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Bhawna Bamel¹, Sunil Phougat²

¹Research Scholar, Department of Economics, Chaudhary Ranbir Singh University, Jind
(126102), Haryana, India

²Professor, Department of Economics, Chaudhary Ranbir Singh University, Jind (126102),
Haryana, India

Corresponding Author: Bhawna Bamel
bhawnabamel1998@gmail.com

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Comparative Advantage of India's Rice Export

Bhawna Bamel¹, Sunil Phougat²

Abstract

This study examines the export performance and comparative advantage of India's rice exports during 2001–02 to 2025–26. The study uses the Revealed Symmetric Comparative Advantage (RSCA) index to assess India's competitiveness internationally and examines the trend in the overall value of rice exports. Although there were notable year-to-year variations, the results show a considerable rising trend in India's rice exports during the study period. The RSCA estimates show fluctuations in India's comparative advantage, with its relative competitive position gradually improving over time. A comparative assessment with major Asian rice-exporting countries further highlights India's position in the regional rice market. The findings suggest that India has considerable potential to further strengthen its position in the global rice market. The study provides useful insights for policymakers and stakeholders in formulating strategies to promote sustainable growth and competitiveness of India's rice exports.

Keywords: Basmati rice, Comparative advantage, Asia, RSCA, Economic growth.

1 Introduction

Rice is one of the most important food crops in the world and occupies a central position in the Indian food system and agricultural economy. For a significant portion of the population, it is a key source of dietary energy and is crucial to rural lives, employment, and agricultural income. Premium-quality Basmati and non-Basmati rice are among the many varieties of rice produced in India, which has a long history of rice production. India has a solid foundation for competing in global rice markets thanks to its variety, agroclimatic conditions, and well-established production methods. India is one of the top producers of rice in the world and has one of the biggest rice-growing regions. India played a major role in the global rice economy in 2024, contributing over 26.52 percent of the world's rice production, according to FAO data. Apart from fulfilling significant local consumption needs, India has become a significant exporter of rice. While non-Basmati rice serves a variety of foreign markets, Basmati rice is especially well-known for its unique scent, superior grain quality, and high market value. Indian rice is exported to several nations. India exported 6.52 million MT of Basmati rice in 2025-2026 for 50,138.28 crore (US \$ 5.67 billion), with the USA, Yemen, Saudi Arabia, Iran, Iraq, and the United Arab Emirates being the main destinations (APEDA, 2026). Examining India's standing and competitiveness in the global market is essential given the rising significance of rice in the country's agricultural exports. A nation's comparative advantage in a given commodity cannot be fully explained by export performance alone. A foundation for evaluating the relative strength of a nation's exports in respect to its total export structure and the related position in global trade is provided by comparative advantage. A popular method for determining whether a nation has a relative export advantage in a certain commodity is the Revealed Comparative Advantage (RCA) methodology, which was created by Balassa in 1965. However, because of the asymmetry of RCA, the Revealed Symmetric Comparative Advantage (RSCA) index provides a more

balanced measure of comparative advantage. Using the Revealed Symmetric competitive Advantage (RSCA) index, the study examines the India's rice exports' competitive advantage on the global market. It examines how India's export competitiveness has changed over time and compares its results with those of a selected major Asian rice-exporting nations. It is expected that the findings will clarify India's position in the global rice market and help identify the need for more output, better quality, stable trade policies, and export market diversification.

2 Literature Review

India's comparative advantage in agricultural exports has been extensively analysed, revealing varied performance across commodities, regions and time periods. Parappurathu and Mathur (2008) studied the India's comparative advantage in exports of ten main agricultural products with respect to countries of Asia and found that India had a strong position in oil meals and cashews during the period of 1991-2004. However, its competitiveness in products like tea, coffee and marine products diminished after economic reforms. Similarly, Ansari and Khan (2015) identify India's comparative advantage in key products like meat, edible meat offal, frozen fish, oilseeds, coffee, wheat, tea and rice with the USA being a significant export market of India. While these studies highlight India's strengths, they also point to challenges in sustaining competitiveness.

Narayan and Bhattacharya (2019) empirically studied export competitiveness of India in agricultural products and its determinants during the period of 1961-2012. Result showed that India had become relatively competitive in export of all four commodities (rice, wheat, cotton and sugar) but its competitiveness had been less as compared to top exporters of four commodities and SAFTA agreement improved the REC in cotton and sugar but had a negative effect on it in wheat and rice. Regional comparisons provide additional insights. Renjini et al. (2017) highlight India's competitiveness in cotton, rice and tea in comparison of ASEAN markets. Researcher also found that partner's and FTA were positively affect the mutual trade and India had achieved its trade potential with Thailand, Singapore, Philippines, Lao and Brunei.

Mandal (2022) concluded that although India's agricultural exports to ASEAN fall short of its imports, countries like Vietnam and Thailand are still crucial. In order to increase India's economic footprint, these studies highlight the significance of concentrating on regional trade dynamics and utilising bilateral agreements. India's agricultural trade demonstrates complementarity with key partners worldwide. Exchange rates and foreign direct investment (FDI) have a favourable impact on India's comparative advantage, according to Jain and Kannan's (2021) found that specific policy interventions can further strengthen its position. Overall, these analyses underline the complex but promising landscape of agricultural exports of India and the need for continuous evaluation to sustain and enhance its global competitiveness.

3 Research methodology

The analysis is based on secondary data and period of study is 2001–02 to 2025–26. While export data can be gathered from various sources including APEDA, the Directorate General of Commercial Intelligence and Statistics (DGCI&S), the Ministry of Commerce and Industry, UN Comtrade, and FAOSTAT. The study uses the Revealed Comparative Advantage (RCA) index created by Balassa (1965) to evaluate India's export competitiveness. In relation to its overall agricultural exports and the corresponding global exports, RCA determines if India has a comparative advantage in exporting a specific commodity. Comparative advantage is indicated by the RCA value more than 1 and comparative disadvantage by a value less than

1.

$$RCA_{ij} = \frac{X_{ij}/X_{ik}}{X_{nj}/X_{nk}} \quad (1)$$

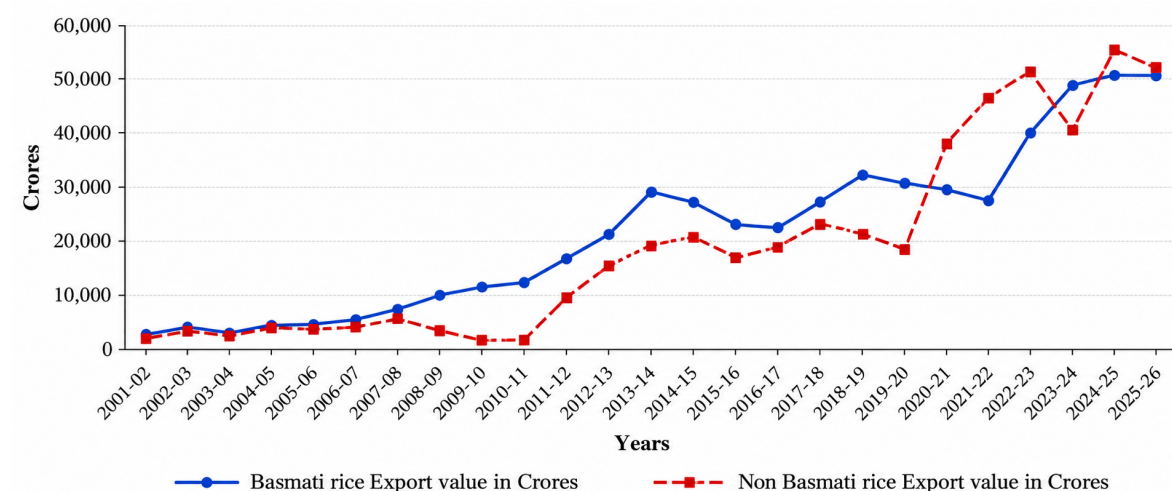
- X_{ij} = Exports of country “i” (India) of commodity “j”.
- X_{ik} = Exports of country “i” of a set of commodities “k” (total agricultural commodities).
- X_{nj} = Exports of a set of countries “n” (world) of commodity “j”.
- X_{nk} = Exports of a set of countries “n” of a set of commodities “k” (total agricultural commodities).

$$RSCA = \frac{RCA - 1}{RCA + 1} \quad (2)$$

RCA’s uneven range, however, prevents direct comparisons between commodities. In order to normalise RCA values between -1 and $+1$, the study also employs the Revealed Symmetric Comparative Advantage (RSCA) index developed by Dalum et al. (1998). A positive RSCA value denotes comparative advantage, while a negative value indicates comparative disadvantage. When combined, RCA and RSCA offer a succinct evaluation of India’s advantages and disadvantages.

4 Results and discussion

Figure 1 presents the trend in India’s rice exports during 2001–02 to 2025–26. It highlights the changes in export performance over the study period and indicates the overall growth and fluctuations in India’s rice exports.

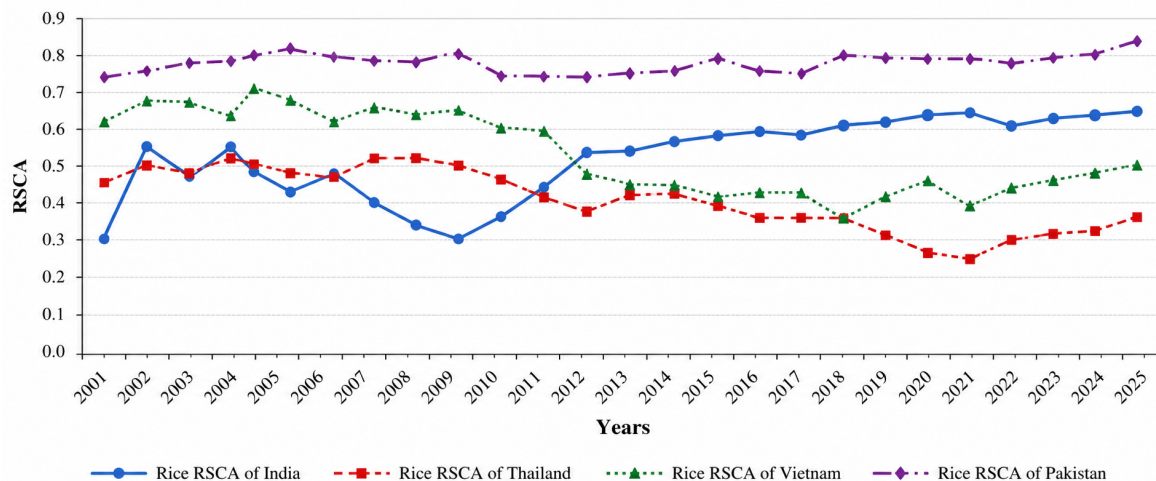


Source: APEDA, Ministry of Agriculture, Government of India (GOI).

Figure 1: Rice export from India during 2001–02 to 2025–26

Figure 1 presents the trend in India’s Basmati and Non-Basmati rice export values during 2001–02 to 2025–26, measured in crore rupees. Although there were significant year-to-year

variations, the figure indicates that both categories saw an overall upward trend. While non-Basmati exports varied at relatively lower levels during the first period, which ran from 2001–02 to about 2007–08, Basmati exports remained relatively low but started to progressively climb. Basmati exports grew significantly starting in 2008–09 and reached over 29,000 crore in 2013–14. From 2014–15 to 2016–17, there was a slight dip. After that, Basmati exports bounced again, hitting over 32,000 crore in 2018–19 before slightly falling until 2021–2022. After that, there is a noticeable uptick, with Basmati exports hitting about 50,000 crore in 2024–2025 and staying at this amount in 2025–2026. Non-Basmati exports exhibit greater fluctuation, especially in the early years, with a notable drop from 2008 to 2010. But from 2010–11, they significantly rose, reaching almost 20,000 crore in 2014–15. Non-Basmati exports increased significantly starting in 2020–2021, reaching over 50,000 crore in 2022–2023, then declined in 2023–2024 before rising again to almost 55,000 crore in 2024–2025. Non-Basmati exports decreased somewhat to over 50,000 crore in 2025–2026. Overall, the graph shows a significant increase in both Basmati and non-Basmati rice exports; non-Basmati exports exhibit higher volatility, while Basmati exports show a comparatively steadier rising trend in the latter half of the research period.



Source: Author's computation based on UN Comtrade data.

Figure 2: Trends in RSCA estimates of India and other major rice-exporting countries in Asia

The figure 2 depicts the Revealed Symmetric Comparative Advantage (RSCA) of rice exports for India, Thailand, Vietnam and Pakistan during 2001-2025. The RSCA values provide an indication of the relative export performance and specialization of rice in the respective countries' export baskets. India's RSCA varied significantly in the early years, reaching a low of around 0.31 in 2010. After that, it gradually increased and reached about 0.62 in 2024. This suggests that India's relative position in rice exports has improved over time. Pakistan consistently maintains the highest and most constant RSCA, ranging from 0.75 to 0.82. Vietnam had a declining trend after 2010 but recovered significantly in recent years, while Thailand saw a large decline, particularly after 2018. Each of the four countries had a competitive advantage based on the RSCA criterion since their RSCA values were greater than zero (or positive). Nonetheless, India's relative competitiveness has steadily improved since 2010. Overall, the data shows that Vietnam, India, and Thailand occasionally trailed Pakistan in terms of rice exports.

5 Conclusion

The study analysed India's rice exports' competitive advantage and export performance from 2001–02 to 2025–2026. Over the period of the study, India's total rice export value increased significantly, according to the trend analysis. The long-term trend continued to be positive, especially in the later years, despite significant year-to-year variations. India's growing participation and significance in the global rice market is reflected in the rise in export value. India's competitive advantage in rice exports changed over the period of the study, according to the RSCA analysis. Although the degree of comparative advantage varied over time, the results indicate that India's relative competitive position improved in the later years. Variations in India's export performance in relation to its entire export structure and the global rice market are reflected in the shifting RSCA values. Further evidence of the disparities in their competitive positions comes from a comparison with the main Asian rice-exporting nations. While India gradually increased its competitiveness in the later time, Pakistan continued to have a comparatively stronger position. This implies that India has improved its standing in the Asian rice market, but there is still room to improve its competitiveness abroad.

Overall, the findings demonstrate that India has significant potential to expand and sustain its rice exports. A greater emphasis should be placed on increasing productivity, improving quality, creating efficient supply chains, adding value, and adhering to international standards in order to strengthen its comparative advantage. To lessen uncertainty among producers and exporters, export policies must be steady and predictable. Finally, expanding into new markets and diversifying export destinations can strengthen India's rice exports' resilience and lessen reliance on a small number of markets. Therefore, the steady expansion and global competitiveness of India's rice exports can be attributed to a mix of productivity enhancement, quality improvement, policy stability, and market diversification.

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None

Conflict of Interest

The authors declare that there is no conflict of interest associated with this article.

Use of Artificial Intelligence

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ORCID iDs

Bhawna Bamel: 0009-0002-0258-0048

Sunil Phougat: 0009-0008-7875-364X

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