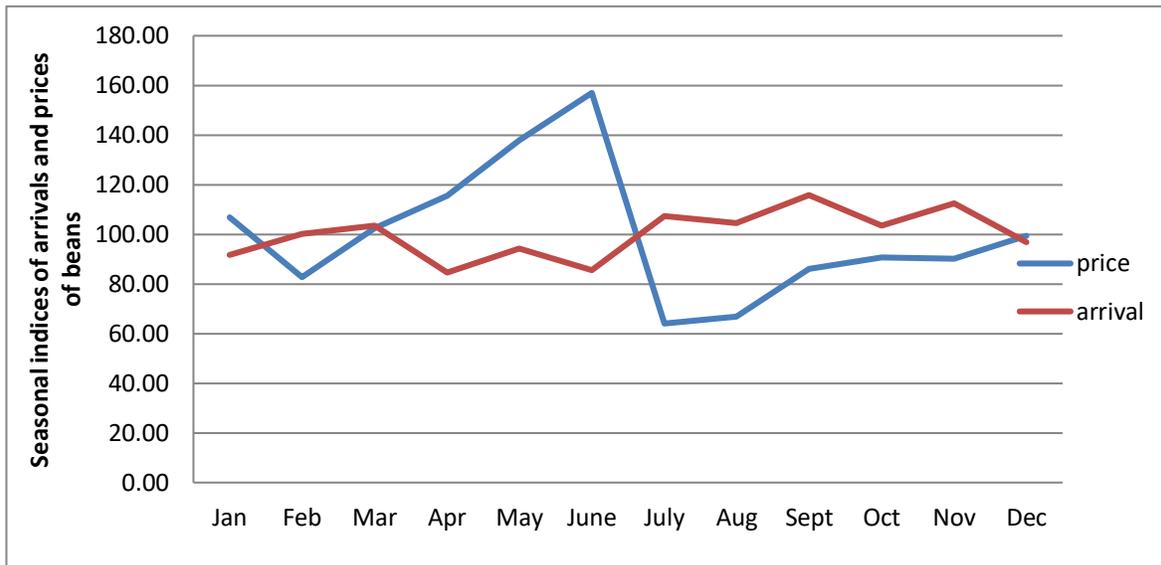
Seasonal Pattern of Market Arrivals and Prices of Beans

Seasonal pattern of market arrivals and prices of beans (Jan 2014- Dec 2016) in respect of Yelahanka Raitharasanthe are presented in Table 4 and Fig 1.

Table 4: Seasonal Indices of Monthly Arrivals and Prices of Beans at Raithara Santhe, Yelahanka (Jan 2014 - Dec 2016)

Sl. No	Period	Arrival (Qtl.)	Price (Rs./Kg)
1	January	91.60	106.96
2	February	100.11	82.76
3	March	103.42	102.41
4	April	84.60	115.54
5	May	94.15	137.80
6	June	85.51	156.98
7	July	107.25	64.07
8	August	104.59	66.91
9	September	115.81	86.18
10	October	103.61	90.66
11	November	112.48	90.23
12	December	96.87	99.51

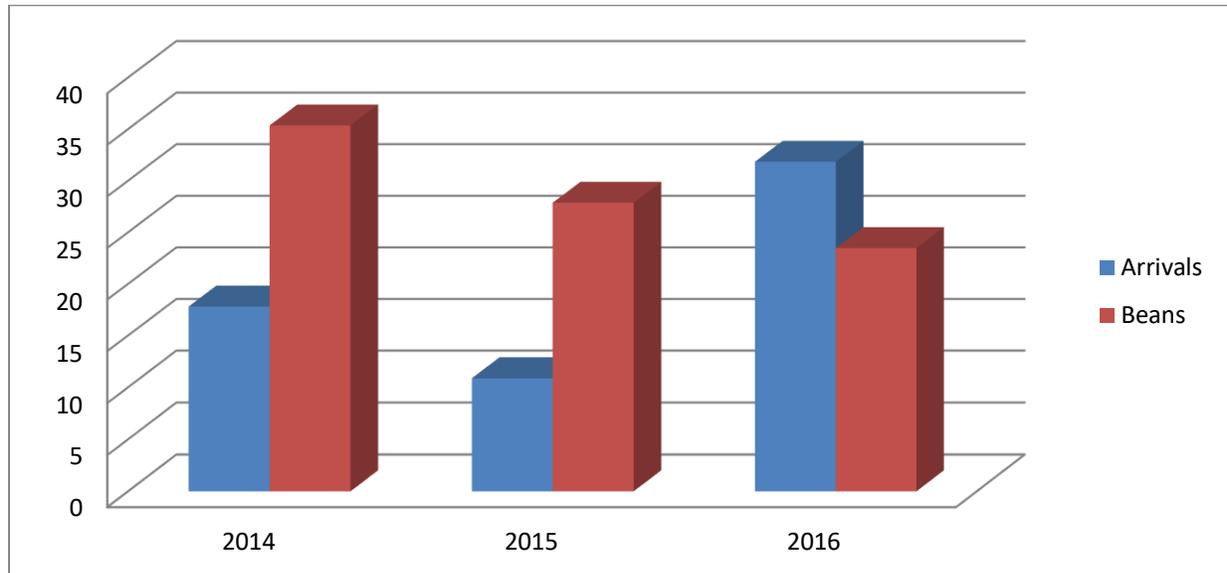
Fig 1: Seasonal Indices of Monthly Arrivals and Prices of Beans to Raithara Santhe, Yelahanka (Jan 2014- Dec 2016)



It is understood that the arrivals were at their peak during September, November, and July. Next peak of arrival were in the months of August and October. The lowest arrivals were observed in the months of April, January and May. The months of high arrivals incidence were obviously associated with the low prices in the market under study. Similarly, the incidence of lower arrivals was associated with the high prices in the market. This clearly indicates that the operation of law of demand in the market, attributing to seasonality of perishable commodities.

Variations in Arrivals and Prices of Beans

Coefficient of variation was computed to study the variations in market arrivals and prices of beans for 2014-16. It is witnessed from the figure 4 that the coefficient of variations in arrivals of beans was found to be highest (31.84%) during the year 2016 as compared to 2014 and 2015. The lowest variation in arrivals was in 2015 (10.87%).

Fig 2: Coefficient of Variation of Arrivals and Prices of Beans during 2014-16

The lowest variation in arrivals was in 2015 (10.87%). Similarly, in the case of price, the coefficient of variations was found to be higher in 2010 (35.36%) as compared to 2011 (27.87%) and 2012 (23.48%). This clearly shows that the variations in arrivals as well as prices over the years were relatively higher, due to prevailing seasonality in the market.

Hypotheses Testing: The result of seasonal indices of monthly arrivals and prices of beans to Raitharasanthe for the study period shows that there is an inverse relationship between arrivals and prices of beans. Hence the study proves the hypotheses of inverse relationship between arrivals and price of beans.

Suggestion: To achieve stability in arrivals and prices of vegetables and fruits information on area under crop for 20 to 25 kilometers should be collected from the agriculture department and should be given to farmers.

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