



# Export competitiveness of Non-basmati Rice in Chhattisgarh, India

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## **Authors' contributions**

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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## **ABSTRACT**

The present study is to analysed the export competitiveness of non-basmati rice in Chhattisgarh based on secondary data. All of the secondary sources engaged in collection and curation of export data were utilised. The Directorate General of Commercial Intelligence and Statistics (DGCIS), the Indiatat website, and the Agricultural and Processed Food Product Export Development Authority (APEDA) statistical export reports was used to gather the secondary data needed to meet the objectives over 10 years (2014 to 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; domestic price; international price.

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## 1. 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. With more than 11% of global production, India ranks second in the world after China (30%) in terms of rice production. Other major producers are Bangladesh (7%), Indonesia (7%), Vietnam (5%) and Thailand (4%). The principal rice-producing states in India include West Bengal, Uttar Pradesh, Andhra Pradesh, Chhattisgarh, Punjab, Tamil Nadu, Odisha, and Bihar [1,2].

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, [3,4].

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 [1,5].

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, IR64, Masuri (APEDA) [5].

The "export competitiveness" of a country or region refers to its "market development and possession ability" and "profit-making ability" in the foreign markets where its products are traded [6,7].

A common measure is the change in a country's exports in relation to changes in global exports. If global exports rise and a country's exports rise by a similar amount, there is no change in its export competitiveness. But if the country's exports rise more, it's becoming more competitive.

Chhattisgarh stands at the seventh spot in rice production. The state produces around 61 metric tonnes of rice. The Weather here is just right for growing rice. In Chhattisgarh, they mostly grow rice in the flat lands of places. The Non- Basmati Rice growing districts in Chhattisgarh is given in Table 1.

**Table 1. Major Non- Basmati Rice growing districts in Chhattisgarh**

1	Champa
2	Raipur
3	Bilaspur
4	Rajnandgaon
5	Korba
6	Dhamtari

## 2. MATERIALS AND METHODS

Non- Basmati Rice was purposefully chosen for the study keeping in mind its availability in the region. All of the secondary sources utilized to gather the study's data were utilised, Chhattisgarh state was selected for the present study based on clustering of millers involved in export value chain of Non- Basmati Rice. 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 10 years (2014 to 2023).

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.

## 2.1 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 [6,8].

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

Where,

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

## 2.2 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 [7].

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 [9,10,11,12].

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  
 $WE$  = 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.

## 3. 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.

### 3.1 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 2, hence Chhattisgarh has no RCA to destination state.

### 3.2 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 [8]. The results given in Table 3 showed that, since 2014.

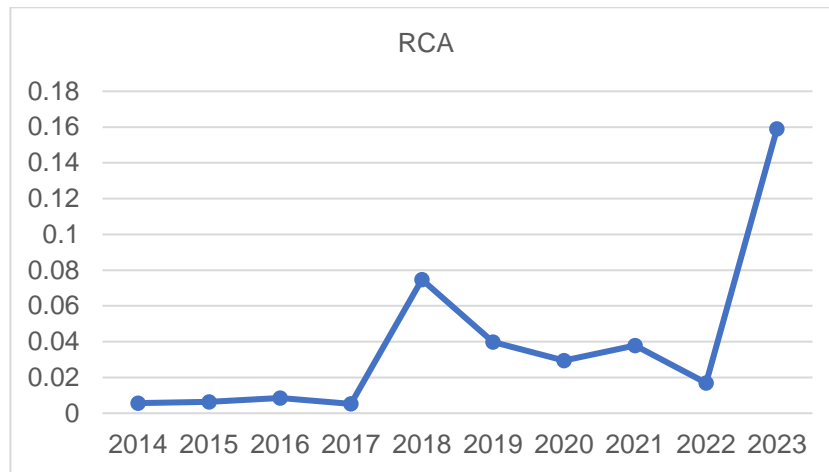


Fig. 1. The RCA of non- basmati rice exports

Table 2. RCA for non- basmati rice exports from Chhattisgarh, 2014-2023

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 (Lakh)
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

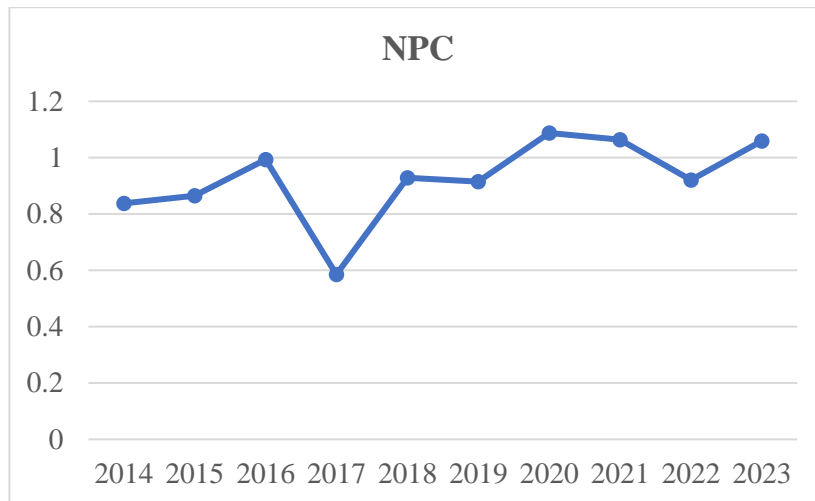
the international price of non-basmati rice has been higher than the domestic price, with the exception of 2020, 2021 and 2022, demonstrating that non- basmati rice are export-competitive, barring those three years. Chhattisgarh ability to compete on the global market during these years [13]. Table 3 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 [13,14].

Table 3. 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



**Fig. 2. Indicated (NPC)**

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 [15,16].

#### 4. 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.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

#### REFERENCES

1. Sangeeta Kumari S, Perke DS, Kamble AT. Export competitiveness and price trend of basmati rice. *Economic Affairs*. 2021;66(04):665-669.
2. Adhikari Anup, Sekhon MK, Nanda Manjeet. Export of Rice from India: Performance and Determinants. *Agricultural Economics Research Review*. 2016;29(1):135-150.
3. Adhikari Anup. Export of rice from India: Performance and determinants (master's thesis). Punjab Agricultural University, Ludhiana. Retrieved from- Available: <http://krishikosh.egranth.ac.in/handle/1/79158>.
4. Udhayakumar M, Karunakaran KR. Growth and stability of basmati and non-basmati rice export in India. *Current Journal of Applied Science and Technology*. 2020;39(40):9-18.
5. Tiwari, Akash. A study on the export performance of Basmati Rice in India (Master's Thesis). Indira Gandhi Krishi Vishwavidyalaya, Raipur. 66 Available: <https://krishikosh.egranth.ac.in/handle/1/5810160822>. Accessed on April 11,2020. Available: <https://apeda.gov.in/apedawebsite/>
6. Farinha L, Nunes S, Ferreira JJ. Understanding the foundations of global competitive advantage of nations *Compet. Rev*. 2018;28 (5):503-517.
7. Akmal Nadeem, Akhtar Waqar, Shah Hassnain, Niazi Muhammad Azam, Saleem Tariq. The structure and competitiveness of Pakistan's Basmati rice exports. *Asian Journal of Agriculture and Rural Development*. 2014;4(4):304-312.
8. Srikalaa M, Devi I, Rajeswari S, Naidu G, Prasad SV. Trade direction and export competitiveness of rice in India. *ORYZA- An International Journal on Rice*. 2017;54 (4):445-451.
9. Baliyan Kavita. Export performance and Competitiveness of Indian mango. *Agricultural Situation in India*. LXXIV. 2017;(5):19-26.
10. Balassa BA. Trade liberalization and revealed comparative advantage. *The Manchester School of Economic and Social Studies*. 1964;33(1):99-124. Accessed on April 9, 2020.

11. Andhale A, Kannan E. Analysis of India's revealed comparative advantage in agri-processed products. Indian Journal of Economics and Business. 2015;1(14):115-130.
12. Mattoo A, Mishra DR, Narain A. From competition at home to competing abroad. World Bank. 2007;83-84.
13. Makama SA, Amrutha TJ, Patil SS, Wali VB. Export competitiveness of Indian rice: A Policy analysis matrix approach. International Journal of Innovative Research & Development. 2016;5(1): 339-344.
14. Goverdan M, Solonrajupaul K, Sankarrao Vishnu D. Trends and Trade competitiveness of rice exports in India. Asian Academic Research Journal of Social Sciences & Humanities. 2014;1(21): 461-473.
15. Kanaka S, Chinnadurai M. A study of export competitiveness of Groundnut in India. Global Journal of Advanced Research. 2015;2(2):512-520.
16. Meena Murlidhar, Khunt KA, Meena HN, Khorajjiya HT. Assessing export competitiveness of Indian groundnut. Agricultural Economics Research Review. 2018;31(2):221-230.

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