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The Impact of Governance, Corruption Control, and Political Stability on Economic Growth in Nepal: An Econometric Analysis

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Abstract

This research investigates the impact of governance quality, political stability, corruption management, regulatory quality, and governmental effectiveness on economic growth in Nepal, utilizing annual time series data spanning from 1996 to 2022. Advanced econometric techniques, including Fully Modified Ordinary Least Squares (FMOLS), Dynamic Ordinary Least Squares (DOLS), and Canonical Cointegrating Regression (CCR), are employed to analyze both short- and long-term relationships. The results reveal a significant positive relationship between political stability and economic growth (FMOLS coefficient = 5.51E+09, $p < 0.01$), underscoring the importance of a stable political environment. Conversely, government effectiveness negatively correlates with GDP (FMOLS coefficient = -2.31E+10, $p < 0.01$), suggesting potential inefficiencies in governance. Corruption control exhibits mixed effects, showing a positive influence on GDP in some models (CCR coefficient = 1.11E+10, $p < 0.10$). Similarly, regulatory quality yields variable results, with a positive DOLS coefficient of 9.68E+09 ($p < 0.05$). Johansen's cointegration test confirms significant long-term relationships among the variables, while Granger causality tests identify political stability and government effectiveness as key drivers of GDP. These findings highlight the need for governance reforms that focus on enhancing political stability, improving regulatory quality, and addressing inefficiencies in public administration. Policymakers are urged to implement targeted strategies to promote sustainable economic growth in Nepal.

Keywords: Corruption, economic growth, government effectiveness, governance quality, political stability

Introduction

Nepal has experienced over two dozen government changes in the past three decades, highlighting the urgent need for stability in governance to sustain economic growth. The relationship between governance quality and economic growth has gained significant attention recently, especially in developing countries like Nepal. Governance, encompassing factors such as political stability, regulatory quality, government effectiveness, and control of corruption, is crucial for fostering economic stability and long-term growth. Effective governance plays a crucial role in facilitating the optimal distribution of resources while simultaneously fostering investor confidence and strengthening public trust in institutional frameworks (Kaufmann et al., 2011). On the other hand, weak governance, marked by corruption and instability, increases transaction costs and reduces economic efficiency, ultimately hindering growth (Mauro, 1998). In light of Nepal's recent political transitions and ongoing governance challenges, this study explores the nexus between governance and economic performance.

Nepal has long struggled with socio-economic challenges, including poverty, inequality, and political instability, which have hindered its path toward sustainable development (Khatri & Timsina, 2023). Over the past few decades, frequent political changes and instability have created a volatile economic environment, further exacerbated by corruption and weak regulatory frameworks (Acemoglu & Robinson, 2013). These governance challenges have significantly limited the effectiveness of public policies aimed at promoting growth and development. Studies have shown that political instability, often accompanied by changes in government, creates uncertainty in the business environment, which in turn deters both domestic and foreign investment (Aisen & Veiga, 2013). As such, understanding the role of governance in influencing Nepal’s economic trajectory is essential for crafting effective policy reforms.

Research on governance highlights the detrimental effects of corruption and political instability on economic growth. Corruption diverts resources from productive uses, increases inequality, and reduces public trust in government institutions, all of which negatively affect long-term growth prospects (Tanzi, 1998). Similarly, political instability leads to inconsistent policy implementation and reduces investor confidence, further weakening economic performance (Acemoglu et al., 2001). These factors are particularly relevant to Nepal, where political instability and corruption have created barriers to economic development. In this context, the control of corruption and the establishment of political stability are critical for promoting sustainable growth (Rodrik et al., 2004).

Despite the growing body of literature on governance and economic growth, there is a lack of comprehensive empirical studies focused specifically on Nepal. Much of the existing research either adopts a qualitative approach or relies on descriptive statistics, providing limited insights into the dynamic interactions between governance quality and economic performance (Kaufmann et al., 2011; Rothstein & Teorell, 2008). This study addresses this

gap by employing advanced econometric techniques, including FMOLS, DOLS, and CCR, to examine the long-run and short-run impacts of governance indicators on Nepal's GDP per capita from 1996 to 2022. Unlike previous studies, it integrates multiple governance indicators into a single econometric framework, offering comprehensive insights into their short- and long-term impacts. By focusing on Nepal's unique governance challenges, this research provides valuable, context-specific recommendations for policymakers.

The objective of this study is to evaluate the effects of political stability, government effectiveness, regulatory quality, and control of corruption on Nepal's economic growth. By applying modern econometric techniques, this research aims to provide policymakers with critical insights into which governance factors have the most significant impact on economic performance. The findings will contribute to the ongoing discourse on governance reform in developing countries, highlighting the importance of stable and effective governance structures for fostering sustained economic growth in Nepal (Acemoglu & Robinson, 2013; Rodrik, 2008). Ultimately, this study emphasizes the need for improved governance as a foundation for achieving long-term economic stability and development in Nepal.

Methods and Materials

This study aims to investigate the long-run and short-run relationships between political stability, government effectiveness, regulatory quality, control of corruption, and GDP per capita in Nepal, using annual data from 1996 to 2022. The econometric models employed for this analysis include FMOLS, DOLS, and CCR. These techniques were chosen for their ability to provide robust estimates in the presence of endogeneity and serial correlation, adjusting for the possible biases in time series data.

Nature and Sources of Data

The data used in this study are derived from secondary sources, specifically time series data covering the period from 1996 to 2022. Three missing data points for each series, except for GDP per capita, were interpolated using EViews 12 software. To handle missing data, linear interpolation was applied, and validation steps were conducted to minimize interpolation bias and maintain data integrity. The variables include Political Stability and Absence of Violence/Terrorism (Estimate), Government Effectiveness (Estimate), Regulatory Quality (Estimate), Control of Corruption (Estimate), and GDP Per Capita. These data were sourced from the World Development Indicators and the Worldwide Governance Indicators databases provided by the World Bank.

Table 1

Variable Descriptions and Measurements

Variables	Definition	Measurement
PS	Political Stability/Absence of Violence/Terrorism (Estimate)	Score (-2.5 to 2.5)
GE	Government Efficiency in Public Services	Score (-2.5 to 2.5)
RQ	The ability of the government to formulate policies	Score (-2.5 to 2.5)
CC	Perception of corruption control	Score (-2.5 to 2.5)
GDP	Gross Domestic Product Per Capita	Constant 2015 US$

Specification of the model

The analytical framework employed in this research investigates the connections between governance indicators and economic growth, specifically measured by GDP per capita. The overarching long-term model is articulated as follows:

$$GDPt = f(PSt, GEt, RQt, CCt) \quad (1)$$

For estimation purposes, the econometric model can be expressed in linear form as:

$$GDPt=\beta0 + \beta1PSt + \beta2GEt + \beta3RQt + \beta4CCt + \epsilon t \quad (2)$$

Where:

GDP = Gross Domestic Product Per Capita (constant 2015 US$)

PS = Political Stability (Estimate)

GE = Government Effectiveness (Estimate)

RQ = Regulatory Quality (Estimate)

CC = Control of Corruption (Estimate)

β0, β1, β2, β3, and β4 are coefficients to be estimated.

ϵt represents the error term.

Unit Root Testing

To ensure the stationarity of the time series data, the study employed the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. These tests were applied to all variables at both levels and first differences, under the assumptions of constant and trend. Stationarity of the variables is a necessary precondition for cointegration analysis (Khatri et al., 2024).

Johansen's Cointegration Test

Johansen's cointegration test was used to detect the existence of long-run relationships between the variables. The trace and maximum eigenvalue statistics helped determine the number of cointegrating equations. A significant cointegration relationship was confirmed,

establishing a stable long-term connection between political stability, government effectiveness, regulatory quality, control of corruption, and GDP per capita (Poudel, 2023).

FMOLS, DOLS, and CCR Cointegration Techniques

FMOLS, DOLS, and CCR were selected for this study due to their ability to address endogeneity and serial correlation, ensuring robust and reliable estimates for time-series data. These techniques outperform methods like ARDL or VAR in capturing long-run relationships when variables exhibit cointegration.

Hansen Parameter Instability Test

To examine the stability of the long-run relationships identified through cointegration, the study utilizes the Hansen Parameter Instability Test. This test assesses whether the estimated cointegrating vectors remain stable over time (Poudel et al., 2024). A stable cointegrating relationship suggests that the governance indicators consistently influence GDP per capita, enhancing the validity of the findings.

Wald Test

The Wald test was conducted to examine the joint significance of the independent variables (PS, GE, RQ, CC) on GDP per capita. This test confirmed that the governance indicators collectively have a statistically significant effect on GDP in both the long and short run (Poudel, 2023).

Granger Causality Tests

To explore the direction of causality between the governance indicators and GDP per capita, pairwise Granger causality tests were performed. These tests helped identify whether changes in governance indicators precede changes in GDP or vice versa, providing insights into the dynamics of the relationships (Poudel, 2023).

Normality Test

The Jarque-Bera test was used to check whether the residuals from the estimated models followed a normal distribution. The results indicated that the model residuals were normally distributed, confirming the reliability of the regression estimates (Poudel, 2023).

Literature Review

This study defines economic growth as the dependent variable and governance indicators—political stability, regulatory quality, government effectiveness, and corruption control—as independent variables to align the review with its objectives. Previous studies often rely on qualitative methods or fail to integrate multiple governance indicators into a unified econometric framework, highlighting significant methodological gaps. This research addresses these limitations by employing advanced econometric techniques, including

FMOLS, DOLS, and CCR, to provide a comprehensive analysis of governance and economic growth in Nepal.

Governance and its Components in Economic Development

The relationship between governance and economic growth has been extensively studied in various contexts, with governance quality widely recognized as a key determinant of economic performance. Governance encompasses a broad set of institutional qualities, including regulatory quality, government effectiveness, and control of corruption. These components of governance influence the efficiency of resource allocation, policy implementation, and the overall stability of economic systems (Kaufmann et al., 2011; Meyer, 2019).

Governance Quality and Economic Growth

The role of governance quality in promoting economic growth has been supported by both theoretical and empirical studies. According to North's (1990) institutional framework, effective institutions are essential for fostering economic development by reducing transaction costs and encouraging productive investment. Acemoglu et al. (2001) further highlight that countries with weak institutions and governance structures tend to experience slow economic growth due to inefficiencies in resource allocation and an increased likelihood of corruption. Studies across various regions, including Africa and South Asia, have demonstrated that higher levels of government effectiveness and regulatory quality are associated with greater economic growth (Bahl et al., 2016).

In developing countries, the relationship between governance and economic growth is particularly significant due to the country's history of political instability and governance challenges. Studies such as Ullah et al. (2024) and Appiah-Kubi et al. (2023) emphasize that the weak regulatory systems and ineffective governance in emerging countries have exacerbated corruption and instability, further hindering economic development. These findings are consistent with global trends, where poor governance is linked to lower economic performance, as seen in studies by Meyer (2019) and Ritahi and Echaoui (2024), who argue that governance quality directly impacts the ability to implement sound economic policies.

Corruption and economic performance

Corruption, as a component of governance, has a particularly detrimental effect on economic growth. Numerous studies have identified the negative impact of corruption on resource allocation, public trust, and institutional effectiveness (Epaphra & Massawe, 2017; Vasileiou, 2015). In developing countries, corruption often leads to reduced public revenues and the inefficient provision of public goods, which hinders economic progress. This is further supported by Uddin and Rahman (2023), who show that corruption diminishes entrepreneurial activity and economic competitiveness, deepening poverty and inequality.

In the context of Nepal, corruption has been a persistent issue that undermines efforts to achieve sustainable economic development. As noted by Hussain and Ilahi (2016),

corruption in Nepal not only disrupts market functioning but also discourages foreign investment, thereby limiting economic growth. Similar patterns are observed in other developing nations, where corruption decreases institutional effectiveness and investor confidence (Omoteso & Mobolaji, 2014).

Political Stability and Economic Growth

Political stability is another crucial aspect of governance that influences economic outcomes. According to Omoteso and Mobolaji (2014), political stability is necessary for consistent policy implementation and creating an environment conducive to investment. Frequent political changes and unrest, as seen in Nepal, lead to policy uncertainty, which discourages both domestic and foreign investment (Appiah-Kubi et al., 2023). Empirical studies by Vasileiou (2015) show that political instability increases the likelihood of economic disruption, reducing long-term economic growth prospects.

Political instability in Nepal has been particularly detrimental, with frequent government changes hindering the implementation of long-term economic policies (Kazmi, 2023). As a result, the country has struggled to create a stable economic environment that fosters sustained growth. These findings echo those of international studies, which consistently show that political stability is a critical factor for economic development (Meyer, 2019).

Regulatory Quality and Government Effectiveness

Effective regulatory frameworks are essential for maintaining economic stability and promoting private sector growth. Regulatory quality ensures transparency and accountability in economic transactions, facilitating the efficient allocation of resources (Meyer, 2019). According to Mohammed and Sanusi (2020), countries with weak regulatory systems often experience inefficiencies that exacerbate inequality and stifle economic progress. In Nepal, improving regulatory quality is crucial for enhancing government effectiveness, particularly in the delivery of public services and the enforcement of legal frameworks (Ibrahim, 2022).

The effectiveness of the government in implementing policies also plays a vital role in economic development. Studies such as those by Effendi and Khoirudin (2022) highlight the importance of government effectiveness in promoting economic growth through sound public administration. In the case of Nepal, addressing weaknesses in regulatory quality and government effectiveness could significantly enhance the country's economic performance.

Research gap

While there is a substantial body of literature on governance and its components, few studies have focused specifically on Nepal. Although previous research has highlighted the negative impacts of corruption and political instability on growth, there is a lack of comprehensive analysis that integrates multiple governance indicators into a single econometric framework (Ibrahim, 2022). Furthermore, most studies have not employed modern econometric techniques such as FMOLS, DOLS, and CCR to analyze the long-run and short-run relationships between governance quality and economic growth.

This study seeks to fill this gap by providing a holistic analysis of governance quality, corruption, regulatory effectiveness, and political stability in the context of Nepal. By employing FMOLS, DOLS, and CCR methodologies, this research offers a robust examination of the interconnectedness of these variables and their impact on economic growth. The study's findings will contribute to the existing body of literature by providing valuable insights for policymakers aiming to improve governance and foster sustainable economic development in Nepal (Hussain & Ilahi, 2016; Kazmi, 2023).

The literature review establishes that governance quality is a critical factor in promoting economic growth, with components such as regulatory quality, political stability, government effectiveness, and corruption control playing key roles. While extensive research has been conducted on the relationship between governance and economic growth globally, there remains a research gap in the specific context of Nepal. This study addresses this gap by employing advanced econometric techniques to assess the long-run and short-run effects of governance quality on economic development in Nepal.

Data Presentation

Descriptive Statistics

This section provides an overview of the descriptive statistics for the variables under study: GDP, CC, GE, PS, and RQ. These statistics offer a summary of the central tendency, variability, and distribution of each variable, providing essential context for understanding the data and its potential implications.

Table 2

Descriptive Statistics for GDP, CC, GE, PS and RQ

	GDP	CC	GE	PS	RQ
Mean	2.01E+10	-0.671083	-0.794973	-1.115727	-0.618422
Median	1.88E+10	-0.688618	-0.896737	-1.129146	-0.650235
Maximum	3.31E+10	-0.463561	-0.349468	-0.071113	0.427091
Minimum	1.12E+10	-0.953119	-1.135350	-2.149138	-0.858154
Std. Dev.	6.67E+09	0.115175	0.241732	0.650615	0.246312
Skewness	0.476751	-0.413247	0.836185	0.026999	2.903918
Kurtosis	2.005969	2.654623	2.311521	1.701876	13.15109
Observations	27	27	27	27	27

Table 2 provides a comprehensive overview of the descriptive statistics for Gross Domestic Product (GDP) and key governance indicators, namely Control of Corruption (CC), Government Effectiveness (GE), Political Stability (PS), and Regulatory Quality (RQ). The average GDP stands at approximately 2.01×10^{10} with a median of 1.88×10^{10}, reflecting a slight positive skew (skewness of 0.477) and indicating considerable variability, as demonstrated by a standard deviation. In terms of governance, CC shows a mean value of −0.671, suggesting a generally negative perception of corruption control, with a maximum of −0.463 and a minimum of −0.953. The skewness of −0.413 indicates a slight leftward

asymmetry, while a kurtosis of 2.655 suggests a relatively flat distribution. GE presents a mean of −0.795 and a median of −0.897, highlighting ongoing challenges in effective governance, supported by a skewness of 0.836 that indicates a rightward tail. The PS indicator has a mean of −1.116 and a median of −1.129, reflecting persistent instability within governance structures, with skewness near zero (0.027) suggesting a nearly symmetrical distribution. Lastly, RQ has a mean of −0.618with a maximum value of 0.427, a minimum of −0.858, skewness of 2.904, and a high kurtosis of 13.151, indicating a distribution with a pronounced peak and heavy tails, further emphasizing the variability in governance quality perceptions in Nepal.

Correlation Analysis

This section examines the relationships between the variables GDP, CC, GE, PS, and RQ using correlation analysis. Correlation coefficients provide insights into the strength and direction of the linear relationships between variables, while the corresponding p-values assess their statistical significance. A positive correlation coefficient indicates that as one variable increases, the other tends to increase, whereas a negative coefficient suggests an inverse relationship.

Table 3

Correlation Analysis

Correlation(p-Value)	GDP	CC	GE	PS	RQ
GDP	1.0000				
CC	-0.0239	1.0000			
	(0.9058)				
GE	-0.7416	0.4160	1.0000		
	(0.0000)	(0.0309)			
PS	0.4956	0.3919	0.0980	1.0000	
	(0.0086)	(0.0432)	(0.6269)		
RQ	-0.5360	0.1491	0.5983	0.0624	1.0000
	(0.0040)	(0.4579)	(0.0010)	(0.7571)	

Note: Values in parentheses indicate the p-values associated with the corresponding correlation coefficients.

Table 3 presents a correlation analysis that illustrates the correlation coefficients among Gross Domestic Product (GDP) and various governance indicators, namely Control of Corruption (CC), Government Effectiveness (GE), Political Stability (PS), and Regulatory Quality (RQ). The results indicate a significant negative correlation between GDP and GE, with a coefficient of −0.7416 (p-value 0.0000), suggesting that a decline in government effectiveness is associated with reduced GDP. Conversely, GDP shows a positive correlation with PS at 0.4956 (p-value 0.0086), indicating that greater political stability correlates with higher GDP. The correlation between CC and GDP is weak at −0.0239 (p-value 0.9058), implying minimal direct impact of corruption control on GDP. In terms of governance relationships, GE exhibits a moderate positive correlation with CC at 0.4160 (p-value 0.0309), while showing little relationship with PS. Furthermore, RQ correlates positively with GE at 0.5983 (p-value 0.0010), indicating that improved regulatory quality

aligns with better government effectiveness. Overall, this analysis emphasizes the importance of effective governance and political stability in promoting economic growth while highlighting the limited influence of corruption control on GDP.

Time Series Plots

Figure 1 provides a visual representation of key economic and governance indicators for Nepal over time. These time series plots offer insights into trends and fluctuations in GDP, governance, and political stability, shedding light on their interconnections and implications.

Figure 1

Time Series Plots of GDP, CC, GE, PS and RQ

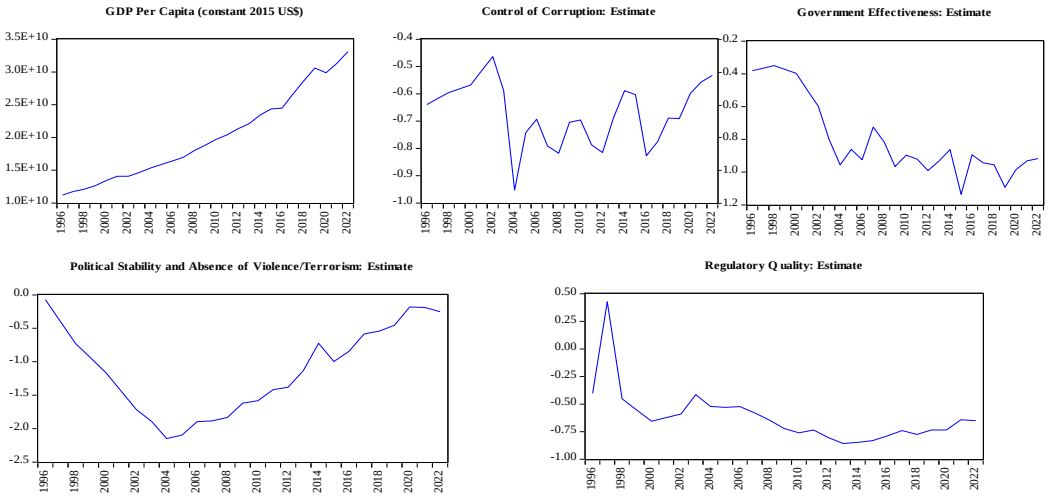

Figure 1 presents a comprehensive overview of key economic and governance indicators for Nepal over time. The first graph illustrates the trend of GDP per capita (constant 2015 USD), demonstrating a steady increase that reflects ongoing economic development and improvements in living standards. In contrast, the second graph depicts the Control of Corruption Estimate, which reveals fluctuations in perceived corruption levels; negative values indicate challenges in managing corruption, while positive values suggest periods of improved control. The Government Effectiveness Estimate, shown in the third graph, indicates variability in public service quality and the government's capacity to implement policies, highlighting both improvements and declines throughout the years. The fourth graph, representing political stability and absence of violence/terrorism, shows a fluctuating trend, with certain years experiencing significant instability, potentially linked to political events and unrest. Finally, the Regulatory Quality Estimate illustrates the effectiveness of government regulations, indicating a notable decline in specific years, which suggests a less supportive regulatory environment for economic activities during those periods. Collectively, these indicators underscore the intricate relationships among economic growth, governance quality, and political stability in Nepal's evolving landscape.

Unit Root Testing

The results of the unit root test, conducted using the Phillips-Perron (PP) and Augmented Dickey-Fuller (ADF) methods, are presented in Table 4. These tests evaluate the stationarity properties of the variables under study. Stationarity is essential for reliable statistical inference, and the results below summarize the behavior of the variables at their levels and first differences.

Table 4

Unit Root Test Table (PP)

At Level		GDP	CC	GE	PS	RQ
With Const.	t-Stat.	9.3798	-2.5867	-1.7954	-1.4707	-2.9282*
With Const.& Trend	t-Stat.	0.2069	-2.4595	-2.0066	-3.5930*	-3.8503**
At First Difference		d(GDP)	d(CC)	d(GE)	d(PS)	d(RQ)
With Const.	t-Stat.	-4.2332***	-7.3506***	-6.4381***	-3.1193**	-9.2305***
With Const. & Trend	t-Stat.	-12.2893***	-9.9365***	-7.5270***	-3.7874**	-10.5452***

Unit Root Test Table (ADF)

At Level		GDP	CC	GE	PS	RQ
With Const.	t-Stat.	5.4171	-2.6525*	-1.8467	-1.7166	-2.9282*
With Const. & Trend	t-Stat.	1.3714	-2.5334	-2.0066	-3.1674	-3.8357**
At First Difference		d(GDP)	d(CC)	d(GE)	d(PS)	d(RQ)
With Const.	t-Stat.	-0.7865	-5.6891***	-6.4180***	-1.7568	-11.2325***
With Const. & Trend	t-Stat.	-6.3133***	-5.7794***	-6.6459***	-3.8546**	-4.2260**

*, **, and *** denote test statistics significant at the 1%, 5%, and 10% levels, respectively.

The unit root test results presented in Table 4, utilizing both the Phillips-Perron (PP) and Augmented Dickey-Fuller (ADF) tests, assess the stationarity characteristics of the variables, including GDP, Control of Corruption (CC), Government Effectiveness (GE), Political Stability (PS), and Regulatory Quality (RQ). At the level, both tests indicate non-stationarity for all variables across most specifications (with constant and with constant & trend), as evidenced by test statistics that do not reject the null hypothesis of a unit root, particularly for GDP and GE.

Upon first differencing, the PP test reveals robust stationarity for all variables, with significant test statistics denoted by "***" for d(GDP), d(CC), d(GE), d(PS), and d(RQ), indicating stationarity at the 1% significance level. Similarly, the ADF test confirms stationarity for all variables at first differences, particularly under the "with constant & trend" condition. These results collectively affirm that all series achieve stationarity following the first differencing, validating the applicability of subsequent cointegration analysis.

Johansen's Cointegration Test

Table 5 summarizes the results of Johansen's cointegration test, which evaluates the existence of long-term equilibrium relationships among the variables under study. The test

results include both the Trace Statistic and the Max-Eigen Statistic, along with their corresponding p-values, for various numbers of cointegrating equations.

Table 5

Johansen's Cointegration Test Results

No. of CE(s)	Trace Statistic	Prob.	Max-Eigen Statistic	Prob.
None	129.3384	0.0000	64.47884	0.0000
At most 1*	64.85952	0.0006	38.72501	0.0012
At most 2	26.13452	0.1247	19.44267	0.0847
At most 3	6.691849	0.6137	6.668131	0.5291
At most 4	0.023718	0.8775	0.023718	0.8775

Table 5 displays the results of Johansen's cointegration test, which assesses the long-term relationships among the study's variables. The findings indicate a clear presence of cointegration, with the Trace Statistic for "None" reporting a value of 129.3384 and a p-value of 0.0000, suggesting that at least one cointegrating relationship exists among the variables. This conclusion is further supported by the Max-Eigen Statistic for "None," which is also significant at 64.47884 with a p-value of 0.0000. The analysis continues to reveal that, for "At most 1," the Trace Statistic is 64.85952 with a p-value of 0.0006, and the Max-Eigen Statistic is 38.72501 with a p-value of 0.0012, indicating strong evidence of a second cointegrating relationship. However, for "At most 2," the results become less definitive, as the Trace Statistic of 26.13452 and the Max-Eigen Statistic of 19.44267 yield p-values of 0.1247 and 0.0847, respectively, suggesting uncertainty regarding a third cointegration relationship. For "At most 3" and "At most 4," both test statistics and their corresponding p-values indicate non-significance, reinforcing the conclusion that while strong evidence supports the first two cointegration relationships, additional relationships are not substantiated by the data. Overall, these results underscore the existence of significant long-term relationships among the variables, essential for understanding their interdependencies in economic contexts.

Table 6

Results of FMOLS, DOLS and CCR (Long-run Coefficients)

Dependent Variable: GDP						
Method	FMOLS		DOLS		CCR	
Variable	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
CC	8.91E+09	0.0665	-4.15E+09	0.6000	1.11E+10	0.0678
GE	-2.31E+10	0.0000	-1.02E+10	0.0551	-2.39E+10	0.0000
PS	5.51E+09	0.0000	7.46E+09	0.0000	5.47E+09	0.0000
RQ	-2.64E+09	0.2391	9.68E+09	0.0339	-1.71E+09	0.5639
C	1.25E+10	0.0001	2.47E+10	0.0150	1.39E+10	0.0004

Table 6 presents the long-run coefficients obtained from three estimation methods: FMOLS, DOLS, and CCR using GDP as the dependent variable. The results highlight the impact of GDP and various independent variables, including Control of Corruption (CC), Government Effectiveness (GE), Political Stability (PS), and Regulatory Quality (RQ).

Control of Corruption (CC) shows varying coefficients across the methods. The FMOLS estimate (8.91E+09) is statistically significant at the 10% level (p = 0.0665), indicating a positive but weak relationship between corruption control and GDP. In contrast, the DOLS estimate (-4.15E+09) is not statistically significant (p = 0.6000), suggesting that the effect may not be robust across different specifications. The CCR coefficient (1.11E+10) is also significant at the 10% level (p = 0.0678), reinforcing the notion that while corruption control is positively associated with GDP, its impact may fluctuate depending on the estimation method. This suggests that effective measures to combat corruption could stimulate economic growth, a critical insight for policymakers aiming to enhance governance.

Government Effectiveness (GE) exhibits a consistently negative relationship with GDP across all methods, with FMOLS showing a coefficient of -2.31E+10 (p = 0.0000), DOLS at -1.02E+10 (p = 0.0551), and CCR at -2.39E+10 (p = 0.0000). The statistically significant negative coefficients indicate that, in the long run, higher government effectiveness is associated with lower GDP, a counterintuitive finding. This could imply that overly effective government interventions may stifle market dynamics or create inefficiencies. In an economic context, it may also reflect a misallocation of resources, where the government's capacity to manage and allocate resources could inadvertently lead to lower economic output.

Political Stability (PS) shows a positive and statistically significant relationship with GDP across all three methods: FMOLS (5.51E+09, p = 0.0000), DOLS (7.46E+09, p = 0.0000), and CCR (5.47E+09, p = 0.0000). This suggests that increased political stability directly correlates with economic growth, highlighting the importance of stable political environments for fostering investment and economic activities. For economic policymakers, this underscores the necessity of promoting stability to enhance economic prospects.

Regulatory Quality (RQ) presents a mixed picture. The FMOLS coefficient (-2.64E+09) is not statistically significant (p = 0.2391), indicating a weak relationship with GDP. However, DOLS yields a significant positive coefficient (9.68E+09, p = 0.0339), while the CCR result (-1.71E+09, p = 0.5639) is again insignificant. This inconsistency suggests that while regulatory quality may play a role in economic growth, its effect is not uniform and may depend on other contextual factors. Policymakers should be cautious in their regulatory approaches, ensuring that regulations support rather than hinder economic activities.

Lastly, the constant term (C) is significant across all methods, reflecting a positive baseline level of GDP. The coefficients for FMOLS (1.25E+10, p = 0.0001), DOLS (2.47E+10, p = 0.0150), and CCR (1.39E+10, p = 0.0004) reinforce the idea that, even in the absence of other factors, a substantial level of GDP is maintained. This finding can inform economic development strategies, suggesting that certain baseline economic conditions are necessary for growth.

From the above data, Government Effectiveness (GE) consistently shows a significant negative relationship across all three methods, suggesting that better government effectiveness is associated with lower GDP per capita, which could indicate inefficiencies or issues in governance. Political Stability (PS) consistently shows a strong positive relationship, indicating that higher political stability is linked to increased GDP per capita, underscoring its importance for economic growth.

Control of Corruption (CC) yields mixed results, being significant in the FMOLS and CCR but not in DOLS, reflecting potential instability in its impact on economic performance. Regulatory Quality (RQ) shows varied results, being significant only in the DOLS method, indicating that its impact may depend on the context and methodology used. These results suggest that while certain governance factors positively influence economic growth, others may require further investigation to understand their complexities within the Nepalese context.

In sum, Table 6 results offer critical insights into the relationships between governance indicators and economic growth, providing valuable implications for policymakers. While effective governance is vital for economic growth, the nuances in these relationships indicate the need for tailored strategies that consider the local context and the specific characteristics of each governance aspect.

Table 7

Cointegration Test - Hansen Parameter Instability

Series: CC, GE, PS, and RQ Null hypothesis: Series are cointegrated.

Method	FMOLS	DOLS	CCR
Lc statistic	0.804721	0.029529	0.669625
Prob.*	0.0900	> 0.2	0.1645
Stochastic Trends (m)	4	4	4
Deterministic Trends(k)	0	0	0
Excluded Trends (p2)	0	0	0

Table 7 presents the results of the Hansen parameter instability test for the series Control of Corruption (CC), Government Effectiveness (GE), Political Stability (PS), and Regulatory Quality (RQ), with the null hypothesis asserting that these series are cointegrated. The results indicate varying levels of evidence for cointegration among the three estimation methods: FMOLS, DOLS, and CCR. Specifically, the FMOLS method shows an Lc statistic of 0.804721 with a p-value of 0.0900, while the DOLS method reports a much lower Lc statistic of 0.029529, yielding a probability greater than 0.2, suggesting no cointegration.

The CCR method presents an Lc statistic of 0.669625 and a p-value of 0.1645, indicating limited evidence against the null hypothesis of cointegration. All methods report four stochastic trends, suggesting a complex relationship among the governance indicators, while deterministic trends and excluded trends are both indicated as 0, reflecting the absence of deterministic factors in the analysis. Overall, these findings highlight the interconnectedness of CC, GE, PS, and RQ, although the lack of consistent support across methods emphasizes the need for careful interpretation and further investigation into the dynamics at play.

Table 8

Wald Test

Method	FMOLS		DOLS		CCR	
Test Statistic	F-statistic	Chi-square	F-statistic	Chi-square	F-statistic	Chi-square
Value	59.58895	238.3558	112.7099	450.8395	52.39592	209.5837
df	(4, 21)	4	(4, 7)	4	(4, 21)	4
Probability	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table 8 summarizes the results of the Wald test conducted using three estimation methods: FMOLS, DOLS, and CCR. The test statistic for each method is reported as both an F-statistic and a Chi-square value. For FMOLS, the F-statistic is 59.58895 with a Chi-square value of 238.3558, both yielding a probability of 0.0000, indicating strong statistical significance and suggesting the null hypothesis that the explanatory variables do not significantly influence the dependent variable is rejected. Similarly, the DOLS method shows an F-statistic of 112.7099 and a Chi-square value of 450.8395, also with a probability of 0.0000, reinforcing the significance of the test results. The CCR method presents an F-statistic of 52.39592 and a Chi-square value of 209.5837, maintaining the trend of high statistical significance with a probability of 0.0000. All methods exhibit degrees of freedom (df) of (4, 21) for FMOLS, (4, 7) for DOLS, and (4, 21) for CCR, respectively. These results collectively indicate that the included variables have a statistically significant influence on the dependent variable, emphasizing the robustness of the model specifications across different methodologies.

Table 9

Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
CC →GDP	25	0.51999	0.6023
GDP →CC		0.01770	0.9825
GE →GDP	25	3.81781	0.0394
GDP →GE		0.62646	0.5446
PS →GDP	25	1.31465	0.2908
GDP →PS		5.51236	0.0124
RQ →GDP	25	0.03311	0.9675
GDP →RQ		1.83427	0.1856
GE →CC	25	1.75997	0.1977
CC →GE		0.15692	0.8558
PS →CC	25	2.80194	0.0846
CC → PS		5.72105	0.0108
RQ →CC	25	0.28233	0.7570
CC →RQ		2.25736	0.1306
PS →GE	25	1.14844	0.3372
GE →PS		9.58723	0.0012
RQ →GE	25	1.92796	0.1715
GE →RQ		0.32895	0.7235
RQ →PS	25	1.49319	0.2487
PS →RQ		2.86464	0.0805

Table 9 presents the results of the pairwise Granger causality tests, examining the causal relationships among CC, GDP, GE, PS, and RQ. The tests reveal that CC does not Granger-cause GDP, nor does GDP Granger-cause CC, suggesting that CC may not have a significant impact on economic growth.

In contrast, a statistically significant relationship is observed between GE and GDP, where GE Granger causes GDP (F-statistic = 3.81781, p = 0.0394), highlighting the role of GE in stimulating economic activity. However, GDP does not Granger-cause GE, indicating that while GE can drive growth, economic expansion does not necessarily influence GE.The results also show that GDP Granger causes PS, with a significant F-statistic of 5.51236 (p = 0.0124), suggesting that higher economic growth may contribute to increased political

stability. Additionally, GE Granger causes PS (F-statistic = 9.58723, p = 0.0012), indicating that improvements in GE can lead to greater political stability. However, no significant causal relationships are identified between RQ and the other variables, implying that RQ does not significantly affect GDP or vice versa. Overall, the findings underscore the importance of government effectiveness (GE) initiatives in fostering economic growth while highlighting the limited influence of CC and RQ on GDP.

Table 10

Normality Test

Method	FMOLS	DOLS	CCR
Jarque-Bera	1.518427	1.384868	1.523992
Probability	0.468034	0.500357	0,466734

Table 10 displays the results of the normality tests for the residuals obtained from the FMOLS, DOLS, and CCR methods, specifically using the Jarque-Bera test. The Jarque-Bera statistic assesses whether the residuals follow a normal distribution based on skewness and kurtosis. The test statistics for FMOLS, DOLS, and CCR are 1.518427, 1.384868, and 1.523992, respectively. Corresponding p-values for these statistics are 0.468034, 0.500357, and 0.466734. Since all p-values exceed the conventional significance level of 0.05, we fail to reject the null hypothesis of normality for the residuals of all three methods. This indicates that the residuals from the FMOLS, DOLS, and CCR models are normally distributed, suggesting that the estimation methods used in this analysis yield reliable results and the assumptions of the underlying statistical models are met. This is important for the validity of inferences drawn from the econometric analysis, ensuring that further interpretations and conclusions based on these models are robust.

Discussion

This study supports the findings of Kaufmann et al. (2011) and Aisen and Veiga (2013), emphasizing the crucial role of political stability in fostering economic growth. Political stability consistently shows a positive correlation with GDP, underscoring its importance in investment and policy implementation. However, contrary to Effendi and Khoirudin (2022), this research reveals a negative association between government effectiveness and economic growth in Nepal, suggesting potential inefficiencies in governance structures. This divergence highlights unique challenges in Nepal's governance compared to other developing nations.

Additionally, the mixed results on regulatory quality align with Mohammed and Sanusi (2020) and Ritahi and Echaoui (2018), who underscore the complexities of governance impacts across different contexts. While Epaphra and Massawe (2017) emphasize the adverse effects of corruption on growth, this study's findings partially align, showing significant but varied impacts depending on the econometric model used. By employing

FMOLS, DOLS, and CCR, the study builds on the methodological frameworks of Hussain & Ilahi (2016), offering a comprehensive examination of the governance-growth relationship, and reinforcing the importance of governance reform for sustainable growth in Nepal.

Conclusion

This study reinforces the significance of governance quality in influencing Nepal's economic growth, with political stability emerging as a key determinant. However, contrary to expectations, government effectiveness exhibited a negative correlation with GDP, suggesting governance inefficiencies. Corruption and regulatory quality were found to have mixed impacts, reflecting the complex dynamics between governance indicators and economic performance. Overall, the findings indicate that improving governance structures, especially political stability and regulatory quality, is essential for fostering sustainable economic growth in Nepal. The findings offer valuable insights for policymakers, suggesting that efforts to stabilize the political environment and enhance regulatory quality are crucial for promoting economic development in Nepal. Additionally, the negative relationship between government effectiveness and GDP suggests the need for administrative reforms to address potential inefficiencies. Anti-corruption measures must be tailored to mitigate the nuanced effects corruption has on growth, which vary across governance structures.

This study provides a novel contribution by applying advanced econometric techniques—FMOLS, DOLS, and CCR—to simultaneously assess multiple governance indicators' effects on economic growth in Nepal. The mixed findings, especially regarding government effectiveness and regulatory quality, challenge conventional wisdom and highlight the need for a more contextual understanding of governance in developing countries like Nepal. Future research could focus on identifying the specific inefficiencies within governance structures that lead to a negative correlation between government effectiveness and economic growth in Nepal, as well as examining sector-specific regulatory frameworks in industries like agriculture, energy, and technology to better understand their impact on fostering economic development.

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