Literature Review

An attempt has been made to critically review the literature of the past research work relevant to the present study. The available literature on the subject has been reviewed and presented under the following headings:

A. Time series analysis
B. Price and arrivals of cumin and fennel
C. Market Concentration
D. Box-Jenkins model and its application

A. Time Series Analysis.
Singh (2000) adopted a linear equation and moving averages to examine the trend as well as seasonal variation of arrivals and price of rapeseed-mustard in Haryana from 1985-86 to 1995-96.

Mehta (2000) analyzed the seasonality in prices of groundnut and maize. The results showed linear trend in maize prices. The oscillatory movements affecting the prices are regular in period and amplitude. The long-term price behavior is approximately linear and the cyclical trend is less pronounced.

Birukul (2001) observed a continuous decreasing trend in both price and arrivals of Laxmi cotton. This may be due to an introduction of DCH-32 around the area and the results showed that the trend values of market arrivals and prices of Varalaxmi cotton in Dharwad market showed an increasing trend.

Ravi Kumar (2001) resolved that, in general, arrivals revealed mixed trend, whereas, prices indicate an increasing trend for the selected commodities in Anakapalle regulated market of Andhra Pradesh. There exists an opposite association between seasonal indices of arrivals and prices of selected commodities.
Sanjay kumar (2003) studied relationship between arrivals and prices of onion in selected markets of India from 1994-2000. The results revealed that the arrivals fluctuated to a great extent and prices had a tendency to rise in all the markets during the study period. The correlation coefficients between yearly arrivals and prices of onion were found to be negative and significant over the years in most of the markets. This indicated inverse correlation between marketplace arrivals and values.

Wadhwani and Bhogal (2003) observed price behaviour of cauliflower and cabbage in Western Uttar Pradesh (1988-1997). The results showed that, the prices of these two vegetables were found maximum in the month of September and started declining from October onwards. The prices were again found increasing from the month of May. The lowest prices were indicated in the month of March and also prices of cauliflower/cabbage responded negatively to the arrivals.

Sangeeta Shroff (2004) analyzed the arrivals and prices of onion in Lasalgaon and Pune markets (Maharashtra) from 1999-2002. She observed that in Lasalgaon market the arrivals were more in January and February. Where as in Pune market the arrivals began increasing in February and March. The prices showed an upward trend from the month of June and continue to rise up to November, after which decline was observed.

Pawar et al. (2004) studied the behaviour of prices and arrivals of pomegranate in Solapur (Maharashtra) market from 1991 to 2000 and found that the arrivals of pomegranate were maximum during July, August, September and December and the lowest arrivals in the month of April. The co-efficient of correlation between arrivals and prices exhibited negative relationship. Trends in arrivals showed increase at 9.80 per cent annum while prices increased at 8.20 per cent annually during the study period.

Navadkar et al. (2005) In their study on seasonal indices of monthly arrivals and prices of vegetables in Pune (1990-2000) observed lowest coefficient of variation of arrivals for tomato and it was more than 50 per cent during remaining months. Where as, the price was extreme during March and below 50 per cent during April to June.
Virender kumar (2005) studied the performance of market arrivals and prices of selected vegetable crops in four metropolitan markets of Delhi, Mumbai, Bangalore and Kolkata from 1990-2001. However, through different months, there have been several occurrences of progressive relationship between arrivals and prices in all the four marketplaces.

Khunt et al. (2006) analyzed the seasonal indices of potato in Ahmedabad during 1981-2000. The results of the study indicated that the highest index of arrivals was observed in the month of March. The price index of potato was lowest in the month of March when the corresponding arrival was highest. The price index was below average (100) from January to May and above average from June to December. The reason was the pattern of market arrivals.

Henderson & Parmeter (2009) proposed a method that generates a regression estimator via a weighted kernel estimate subject to conditions on the Hessian of the estimator; solutions are found using sequential quadratic programming. Convexity is guaranteed only at points where the Hessian condition is enforced and the method does not scale well to high dimensions or large datasets.

Hannah & Dunson (2011) proposed a method, Convex Adaptive Partitioning (CAP), that adaptively splits the dataset and its linear estimates within each of the subsets. Like the least squares estimator, the CAP estimator is formed by taking the maximum over hyperplanes; unlike previous methods, it produces a sparse estimator that scales well to large datasets and large numbers of covariates.

Chengappa, Arun, Yadava and Prasanna Kumar et al. (2012) proposed e-tender system in the selected regulated agricultural markets of Karnataka to improve the marketing efficiency through competitive and transparent bidding mechanism, and by minimization of manipulations in trading practices. Considerable time saving for all the stack holders has been a clear outcome of e-tender system. There is a vast scope to improve market fee collections if gate entry is systematically monitored.

B. Price Arrivals of Cumin and Fennel
Dinakar (1990) analysed the association between arrivals and prices of groundnut in three markets of Raichur district of Karnataka state. He calculated monthly index number of market arrivals and prices for the years 1979-80 to 1985-86. He observed positive correlation between arrivals and prices. This discovered that arrival pattern may not influence the price and forces not taken into account in the analysis may determine the price.

Chitra (2012) studied the market arrivals and prices of groundnut in Challakere market for the period 1990-99 and observed that estimated trend in arrivals of groundnut was statistically non-significant, while prices of groundnut showed a steady increase, which was significant.

C. Market Concentration

Ravi Kumar (2003) analysed the structural performance of groundnut in Anakapalle, Adoni and Warangal markets of Andhra Pradesh. The results revealed that there exists higher degree of competitiveness for groundnut in Adoni market and market concentration was low as the arrivals were distributed among more number of intermediaries. He has also derived a value of Gini ratio for groundnut in Deavanagere and Hubli market which were found to be 0.48 and 0.46 respectively and observed no much difference between these two markets. As Hubli market’s Gini ratio is less than that of Devanagere market, which indicate complex degree of effectiveness for the agriculture product. Also he has shown that market concentration was low in both the markets as the groundnut trade were concentrated among more number of traders. From the figures it is obvious that the cumulative percentage of quantity handled by traders is nearer to the line of equality in both the markets, thus indicating more competitiveness of trade for groundnut.

D. BOX-JENKINS Model and its Application

A class of ARIMA (Auto Regressive Integrated Moving Average) model is called Box-Jenkins model. This model was popularized in late sixties. The application of these models for predicting prices of agricultural commodities is very few.