

RESEARCH PAPER

Market structure of cotton seed in Nanded district of Maharashtra

■ K.P. KULKARNI, SEEMA, ZAINAB SHARIEF AND M.C. JADHAV

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ABSTRACT

Agricultural progress is the key to the growth and prosperity and quality seeds of high yielding varieties are the key to agricultural progress. Indian seed market is the 6th largest in the world. It has grown 12 per cent compared to less than 5 per cent growth of global seed market. India accounts for approximately 25 per cent of worlds total cotton area and 18 per cent of global cotton production. The study focus on the marketing structure in the wake of development of cotton seed market and cotton economy in selected area of the study. Data was collected from both primary and secondary sources. Total 8 villages from four tehsils were selected based on highest cotton area under cultivation. A total 16 dealers and 8 retailers were selected as sample size from selected study area. Gini co-efficient ratio was found to be 0.62 which implies that there was significant inequality in the marketing of Bt cotton seeds in the study area and hence a high level of concentration was present in handling the trade. This exhibits features of imperfect market of monopolistic nature. Lorenz indicates that more than half of the dealer's (53.2 %) account for 27.7 per cent of the total quantity sold, which indicates inequality in distribution.

KEY WORDS : Market structure, Bt cotton, Seed, Perfect, Imperfect, Gini co-efficient

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Seed is the most important input component for productive agriculture. In the significant advances that India made in agriculture in the last four decades, the role of the seed sector has been substantial. The expansion of seed industry has occurred in parallel with growth in agricultural productivity. Given the fact that sustained growth to cope with increasing demand

would depend more and more on the pace of development and adoption of innovative technologies. The private seed industry is no more confined to just production and marketing of seed.

It has as well acquired technological strength to cater to the varietal needs of tomorrow. As the most critical of all farm inputs in agricultural production, seed holds the key for increasing productivity. Agricultural progress is the key to the growth and prosperity and quality seeds of high yielding varieties are the key to agricultural progress.

Cotton has been premier agricultural crop of India playing a pivotal role in the national economy in both rural and urban sector. India ranks second in cotton production after China. India accounts for approximately 25 per cent of worlds total cotton area and 18 per cent

MEMBERS OF THE RESEARCH FORUM

Correspondence to:

K.P. KULKARNI, School of Agribusiness Management, College of Agriculture, Acharya N.G Ranga Agricultural University, Rajendranagar, HYDERABAD (TELANGANA) INDIA
Email: krashna.pk@gmail.com

Authors' affiliations:

SEEMA, ZAINAB SHARIEF AND M.C. JADHAV, School of Agribusiness Management, College of Agriculture, Acharya N.G Ranga Agricultural University, Rajendranagar, HYDERABAD (TELANGANA) INDIA

of global cotton production. In the year 2012-13, India having 119.78 lakh hectares area under cotton cultivation with production of 365.00 lakh bales and average yield 518 kg per hectare (National Cotton Scenario, Current Cotton Scenario, CCI, 2012-13). The current yield is significantly lower as compared to the world average of 740 kilo / hectare (FICCI Report, 2012).

The previous studies have been mostly concentrated on the technological break through in hybrids, economics of production etc. But, in the present context of globalization, liberalization and privatization, it becomes more important to focus more on the marketing and service aspect of seed companies which will ultimately bring the results of the technological changes in the near future. Hence, a study was undertaken to study the market structure for cotton seed in the Nanded district of Maharashtra state.

Objective of study :

The study was primarily carried out with objective focussing mainly to study the market structure of cotton seed in selected study area.

Scope and limitation of study :

The market structure of cotton seed was studied only in selected market area under study *i.e.* Total 16 dealers and 8 retailers were selected in Nanded district of Maharashtra.

METHODOLOGY

Data was collected from both primary and secondary sources. The primary data was collected from farmers and dealers using a pre-structured questionnaire. The secondary data required were collected from Department of Agriculture, Districts Statistical Officer journals, published reports, websites, dealers/retailers records etc. To collect the information on the marketing aspects 4 markets *i.e.* Bhokar, Himayatnagar, Kinwat and Mahur were selected. To carry out dealer's study, it was proposed to select 4 dealers and 2 retailers randomly from each tehsils. Hence, a total of 16 dealers and 8 retailers were selected to elicit information required for the study.

This analysis was carried out with help of Gini-Co-efficient in order to know the market structure in the agricultural input marketing system by different agencies in cotton trade. This helps in exploiting precisely the

extent of inequality in distribution of volume of business. The agencies were arranged in the descending order of the volume of commodity transacted. The frequency distribution of different agencies and the actual volume of the business were worked out.

Lorenz curve was used to give a visualized nature of the sellers' concentration in the markets through a graphical representation. The Lorenz curve which is an important tool for the measurement of income inequality relates the cumulative proportion of quantity sold to the cumulative proportion of dealers. The graph of cumulative percentage of total sales is plotted against the cumulative percentage of the dealers. It is used in economics to describe in- equality in income or wealth (Damagaard and Weiner, 2000).

Mathematically, the Gini co-efficient is given as:

$$G.C = 1 - \Sigma XY$$

where, G.C. = Gini co-efficient

X = Percentage share of each dealer

Y = Cumulative percentage of their quantity sold

ΣXY = Summation of the product of the cumulative proportion of the dealer (X) and the cumulative proportion of their quantity sold (Y).

Gini co-efficient which is greater than 0.35 are high indicating inequitable distribution (Dillon and Hardaker, 1993). In other words, higher Gini co-efficient means higher level of concentration and consequently high inefficiency in the market structure.

ANALYSIS AND DISCUSSION

Table 1 represents proportion of dealer and quantity handled by them. It also represents cumulative percentage of dealers and the cumulative percentage of quantity's handled by the selected dealers.

Fig. 1 Shows the Lorenz curve for cotton seed market in the selected study area. The divergence of the observed curves from the line of equal distribution (LED) gives a visual measure of concentration of cotton seed dealers in the selected market area. The curve indicates that more than half of the dealers (53.2 %) account for 27.7 per cent of the total quantity sold, it also indicates that 91.1 per cent dealers handling 80.3 per cent of the quantity and the remaining 8.9 per cent of dealers are handling 19.7 per cent of the quantity. The table shows distribution among the dealers of which 41.1 per cent of them are handling only 18.5 per cent of the quantity. This indicates inequality in distribution of

Table 1 : Cumulative per cent of dealers and quantity sold in the selected market area (2013-14)

Proportion of dealer (X)	Proportion of quantity sold	Cumulative proportion of dealer	Cumulative proportion of quantity sold (Y)	Cumulative % of dealer	Cumulative % of quantity sold	ΣXY
0.0022	0.0022	0.0100	0.0022	1.0	0.2	0.00
0.0533	0.0533	0.1772	0.0555	17.7	5.5	0.01
0.0732	0.0732	0.3291	0.1286	32.9	12.8	0.02
0.0568	0.0568	0.4177	0.1854	41.8	18.5	0.02
0.0917	0.0917	0.5316	0.2771	53.2	27.7	0.03
0.1212	0.1212	0.6456	0.3983	64.6	39.8	0.05
0.0622	0.0622	0.6962	0.4606	69.6	46.0	0.02
0.0884	0.0884	0.7595	0.5490	75.9	54.9	0.03
0.2304	0.2304	0.8987	0.7794	89.9	77.9	0.11
0.0240	0.0240	0.9114	0.8035	91.1	80.3	0.01
0.1048	0.1048	0.9620	0.9083	96.2	90.8	0.05
0.0284	0.0284	0.9747	0.9367	97.5	93.6	0.01
0.0306	0.0306	0.9873	0.9672	98.7	96.7	0.01
0.0328	0.0328	1.0000	1.0000	100.0	100.0	0.01
1.0000	1.0000					0.38

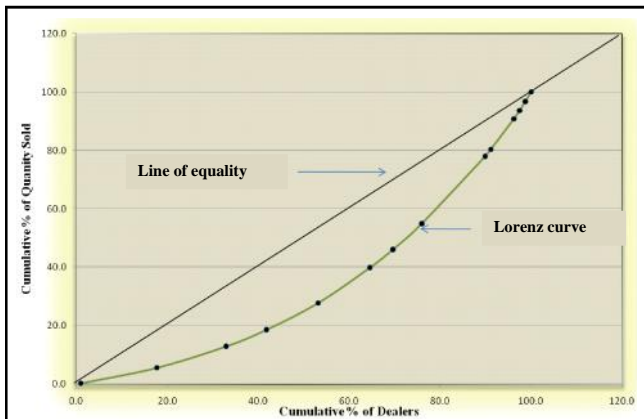


Fig. 1 : Market structure of Bt cotton seed showing the degree of inequality (Lorenz curve)

dealers and quantity sold. It signifies that the higher concentration is present in the market. The Lorenz Curve plotted from the data in table 1 is given as:

$$G.C.R. = 1 - \Sigma XY = 1 - 0.3814 = 0.6182.$$

As already indicated, a Gini co-efficient greater than 0.35 is high and therefore implies inequitable distribution. Therefore, a high Gini co-efficient of 0.62 implies that there is significant inequality in the marketing of Bt cotton seeds in the study area and hence a high level of concentration is present in handling the trade. This clearly indicates the inefficiency of the cotton seed market structure in the selected study area. This is similar to the imperfect market of monopolistic nature. Similar work related to the present investigation was also carried out

by Reuben and Mshelia (2011); Timmanna (2007) and Current Cotton Scenario.

Summary and conclusion:

From study it is concluded that Market structure for cotton seed in selected study area Gini co-efficient Ratio was found to be 0.62 which implies that there was significant inequality in the marketing of Bt cotton seeds in the study area and hence a high level of concentration was present in handling the trade. This is a reflection of inefficiency of the cotton seed market structure in selected study area. This exhibits features of imperfect market of monopolistic nature.

Lorenz curve showed the divergence of the observed curves from the Line of Equal Distribution (LED) and gives a visual measure of concentration of cotton seed dealers in selected market area. The curve indicates that more than half of the dealer’s (53.2 %) account for 27.7 per cent of the total quantity sold, which indicates inequality in distribution.

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