

# Relationship between Corruption and Development: Evidence from India

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## Abstract

According to theory, the effect of corruption on development is ambiguous. However, there is consensus among economists and policymakers that the negative effects of corruption outweigh the positive effects. Corruption is a major issue in most developing countries. According to the Corruption Perception Index Report (CPI, Transparency International, 2022), India stands at the 85th position among 180 countries. This paints a very dismal picture of the Indian economy despite it being one of the fastest-growing countries in the world. Many policymakers and economists share a common viewpoint that corruption negatively impacts productivity and equity and, hence, the country's development. Against this background, the paper aims to examine the linkage between corruption and development in India from 2012 to 2022. Corruption is measured using the Corruption Perception Index (CPI) by Transparency International, and development is measured using per capita GDP and the Human Development Index (HDI).

The study examines the relationship between corruption and development using the technique of bivariate regression. Two sets of regression equations are estimated- 1. CPI and per capita GDP over the period 2012-2022 and 2. CPI and HDI over the period 2011-21. The empirical findings show that a lower level of corruption is associated with improvement in per capita GDP as well as HDI and vice versa. In addition to this, the results are statistically significant at a one per cent level of significance.

Therefore, it becomes essential for India to reduce corruption levels to achieve higher growth and better human development outcomes.

*Keywords: Corruption, Per-capita GDP, Human Development, Bivariate Regression*

## 1. Introduction

Countries worldwide seek to grow faster and attain better human development outcomes. Corruption has been one of the most severe concerns confronting practically all countries, with poorer countries bearing the burden. Corruption is extensively debated because it has a negative impact on productivity, equity, and, thus, development. Goal 16 of the Sustainable Development Goals (SDGs) is "Peace, Justice, and Strong Institutions-promote peaceful and inclusive societies, providing access to justice for all, and building effective, accountable, and inclusive institutions at all levels" (UNDP Website). Good governance is clearly associated with less corruption. According to Transparency International (TI), corruption has been a key reason for the Millennium Development Goals' poor achievement (Hartman and Mungiu-Pippidi, 2020).

According to the World GDP ranking, India ranks fifth with a GDP of \$3750 billion (Forbes India, August 14, 2023). According to the International Monetary Fund (IMF, December 2022), it will have the world's fastest-expanding GDP at 6.1 per cent in 2023. It has outpaced growth not only in comparison to emerging markets and developing economies but also to China. However, according to Transparency International's (TI) Corruption Perception Index for 2022, the global average score is 43. India ranks 85th out of 180 countries, with a score of 40 out of 100. According to the Transparency International Report (2022), India's score is not only lower than the global average but also lower than the Asia Pacific region's (45). New Zealand is the least corrupt country (87), and North Korea is the most corrupt (17).

Since 2003, the TI has also calculated the Global Corruption Barometer, which is based on the experiences of ordinary people with corruption. In India, 89 per cent of individuals believe that government corruption is a big problem, and over 39 per cent of persons who used public services paid a bribe in the previous year. The figures for Asia are 74% and 20%, respectively (TI, Asia-2020 Report). This paints a gloomy picture of India's corruption levels. As a result, the study's goal is to examine the relationship between corruption and development in India from 2012 through 2022. Corruption is measured using Transparency International's Corruption Perception Index (CPI), and development is measured using per capita GDP and the Human Development Index (HDI).

The following section (2) discusses key concepts and metrics of corruption. Section 3 discusses the theoretical context of corruption and development. The current literature is reviewed in the following section (4), and data, variables, and findings are addressed in the following section (5). The final section discusses the conclusion and policy implications.

## 2. Definitions and Measures of Corruption

### 2.1 Definitions of Corruption

Corruption does not have a unique definition. Corruption is described as "abuse or misuse of public office for private gain" by Jain (2001). In a democratic democracy, he distinguishes three sorts of corruption. The first, "Grand Corruption," relates to the way political elites influence policy formulation; the second, "Bureaucratic Corruption," refers to corruption by bureaucrats in dealing with political elites or the general public. Finally, "Legislative Corruption" refers to the extent to which special interest organisations can influence legislators' voting conduct in order for legislation to be passed to their advantage.

The principal-agent framework is sometimes used to explain corruption. In these models, corruption is based on the profits that can be earned relative to the expenses that must be incurred for the agent's corrupt practices (Shleifer, V., and R.W. Vishny, 1993). Corruption is predicated on rent-seeking behaviour in resource allocation models, where multiple agents fight for economic rents. As a result, according to these models, corruption is predicated on three conditions: "1) discretionary authority of government employees, 2) the quantity of economic rents, 3) the legal system" (B.D. Simo-Kengne and S. Bitterhout, 2023).

### 2.2 Measures of Corruption

Because there is no single technique to measure corruption, measuring it becomes even more difficult. Some of the subjective metrics of corruption are listed in Table 1 below.

**Table 1: Measures of Corruption**

Author	Index	Description	Coverage
The Transparency International	Corruption Perception Index (CPI), 0 (highly corrupt) to 100 (very clean)	Degree to which the public sector is anticipated to be corrupt	Since 1995, 180 countries

The Worldwide Governance Indicators - World Bank (Kaufmann, Kraay and Mastruzzi, 2010)	Control of Corruption (CCI), -2.5 (weak) to 2.5 (strong)	“capturing perceptions of the extent to which public power is exercised for private gain, including petty and grand forms of corruption and "capture" of the state by elites and private interests” (Kaufmann, Kraay and Mastruzzi, 2010)	Since 1996, 200 countries
The Transparency International	Global Corruption Barometer (GCB) - 0 (lowest) to 100 (highest) per cent	People’s survey on corruption	Since 2003 (available for few years)
The Political Risk Services (PRS) Group	International Country Risk Guide (ICRG)- 0 (very high risk) to 100 (very low risk)	Political risk, financial risk and economic risk	Since 1984, 140 countries

The GCB measure was one of the first attempts to assess corruption based on a survey/opinion of ordinary citizens who encounter corruption on a daily basis; however, it is only available for a limited number of years. The ICRG primarily calculates investment risk. CPI and CCI are both measurements of corruption. However, CPI is a more accurate indicator of corruption and hence used in the study.

### 3. Theoretical Framework

In economic literature, the relationship between corruption and development is ambiguous. According to some authors, corruption can have a positive effect by increasing efficiency and hence increasing growth. According to Leff (1964) and Huntington (1968), cited in (Hodge, A. et al. 2009), corruption functions as a 'grease' that lubricates the stiff wheels of stringent government administration. It also functions similarly to 'piece-rate' pay for bureaucrats, resulting in increased efficiency in providing public goods and services. According to Acemoglu and Verdier (1998), the costs of enforcing property rights and contractual agreements may be significantly higher than the advantages of optimal corruption.

Myrdal (1968), on the other hand, argues that the efficiency hypothesis of corruption completely ignores the fact that government officials have the motivation to cause further administrative delays to get more bribes. Furthermore, corruption redirects resources from productive to unproductive activities such as rent-seeking, in which actors compete for economic rents (Shleifer and Vishny, 1991). This demonstrates how corruption may diminish efficiency and harm economic growth. Bribery, according to Kaufmann and Grey (1998), generates uncertainty in the economy while also increasing transaction costs. It also affects efficiency by impeding/obstructing both domestic and foreign investment. Additionally, corruption is more prevalent in developing countries than in developed countries, owing to a greater desire to earn income, higher economic rents, and, most importantly, a lack of accountability on the part of the government, which is aided by a weak legal system.

The adverse effects of corruption on growth and development are well acknowledged by economists and policymakers. Corruption has a variety of detrimental effects on development (Gupta (2000) and Tanzi (1997), as cited in Chene, M. 2014). For instance, it distorts market dynamics of demand and supply, resulting in inefficient resource allocation across diverse sectors. Furthermore, rent-seeking activity diverts physical and human resources from productive to unproductive sectors. Bribery functions as an additional tax, increasing production costs and lowering return on investment. Corruption also lowers the quality of health and education services, lowering productivity and efficiency.

#### **4. Literature Review**

Researchers typically agree that corruption has a negative impact on growth; however, there is another school of thought that says corruption can be justified to some extent because it helps to overcome the inefficiencies of overly regulated sectors (as per the "grease the wheels" hypothesis, Dreher and Gassebner, 2011). In some circumstances, this could be beneficial to growth.

According to Dreher and Gassebner (2011), in industries with administrative barriers to entry, corruption aids in raising firm entry rates. So, while corruption aids in mitigating the negative impacts of overregulation, there is no evidence that it always leads to higher growth. Hodge A. et al. (2009) examine the association between corruption and growth in 81 countries between 1984 and 2005. According to the empirical findings, corruption

has a negative impact on physical capital and human capital investment, as well as political instability, which has a negative impact on economic growth. Similarly, a study of low-income nations confirms the negative consequences of corruption on economic growth via direct and indirect channels such as government spending, investment, and human capital (Ugur and Dasgupta 2011). Using panel data for 83 developing countries from 2012-2018, Spyromitros and Panagiotidis (2022) show that corruption positively affects growth in Latin American countries, whereas the effect is negative for other countries.

Considering other development outcomes, Mauro (1998) analyses the effect of corruption on government spending on education as a proportion of GDP for a cross-section of countries and finds that the two variables are negatively correlated. According to Sanyal and Samanta's (2008) investigation of US FDI outflows to 42 host countries in relation to the level of corruption, US businesses are less likely to invest in countries with high levels of corruption. Similarly, the cross-sectional analysis by Asiedu and Freeman (2009) demonstrates that corruption is a significant determinant of investment in developing nations. The poor are most negatively impacted by corruption since funding intended for various social welfare programmes is reduced or poorly targeted. This is supported by a study in Indonesia (Suryadarma, 2012), which found that public spending had a positive and significant impact in less corrupt regions while having essentially no effect in regions with high levels of corruption.

Hence, corruption can have a negative effect on the quantity and quality of government spending, which in turn would have effects on human capital, economic growth and equity.

## **5. Data, Methodology and Empirical Findings**

### **5.1 Data and Variables**

The objective of the paper is to analyse the linkage between corruption and development in India. CPI is used as a measure of corruption in this study. It varies from 0 (highly corrupt) to 100 (very clean). Human Development is measured using per capita GDP at constant prices and the Human Development Index (HDI). The HDI measures the progress in human development in three areas- a long and healthy life measured by life expectancy at birth, access to knowledge measured by mean years of schooling and expected years of schooling and lastly, standard of living by per capita Gross National Income. It ranges from 0 (lowest) to 1 (highest). The analysis is carried out from 2012-2022 because of the change in methodology to construct the index by TI, and the data for HDI is available till 2021. Table 2 below provides the variables used and sources of data.

**Table 2: Sources of Data for the Study**

Variable	Data Source
Corruption Perception Index (CPI)	The Transparency International (TI)
Per capita GDP at constant prices (2011-12)	Handbook of statistics on Indian Economy, RBI
Human Development Index (HDI)	UNDP website

## 5.2 Methodology and Empirical Findings

The study analyses the relationship between corruption and development in India. Using the bivariate regression technique, two regressions are carried out: 1) CPI and per capita GDP from 2012 to 2022 and 2) CPI and HDI from 2012 to 2021. Stata is used to carry out the analysis. Table 3 gives the descriptive statistics of the variables.

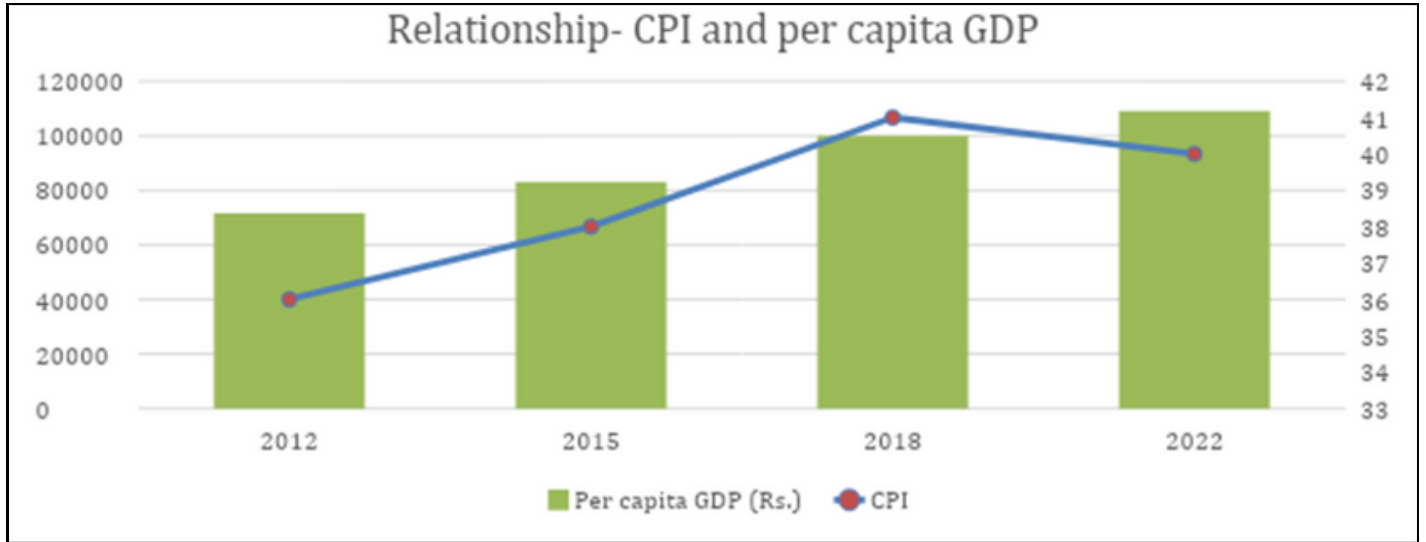
**Table 3: Descriptive Statistics of Variables**

	CPI	Per capita GDP	HDI
Max	41	109060	0.65
Min	36	71609.3	0.6
Mean	39.09	92266	0.63
Median	40	94751.3	0.64
Coefficient of Variation	4.64	14.89	2.67

*Source – Author's calculations*

Figure 1 graphs the CPI and per capita GDP data for India from 2012-2022.

**Figure 1: Relationship between CPI and Per Capita GDP**

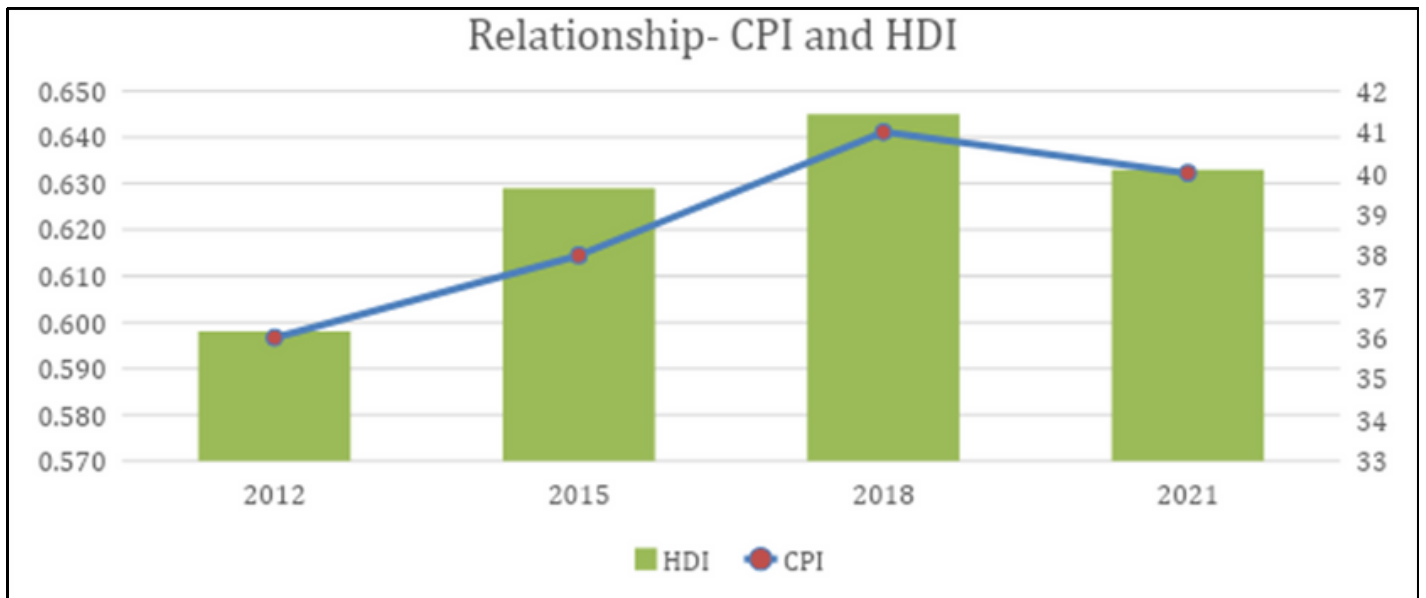


*Source – Author’s Calculations based on CPI and per capita GDP*

We observe that from 2012-2018, improvement in CPI is associated with an increase in per capita GDP. However, for the year 2022, a one-point fall in CPI is associated with higher per capita GDP.

Figure 2 shows the relationship between CPI and HDI between 2012 to 2021.

**Figure 2: Relationship between CPI and HDI**





When HDI is used as a measure of development, an improvement in CPI is associated with an increase in HDI from 2012-18, and a decrease in CPI in 2021 corresponds to lower HDI.

In this part, bivariate regression is carried out between corruption and development. In the first regression, CPI is regressed on per capita GDP, and the per capita GDP is regressed on CPI. Next, HDI is used as a measure of development and similar regressions are carried out. The empirical results for the first regression are given in Table 4 below.

**Table 4: Regression 1- CPI and Per Capita GDP**

Regression 1. Per capita GDP as a measure of Development					
Dependent Variable - CPI	Coefficients	P- value	Dependent Variable - Per capita GDP	Coefficients	P- value
Per capita GDP	0.0001167***	0	CPI	6698.21***	0
	-5.38			-5.68	
Constant	28.32***	0	Constant	-169573.3***	0.005
	-14.79			(-3.68)	
R-squared	0.78	0.0003	R-squared	0.78	0.0003
No. of Observations	11		No. of Observations	11	

The regression results indicate CPI and per capita GDP are positively related; that is, improvement in corruption levels is associated with higher per capita GDP and vice versa. The relationship is statistically significant at a one per cent level of significance. Table 5 below shows the regression results when HDI is used as a measure of development.

**Table 5: Regression 2- CPI and HDI**

<b>Regression 2. HDI as a measure of Development</b>					
<b>Dependent Variable -CPI</b>	<b>Coefficients</b>	<b>P- value</b>	<b>Dependent Variable - HDI</b>	<b>Coefficients</b>	<b>P- value</b>
HDI	107.63***	0	CPI	0.0086***	0
	-9.93			-9.93	
Constant	-28.82***	0.003	Constant	0.295***	0
	(-4.22)			-8.73	
R-squared	0.925	0	R-squared	0.925	0
No. of Observations	10		No. of Observations	10	

The empirical findings for regression 2 also show that lower levels of corruption correspond to better HDI and the other way around; also, the relationship is statistically significant at a one per cent level of significance.

## **6. Conclusion and Policy Implications**

There is broad consensus among economists and policymakers on the adverse effects of corruption on growth and development. Corruption is also identified as one of the significant reasons for the dismal performance of Sustainable Development Goals, especially in developing countries (Sustainable Development Report, 2023). According to the CPI of Transparency International, corruption levels remain high in India. Its CPI score (40) falls below both the world average (43) as well as that of the Asia Pacific region (45). The study aims to investigate the linkage between corruption and development in India from 2012 to 2022. Corruption is measured using the CPI by Transparency International, and development is measured using per capita GDP and the Human Development Index (HDI).

The study examines the relationship between corruption and development using the technique of bivariate regression. Two sets of regression equations are estimated- 1. CPI and per capita GDP over the period 2012-2022 and 2. CPI and HDI over the period 2012-21. The empirical results indicate that a lower level of corruption is consistent with an improvement in per capita GDP as well as HDI and vice versa. In addition to this, the results are statistically significant at a one per cent level of significance.

Hence, in order to achieve superior development outcomes, be it health, education, income, investment, and more, it becomes essential to reduce corruption levels.

India has taken a few steps to curtail corruption, one of which was the establishment of the Comptroller and Auditor General (CAG) of India in 1971 by the GoI. The main role of CAG is to audit the finances of all public institutions. In 2005, the government enacted the Right to Information (RTI) legislation. According to the RTI Act, every citizen has the fundamental right to get information from a government organisation or any institution that the government aids.

There is much to learn from countries such as Singapore and Hong Kong that have significantly reduced their corruption levels, mainly because of the governments' strong will. They made several changes, such as restructuring the legal system, reforming the administration and increasing the salaries of public officials, to name a few (Delabarre, 2021). Some other examples are Botswana, Estonia and South Korea. There are many factors that explain this, ranging from the determination to fight corruption at the top level of the government.

However, the efforts of the citizens and their push on the government play an equally important role (Terracol, M. 2015). In addition to that, transparency in areas related to the preparation and implementation of government budgets, the right to information from governments and government-aided institutions and the role of E-Governance, that is, greater use of technology at various government levels in dealing with citizens, businesses and other organisations is essential to reduce corruption levels.

Corruption is a big problem for India, and the efforts to curb it are inadequate. Very strong anti-corruption measures are required, which would require significant reforms in the judicial system and existing laws. It is imperative for India to reduce corruption levels for it to achieve higher growth and better human development outcomes.

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