

The Effect of COVID-19 on India's Spice Exports

OPEN ACCESS

Manuscript ID:
MGT-2023-10035294

Volume: 10

Issue: 3

Month: January

Year: 2023

P-ISSN: 2321-4643

E-ISSN: 2581-9402

Received: 13.10.2022

Accepted: 8.12.2022

Published: 01.01.2023

Citation:
Vilasini, M., and
S. Gopalasamy. "The Effect
of COVID-19 on India's
Spice Exports." *Shanlax
International Journal of
Management*, vol. 10, no. 3,
2023, pp. 7–10.


DOI:
[https://doi.org/10.34293/
management.v10i3.5294](https://doi.org/10.34293/management.v10i3.5294)



This work is licensed
under a Creative Commons
Attribution-ShareAlike 4.0
International License.

M. Vilasini

*Ph.D., Scholar, Department of International Business
Alagappa University Karaikudi, Tamil Nadu, India*

 <https://orcid.org/0000-0002-6431-4194>

S. Gopalasamy

*Assistant Professor, Department of International Business
Alagappa University, Karaikudi, Tamil Nadu, India*

Abstract

The COVID-19 pandemic shows an irreversible change in the world. Developing nations like India, the effect is even more significant. Spice exports are one of the important sectors to generate foreign revenue to the country. This paper investigated the impact of COVID-19 on spice exports in India. This research is based on secondary data from fiscal year 2018-19 to 2020-21. To analyse conditional volatility of a time series data, a GARCH model was applied. The findings suggest that the COVID-19 pandemic has a significant effect on spices exports in India.

Keyword: COVID -19, Pandemic, Spices Export ,Volatility, Stationarity.

Introduction

In the year 2020, all over the world, the COVID-19 pandemic spread was very severe. It affects developed, developing and least developed countries' economies and psychologically. People are in need of basic necessities such as food, safety, and medicine. In pandemic times, the world stopped exporting and importing goods. After the spread of COVID-19, many countries have shut down their seaports and airports (LIN, B., & ZHANG, Y. Y. (2020)). In India, the entire export industry was facing the problem of doing international trade, and spice exports were not an exception. In the world trade, India's contribution to spice exports is exemplary. The early period, middle age, and early modern period are the three eras that divided into the history of the Indian spice trade. Spices are used in alcoholic beverages, pharmaceutical items, cosmetics, and perfumes. Turmeric, cumin, coriander, fenugreek, peppers, etc are the major spices exported by India (Gidwani et al., 2022). People are following traditional methods by using herbal plants and spices that focus more on the initial immunity of the body.

The Ministry of AYUSH, Government of India, recently issued advice suggesting how to fight against the coronavirus pandemic in India. We can find a solution by using herbal plants and spices for curing and preventing COVID-19. People recognised the value of spices as medicine during the pandemic period. It help to increase india spices production and export.

Review of Literature

(Rajamohan et al., 2021) in this paper examined impact of covid -19 on FMCG sector. The stationarity of FMCG sector index during pre and post COVID-19. The study basic on secondary Time series data 2018-19 to 2020-21 Year ADF, GARCH The data has been analysed using The study reveals that the FMCG sector is affected.

(Cao et al., 2021) In this paper investigated The impact of the COVID-19 pandemic on China's agricultural import and export from both short- and long-term perspectives is attempted in this study as a preliminary analysis.

Panel data have been used covering China and 159 export counterparts from year 2010 through 2018. The study found that China's agricultural exports have faced short-term deficits, mostly as a result of the supply chain disruption.

LIN, B., & ZHANG, Y. Y. (2020) investigate the impact of COVID-19 on agricultural export companies in China. Exports of medicinal herb also increased significantly during the pandemic, compare to Small firm are hit majorly than Larger firm. Industry the result agriculture export are COVID-19 mitigation efforts to navigate this global pandemic.

(Barua, 2020) The study then uses a common macroeconomic AD-AS model to demonstrated the anticipated effects and then explains some key elements that need to be taken into account when formulating policy responses by countries and international organisations. In institutions to lessen the effects of economic shocks. Reviews of this work are mostly positive. This is in keeping with the scant research on COVID-19's economics that has been done.

Akbulaev, N., Mammadov, I., & Aliyev, V. (2020) The economic impact of COVID-19 in Turkish is the primary focus of this essay. Basic research is based on 2019–2020 primary data collection. Numerous factors that affected production, employment, export, and import have been identified; the results of this study demonstrate a negative impact.

Design of the Study

Objectives of the Study

- To examine the stationarity of Spices exports during pre and post COVID-19.
- To analyse the volatility of the export price of spices, during prior and ahead COVID-19.

Hypothesis

- H0: The Index export price return of spice Export is not volatile.
- H0: The COVID-19 does not influence the export price returns of spices exports.

Methodology of the Study

This research is both descriptive and analytical in nature, and it discusses the positive and negative effects of COVID-19 on spice export

Sources of Data

The study used secondary data for the analysis of spices export from India. The data were collected from the website of Ministry of commerce and Industry. There are few other data set were collected from spices broad of India, magazines, journal, newspaper etc.

Period of the Data

For analyzing the impact of COVID-19 on spices sector, the data considered for pre covid-19 period which is from January 2018 to December 2019 and for post covid-19 period data were considered from 2020 January to December 2021.

Analysis and Interpretation

The data collected are analysed through respective statistical tools like Augmented Dickey Fuller Test (ADF) and GARCH(1,1) Model.

Stationarity in Price Series of Spices Export by using The Augmented Dickey-Fuller Test (ADF)

The first stage in time series analysis is to look at the stationarity of each time series. A series is said to be stationary if its mean and variance are invariant; if the series are not verified for stationarity, the scenario may lead to the problem of spurious regression between variables caused by a non-stationary process. As a result, a stationary (unit root) test is performed to determine the sequence of integration. Several tests for detecting the existence of unit root are available in the literature. Unit root test for Augemental Dickey-Fuller (ADF).

Table 1 Testing Stationarity of spices export Price (USD) during the Pre COVID-19 Period by using Augmented Dickey- Fuller Test (ADF)

Unit Root For Spices Export		t-Statistic	Prob.*
Augmented Dickey Fuller test statistic		-3.593268	0.0142
Test critical values:	1% level	-3.752946	
	5% level	-2.998064	
	10%level	-2.638752	

Source: Collected from www.indianspices.com and computed.

The table shows that pre-COVID-19 spice export performance also indicates the persistence of coefficients is positive and statistically significant. The time varying Volatility includes a constant (0.722)plus its past (9.042) and a components which depends on past errors (1.039) its past value significantly predicts the current series. Hence the hypothesis “The Index export price return of spice Export is not volatile” is rejected

Table 2 Measuring Stationarity of spices export Price(USD) during the Post COVID-19 Period by using Augmented Dickey Fuller Test (ADF)

Unit Root For Spices Export		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.347183	0.0243
Test critical values:	1% level	-3.752946	
	5% level	-2.998064	
	10% level	-2.638752	

Source: Collected from www.indianspices.com and computed.

In the augmented dickey -fully test, the t-statistics value(-3.347183) is less than the critical value at all levels of significance in the export price of spices exported in India. As a result, the result shows that spice export prices per COVID-19 were obtained at stationarty in the level itself. Furthermore, the probability (p) value indicated the rejection hypothesis.

GARCH Model for Estimating Volatility

The conditional volatility of a time series is modelled using GARCH, or generalised autoregressive conditional heteroscedasticity models. In reality, an ARCH (infinity) model is equivalent to a GARCH (1,1) model. A time series’ (conditional) volatility.

Coefficients of the constant variance term the ARCH and GARCH Parameters are positive and statistically significant at the 1/ level. This given the result of the GARCH model .The time varying volatility includes a constant (0.722164)plus its past (0.623) and a component which depends on past errors(0.136) .The result reveals post-COVID 19 spice export performance also indicates the persistence of the volatility spices export represented is larger .It denoted that the effect of today,s export prices remains in the forecast of variance for many periods in the future. **Calculating the volatility of spices export price during the post –COVID 19 period by (GARCH)**

Table 3 Test of Pre COVID-19 in Spices export by using GARCH Model

Mean Equation				
Variable	Coefficient	Std. Error	Std. Error	Prob
C	1.653451	0.502497	3.290468	0.0010
Variance Equation				
C	0.001526	0.002113	0.722164	0.4702
RESID(-1)^2	0.136148	0.039928	3.409872	0.0006
GARCH(-1)	0.551169	0.881217	0.625464	0.5317

Source: Collected from www.indianspices.com and computed.

Table 4 GARCH (1,1) of Post COVID-19 in Spices export

Mean Equation				
Variable	Coefficient	Std. Error	Std. Error	Prob
C	1.649518	0.369197	4.467849	0.0000
Variance Equation				
C	0.001526	0.002113	0.722164	0.4702
RESID(-1)^2	0.136148	0.039928	3.409872	0.0006
GARCH(-1)	1.039551	0.114966	9.042260	0.0000

Source: Collected from www.indianspices.com and computed.

The table shows that pre-COVID-19 spice export performance also indicates the persistence of coefficients is positive and statistically significant. The time varying Volatility includes a constant (0.722) plus its past (9.042) and a component which depends on past errors (1.039) its past value significantly predicts the current series. Hence the hypothesis “The Index export price return of spice Export is not volatile” is rejected

Conclusion

The main purpose of the study is to analyze the impact of COVID-19 on the export performance of the spice sector

The results from the GARCH show the volatility of the spice industry. From its entry analysis, it can be comprehended that the COVID-19 in India had an unfavourable impact on spice exports. As a result of the above findings, there is a significant change and impact in spice export during the study period. The spices industry is boomed in upcoming years because of people’s knowledge about importance of spices and their medicinal value. So the spice Exporters and the Government has to make a manageable plan to get the better of immediate change in upcoming years.

References

Barua, Suborna. *Understanding Coronanomics: The Economic Implications of the Coronavirus (COVID-19) Pandemic*. 2020.

Author Details

M. Vilasini, Ph.D., Scholar, Department of International Business, Alagappa University Karaikudi, Tamil Nadu, India, **Email ID:** vilasinimurugesan98@gmail.com

S. Gopalsamy, Assistant Professor, Department of International Business, Alagappa University, Karaikudi, Tamil Nadu, India, **Email ID:** gsgopalsamy@gamil.com

Cao, Lijuan, et al. “Impact of COVID-19 on China’s Agricultural Trade.” *China Agricultural Economic Review*, vol. 13, no. 1, 2021.

Gidwani, Bina, et al. “Indian Spices: Past, Present and Future Challenges as the Engine for Bio-Enhancement of Drugs: Impact of COVID-19.” *Journal of the Science of Food and Agriculture*, vol. 102, no. 8, 2022.

Rajamohan, S., et al. “Impact of COVID-19 on FMCG Sector.” *Shanlax International Journal of Management*, vol. 8, no. 4, 2021, pp. 69-74.

Fernandes, Nuno. “Economic Effects of Coronavirus Outbreak (COVID-19) on the World Economy.” *Journal of Marketing Research*, vol. 6, no. 3, 2020, pp. 37-48.

Gupta, Puneet Kumar, et al. “Coronavirus 2019 (COVID-19) Outbreak in India: A Perspective so far.” *Journal of Clinical & Experimental Investigations*, vol. 11, no. 4, 2020.

Akbulaev, Nurkhodzha, et al. “Economic Impact of COVID-19.” *SYLWAN*, vol. 164, no. 5, 2020, pp. 113-26.

Barichello, Richard. “The COVID-19 Pandemic: Anticipating its Effects on Canada’s Agricultural Trade.” *Canadian Journal of Agricultural Economics*, vol. 68, no. 2, 2020, pp. 219-24.

Verschuur, Jasper, et al. “Observed Impacts of the COVID-19 Pandemic on Global Trade.” *Nature Human Behaviour*, vol. 5, 2021, pp. 305-07.