Corruption and Economic Growth in BRICS Countries

Ms. I. Shireesha [1], Ms. T. Varalakshmi[2], Ms. S. Swarna Shiva[3]
[1,2,3] Master of business administration, IARE, Hyderabad-Tamilnadu, India
Email: i.shireesha@iare.ac.in[1], t.varalakshmi@iare.ac.in[2], swarnasai248@gmail.com[3]

Abstract

The study presents a comprehensive analysis of the Corruption Index (CI) ranks and Gross Domestic Product (GDP) of Brazil, Russia, India, China, and South Africa, highlighting their economic and governance trends over times. Brazil's stable Corruption Index rankings and fluctuating GDP growth demonstrate the country's economic resilience and the influence of various economic factors. Similarly, Russia's steady Corruption Index rankings and adaptable GDP growth signify the nation's economic resilience. India's consistent Corruption Index ranks and growing GDP reflect the country's economic strength, while China's stable Corruption Index ranks and robust GDP growth demonstrate its economic prowess. South Africa, facing challenges with fluctuating Corruption Index ranks, exhibits gradual improvements in GDP, indicating potential prospects for economic development. Through Correlation coefficient we found positive correlation in Brazil, India, and China, with varying magnitudes of effect. Where negative correlation was found in Russia and South Africa. ANOVA ANALYSIS revealed statistically significant relationships between corruption perception and economic growth were found in Russia, India, and China, with varying magnitudes of effect.

Keywords: *Corruption Index, Economic growth, Gross domestic product*

1. Introduction

Corruption has long been recognized as a significant impediment to economic growth and development worldwide. It erodes public trust in government institutions, diverts resources away from essential public services, and undermines the fair and efficient functioning of markets. Among the group of emerging economies known as BRICS (Brazil, Russia, India, China, and South Africa), corruption poses a particularly pressing challenge, given their substantial economic potential and rising global influence. The BRICS nations, representing almost 42% of the world's population and contributing over one-quarter of the global GDP, have been a focal point of international attention due to their rapid economic growth and development [1]. However, despite their impressive macroeconomic indicators, these countries have struggled with persistent corruption issues that cast a shadow on their progress. This study aims to delve into the complex relationship between corruption and economic growth in the BRICS countries. It seeks to identify the mechanisms through which corruption impacts various sectors of their economies and assess the extent to which corruption affects economic performance. Additionally, the research aims to identify the unique challenges faced by each BRICS nation concerning corruption and explore potential strategies to combat this scourge effectively [2].

1.1 Objectives

- To study the trends and patterns of the corruption index of the economic growth of BRICS countries.
- To measure the relationship of corruption index with the economic growth of BRICS countries.
- To analyse the Impact of Corruption index on the economic growth of BRICS of countries.

1.2 Purpose

The purpose of researching corruption and economic growth in BRICS countries could be multifaceted. Firstly, it could aim to understand the relationship between corruption levels and economic development within these nations. Additionally, it could seek to identify patterns or factors that either

hinder or promote economic growth in the presence of corruption [3]. Furthermore, such research could contribute to developing strategies or policies to mitigate corruption's negative impacts on economic progress in BRICS countries.

1.3 Hypothesis

H01: There is no long run relationship between the corruption index and the economic growth of BRICS countries.

H02: There is no significant Impact of Corruption index on the economic growth of BRICS of countries.
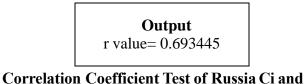
2. Methodology

The present study adopted the descriptive research approach for the examination of framed objectives. The study considered the following statistical tools. The research design for this study was a comparative analysis. It involved examining and comparing the impact of corruption on economic growth across 5 countries: [4] Brazil, Russia, India, China, South Africa. The study adopted a quantitative research approach. It involved analysing numerical data related to corruption and economic indicators to assess the relationship between corruption and economic growth in the selected countries. The study covered the period from 2012-13 to 2021-22. This time frame allowed for a analysis of the long-term trends and patterns in corruption and economic growth within the chosen Countries.

3. Result Analysis

H01: There is no long run relationship between the corruption index and the economic growth of BRICS countries.

Correlation Coefficient Test for Brazil Ci and GDP

Output
r value= 0.693445

Correlation Coefficient Test of Russia Ci and GDP

Output
r value= -0.6645

Correlation Coefficient Test of India Ci and GDP

OUTPUT
R Value = 0.801329

Correlation Coefficient Test of China Ci and GDP

OUTPUT
r value = 0.502485

Correlation Coefficient Test of South Africa Ci and GDP

OUTPUT
r value= -0.644397575

Interpretation

The correlation coefficients provided reveal distinct relationships between corruption levels, as measured by the Corruption Index (CI), and the Gross Domestic Product (GDP) of various countries. In Brazil, the moderately strong positive correlation ($r \approx 0.693$) indicates that as corruption decreases, GDP tends to increase, reflecting the potential economic benefits of combating corruption [5]. Conversely, Russia exhibits a moderately strong negative correlation ($r \approx -0.664$), suggesting that lower corruption levels may coincide with decreased economic activity. India demonstrates a robust positive correlation ($r \approx 0.801$), highlighting the critical link between reduced corruption and heightened economic growth table 1. China displays a moderate positive correlation ($r \approx 0.502$), implying that efforts to address corruption could lead to incremental improvements in GDP. Meanwhile, South Africa presents a moderately strong negative correlation ($r \approx -0.644$), indicating a complex relationship where anti-corruption measures may initially impact GDP negatively table 2.

Summary Output

H02: There is no significant Impact of Corruption index on the economic growth of BRICS of countries.

Table 1 correlation coefficients

Count	Sum	Average	Variance	Groups
BRAZIL_CI	11	427	38.818	8.16 36
BRAZIL_GDP	11	21891.04	1990.095	1157 89.3

Table 2 ANOVA

ANOVA	Source of Variation	df	SS	MS	F	F crit	Significance F
Between Groups	2094 1137	1	238 7.86	2094 1137	361.6 857	2.8 2E-14	4.3512 44
Within Groups	1157 974	2 0	164. 13	5789 8.72			
Total	2209 9111	2 1	255 2				

Interpretation

The extremely low p-values across all comparisons indicate strong evidence to reject the null hypothesis for each country's Corruption Index (CI) and Gross Domestic Product (GDP) groups. These findings underscore significant differences between the mean values of CI and GDP for Brazil, Russia, India, China, and South Africa, highlighting the complexity of the relationship between corruption levels and economic performance [6].

Findings

- The study reported from the Brazil and Russia's Corruption Index (CI) ranks and Gross Domestic Product (GDP) from year to year reveals significant economic and governance trends.
- It reported from Correlation coefficient that, In Brazil, India, and China, the coefficients for the corruption index were statistically Positive Correlation. However, the magnitude of the effect differed among the countries, with Brazil having a coefficient of 0.693, India with 0.8013, and China with 0.5024.
- The study indicates that there is statistically Negative Correlation relationship between the corruption index and economic growth in Russia and South Africa, as the coefficient estimate was found to be Russia with -0.6645 and South Africa with -0.6443.
- It reported from ANOVA that, In Russia, India and China the coefficients for the corruption index were statistically significant, indicating a reliable relationship between corruption perception and economic growth.
- However, the magnitude of the effect differed among the countries, with Russia having a critical value of 4.35124, India with 4.35124, and China with 4.35124.

Conclusion

The study provides valuable insights into the economic and governance trends of Brazil, Russia, India, China, and South Africa in relation to their Corruption Index (CI) ranks and Gross Domestic Product (GDP) growth. Brazil displayed economic resilience with relatively stable Corruption Index rankings and fluctuating GDP growth, while Russia showcased adaptability with steady Corruption Index rankings and GDP performance. India demonstrated consistent economic growth alongside stable Corruption Index ranks, reflecting its economic resilience, whereas China's stable Corruption Index ranks were accompanied by robust GDP growth, indicating its economic prowess. South Africa faced challenges with fluctuating Corruption Index ranks but showed gradual improvement in GDP, suggesting potential prospects for economic development.

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