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Nexus between Democracy, Corruption, and Income Inequality in South Asia

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Nexus Between Democracy, Corruption, and Income Inequality in South Asia

*Rozina Shaheen and Muhammed Haroon Amjad**

ABSTRACT

This study explores the interplay between corruption, democracy, and income inequality in South Asia, analysing data from 2012 to 2022. It incorporates variables from the Transparency International Corruption Perception Index (TI-CPI), Democracy Index by the Economist Intelligence Unit (EIU), and measures of income inequality, in addition to other control variables relevant to political governance and economic performance. Utilising the Feasible Generalised Least Squares (FGLS) approach, the research reveals that democracy, regulatory quality, income inequality, and population growth are associated with increased corruption, while effective corruption control, rule of law, and economic growth contribute to its reduction in the region. These findings offer valuable insights for policymakers on enhancing democratic structures, governance efficiency, and the rule of law to combat corruption in South Asia.

Keywords: Corruption, Democracy, Income Inequality, FGLS, South Asia.

JEL Classification Codes: O15, D73

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1. INTRODUCTION

A democratic political system aims to empower citizens, providing them a say in governance and the capacity to remove leaders from public office. In contrast, corruption involves the misuse of public offices for private gain. It is often assumed that politicians in a democratic setup are less susceptible to corrupt practices compared to those in authoritarian regimes.

The body of literature examining the link between democracy and corruption has expanded notably since Transparency International (TI) began its annual publication of the Corruption Perception Index (CPI). Transparency International (2010) has labelled corruption as one of the ‘biggest global issues of our time,’ noting its detrimental effects on economic growth (Mauro 1995) and its significant hindrance to poverty reduction efforts.

Although both authoritarian and democratic regimes face the issue of corruption, however, in a democratic political structure, people can vote out politicians in case public trust is violated. In addition, under a democratic system, politicians can develop a regulatory framework to limit corruption, and this system allows criticism and freedom to media which are key pillars to help the public in identifying corrupt practices by public officials and political leaders.

However, empirical literature finds the relationship between corruption and democracy as mixed. Some studies suggest a higher level of corruption at the initial phase of democratisation (Mohtadi and Roe 2003) as young democracies lack transparency and don’t have a system to monitor rent-seeking practices by public officials. In this context, the current research aims to investigate the nexus between corruption and democracy in the South Asian region. The study also examines the relationship between income inequality and corrupt practices, a topic that has long intrigued political scientists and economists due to the potential role of income disparity in fostering corruption. Previous research has primarily focused on the impact of corruption on economic development, often overlooking its connection with income inequality. This oversight means the relationship between inequality and corruption remains insufficiently explored. Income inequality can perpetuate the normalisation of corrupt practices, thereby exacerbating and entrenching the existing disparities. This situation often leads to a cyclical pattern of inequality leading to corruption, which in turn further deepens inequality. Moreover, in societies marked by high levels of corruption and inequality, there is a common perception among the poor and marginalised that the wealthy and powerful are inherently corrupt and success cannot be achieved through honest means. This belief can lead them to rationalise their involvement in minor corrupt activities. People are also more prone to believe that political structures and laws in unequal societies are unfair, favour the

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wealthy, and thus lack legitimacy. When laws and rules are viewed as unjust, more individuals are inclined to violate them. Thus, as inequality rises, people will find it easier to rationalise their corrupt behaviour.

Furthermore, societies with high levels of inequality are more likely to restrict low-income groups' access to essential public services such as education and healthcare, compared to societies with lower inequality. To obtain basic services, individuals are, therefore, more prone to rely on small-scale corruption or become the victims of bureaucratic extortion. Although the quantity of kickbacks they really pay may be minute due to their low financial resources, the poor will consider corruption levels to be quite high and will start to view corruption as the required proper behaviour or a social norm.

However, the effect of income inequality on corruption will vary between societies with higher and lower levels of democracy. The wealthy and powerful can use or encourage repression in societies with authoritarian governments to further their interests. Yet, in a democratic society, oppression cannot be used to trade for corruption; as a result, the affluent are forced to rely more and more on corruption as inequality rises and pressure for redistribution mounts. While average levels of corruption are expected to be higher in nations with more autocratic governments, the impact of inequality on corruption will be greater in nations with more democratic governments.

In a grossly unequal society, while elections are conducted, the majority of the poor are likely to sell their votes in exchange for monetary compensation, gifts, or other favours, while the wealthy and powerful would purchase votes to preserve the status quo of inequality. Instead of opposing massive corruption by the wealthy and powerful, which would have allowed them to receive much larger advantages, the poor are more likely to be satisfied with modest rewards by taking part in tiny corrupt transactions and patronages.

Table 1 presents the key socioeconomic indicators of selected countries in South Asia. It shows the relatively higher GDP per capita income in Bhutan and Sri Lanka whereas these two countries also have the least population growth rate in the region. Furthermore, Sri Lanka and India are characterised with higher literacy rate while Pakistan and Sri Lanka face the challenges of higher inflation rate and fiscal deficit (as % of GDP):

Table 1: Key Socioeconomic Indicators of Selected South Asian Countries

	GDP Per Capita USD	Population Growth Rate	GINI Coefficient	Literacy Rate	Unemployment Rate	Inflation Rate	Fiscal Deficit % of GDP
Bangladesh	1784.74	1.07	57	74.7	4.7	7.7	4.3
Bhutan	3477.57	0.64	42.1	73.1	3.6	5.9	7.8
India	2301.42	0.68	82.3	77.7	7.3	6.7	6.4
Nepal	1371.97	1.71	58.5	71.2	11.1	6.3	12.8
Pakistan	1658.36	1.89	29.6	63	6.4	19.9	7.9
Sri Lanka	3393	0.27	51	92.4	6.7	25	10.2

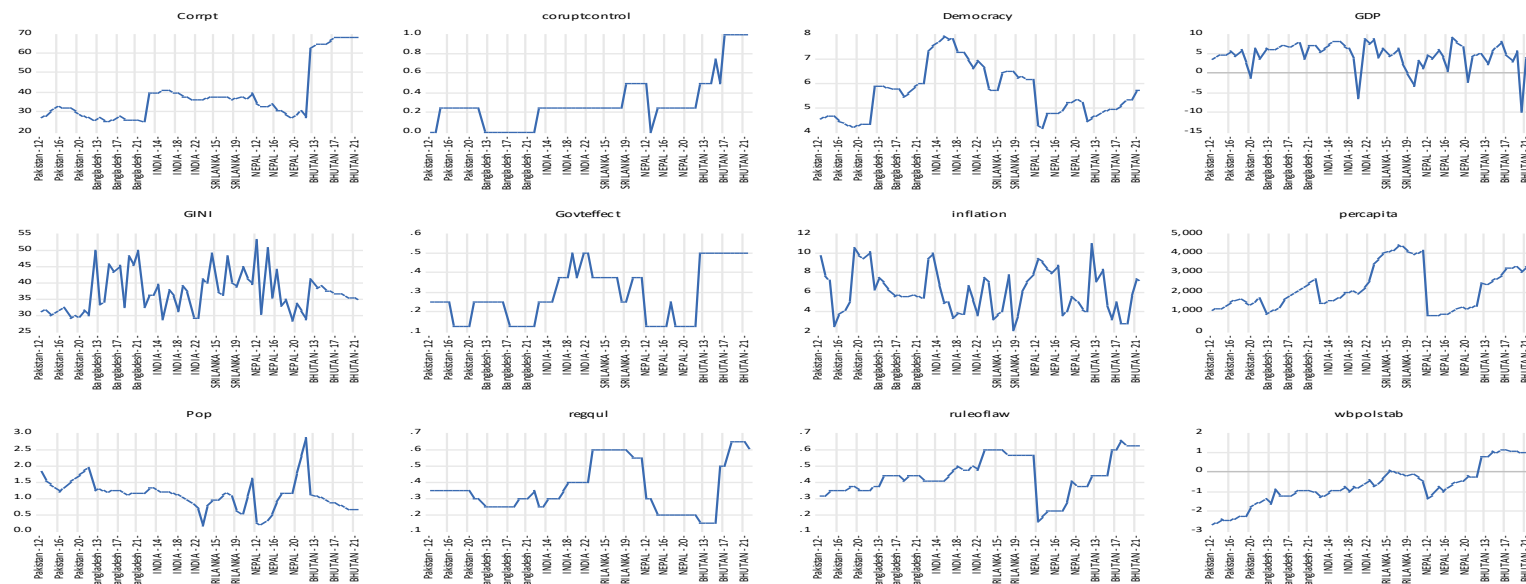
Source: World Bank Database (2022).

Similarly, South Asian countries, particularly Bangladesh, India, and Pakistan, are grappling with corruption and weak governance. These nations rank poorly in both the TI-CPI and the Income Inequality Index. Despite experiencing sustained economic growth and a reduction in poverty rates over the past two decades, the South Asian region's progress is being hindered by pervasive corruption, as noted by the World Bank in 2014.

Empirical studies indicate that reducing corruption in Pakistan to levels similar to Singapore could enhance its GDP growth by two percent. Likewise, if India were to lower its corruption to levels comparable to Scandinavian countries, it could see a 1.5% increase in GDP growth rate (Baru 1998). According to Figure 1, Bangladesh and Pakistan rank lowest in the CPI within South Asia, while Bhutan is identified as having the lowest levels of perceived corruption in the region. India, despite being the most democratic, along with Nepal and Pakistan, characterised as more autocratic regimes, exhibit varying degrees of corruption. Additionally, income inequality is significantly higher in India, Bangladesh, and Sri Lanka, as shown in Figure 1:

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Figure 1: Corruption, Democracy & Inequality Dynamics in South Asia



Source: World Bank Database (2022).

The current research adopts the traditional definition of corruption which is considered somewhat narrow but is widely accepted i.e., ‘Abuse of public power (or public office) for private gain’ (Jong-sung and Khagram 2005). Although there are no reasons to exclude corporate embezzlement, fraud in the non-profit sector, etc., from the definition, there are no available cross-national measures that capture this fuller range of corruption.

This study stands out as it empirically investigates the relationship between corruption, democracy, and income inequality in the South Asian region. It utilises a range of governance-related factors, including corruption control, effective governance, regulatory quality, and rule of law, analysing annual data from 2012 to 2022. Additionally, the research incorporates control variables like GDP growth rate, inflation, and per capita income, focusing on countries such as Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka. Using the Feasible Generalized Least Squares (FGLS) method to analyse the data, the study finds that democracy and income inequality are linked to higher levels of corruption in the region. These results align with theoretical expectations, as new democracies often have weaker accountability and regulatory frameworks, providing politicians with greater opportunities for rent-seeking and misuse of public office.

The rest of the paper is organised as follows: Section 1 briefly discusses the relevant literature, while Section 2 elaborates the data and model specification. Whereas Section 3 deliberates on the estimated results and Section 4 concludes the research and provides some policy insights.

2. LITERATURE REVIEW

To explore the connections between corruption and democracy, there is a noticeable lack of literature, with only a limited number of empirical studies available on the subject. Theoretically, a democratic government is assumed to be less corrupt due to strong public accountability. However, empirical literature finds mixed evidence. For instance, studies such as Ades and Di Tella (1999) noted a negative relationship between democratic political regimes and corruption suggesting that lack of political rights leads to less corruption. In contrast, Goel and Nelson (2005) found that a higher degree of civil rights motivated less corruption. Similarly, Chowdhury (2004) suggested a negative relationship between Vanhanen’s (1992) Democracy Index and corruption. Likewise, Treisman (2000) argued that democratic regimes with a longer history or more established democracies tend to have lower levels of corruption; and that democracies are significantly less corrupt only after 40 years. However, there are studies that suggest an inverted curvilinear relationship between democracy and corruption, identifying the most democratic and most authoritarian regimes as least corrupt (McMann et al., 2020). Corruption increases in the initial phases of democratisation and reduces when democratic regimes become stable and mature (Mohtadi and Roe 2003; Hadiz and Robison 2004; McLeod 2005)

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Bäck and Hadenius (2008) argued that corruption tended to increase in the initial stages of democratisation, as autocratic controls at the top level dissipated without effective monitoring of public officials at lower levels. Meanwhile, Charron and Lapuente (2010) related a curvilinear relationship between the quality of governance and democracy to the economic development stage of a country. In their study of a panel of 125 countries, they suggested that after a certain degree of economic development, there was a strong demand to improve the quality of governance, whereas in poorer countries, there was less incentive for long-term bureaucratic investments.

Montinola and Jackman (2002) demonstrated that the relationship between democracy and corruption could be nonlinear; while partial democratisation might initially increase corruption, beyond a certain threshold, democracy tends to inhibit it. Other studies, such as those by LaPalombara (1994) and Goel and Nelson (1998), suggested that a larger government size or an extensive governmental reach could lead to higher levels of corruption. However, empirical evidence from sources like Porta et al. (1999) and Friedman et al. (2000) indicated that larger governments tend to be less corrupt. Meanwhile, findings on the effects of decentralisation have been contradictory, as highlighted by Treisman (2000) and Fisman and Gatti (2002).

Similarly, Rose-Ackerman (1999) argued that elections increase the accountability of politicians but also produce new incentives for corruption as political financing needs increase. Protestantism's link with democracy and economic growth provides two additional causal pathways. Several empirical studies have revealed a substantial relationship between Protestantism and corruption (La Porta et al., 1999; Sandholtz and Koetzle 2002; Treisman 2000; Paldam 2002). According to La Porta et al., (1999) legal systems reflect the relative strength of the state vis-à-vis property owners. Civil law was developed as a sovereign tool for state construction and economic control, but the British common law system was created to protect property owners against the sovereign's attempts to expropriate property. Treisman (2000) added that British legal traditions had a propensity to place a strong emphasis on procedural fairness. He discovered that former colonies of the British were substantially less corrupt. While countries with French legal or socialist origins have higher levels of corruption, legal origins are insignificant, controlling for other factors (La Porta et al., 1999).

In addition, Huntington's cultural areas of Western Europe, Latin America, and Old Communist countries (Paldam 2002) and Hofstede's cultural values such as power distance, uncertainty avoidance, and masculinity were also significant predictors of corruption (Husted 1999). Although some scholars also suggested that ethno-linguistic fractionalisation would increase corruption (Mauro 1995), its significance disappeared after adding per capita income and latitude controls (La Porta et al., 1999). While using data from 80 developing countries, Oueghlissi and Derbali (2023) examined the link

between corruption and income inequality. Their study revealed that a democratic regime has the potential to decrease corruption. However, the positive impact of democracy on reducing corruption is undermined by the presence of higher unemployment rate in these nations.

While linking corruption with income inequality, Rose-Ackerman (1999) suggested that corruption was a function of motivations and opportunities. As income inequality increases, the rich will have greater resources that can be used to buy influence, both legally and illegally (Glaeser et al., 2003). The rich as a class or interest groups can employ legal lobbying and political contributions or bribery (grand political corruption) to influence law-making processes. The wealthy, whether they are firms, individuals, or interest groups, may influence how laws are implemented through bribery or connections (a practice known as bureaucratic corruption) and purchase favourable legal interpretations (judicial corruption). As inequality rises, leading to a larger portion of the population becoming relatively poorer, there is a likely increase in demands for more extensive redistribution, typically through higher levels of progressive taxation. According to Meltzer and Richard (1981), as these redistributive pressures intensify, the wealthy are increasingly motivated to engage in political corruption to reduce tax rates. Additionally, they may resort to bureaucratic corruption as a means to evade tax collection more effectively.

The non-wealthy have more to gain by rooting out corruption, even though the wealthy are more motivated and capable of acting corruptly at higher levels of inequality. The middle class and the poor typically have a reason to watch out for, reveal, and halt corruption by the powerful and wealthy. But the poor lack the resources to organise an effective countermeasure, and in countries with high levels of inequality, a small middle-class individual is probably less relevant. Holding other circumstances constant, high levels of inequality (and related poverty) are likely to hinder middle class and poor groups' abilities to keep an eye on the corrupt practices of the wealthy and powerful (McCarthy and Zald 1977).

There is limited empirical literature to analyse the direct impact of income inequality on corruption. The empirical tests conducted by Husted (1999) and Paldam (2002) were far from rigorous, and both authors' primary focus was on cultural variables. Husted (1999) used TI's CPI for 1996 and the income share of the top 10% in 1996 from the World Bank's data for a sample of only 36 countries. Paldam (2002) used TI's CPI for 1999 coefficients for different years from the World Bank's data for samples of 85 to 100 countries. Both authors' OLS regressions showed that only per capita income and cultural variables (cultural values for Husted and cultural areas for Paldam) were significant. Both authors employed OLS regressions, which cannot address potential biases associated with measurement error, omitted variables, and reverse causation. For per capita income, the

relative magnitude of reverse causality may be larger, and the measurement error is presumably much larger, leading to a relative miscalculation of inequality. As a result, we think there is a lot of substantial room for more thorough statistical research of how inequality affects corruption.

Wei et al., (2023) and Li et al., (2000) found a significant effect of corruption on inequality through cross-country analysis. Gupta et al., (2002) hypothesised that corruption exacerbated inequality by maintaining an unequal distribution of wealth and unequal access to education, reducing the progressiveness of the tax code, reducing the amount and effectiveness of social expenditure, and slowing down economic development.

Moreover, it is often claimed that continuous administration of ‘larger’ doses of democracy will strengthen the institutions and help realise the ideal of fairness and justice in society. From both theoretical and empirical perspectives, the relationship between democracy, inequality, and economic progress has drawn more attention over time (Alesina and Perotti 1996; Alesina and Rodrik 1994). Studies that have already been conducted on the connection between economic development, income disparity, and democracy have focused in one of two different approaches. Initially, they looked at the effects of certain amounts of ‘collective well-being’ and ‘education’ in a given time on the process of democratisation. Secondly, they investigated how the implementation of democratic institutions affected the nation’s economy (Muller 1988).

This study, hence, stands out in its examination of democracy, income inequality, and other governance-related factors, alongside control variables, as key determinants of corruption in South Asia. To the best of our knowledge, there is no prior research that analyses this specific data set using our proposed empirical methodology. Thus, this research contributes new insights to the existing body of literature and offers valuable policy guidance for regional policymakers.

3. DATA AND MODEL SPECIFICATION

To determine the linkages between corruption, democracy and income inequality, this study employs the dynamic panel data approach while using the TI-CPI as the dependent variable; and employing social, political, and economic and governance related factors as exogenous variables. The model is specified as follows:

$$\begin{aligned} COR_{it} = & \beta_0 + \beta_1(DEM)_{i,t} + \beta_2(CC)_{i,t} + \beta_3(RQ)_{i,t} + \beta_4(RL)_{i,t} + \beta_5(PS)_{i,t} + \\ & \beta_6(GE)_{i,t} + \beta_7(IE)_{i,t} + \beta_8(GDP)_{i,t} + \beta_9(PC)_{i,t} + \beta_{10}(POP)_{i,t} + \\ & \beta_{11}(INF)_{i,t} + \varepsilon_{it} \end{aligned} \tag{i}$$

where COR_{it} is the Corruption Perception Index (CPI) for cross section i at time t ; $(DEM)_{i,t}$ is Democracy Index; $(CC)_{i,t}$ is corruption control; $(RQ)_{i,t}$ is regulatory quality; $(RL)_{i,t}$ is rule of law; $(PS)_{i,t}$ is political stability; $(GE)_{i,t}$ is government effectiveness; $(IE)_{i,t}$ is income inequality; $(GDP)_{i,t}$ is Gross Domestic Product (GDP); $(PC)_{i,t}$ is per capita income; $(POP)_{i,t}$ is size of population; $(INF)_{i,t}$ is the inflation rate; and finally ε_{it} is the error term.

The TI-CPI measures public sector corruption on a scale of 0 -100, where a score of 100 indicates very clean, and 0 implies the most corrupt. This index is estimated by the Transparency International Organisation, and it covers different types of political and administrative corruption such as misuse of public funds and bribes. To measure the democratic structure of a country, the current research employs the Democracy Index which is estimated by the Economist Intelligence Unit (EIU). The Democracy Index is measured on a scale of 0-10 and is a composite index of 60 indicators which are rated as 0, 0.5, and 1, and categorised into five major groups that include civil liberties; the electoral process and pluralism; government functioning; political culture; and political participation. While control of corruption is based on a scale of -2.5 (weak) to 2.5 (strong) where -2.5 indicates a weak system of controlling corruption; and 2.5 shows a strong system. This index captures perceptions of the misuse of public power for private gain, encompassing both grand and petty forms of corruption (The World Bank 2022). The variable regulatory quality is indexed on a scale of -2.5 to 2.5 where -2.5 being the weak and 2.5 as strong. This index assesses the capability of the government to devise and execute effective regulations and policies to facilitate private sector development. It contains categories such as unfair competitive practices; price controls; discriminatory tariffs; excessive protections; and discriminatory taxes. In addition, the rule of law index is scaled on -2.5 – 2.5 where 2.5 being strong and -2.5 being the weak situation. Its components are violent crime; organised crime; fairness of the judicial process; enforceability of contracts; speediness of the judicial process; confiscation/expropriation; intellectual property rights protection; and private property protection. The variable political stability is also scaled from -2.5 to 2.5, where – 2.5 shows politically unstable and 2.5 indicates a politically stable regime. It contains subcomponents such as orderly transfers; armed conflict; violent demonstrations; social unrest; international tensions; and terrorist threats. Moreover, government effectiveness measures the quality of public services, and it is scaled from -2.5 (being weak) to 2.5 (being strong), and it includes the components of quality of bureaucracy / institutional effectiveness and excessive bureaucracy / red tape. To measure income inequality, the study used the GNI index

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which is scaled as 0 -100, where a value of zero implies perfect equality whereas a value of 100 shows perfect inequality.

Table 2: Variables Description

Variables	Description	Source	Expected Sign
COR	Corruption Perception Index on a scale of 100 -0, 100 as cleanest and 0 as most corrupt.	Economist Intelligence Unit	
DEM	Democracy Index measured on a scale of 0 -10, 0 implies autocratic and 10 being most democratic.	Economist Intelligence Unit	$\beta_1 > 0$
CC	Corruption Control Index on a scale of -2.5 being weak and 2.5 as strong.	Economist Intelligence Unit	$\beta_2 > 0$
RQ	Regulatory Quality Index on a scale of -2.5 being weak and 2.5 as strong.	Economist Intelligence Unit	$\beta_3 > 0$
RL	Rule of Law on a scale of -2.5 being weak and 2.5 as strong.	Economist Intelligence Unit	$\beta_4 > 0$
PS	Political Stability on a scale of -2.5 being weak and 2.5 as strong.	Economist Intelligence Unit	$\beta_5 > 0$
GE	Governance Effective on a scale of -2.5 being weak and 2.5 as strong.	Economist Intelligence Unit	$\beta_6 > 0$
IE	Income Inequality; GINI coefficient on the scale of 0 – 100, 0 in case perfect equality and 100 for perfect inequality.	Economist Intelligence Unit	$\beta_7 < 0$
GDP	Gross Domestic Product / Growth Rate	World Bank Database	$\beta_8 > 0$
PC	Per Capita Income	World Bank Database	$\beta_9 > 0$
POP	Population Growth Rate	World Bank Database	$\beta_{10} < 0$
INF	Inflation Rate	World Bank Database	$\beta_{11} < 0$

Source: Authors' own.

3.1. Model Specification

Panel data often presents econometric challenges such as autocorrelation, heteroskedasticity, and cross-sectional dependence. Beck and Katz (2011) argue that these issues can render the Ordinary Least Squares (OLS) approach inefficient and potentially biased for panel data analysis, as it may violate certain underlying assumptions. This viewpoint is further supported by Schmitt (2016), who also highlights similar concerns regarding the application of OLS in panel data contexts. Therefore,

current research employs the Feasible Generalized Least Squares (FGLS) approach introduced by Parks (1967). This approach is appropriate when number of time periods (T) is greater than number of cross-sectional units (T>N). The model is specified as follows:

$$z_{it} = \Gamma_{it}\beta_{it} + \epsilon_{it} \quad i = 1, 2, \dots, N; t = 1, \dots, T \quad (\text{ii})$$

where z_{it} and Γ_{it} are the dependent and independent variables respectively for the i^{th} unit at time t , whereas β is the vector of slope coefficients and ϵ_{it} is the error term containing the typical ordinary least squares properties such as zero mean, homoscedastic and uncorrelated with itself as well as with independent variables Γ . We can write Equation (ii) as:

$$\begin{bmatrix} z_1 \\ z_2 \\ \vdots \\ z_N \end{bmatrix} = \begin{bmatrix} \Gamma_1 \\ \Gamma_2 \\ \vdots \\ \Gamma_N \end{bmatrix} \beta + \begin{bmatrix} \epsilon_1 \\ \epsilon_2 \\ \vdots \\ \epsilon_N \end{bmatrix} \quad (\text{iii})$$

and we can write the variance matrix of the disturbance terms as follows:

$$[\epsilon\epsilon'] = \Omega = \begin{bmatrix} \sigma_{1,1}\Omega_{1,1} & \sigma_{1,2}\Omega_{1,2} & \cdots & \sigma_{1,N}\Omega_{1,N} \\ \sigma_{2,1}\Omega_{2,1} & \sigma_{2,2}\Omega_{2,2} & \cdots & \sigma_{2,N}\Omega_{2,N} \\ \vdots & \vdots & \ddots & \vdots \\ \sigma_{N,1}\Omega_{N,1} & \sigma_{N,2}\Omega_{N,2} & \cdots & \sigma_{N,N}\Omega_{N,N} \end{bmatrix}$$

and $\Omega_{i,j}^2$ is used to model cross-sectional correlations for balanced panels. In addition, the model considers the usual assumptions of the classic ordinary least squares regression such as $E[\epsilon_{i,t}] = 0$, $Var[\epsilon_{i,t}] = \sigma^2$, $Cov[\epsilon_{i,t}, \epsilon_{j,s}] = 0$ if $t \neq s$ or $i \neq j$. The Generalised Least Squares (GLS) estimate the regression coefficient as:

$$\hat{\beta}_{GLS} = (X'\Omega^{-1}X)^{-1}X'\Omega^{-1}Y \quad \text{And} \quad \widehat{Var}(\hat{\beta}_{GLS}) = (X'\hat{\Omega}^{-1}X)^{-1}$$

Whereas Ω matrix can be written as Kronecker product: $\Omega = \sum_{N \times N} \otimes I_{T_i \times T_i}$. To

estimate the variance matrix, we substitute the $\hat{\Sigma}$ for Σ and $\hat{\Sigma}_{i,j} = \frac{\hat{\epsilon}_i' \hat{\epsilon}_j}{T}$.

4. MODEL ESTIMATION AND ANALYSIS

This research starts its empirical strategy through the analysis of descriptive statistics and pairwise correlations of the selected variables (Table 2). The estimates reveal an average

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value of CPI (on a scale of 100 being very clean to 0 being highly corrupt) as 38.33 with relatively larger dispersion in the South Asian region. In addition, the average value of the Democracy Index is 5.6 (on a 0 – 10 scale) with a minimum value of 1.04 and maximum value of 7.92 (Table 3). The pairwise correlation coefficients reveal a positive and weak correlation between corruption and democracy indices. Whereas political stability, effective governance, and rule of law variables have positive and strong relationship with the CPI that any improvement in these structural variables can help to reduce corruption in the region. In addition, control variables such as population growth rate and GDP growth rate have negative correlation whereas per capita income has positive association with the CPI.

Table 3: Descriptive Statistics and Pairwise Correlation

10.5	COR	DEM	PS	GE	RQ	RL	CC	GINI	POP	GDP	PC	INF
OBS	66	66	66	66	66	66	66	66	66	66	66	66
MEAN	38.33	5.6	0.5	0.29	0.37	0.44	0.31	36.91	1.12	4.62	2166.2	6.1
ST DEV	13.64	1.04	0.2	0.14	0.15	0.12	0.27	6.4	0.47	3.44	1089.3	2.26
MIN	25	4.16	0.15	0.13	0.15	0.16	0	28.3	0.13	-10.01	794.09	2.14
MAX	68	7.92	0.85	0.5	0.65	0.66	1	53	2.85	8.98	4401.2	10.92
COR	1											
DEM	0.01	1										
PS	0.77	0.38	1									
GE	0.79	0.28	0.73	1								
RQ	0.37	0.23	0.39	0.5	1							
RL	0.55	0.42	0.69	0.7	0.78	1						
CC	0.87	-0.09	0.61	0.65	0.49	0.51	1					
GINI	0.01	0.16	0.16	0.01	0.08	0.13	-0.04	1				
POP	-0.38	-0.17	-0.29	-0.35	-0.36	-0.22	-0.32	-0.39	1			
GDP	-0.15	0.15	-0.1	-0.07	-0.26	-0.14	-0.3	0.02	0.02	1		
PC	0.47	0.29	0.61	0.6	0.8	0.87	0.47	0.25	-0.32	-0.15	1	
INF	-0.11	-0.24	-0.22	-0.18	-0.29	-0.37	-0.1	0.07	0.05	-0.14	-0.29	1

Source: Authors' own calculations.

To decide an appropriate econometric method for the estimation of panel data models, it is required to check the characteristics of the sample data. In this context, the authors applied several tests to inspect the stochastic disturbance term for group-wise

heteroscedasticity, autocorrelation, and cross-sectional correlation within the panels. Table 3 indicates some variables have strong correlation, indicating collinearity among few variables. However, multicollinearity is not a major issue in the panel data, having heterogeneous cross-sectional units in the sample. This research employs the Wald test suggested by (Greene 2018) to test the group-wise heteroscedasticity; whereas (Wooldridge 2010) test is used to examine the autocorrelation. Table 4 shows the results of these tests and confirm the presence of group-wise heteroscedasticity and autocorrelation. Moreover, to check for the cross-sectional dependence (CD), this research employs Pesaran, Friedman and Frees tests and results are presented in Table 4:

Table 4: Models Fit Tests

Wooldridge Test for Serial Correlation		Modified Wald Test for Group Wise		Cross Sectional Dependence Tests
Wooldridge Test		Modified Wald Test		Pesaran Statistics = 2.458, Pr = 0.0140
H₀: No First Order Serial Correlation		H₀ = $\sigma_i^2 = \sigma^2$ for all i		Friedman Statistics = 18.848, Pr = 0.0021
F(1, 5)	6.942	χ^2 (01)	80.61	Frees Statistics = -0.047
p-val > F	0.0463	p-val > χ^2	0.000	Critical Values from Frees' Q Distribution $\alpha = 0.10$: 0.2333, $\alpha = 0.05$: 0.3103, $\alpha = 0.01$: 0.4649

Source: Authors' own calculations.

The estimates of these three CD based tests reveal dependency between the cross-sectional units, indicating that any change in one country affects the other countries in the sample. The estimates from these diagnostic tests help to select the appropriate method to estimate the model. Therefore, this research selected the FGLS model while adjusting the stochastic error term for group-wise heteroscedasticity and autocorrelation. (Hansen 2007) suggests that the FGLS approach can asymptotically generate more powerful and efficient estimators than ordinary least squares.

Table 5 presents the estimates from feasible generalised squares. It shows a negative and statistically significant relationship between the CPI and Democracy Index. Corruption perception is measured on scale of 100-0, where a score of 100 reflects the cleanest whereas a score of 0 shows the most corrupt. Similarly, the Democracy Index is measured

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on scale of 10 to 0, and a score of 10 indicates the most democratic and 0 shows an autocratic nation. Therefore, a negative relationship between the CPI and Democracy Index implies that an improvement in democratic index induces more corruption in the South Asian region. The FGLS estimates also identify the positive and statistically significant relationship between political stability and CPI, which implies that if a country is politically stable then, there is a reduction in corrupt practices. Similarly, corruption control practices, effective governance, and implementation of the rule of law have positive and statistically significant impact on CPI and it shows that adoption of corruption control measures, effective governance and implementation of rule of law can reduce corruption in the region. In addition, this research finds negative and statistically significant relationship between regulatory quality and CPI which shows that any changes in the regulatory quality may cause more corrupt practices in the region. This research also identifies a negative relationship between income inequality and CPI which shows that an increase in income inequality causes higher levels of corruption in the region. This research also employs control variables such as population growth rate, GDP growth rate, GDP per capita and inflation. However, inflation rate and per capita income both were statistically significant; therefore, they were dropped from the estimation. This research finds a negative and statistically significant relationship between CPI and population growth rate, indicating a higher population growth rate leads to more corruption practices. In contrast, higher economic growth in the region leads to less corruption in society.

Table 5: Feasible Generalised Least Squares Regression

Corrpt	Coefficient	Std.err	z	P> z	[95% conf. interval	
Democracy	-1.87752	0.57449	-3.27	0.001	-3.0035	-0.75154
Political Stability	18.342	3.178439	5.77	0	12.11238	24.57163
Effective Governance	21.32284	4.088735	5.22	0	13.30906	29.33661
Regulatory Quality	-11.9648	5.415813	-2.21	0.027	-22.5796	-1.35004
Rule of Law	14.73225	8.640665	1.7	0.088	-2.20314	31.66764
Corruption Control	20.98318	2.245509	9.34	0	16.58206	25.38429
GINI	-0.07121	0.042361	-1.68	0.093	-0.15423	0.011821
Population Growth Rate	-2.47057	1.067507	-2.31	0.021	-4.56284	-0.37829
GDP	0.03414	0.085098	2.4	0.018	0.23265	2.00929
_cons	29.67333	4.149859	7.15	0	21.53976	37.80691
Wald chi2(8) = 312.98		Prob > chi2 = 0.0000				

Source: Authors' own calculations.

5. CONCLUSION AND POLICY IMPLICATIONS

This research aimed to investigate the relationship between corruption, democracy, and income inequality in South Asia. In this context, the study considered a sample of six countries: Bhutan, Bangladesh, India, Nepal, Pakistan, and Sri Lanka while considering the annual data for the period 2012-22. The authors employed variables such as CPI, Democracy Index, corruption control, regulatory quality, political stability, government effectiveness, income inequality and some control variables such as GDP, per capita income, population growth rate, and inflation rate. After the analysis, the FGLS model was employed. The estimates revealed that some variables such as democracy, regulatory quality, income inequality and population growth rate have negative and statistically significant impact on CPI which implies that these variables induce more corruption in the region. In contrast, some variables such as political stability, corruption control measures, government effectiveness, and rule of law can help to reduce corruption in the South Asian region. The findings provide insights for policymakers to introduce structural reforms in terms of improved regulatory quality, effective governance, political stability and implementation of the rule of law to control corruption in the region. This research additionally indicates that reducing income inequality could be a key strategy in combating corruption in South Asia. Moreover, it advocates for improvements in the electoral system, stressing that a well-functioning democratic system should act as a mechanism to control corruption.

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