

Export competitiveness of Non- Basmati Rice in Chhattisgarh

ABSTRACT

The present study is to analysed the export competitiveness of non-basmati rice in Chhattisgarh based on secondary data. The secondary data required to achieve the objectives were collected from the APEDA, DGCIS and Indiastat website for the period 2014-2023. Nominal protection coefficient, Revealed comparative advantage techniques were used to analyse the data. As NPC and RCA was less than unity, respectively, the competitiveness revealed that Chhattisgarh had a comparative disadvantage in the export of non- basmati rice. Thus the share of non- basmati rice in total agriculture export is medium.

Keywords: Agriculture, Non- basmati rice export, NPC, RCA, domestic price, international price, APEDA

INTRODUCTION

The Indian economy is based primarily on the agricultural sector. By producing raw resources, it helps the industrial sector and provides the essential components for humankind. Achieving agricultural success can help promote economic advancement more effectively.

For all nations, the agriculture sector is the main engine for capital formation and foreign exchange. It produces roughly 10% of total export revenue. A country's balance of payments will be severely depleted if agricultural exports do not rise to the required level. To avoid this, nations must diversify their industry and encourage exports. Capital formation is significantly impacted by international trade. India's contribution to world commerce is confined to basic commodities,

despite the fact that it has a great possibility to grow agricultural exports, particularly under a free trade system. (Sangeeta et al 2021)

The rice plant, *Oryza sativa* L., continues to play a key role in India's agricultural economy and food security. Almost 65% of Indians depend on it as a staple food and a source of income for their households and the country as a whole. More than 50% of the world's population gets more than 20% of their daily calories from rice. 90% of the world's rice is consumed in Asia, according to CGIAR. India is the world's top exporter of rice and the second-largest producer of the grain after China. In the international trade sector, there is a significant demand for rice.

Any rice other than Basmati Rice is named as non-basmati rice. In the world, it has been reported that there are 10000 varieties of rice and out of which the maximum number are in India. In fact, basmati rice equals to only 1% production of the total rice grown in India. Non-basmati rice comes in all kinds of different shapes and sizes. Some are long slender, some are short and thick, some are like beads, and some may be round. None have the same characteristics as basmati rice. Some names of non-basmati rice are shaped like basmati rice and PR, 104 IR8, IR 64, Masuri.

Source: APEDA

MATERIALS AND METHODS

Non-basmati rice was purposefully chosen for the study keeping in mind its significance to the economy. All of the secondary sources utilized to gather the study's data were utilised, and the Chhattisgarh state was taken into account. The Directorate General of Commercial Intelligence and Statistics (DGCIS), the Indiastat website, and the Agricultural and Processed Food Product Export Development Authority (APEDA) statistical export reports were used to gather the secondary data needed to meet the objectives over 20 years (2003 to 2022)

The gathered data were combined and analysed in an MS Excel spreadsheet to get a relevant result. Analytical tools like Revealed comparative advantage (RCA) and the Nominal Protection Coefficient (NPC) were used, depending on the type of data.

Nominal Protection Coefficient

The Nominal Protection Coefficient (NPC) is defined as the ratio of the domestic price to the world reference price of the particular commodity taken into consideration (Srikalaa et al. 2017).

$$NPC = \frac{P_d}{P_r}$$

Where,

P_d = Domestic price of non- basmati rice

P_r = World Reference price/ International price of non- basmati rice

Revealed comparative advantage

The revealed comparative advantage (RCA) method was developed by Leisner in 1958 and initially used by Balassa in 1965 to determine a commodity's comparative advantage.

RCA index, or revealed comparative advantage index, is the ratio of two shares. The ratio of the relevant commodity (non- basmati rice) to all agricultural exports from the Chhattisgarh is determined in the numerator. The ratio of the export commodity (non- basmati rice) to all agricultural exports nationally was converted and used as the denominator.

The comparative advantage of the relevant commodity in that state is then indicated by numerated divided by denominator. The range of the value of RCA is zero to infinity. If the RCA value is higher than 1, the relevant commodity has a competitive advantage. Revealed Comparative Advantage (RCA) has been used in this inquiry to tally comparative advantage based on export specialization for a certain group.

The Revealed Comparative Advantage (RCA) index is calculated as follows:

$$RCA_i = (E_i/CE)/(W_i/WE)$$

Where:

E_i = Export of non- basmati rice from Chhattisgarh

CE = Export of agri. Products from Chhattisgarh

W_i = India Exports of non- basmati rice

W_E = Total India export of all agri. Products

A value of RCA greater than unity infers that India has comparative advantage in the exports of banana and RCA less than unity indicate India does not possess comparative advantage in non- basmati rice exports.

RESULTS AND DISCUSSION

Export competitiveness of Non- Basmati Rice in Chhattisgarh

Nominal Protection Coefficient (NPC), and Revealed Comparative Advantage (RCA) were used to analyze the export competitiveness of non- basmati rice in Chhattisgarh.

1. Revealed Comparative Advantage (RCA)

The RCA approach is used to examine a commodity's export competitiveness year over year. If the RCA value is greater than one, Chhattisgarh is said to have a comparative advantage in exporting non- basmati rice, and vice versa. In the current study, export competitiveness was calculated using the RCA method for the period 2014–2023. The disclosed comparative advantage over time has been less than unity, as shown in Table 1 below, hence Chhattisgarh has no RCA to destination state.

Table 1: RCA for non- basmati rice exports from Chhattisgarh, 2014-2023

(Lakh)

Year	Export of non-basmati rice from Chhattisgarh	Export of agri. Products from Chhattisgarh	India Exports of non- basmati rice	Total India export of all agri. Products	RCA
2014	2084	9,51,496.00	2,59,48,317.11	6,60,13,848.59	0.006
2015	2137	14,26,455.00	95,58,957.77	4,01,53,364.06	0.006
2016	2379	13,27,010.00	89,51,782.25	4,27,81,215.30	0.009
2017	1464	5,27,440.00	3,02,74,970.98	5,69,56,339.72	0.005
2018	2467	1,15,960.00	1,31,15,051.65	4,61,22,262.29	0.07
2019	2550	2,66,860.50	74,92,086.71	3,12,61,796.61	0.04
2020	3100	3,96,575.63	2,28,37,868.23	8,58,77,070.70	0.03
2021	3500	3,56,358.67	3,51,11,069.23	13,54,38,233.98	0.04
2022	2570	7,02,928.14	2,11,90,695.58	9,85,83,054.12	0.02
2023	3600	2,07,370.00	15,04,728.69	1,37,77,791.47	0.16

Source: APEDA, Ministry of Agriculture, Govt. of India.

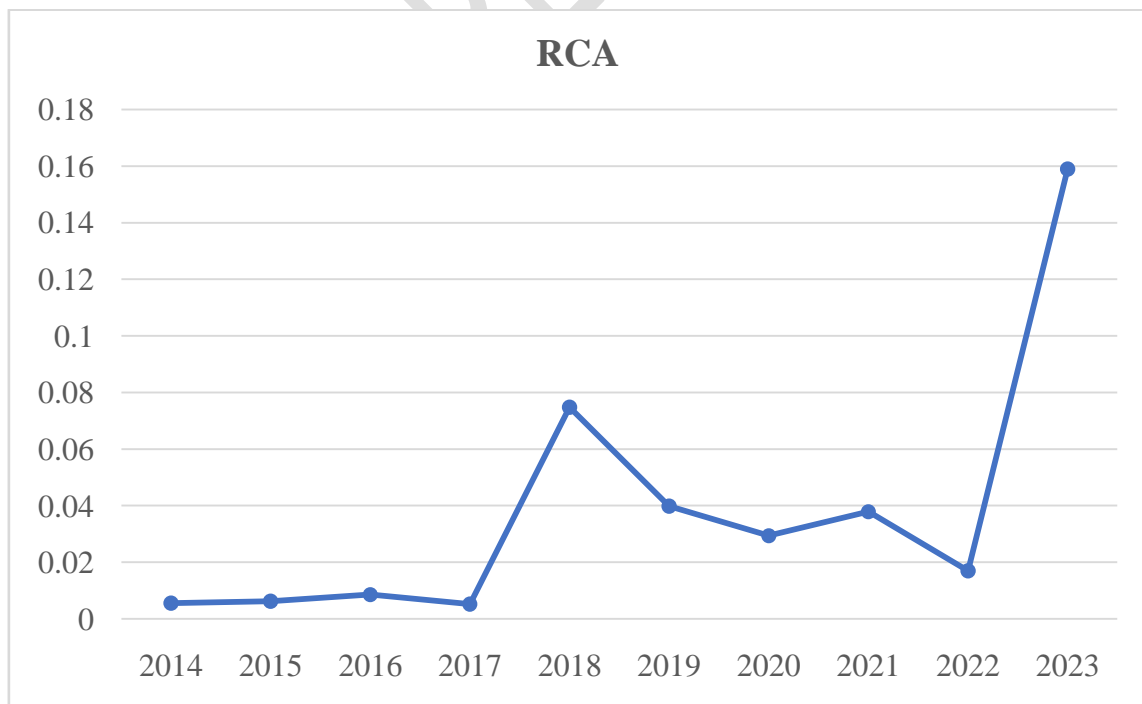


Figure 1: The RCA of non- basmati rice exports

2. Nominal protection coefficient for non- basmati rice

Through the NPC, the price competitiveness of agricultural commodities from Chhattisgarh is measured. As a result, the export competitiveness of non- basmati rice from Chhattisgarh has been determined and is described below along with the domestic and international prices to be realized using the (NPC) technique. NPC values lower than unity signify the exportability and competitiveness of the commodities. NPC is more than demonstrates that export competitiveness is not present and that commodities are importable. On the other hand, a commodity is export competitive if its domestic price is lower than its global price and vice versa (Mattoo 2007). The results given in Table 2 showed that, since 2014, the international price of bananas has been higher than the domestic price, with the exception of 2020, 2021 and 2022, demonstrating that non- basmati rice are export-competitive, barring those three years. Chhattisgarh ability to compete on the global market during these years. Table 2 further shows that banana exports had a competitive advantage from 2014 to 2023 when compared to domestic prices, with less variability. In light of the results above, it is possible that it had an impact on the low standards for quality, the lack of a cold chain, and the variety resistance.

The aforementioned findings have led to the conclusion that, despite the non- basmati rice lack of a comparative advantage in the global market, it does have export competitiveness.

Table 2: International and domestic price of non- basmati rice in Chhattisgarh, 2014-2023

Year	Domestic price	International price	NPC
2014	2084	2488.36	0.84
2015	2137	2468.99	0.87
2016	2379	2395.12	0.99
2017	1464	2500.42	0.59
2018	2467	2655.7	0.93
2019	2550	2787.66	0.91
2020	3100	2849.73	1.09
2021	3500	3289.08	1.06
2022	2570	2790.11	0.92

2023	3600	3398.25	1.06
------	------	---------	------

Source: International price was taken to Food and Agricultural Organization and Domestic price was obtained to local market of Chhattisgarh.

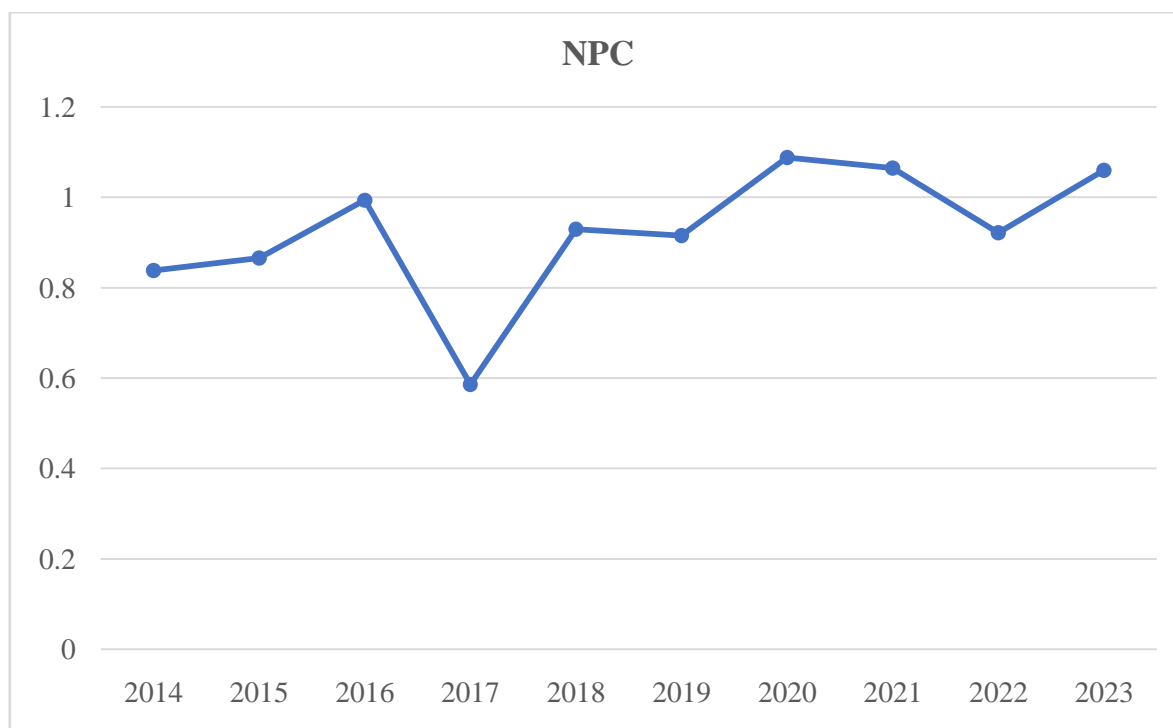


Figure 2: indicated (NPC)

CONCLUSION

The present study concluded that non- basmati rice is an important cereal crop owing to its importance in the economy of the country. As NPC and RCA was less than unity, respectively, the competitiveness revealed that Chhattisgarh had a comparative disadvantage in the export of non- basmati rice. Thus the share of non- basmati rice in total agriculture export is medium.

REFERENCES

- Abdullah, Muhammad., Li, Jia., Ghazanfar, Sidra., Ahmed, Jaleel. & Khan, Imran. (2015). Growth and Instability analysis of rice production and export of Pakistan. *European Journal of Economic Studies*. 11(1), 04-15.
- Acharya, Saraswati Poudel., Basavaraja, H., Kunnal, L.B., Mahajanashetti, S.B. & Bhat, A.R.S. (2012). Growth in area, production and productivity of major crops in Karnataka. *Karnataka Journal of Agricultural Science*. 25(4), 431-436.
- Adhikari, Anup., Sekhon, M. K., & Nanda, Manjeet. (2016). Export of Rice from India: Performance and Determinants. *Agricultural Economics Research Review*. 29(1), 135-150.
- Adhikari, Anup. (2014). Export of Rice from India: Performance and Determinants (Master's Thesis). Punjab Agricultural University, Ludhiana. Retrieved from- <http://krishikosh.egranth.ac.in/handle/1/79158>. Accessed on April 9, 2020.
- Akmal, Nadeem., Akhtar, Waqar., Shah, Hassnain., Niazi, Muhammad, Azam & Saleem, Tariq. (2014). The structure and competitiveness of Pakistan's Basmati rice exports. *Asian Journal of Agriculture and Rural Development*. 4(4), 304-312.
- Ananthi, S. (2000). An econometric analysis of Indian rice exports (Master's Thesis). University of Agricultural Science, Dharwad. Retrieved from- <http://krishikosh.egranth.ac.in/handle/1/5810122951>. Accessed on April 11, 2020.
- Andhale, A. and Kannan, E. 2015. Analysis of India's revealed comparative advantage in agri-processed products. *Indian Journal of Economics and Business*. 1(14): 115-130.
- Anjaneyulu, N. (2015). Economic analysis of Area, Production and Productivity levels of Paddy in India. *EPRA International Journal of Economic and Business Review*. 3(12), 127-132.
- Ashoka, N. (2013). Dynamics of Coffee Marketing and Export: An agribusiness approach (Doctoral Dissertation). University of Agricultural Science, Dharwad. Retrieved from- <http://krishikosh.egranth.ac.in/handle/1/5810003951>. Accessed on April 14, 2020.

- Balassa, B. A. (1964). Trade liberalization and revealed comparative advantage. *The Manchester School of Economic and Social Studies*, 33(1): 99-124.
- Baliyan, Kavita. (2017). Export performance and Competitiveness of Indian mango. *Agricultural Situation in India*. LXXIV (5), 19-26.
- Bankar, B.; Sandesh, K. and Ashoka, N. 2012. Export Competitiveness of Sugarcane Jaggery in Karnataka – A Comparative Analysis. *Indian Journal of Sugarcane Technology*. 27(01): 1-3.
- Chakraborty, Minakshi & Garg, Ankita. (2020). Competitiveness in Indian Agricultural Exports. *Journal of Accounting and Finance*. 34 (2), 12- 21.
- Devi, Paramalakshmi E. & Kalabarani S.P. (2016). Problems and Prospects of Rice (Basmati and Non-Basmati) production and exports in India. *Shanlax International Journal of Economics*. 5(1), 7-16.
- Dey, Anwesha., Dinesh & Rashmi. (2020). Rice and wheat production in India: An overtime study on growth and instability. *Journal of Pharmacognosy and Phytochemistry*. 9(2), 158-161.
- Eswaraprasad. 2005. Export competitiveness of spices in India. Ph. D. Thesis (Unpublished), Acharya N. G. Ranga Agricultural University. Hyderabad.
- Gangaiah B. 2004. Agronomy- Kharif crops. Report of Indian Agriculture Research Institute. New Delhi.
- Goverdan, M., Solonrajupaul, K. & Sankarrao, Vishnu D. (2014) Trends and Trade competitiveness of rice exports in India. *Asian Academic Research Journal of Social Sciences & Humanities*. 1(21), 461-473.
- Kamboj, Pardeep (2019) Economic analysis of production and export of basmati rice in Haryana (Master's Thesis). Chaudhary Charan Singh Haryana Agricultural University, Hisar. Retrieved from - <http://krishikosh.egranth.ac.in/handle/1/5810142480>. Accessed on April 9, 2020.
- Kanaka, S. & Chinnadurai, M. (2015). A study of export competitiveness of Groundnut in India. *Global Journal of Advanced Research*. 2(2), 512- 520.

- Kumar, Anjani & Rai, D.C. (2011). Trends and Volatility in domestic and international prices of livestock products in India. *Indian Journal of Animal Sciences*. 81 (12), 1248-1252.
- Kumar, N. R.; Rai A. B. and Rai. M. 2008. Export of cucumber and gherkin from India: performance, destinations, competitiveness and determinants. *Agricultural Economics Research Review*. 21: 130-138.
- Kumaresh, K. & Sekar, C. (2013). Export performance and competitiveness of fresh mangoes and mango pulp in India. *International Journal of Commerce and Business Management*. 6(2), 154-159.
- Lakshmi, Bala M. & Sudhakar, K. (2017). An overview of Export performance of agricultural products in India. *IOSR Journal of Business and Management*. 19 (2), 01-05.
- Makama, S.A., Amrutha, T.J., Patil, S.S. & Wali, V.B. (2016). Export competitiveness of Indian rice: A Policy analysis matrix approach. *International Journal of Innovative Research & Development*, 5(1), 339-344.
- Meena, Murlidhar., Khunt, K.A., Meena, H.N. & Khorajjiya, H.T. (2018). Assessing export competitiveness of Indian groundnut. *Agricultural Economics Research Review*. 31(2), 221-230.
- Nain, Mohit., Nisha, Sanjeev & Aneja, D.R. (2019). Instability and trend in area, production and productivity of Rice crop in Haryana and India. *Current Journal of Applied Science and Technology*. 37(5), 01-09.
- Najeeburahman. (2014). An economic analysis of India's Basmati rice exports (Master's Thesis). University of Agricultural Sciences, Bengaluru. Retrieved from- <http://krishikosh.egranth.ac.in/handle/1/81830>. Accessed on April 9, 2020.
- Nemade, D.K., Rathod, V.J., Gawande, S.A. & Katole. R.T. (2019). India's rice export: An economic analysis. *International Journal of Chemical Studies*. 7(6), 205-210.
- Pandit, Arun., Samal, P. & Mishra, Jyoti Ranjan. (2012). An analysis of price behaviour of rice in Eastern Indian markets. *Indian Journal of Agricultural Marketing*. 26(2), 102-114.

- Phougat, Sunil. (2017). Wheat and Rice Competitiveness of Indian Agriculture. *International Journal of Research*. 4(1), 1258-1277.
- Punia, Meenu., Kundu, K.K. & Nimbrayan, Praveen Kumar. (2019). Instability in area, production and yield of rice and gram in Haryana and India. *Bulletin of Environment, Pharmacology and Life Sciences*. 8(11), 95- 97.
- Ramakrishna, B. & Degaonkar, Chaya. K. (2016). Rice exports from India: Trends, Problems and Prospects. *International Journal of Research GRANTHAALAYAH*. 4(7), 122-136.
- Ray, Pratik Kumar. (2018). Export performance of basmati rice in India (Master's Thesis). Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola. Retrieved from <http://krishikosh.egranth.ac.in/handle/1/5810107717>. Accessed on April 9, 2020.
- Rode, Payal Sewakram. (2018). Export Performance of Rice in India (Master's Thesis). Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola. Retrieved from <http://krishikosh.egranth.ac.in/handle/1/5810075011>. Accessed on April 15, 2020.
- Sadavatti, P.M. (2007). Export Prospects of Indian Basmati Rice: Co-integration and Error Correction Approach. *Agricultural Marketing*. 21 (3), 31-35.
- Samal, P., Rout, C., Repalli, S.K. & Jambhulkar, N.N. (2018). State-wise analysis of Growth in Production and Profitability of Rice in India. *Indian Journal of Economics and Development*. 14(3), 399-409.
- Satishkumar, M, Harishkumar, H.V., Ramesh, & Rangegowda, R. (2016). Growth, Export Performance and Competitiveness of Basmati and Non-Basmati Rice of India- An Markov Chain Approach. *International Journal of Agriculture, Environment and Biotechnology*. 9(2), 305-311.
- Sharma, S. K. and Bugalya, K. 2014. Competitiveness of Indian agriculture sector: A case study of cotton crop. *Procedia-Social and Behavioral Sciences*. 133: 320-335.

Srikalaa, M., Devi, I., Rajeswari, S., Naidu, G. & Prasad, S.V. (2017). Trade direction and export competitiveness of rice in India. *ORYZA- An International Journal on Rice*. 54 (4), 445-451.

Tiwari, Akash. (2020). A study on the export performance of Basmati Rice in India (Master's Thesis). Indira Gandhi Krishi Vishwavidyalaya, Raipur. 66 Retrieved from- <https://krishikosh.egranth.ac.in/handle/1/5810160822>. Accessed on April 11,2020.

Vasudev, Samarpita. (2015). A study on the price instability and price behaviour of rice in Andhra Pradesh. *Indian Journal of Agricultural Marketing*. 29(3), 26-32.

UNDER PEER REVIEW