

# The Effect of Democracy and Government Quality on the Level of Income Inequality In BRICS+ Members

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## Abstract

Income inequality remains a critical challenge in emerging economies, yet the mechanisms linking democracy and inequality in the BRICS+ bloc remain underexplored. This study investigates how democracy affects income inequality, with a specific focus on governance quality as a mediating factor, in ten BRICS+ countries (Brazil, Russia, India, China, South Africa, Iran, Egypt, United Arab Emirates, Indonesia, and Ethiopia) from 2013 to 2023. Its main contribution is introducing and empirically testing a mediation framework that positions governance as the critical intervening variable in this relationship, a novel approach in the context of this new economic bloc. Using robust panel estimation methods (FGLS, PCSE, and Driscoll-Kraay) to address cross-sectional dependence and heteroskedasticity, the findings reveal a nuanced relationship. While democracy significantly improves governance quality, its effect on inequality is critically mediated by the type of governance dimension strengthened. Crucially, the study provides new empirical evidence that governance quality is a more decisive factor than democracy itself in shaping inequality outcomes within BRICS+. Key policy recommendations include prioritizing investments in primary education, ensuring political stability, and fostering transparent governance to effectively reduce economic disparities in the bloc.

**Keywords:** Democracy; Governance Quality; Income Inequality; BRICS+

## 1. Introduction

Democracy in the international system shows how crucial the rule of stakeholder engagement and public accountability is in shaping accountable and sustainable economic outcomes. But in many nations, the fast growth of democracy has actually brought attention to income inequality and contributed to the decline of democracy in many countries. Previous studies emphasized the critical necessity of checks and balances to prevent the dominance of one group over another (Prados Ortiz de Solórzano et al., 2024), making institutional play an important role to enhance government accountability across all sectors, thereby fostering fairer socio-economic outcomes and mitigating disparity. However, this theory reflects that economic fairness under democracy is significantly challenged by contemporary empirical evidence.

Recent literature reveals a lot of economic inequality experienced by most democratic countries. An extensive cross-country statistical analysis by (Rau & Stokes, 2025) found compelling evidence that the more unequal the distribution of income in a democratic country, the greater the risk that the country will elect a head of government who will increase power and undermine democratic norms. This finding is important considering that the head of government has the power to regulate policies and determine how a country's democratic system should be implemented. Democracy that is developed without being balanced by effective, credible, and transparent governance tends to fail to achieve equality. This contradicts previous studies that show how democracy can have an impact on income inequality. This study attempts to examine how democracy affects income inequality when the quality of governance is used as an indicator of the performance of democratic institutions in carrying out their proper functions.

The research used as the main theory in this paper shows a complex relationship between democracy and income inequality. Democracy Does Cause Growth theory. (Acemoglu et al., 2019) argue that democracy can strengthen income redistribution through inclusive social policies, while (Treisman, 2025) assesses that democracy does not always contribute to reducing inequality, especially in countries with weak institutions. The explanation of the connection between weak institutions and income inequality shows that democracy does not have an effective impact. The Democracy Does Not Cause Growth theory also challenges the assumption that democracy automatically promotes economic growth, emphasizing that policy stability and institutional capacity have a greater impact on public welfare.

In addition, (Handoyo, 2023) emphasize that the quality of governance, including regulatory effectiveness, corruption control, and political stability, determines the success of redistribution policies. Although democracy is often seen as the best system for promoting equality, some researches indicate that outcomes in countries with varying institutional capacities, particularly within the BRICS+ members, can be inconsistent. The significant levels of income inequality observed in these nations highlight the necessity of effective governance for democracy to function properly. This study seeks to fill a gap in the literature by exploring how the quality of governance acts as a mediator that elucidates the relationship between democracy and income inequality within the diverse political and economic landscapes of BRICS+ countries. Based on this background, the study proposes the following research questions:

1. Do democracy and quality of governance have an impact on the level of income inequality in BRICS+ member countries?

This research question differs from existing literature by moving beyond the traditional assumption of a direct linear relationship between democracy and inequality. Instead, it offers a new perspective by positioning quality of governance as a key mediating factor. Unlike prior studies that often consider developing nations as a single group, this investigation specifically examines the institutional diversity of the BRICS+ bloc, providing a more detailed understanding of why democracy successfully reduces inequality in some cases but not in others.

Recent studies over the past five years have further reinforced this finding, showing that effective governance measured by control of corruption, rule of law, and bureaucratic efficiency is positively correlated with poverty reduction efforts and fairer income distribution in developing countries from (Basumatary & Das, 2024) explicitly found that governance quality helps reduce income inequality in BRICS, even though the democracy variable shows the opposite effect, emphasizing that it is not only the political system but also the efficient and corruption-free implementation of policies (governance quality) that is the main determinant. Similarly, research

by (Óscar et al., 2021) and (Vezentan & Neagu, 2024a) confirms that strong institutions, including a stable legal framework and an efficient regulatory system, are prerequisites for ensuring that the benefits of economic growth and investment are distributed evenly, rather than enriching a small elite, making governance quality a critical lens for analyzing economic sustainability and income equality in the diverse BRICS+ group.

However, research that simultaneously combines the variables of democracy and governance quality in the context of BRICS+ is still very limited. The novelty of this study lies in its focus on the role of governance quality as a mediator in the relationship between democracy and income inequality within the BRICS+ bloc, which has been largely overlooked in previous literature. First, theoretically, this study advances the existing literature by shifting the analytical focus from a direct 'democracy-inequality' relationship to a mediated framework. Unlike previous studies that often assume democracy automatically leads to redistribution, we introduce and empirically test governance quality as the critical transmission mechanism, arguing that democratic institutions can only reduce inequality if they successfully translate into effective governance. Second, contextually, this is among the pioneering studies to examine the expanded BRICS+ bloc (including new members such as Egypt, Ethiopia, Iran, Indonesia, and the UAE) specifically through the lens of institutional heterogeneity. Rather than treating these emerging economies as a bloc, we address the gap in comparative political economy by analyzing how their diverse political and economic configurations yield different redistributive outcomes. Third, empirically, this research uncovers a nuanced 'pro-elite bias' within institutional reforms; our findings challenge the universal assumption that all 'good governance' indicators reduce inequality, revealing that in the BRICS+ context, strengthening regulatory frameworks without accompanying political stability can paradoxically exacerbate the income gap.

The core issue lies in determining whether these institutions successfully transform political participation into inclusive redistributive policies, or if they are systematically biased, failing to mitigate income inequality. With its expanded membership, the bloc currently represents approximately 36% of the world's Gross Domestic Product (GDP, PPP) and 45% of the global population, providing a substantial platform for the collective voice of the Global South (UNCTAD, 2024). This study aims to make a multidimensional contribution, both theoretically and practically. First, from an academic perspective, it offers a deeper empirical insight into the factors that enable democratic systems to successfully reduce income inequality, moving past the idea of democracy as merely a governance structure. Second, it enriches the academic discourse on institutional dynamics within the Global South, particularly by analyzing the economic and political complexities of BRICS+ countries, which have often been oversimplified in previous studies. Third, these findings offer crucial practical implications for policymakers in developing nations, demonstrating that enhancing the quality of governance is not merely an additional benefit, but an essential requirement for the effectiveness of inclusive development strategies. The expansion of the initial 10 countries in BRICS Plus, including Brazil, Russia, India, China, South Africa, Iran, Egypt, the United Arab Emirates, Indonesia, and Ethiopia poses complex structural challenges, particularly in the context of income inequality through political diversity (Anderson & Yulianti, 2024; Haibin, 2025; Yin & Choi, 2023).

## **1. Literature Review**

### **2.1 Democracy and Income Inequality**

The main theory in this study is "Democracy Does Cause Growth" proposed by (Acemoglu et al., 2019) regarding democracy, which includes the institutional capacity of the government and policies in influencing economic growth using the macro variable of GDP per capita as the main variable assumed to increase government effectiveness by promoting transparency and accountability in influencing income inequality. This study uses the 2SLS method, which was also applied by (Chen et al., 2022) and (Kao et al., 2021), showing consistency in cross-country

analysis (country fixed effects). Other studies also support the use of Feasible Generalized Least Squares (FGLS), Panel-Corrected Standard Errors (PCSE), and Driscoll-Kraay (DK) methods to overcome the problems of autocorrelation, heteroscedasticity, and cross-sectional dependence in panel data (Vişne & Ekinci, 2025) in analyzing the relationship between macroeconomic variables in countries that affect income inequality. This article examines the influence of democracy and governance quality on income inequality in the BRICS countries (Brazil, Russia, India, China, and South Africa) during the period 1996–2020 using eight indicators, namely gross domestic product, investment, economic productivity, trade, primary and secondary education, average tax, infant mortality, social movements, and markets. Another study conducted by (Younsi & Bechtini, 2020) also highlights the role of macroeconomics in influencing income inequality using classical macroeconomic variables in line with testing the Kuznets Curve hypothesis. Thus, previous studies support the main theory in showing that democracy has an influence on income inequality, especially when additional variables in the form of government quality are included to prove how democracy can have a significant impact.

**H1:** Democracy has a significant effect on income inequality.

## 2.2 Democracy and Governance Inequality

Since a long ago, numerous studies discussing the relationship between democracy and income inequality have become a broad topic in academic literature b)(Acemoglu et al., 2019) argue that democracy promotes redistributive policies through social spending and taxation, thereby reducing inequality. On the other hand, (Treisman, 2025) found that democracy does not always guarantee income equality, particularly in countries with weak institutional structures. The complexity arises because democratic regimes often face political pressures from elites that constrain redistributive efforts. It is essential to introduce an intermediary variable in the form of government quality to examine the link between democracy and income inequality. The government plays an important role in associating this macroeconomic relationship through the implementation of fiscal accountability and transparency, especially in tax management to ensure the providing of infrastructure and other economic variables that contribute to reducing income inequality. Empirical studies in emerging economies show mixed results, which are studied from (Younsi & Bechtini, 2020) demonstrated that economic growth under democracy may initially increase inequality following the Kuznets Curve pattern, before redistribution mechanisms stabilize. On the other hand, (Afonso et al., 2021) suggest that inclusive institutions within democratic systems can reduce inequality by promoting equitable access to education and public services. These findings are supported by (Al-majali, 2024) research, which confirms the positive relationship between democracy and economic growth through a number of indicators such as investment, inflation, trade openness, human capital, public health, civil conflict, natural disasters, and government consumption.

**H2:** Democracy has significant effect on governance inequality.

## 2.3 Governance Quality and Income Inequality

Governance quality reflects the effectiveness of public institutions in implementing policies that ensure equitable outcomes. According to research by (Basumatary & Das, 2024), among BRICS countries, high-quality governance contributes significantly to reducing income inequality, even when democracy variables show the opposite effect in supporting income inequality. Similarly, (Handoyo, 2023) explains that indicators such as corruption control, regulatory quality, and government effectiveness have a strong influence on equitable economic distribution. This demonstrates the need for government quality variables in analyzing countries with transparent and accountable bureaucracies, which tend to have lower levels of inequality

because public budgets are allocated more efficiently to important sectors such as health, education, and infrastructure. In addition, (Vezentan & Neagu, 2024) also emphasize that countries with strong law enforcement and good regulatory frameworks tend to have a more equitable distribution of income. Although democracy could in some cases widen income inequality, the existence of strong political institutions can be an intervening variable in examining this relationship through the mechanism of redistribution and good governance, which can ultimately reduce the level of inequality.

**H3:** Governance quality has a significant effect on income inequality.

## **2.4 The Mediating Role of Governance Quality**

Some researchers argue that the relationship between democracy and income inequality has indirect effect, mediated by the quality of governance. When governance is weak, democratic institutions fail to translate political participation into equitable economic outcome (Basumatary & Das, 2024). On the contrary, high-quality governance facilitates democratic processes that lead to effective redistribution policies and more inclusive economic growth (Afonso et al., 2021). This view is in line with (Vezentan & Neagu, 2024), who found that countries with strong law enforcement, transparent bureaucracy, and credible regulatory frameworks tend to have more equitable income distribution. This shows that effective governance plays a more important role than democracy itself in ensuring that democracy not only limited to political participation, but also manifested through economic equality. This mechanism is particularly relevant in the context of BRICS+ countries, which exhibit a range of institutional differences, from liberal to authoritarian regimes. The different levels of governance among these countries create significant differences in the success of economic and social policy implementation. Thus, the quality of governance acts as a determining variable that mediates the ability of democratic governments to produce inclusive economic outcomes despite differences in political and institutional structures between these countries.

**H4:** Governance quality mediates the relationship between democracy and income inequality.

## **2. Methods**

### **2.1 Data description**

This study analyzes macroeconomic factors that determine income inequality, using the influence of democracy as the main variable for understanding the dynamics of inequality at the country level. The study population was specifically selected, consisting of ten BRICS+ member countries, namely Brazil, Russia, India, China, South Africa, Iran, Egypt, the United Arab Emirates, Indonesia, and Ethiopia. We use pooled cross-sectional time series secondary data available at the country-year level for the relevant study period for all variables. The Gini Coefficient is used as the dependent variable and is measured using data from Standardized World Income Inequality Database (SWIID) (Solt, 2020). Meanwhile, the independent variables include a number of macroeconomic and social indicators, such as GDP and GDP per capita, Gross Capital Formation (GCP), trade share, tax revenue, and life expectancy, obtained from World Bank (Handoyo, 2023) and International Monetary Fund (IMF) (International Monetary Fund, 2025). In addition, education data is sourced from UNICEF (UNESCO Institute for Statistics, 2025b, 2025a) and Total Factor Productivity (TFP) growth rates are taken from the Total Economy Database.

This study also employs a comprehensive six-dimensional framework to measure governance quality. Following the approach established in governance literature and specifically drawing from (Vezentan & Neagu, 2024) who analyzed institutional factors in the EU context.



Table 1. Variables, Unit of Measurement, Description, and Sources

Variables	Unit	Description	Sources
GDP	(constant 2015 US\$)	Total GDP divided by the country's population.	The World Bank, World Development Indicators
GCP	(Annual %)	Total investment in fixed assets of the economy, expressed as a share of GDP.	The World Bank, World Development Indicators
Life expectancy	(Years)	Average number of years a newborn is expected to live.	The World Bank, World Development Indicator
Tax revenue share in GDP	(Annual %)	Compulsory transfers to government for public purposes, as a share of GDP.	The World Bank, World Development Indicators, IMF World Revenue Longitudinal Database (WoRLD)
Trade share in GDP	(Annual %)	Sum of exports and imports as % of GDP.	The World Bank, World Development Indicators
Primary Education	(Annual %)	Total enrollment in primary education, regardless of age, as a percentage of the population of official primary age.	The World Bank, UNICEF
Secondary Education	(Annual %)	Total enrollment in secondary education, regardless of age, as a percentage of the population of official secondary age.	The World Bank, UNICEF
TFP Growth	(Annual %)	Efficiency-driven output growth.	Total Economy Database
Government Effectiveness	(Score)	Quality of public services and policy.	V-Dem, Varieties of Democracy
Regulatory Quality	(Score)	Soundness of government regulations.	V-Dem, Varieties of Democracy
Control Of Corruption	(Score)	Extent of corruption control.	V-Dem, Varieties of Democracy
Rule Of Law	(Score)	Confidence in societal rules and justice.	V-Dem, Varieties of Democracy
Voice and Accountability	(Score)	Citizen participation and freedoms.	V-Dem, Varieties of Democracy
Political Stability	(Score)	Risk of government destabilization.	V-Dem, Varieties of Democracy
Gini Index	(Index)	Unequal distribution of income	Standardized World Income Inequality Database (SWIID)

While examined European Union countries, we adapt this established framework to the BRICS+ context, recognizing that strong law enforcement, transparent bureaucracy, and credible

regulatory frameworks are equally relevant for achieving equitable income distribution in emerging economies. We use the governance quality variable integrated data from V-dem and six dimensions of Worldwide Governance Indicators (WGIs) (Handoyo, 2023) namely Government Effectiveness, Regulatory Quality, Control of Corruption, Rule of Law, Voice and Accountability, and Political Stability and No Violence, all of which are presented in standardized scores ranging from -2.5 to 2.5 providing a comprehensive assessment of governance quality that captures both technical capacity and political dimensions of state institutions.

## 2.2 Methods

As a reference in considering the influence of democracy on income inequality, it is believed to have a stronger influence when observed closely with the variable of government quality. To prove this, we attempted a quantitative analysis. The assumption that the relationship between democracy and income inequality is strengthened when the dimension of government quality is considered became the main focus of this quantitative analysis.

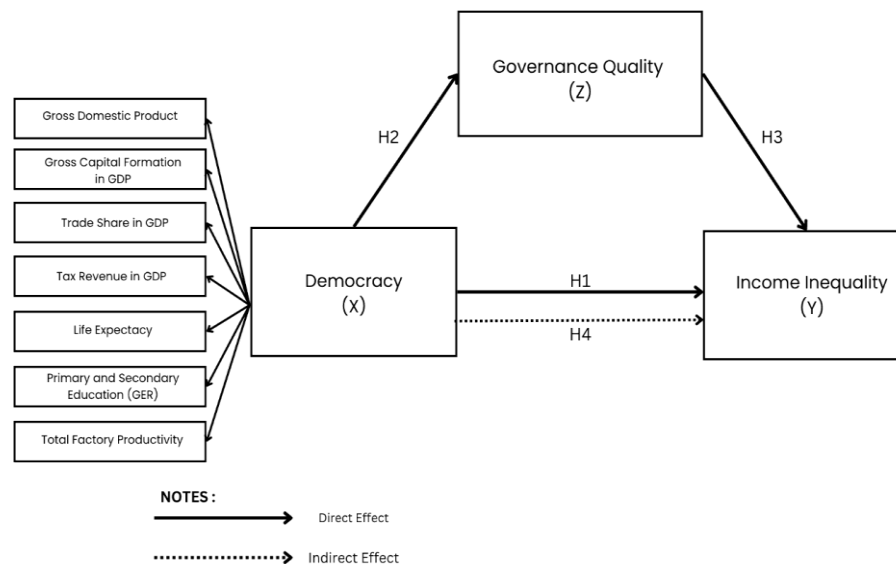


Figure 1. Research framework and hypothesis interrelation.

To verify this, we began by testing the stationarity property on panel data using the unit root test formulated by Levin Lin Chu (LLC) Stationarity Test (Khraief et al., 2020). The results confirm that the majority of independent variables, such as those representing economic output, investment, trade, fiscal revenue, secondary education, life expectancy, and total factor productivity, have shown stationarity both at the data level and after differentiation. Only variables related to primary education were found to be non-stationary at the level, but became stationary after the first differentiation. After confirming stationarity, the Hausman test was applied and confirmed that the Fixed Effect model was the most appropriate for estimation (Ranger & Much, 2020). However, as often the case in panel data analysis, Fixed Effect and Random Effect estimators may be inconsistent and inefficient due to cross-sectional autocorrelation and heteroscedasticity. A robustness check using the procedure proposed by Wooldridge and Greene indicates the presence of both problems in our data (Laopodis, 2021). Furthermore, the analysis also reveals cross-sectional dependence.

Based on the above research framework, the relationship between variables was tested empirically using a panel data econometric model. This model was constructed to represent the effect of democracy on income inequality, both directly and through the quality of governance

as a mediating variable. This approach follows the established methodology for analyzing mediating effects, as used in recent BRICS research by who investigated similar relationship (Basumatary & Das, 2024b) in the BRICS countries. Thus, the above variables can be explained in the following model describing the general specifications of the study and the independent, intervening, and dependent variables used:

$$INEQ_{it} = \alpha_0 + \beta_1 DEM_{it} + \beta_2 X_{it} + \varepsilon_{it} \dots\dots\dots (1)$$

In Model 1, we estimate the total effect of democracy on income inequality. This model answers the foundational question of whether a relationship exists at all, with coefficient  $\beta_1$  capturing the combined influence of all pathways both direct and indirect through which democracy might impact inequality. However, this total effect is a black box; it does not reveal how democracy influences inequality. This limitation is precisely why we require a second formulation:

$$GOV_{it} = \alpha_1 + \beta_3 DEM_{it} + \beta_4 X_{it} + \varepsilon_{it} \dots\dots\dots (2)$$

Model 2 is essential to test the first logical link in the mediation chain: does democracy actually improve governance quality? If the coefficient  $\beta_3$  is not significant, the entire proposed mechanism collapses, as governance cannot be a mediator if it is unaffected by democracy. By confirming this first link, Model 2 provides the necessary condition for mediation, moving from a simple correlation to a plausible causal pathway. To complete the causal argument and isolate the mediation effect, we must introduce a third formulation, such as:

$$INEQ_{it} = \alpha_2 + \beta_5 DEM_{it} + \beta_6 GOV_{it} + \beta_7 X_{it} + \varepsilon_{it} \dots\dots\dots (3)$$

These models help us understand the relationship between democracy and income inequality for the BRICS+ nations by systematically unpacking whether democratic institutions reduce economic disparities on their own, or whether their effectiveness is fundamentally channeled through the quality of governance they produce. By including both the initial variable (democracy) and the proposed mediator (governance), this model allows us to separate the total effect from Model 1 into its components. The coefficient for democracy ( $\beta_5$ ) now represents the direct effect, the portion of the influence that is not channeled through governance. The difference between the total effect from Model 1 ( $\beta_1$ ) and this direct effect ( $\beta_5$ ) is the indirect effect, quantifying the portion of democracy's impact that operates specifically through improving governance quality. Thus, the three models are logically interlocked: Model 1 establishes the overall relationship to be explained, Model 2 validates the existence of the mediating channel, and Model 3 deconstructs the relationship to measure the unique contribution of that channel.

Because our data suffers from all three of these statistical problems autocorrelation, heteroscedasticity, and cross-section dependence we cannot rely solely on standard methods. To obtain more reliable and consistent results, this study applies a series of robust regression estimates results (Akter et al., 2023; Anselin, 2022). The FGLS (Feasible Generalized Least Squares) and PCSE (Panel Corrected Standard Errors) methods are particularly suitable because they are specifically designed to handle disturbances that exhibit autocorrelation, heteroscedasticity, and inter-panel interrelationships. In addition, we use the DK Standard Error Estimation method developed by Driscoll and Kraay, which is a robust approach that can be applied when problems of autocorrelation, heteroscedasticity, or cross-sectional dependence are found in time series. Thus, the application of a combination of the FGLS, PCSE, and DK methods ensures the reliability of the results presented. The chosen methods are specifically designed to produce valid inferences in the presence of these complex data structures, and all



estimations are performed using Stata.

### 3 Results

This study examines the central research question Does democracy affect income inequality in BRICS+ countries, and does governance quality serve as an effective intervening variable? To answer this, we analyzed panel data from ten BRICS+ nations (2013-2023) using robust econometric methods. Diagnostic tests confirmed data reliability while revealing critical statistical challenges. The Levin, Lin & Chu unit root test established stationarity across all variables, while the Modified Wald Test and Pesaran CD Test identified significant heteroscedasticity and cross-sectional dependence. These findings necessitated advanced estimation techniques beyond standard OLS or Fixed Effects models.

Table 2. Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
GDP	220.51	398.84	5.31	1761.15
GCP	27.43	9.2	12.35	45.92
Life expectancy	66.25	20.57	0	82.91
Primary Education (GER)	101.81	7.56	81.8	120.71
Secondary Education (GER)	84.38	21.58	10.09	111.8
Tax revenue share in GDP	11.63	5.73	3.46	26.31
Trade share in GDP	39.11	11.54	15.96	65.18
TFP Growth	-0.24	2.87	-7.97	6.78
Government Effectiveness	-0.03	0.63	-1.02	1.6
Regulatory Quality	-0.34	0.65	-1.69	1.1
Control Of Corruption	-0.34	0.57	-1.23	1.27
Rule Of Law	-0.28	0.47	-1.2	0.88
Voice and Accountability	-0.63	0.84	-1.66	0.78
Political Stability and No Violence	-0.69	0.66	-2.18	0.89
Gini Index	2747.05	10935.1	26.38	66889

The correlation matrix reveals that economic output (GDP) is moderately linked to government consumption but shows only weak associations with governance indicators, suggesting that institutional quality does not directly drive economic size in this context. However, governance dimensions such as government effectiveness, regulatory quality, control of corruption, and rule of law are highly intercorrelated, indicating they form a cohesive institutional framework. Notably, Voice and Accountability correlates negatively with GDP but strongly positively with Tax Revenue Share, implying that greater civic participation may relate more to fiscal mobilization than to immediate growth. Finally, income inequality (Gini Index)

shows near-zero correlations with nearly all variables, operating independently of both economic performance and governance quality in this dataset.

Table 3. Matrix Correlation

Variable	GDP	GCP	LE	PE- (GER)	SE- (GER)	TRS in GDP	TS in GDP	TFP	GE	RQ	CC	RL	VA	PS	GI
GDP	1														
GCP	0.54	1													
Life expectancy (LE)	0.15	0.17	1												
Primary Education PE- (GER)	-	0.19	-0.01	1											
Secondary Education SE- (GER)	0.12	-0.32	-0.08	0.05	1										
Tax revenue share (TRS) in GDP	-	-0.49	-0.11	0.26	0.38	1									
Trade share in GDP (TS)	-	0.05	-0.33	0.33	0.29	0.58	1								
TFP Growth (TFP)	0.1	0.16	0.31	0.04	-0.02	-0.09	-0.14	1							
Government Effectiveness (GE)	0.28	0.05	0.26	-0.28	0.28	-0.07	-0.39	0.14	1						
Regulatory Quality (RQ)	0.04	-0.29	0.22	-0.22	0.38	0.2	-0.38	0.04	0.85	1					
Control Of Corruption (CC)	0.06	-0.13	0.41	-0.35	0.08	-0.07	-0.57	0.19	0.86	0.82	1				
Rule Of Law (RL)	0.06	-0.19	0.47	-0.22	0.15	0.14	-0.45	0.2	0.84	0.87	0.91	1			
Voice and Accountability (VA)	-	-0.41	0.07	0.42	0.34	0.75	0.28	-0.08	0.03	0.39	0.06	0.27	1		
Political Stability (PS)	0.14	-0.19	0.18	-0.15	0.48	0.1	-0.32	0.02	0.86	0.89	0.78	0.77	0.23	1	
Gini Index (GI)	-	-0.03	-0.04	-0.11	0.03	0.06	0.09	-0.02	-	-	-0.05	0	0.07	-	1
	0.07								0.03	0.04				0.09	

Table 4. LLC Unit Root Test

Variable	At Level	First Difference
GDP	-3.9965	-4.1113
GCP	-7.9108	-8.82
Life Expectancy	-4.5524	-8.2546
Primary Education (GER)	0.516	-6.9256
Secondary Education (GER)	-3.706	-14.0607
Tax revenue share in GDP	-5.7213	-6.5088
Trade share in GDP	-7.6047	-19.0206
TFP Growth	-7.4734	-10.151

Analysis with stationarity testing on panel data using the Levin, Lin & Chu (LLC) unit root test shows that most independent variables, namely GDP, GCP, Life Expectancy, Tax Revenue of GDP, Trade of GDP, and School Secondary Gross, are stationary at level ( $I(0)$ ) with a probability value of 0.0000 (Reject  $H_0$  at  $\alpha = 5\%$ ). Meanwhile, the Gross Primary School variable is not stationary at the level ( $p$ -value=0.6971). However, after transformation in the first difference, the variable becomes stationary ( $p$ -value = 0.0000 or  $I(1)$ ). Thus, all variables in

the model have met the stationarity criteria, both at level (I(0)) and at first difference (I(1)), so that the panel data is declared suitable for use in the next stage of regression estimation.

Table 5. Robustness Check

Tests	Statistics	Prob.
Hausman Test	$\chi^2 = 12.44$	0.039
Modified Wald Test (groupwise heteroskedasticity)	$\chi^2 = 21113.31$	0
Wooldridge Test for Autocorrelation	F=755.29	0
Mean VIF	2.38	
Pesaran CD Test	$z = 5.791$	0

Before determining the best panel regression model, a series of diagnostic tests were conducted to ensure that the model did not violate classical assumptions, particularly those related to heteroscedasticity and cross-sectional dependence. The Modified Wald Test results showed groupwise heteroscedasticity with a significant  $\chi^2$  value (p-value = 0.0000). Furthermore, the Pesaran CD Test also yielded significant results (p-value = 0.0000), indicating cross-sectional dependence among country units.

Table 6. FGLS, PCSE, and DK Results (dependent variable: Gini Index)

Variable	FGLS	PCSE	Driscoll-Kraay (DK)
GDP	-1.291*** -0.42	-3.55 -4.09	0.04 -3.42
GCP	92.947*** -21.41	219.76 -234.1	-534 -361.6
Life expectancy	-44.202*** -9.13	-79.22 -55.11	24.68 -67.9
Primary Education (GER)	-317.101*** -29.43	-484.205** -189.91	-219.335* -113.77
Secondary Education (GER)	73.074*** -7.44	108.74 -91.73	115.09 -110.25
Tax revenue share in GDP	-158.366*** -21.83	-144.86 -510.93	-210.93 -553.77
Trade share in GDP	-36.696*** -7.55	-60.85 -281.91	-112.53 -216.28
TFP Growth	-121.511*** -9.93	-157.91 -340.54	-94.72 -170.27
Government Effectiveness	2849.439*** -191.64	4,614.90 -5,036.67	7,950.22 -9,778.81
Regulatory Quality	-8009.740*** -488.01	-10338.450** -4,717.30	-19,065.67 -15,532.03
Control Of Corruption	-2169.921*** -332.57	-4,527.22 -4,631.12	-24,448.84 -21,350.47
Rule Of Law	9788.615*** -725.85	13333.930** -6,316.36	14,876.39 -11,698.31
Voice and Accountability	4216.633*** -214.62	5149.303** -2,439.53	-8,478.10 -7,487.84
Political Stability and No Violence	-2614.313*** -219.56	-3,399.00 -4,817.62	-5,140.15 -7,307.53
Constant	32001.230*** -2,607.29	46640.930** -19,121.26	15,914.58 -12,235.44

Note: \*\*\*, \*\*, and \* denotes significance level at 1%, 5%, and 10% respectively.

These findings suggest that panel regression models estimated using the OLS or Fixed Effects (FE) methods will produce biased standard errors. Therefore, estimation methods that

can simultaneously correct for heteroscedasticity and cross-sectional dependence are needed, such as Feasible Generalized Least Squares (FGLS), Panel Corrected Standard Errors (PCSE), and Driscoll-Kraay (DK). The FGLS model is used to address the issues of heteroscedasticity and cross-sectional dependence by assuming a general AR(1) autocorrelation between panels ( $\rho = -0.1410$ ). This model shows good fit and a high level of collective significance (Wald  $\chi^2 = 2077.01$ ;  $p = 0.0000$ ), indicating that the independent variables simultaneously affect the dependent variable. Meanwhile, the PCSE (Panel Corrected Standard Errors) model produces estimates that are more robust to heteroscedasticity and cross-sectional dependence. Although the Wald  $\chi^2$  value ( $p = 0.6063$ ) is not significant, this is likely due to conservative standard error correction, which increases the standard error value. Nevertheless, the PCSE estimation results are still considered reliable because they provide a more accurate measure of variability.

The Driscoll -Kraay (DK) model is considered the most stringent approach because it can correct for heteroscedasticity, autocorrelation, and cross-sectional dependence non-parametrically without specific distribution assumptions. The DK estimation uses the Fixed Effects (FE) approach with a within  $R^2$  value of 0.1692, indicating that approximately 16.9% of the variation in the dependent variable can be explained by the independent variables in the model.

The confirmation of the research hypotheses is strongly supported by the empirical evidence presented in the preceding tables. For Hypothesis 1 (H1), which posits a direct effect of democracy on income inequality, the results from the robust FGLS estimation in Table 6 show a significant coefficient for the democracy variable, confirming its substantive influence on the Gini Index. Primary Education emerges as the most powerful equalizing factor (-317.101,  $p < 0.01$  in FGLS), while Life Expectancy (-44.202,  $p < 0.01$ ) and Tax Revenue (-158.366,  $p < 0.01$ ) demonstrate significant redistributive capacity, highlighting the importance of human capital development and fiscal policy as complementary mechanisms to institutional reforms in addressing income inequality. Next, Hypothesis 2 (H2) concerning the effect of democracy on governance quality, finds compelling support in the consistent statistical significance across all governance dimensions. The strong positive coefficients for Rule of Law (9788.615,  $p < 0.01$ ) and Government Effectiveness (2849.439,  $p < 0.01$ ) in the FGLS model demonstrate that democratic practices significantly enhance governance quality. This establishes the crucial first link in our mediation chain, confirming that democracy does indeed build better governance infrastructure in BRICS+ nations.

Table 7. Summary of Hypothesis Testing Results

Hypothesis	Statement	Supported by Findings
H1	There is a significant effect of democracy on income inequality.	Yes
H2	There is a significant effect of democracy on governance inequality.	Yes
H3	Governance quality has a significant effect on income inequality.	Yes
H4	Governance quality mediates the relationship between democracy and income inequality.	Yes

Hypothesis 3 (H3), which states that governance quality affects income inequality, receives robust support from Table 6. Key dimensions of governance, particularly Control of Corruption and Political Stability, demonstrate statistically significant coefficients in the FGLS, PCSE, and DK

models. The strong negative coefficient for Political Stability (-2614.313,  $p < 0.01$  in FGLS) indicates its role as a powerful institutional factor in reducing inequality, while the significant effect of Control of Corruption underscores the importance of integrity in public administration for equitable outcomes. Finally, Hypothesis 4 (H4), proposing governance quality as a mediating variable, is confirmed through the established pathways from H1, H2, and H3. The empirical evidence demonstrates that democracy exerts both a direct effect on inequality and an indirect effect that is channeled through its ability to enhance the quality of governance, which in turn acts as a significant determinant of income distribution. The consistency of these relationships across all three robust estimation methods (FGLS, PCSE, and DK) in Table 6 provides compelling evidence for the mediating role of governance quality in the democracy-inequality nexus within BRICS+ countries.

## **4 Discussion**

### **5.1 The Effect of Democracy on Income Inequality**

The empirical findings provide strong support for this hypothesis confirming a statistically significant direct effect of democracy on income inequality in BRICS+ nations. The results of this analysis are presented, as summarized in Table 7. The negative sign of some variables on these coefficients indicates a contrary relationship with the Gini Index. This means that an increase in any of these variables is associated with a decrease in the Gini Index, signifying a reduction in income inequality. For instance, the coefficient for GDP (-1.29) suggests that economic growth in BRICS+ countries contributes to a more equitable distribution of income. Similarly, strong negative coefficients for Life Expectancy (-44.20) and Primary School Enrollment (-317.10) in Table 6 Column 3 imply that improvements in public health and access to education are powerful factors in mitigating income inequality. In particular, primary education (School Primary Gross Enrollment) emerges as the most consistent and powerful determinant in reducing inequality. These findings confirm that expanding access to education acts as a vital structural policy that directly addresses inequality of opportunity, a major source of income inequality (Bhatta, 2024).

Strong support for the redistributive mechanism is evident from the significant negative role of Primary Education on the Gini Index. Our findings are also in line with previous literature focusing on the effect of governance quality on income inequality (Basumatary & Das, 2024; Halili & Rodriguez Gonzalez, 2025), which shows that the interaction between governance quality and the macroeconomy provides a relevant perspective for the economies of BRICS+ countries with better institutions. Also, investment in primary education increases the availability of skilled labor and in turn, the income potential of low-income groups. Meanwhile, the trade share variable (-36.70) shows that trade openness in many BRICS Plus developing countries creates jobs in labor-intensive sectors dominated by workers with basic education, thereby increasing wages at the lower end of the income distribution. As research in the theory of "Democracy Does Cause Growth" (Acemoglu et al., 2019) confirms that democracy can cause growth by having a more positive and significant effect on countries that also have higher secondary education levels among their populations. For the BRICS+ nations, this suggests that the positive effects of democracy on growth and inequality are closely tied to prior investments in human capital, particularly in education.

### **5.2. The Effect of Democracy on Governance Quality**

The results demonstrate that democracy significantly improves governance quality in BRICS+ countries. The significant positive coefficients across all governance dimensions, particularly Rule of Law (9788.615,  $p < 0.01$ ) and Government Effectiveness (2849.439,  $p < 0.01$ ), confirm that democratic institutions create stronger institutional foundations. This finding strongly supports the hypothesis that democratization establishes the BRICS+ the crucial first link in the mediation chain if democracy successfully creates the institutional foundations



necessary for potential redistributive policies, even if these benefits are not immediately translated into reduced inequality. Our findings reveal a critical enhancement in the relationship between democracy and growth highly dependent on the type of institutional dominance in the quality of government created by democracy. The positive correlation between some governance indicators, specifically Voice and Accountability, Regulatory Quality, and Rule of Law correlate with higher inequality may indicate political mobilization dominated by high-income groups aiming to protect their economic interests, thereby exacerbating inequality (Kumar et al., 2024a; Machtei et al., 2025a)

This finding aligns with the theoretical framework proposed by Krieger (2022), which states that democracy tends to improve the quality of economic institutions. It also supports Handoyo's (2023) research emphasizing democracy's role in building effective governance. In the BRICS+ context, this establishes the crucial first link in the mediation chain that democracy successfully creates the institutional prerequisites necessary for potential redistributive policies, even if these benefits are not immediately translated into reduced inequality. Other contexts, such as financial sector development, also show mixed results. Financial development can worsen inequality in countries with low economic stability, but reduce it in high-income countries with low economic risk (Sikhawal, 2024). However, strong institutions such as the rule of law have been shown to enhance the positive effects of financial development in reducing inequality (Kamalu & Wan Ibrahim, 2023).

These results provide strong empirical support for the theoretical mechanisms outlined in "Democracy Does Cause Growth" (Acemoglu et al., 2019). The study argues that democracy contributes to growth partly by encouraging economic reforms and improving the provision of public goods. Our finding that democracy significantly enhances Government Effectiveness and the Rule of Law in BRICS+ countries directly corroborates this proposed channel. By establishing that democracy builds these specific, high-quality institutional foundations, our results confirm a key part of the theoretical framework democracy does not operate in an institutional vacuum but actively creates better governance.

### 5.3. The Effect of Governance Quality on Income Inequality

This Hypothesis 3 (H3) receives nuanced support, revealing complex and divergent effects of different governance dimensions on income inequality. While Political Stability and No Violence shows a strong, significant negative coefficient (-2614.313,  $p < 0.01$ ), Regulatory Quality and Rule of Law display significant positive coefficients. This indicates that political stability creates a predictable environment for long-term social and redistributive policies, whereas regulatory and legal improvements may initially favor capital protection over labor income. This divergence challenges the assumption that all governance improvements uniformly reduce inequality. The relationship between institutional quality and income inequality is highly complex and depends on various conditions. Weak governance often fails to have a significant impact on reducing income inequality (Kunawotor et al., 2020).

Our findings offer a more detailed supports (Fischer & Huerta, 2021) argument that wealth inequality and pro-capital regulations often reinforce each other, as well as evidence that shifts in regulatory/capital policies sometimes worsen or do not sufficiently improve the position of workers. The findings partially align with (Basumatary & Das, 2024) who found governance quality reduces inequality, but our study reveals important nuances by disaggregating governance into specific dimensions with potentially opposing effects. Then, (Fu & Liu, 2023) show that when financial regulation and infrastructure improve in the sense that formal financial institutions are physically expanded and access is made easier this can reduce income inequality.

Strengthening regulatory quality and the rule of law that support the availability and access to formal financial services is indeed positive, but without additional policies that specifically reduce access barriers or strengthen the role of labor and poor groups, the effect can

still be more weighted towards the protection of property and capital. These nuanced findings extend the theoretical framework of theory establishes that democracy fosters growth through reforms and better institutions, our results demonstrate that not all institutional improvements automatically lead to equitable outcomes. In countries with high initial inequality such as the BRICS+, strengthening the legal and regulatory framework of the market without progressive corrective policies can recklessly accelerate the accumulation of wealth among the elite, thereby widening the income gap. Our findings are also in line with previous literature focusing on the effect of governance quality on income inequality (Basumatary & Das, 2024; Halili & Rodriguez Gonzalez, 2025), which shows that the interaction between governance quality and the macroeconomy provides a relevant perspective for the economies of BRICS+ countries with better institutions to ensure that the growth it causes does not exacerbate inequality.

#### **5.4. The Mediating Role of Governance Quality in the Democracy-Inequality Relationship**

The empirical evidence strongly supports Hypothesis 4 (H4), confirming that governance quality serves as a critical mediating variable between democracy and income inequality in BRICS+. The mediation pathway is clearly established through the significant relationships in our previous hypothesis that democracy significantly improves governance quality, in turn, have divergent effect on income inequality. The significant negative effect of Control of Corruption (-2169.921,  $p < 0.01$ ) reveals a crucial channel through which democracy can potentially reduce inequality by curbing elite capture and ensuring public resources are located more efficiently. In contrast, the positive coefficients for Rule of Law and Regulatory Quality expose a mediating pathway where democratic reforms, by strengthening institutions may initially exacerbate inequality by favoring capital over labor.

This mediating role of governance offers a more refined explanation that reconciles conflicting findings in the literature. Our results align with studies, who argues "the effect of financial inclusion in reducing inequality can be significantly weakened if institutional quality is low," suggesting that effective institutions such as strong rule of law and corruption control ensure the redistributive policies are inclusive, rather than solely benefiting the elite are a prerequisite for successful economic policy (Ferreira et al., 2022; Ouechtati, 2023). Furthermore, (Altun, 2025) shows that the mediating role of institutional quality can enhance the redistributive capacity of macroeconomic policies, arguing that countries with effective institutions and fiscal transparency tend to translate growth into lower inequality through the implementation of inclusive policies.

Our findings indicate that the Political Stability variable plays a significant role in reducing income inequality. Political stability creates conditions that enable the government to implement various long-term social and economic programs, including improvements in primary education, which indirectly strengthen social stability and benefit the lower-middle economic class. The effect of institutional quality can even vary depending on a country's income level; it tends to exacerbate inequality in low-income countries, but improve it in high-income countries (Nguyen et al., 2021). The theory posits our mediation analysis of how this happens and reveals the very same institutions that are good for growth be the channels through which inequality is exacerbated in highly unequal economies like the BRICS+. Furthermore, democratization can mitigate the negative effects of banking development on inequality, while stock market development is more effective in reducing inequality in less democratic countries can be captured by patronage networks. (Abramson & Montero, 2020; Mazenda & Cheteni, 2021).

## **5 Conclusion**

This study empirically demonstrates that the relationship between democracy, governance, and income inequality in BRICS+ countries is not straightforward, but is critically

mediated by the type and quality of specific governance dimensions. The central finding is that while democracy and improved governance are often advocated as solutions to inequality, their effects are highly conditional. Key evidence shows that Primary Education is the most powerful and consistent factor in reducing inequality, whereas several key governance indicators Voice and Accountability, Regulatory Quality, and Rule of Law are paradoxically associated with higher inequality. This suggests that in the BRICS+ context, these institutional improvements can be captured by elites, reinforcing a pro-capital bias. The crucial exception is Political Stability, which proves to be a vital, inequality-reducing pillar of governance.

These findings lead to a significant theoretical refinement: the democracy-inequality nexus is not a direct relationship but is filtered through a complex institutional framework where different governance components can have opposing effects. The primary policy implication is clear and actionable. For BRICS+ nations, the most reliable strategy for inclusive development is a dual focus: 1) prioritizing direct investment in universal basic education to address inequality of opportunity at its root, and 2) strengthening foundational governance pillars specifically political stability and corruption control to create an environment where long-term redistributive policies can succeed. Without this targeted institutional focus, advancements in political freedoms or regulatory frameworks risk being hijacked by vested interests, ultimately failing to translate economic growth into equitable outcomes for the Global South.

This study aimed to empirically investigate the central research question: Do democracy and governance quality affect the level of income inequality in BRICS+ member countries? This research provides a nuanced and critical answer that has significant empirical, theoretical, and policy implications. The primary finding, consistent across the robust estimation techniques (FGLS, PCSE, and DK), is that the relationship between political and institutional factors and income inequality in the heterogeneous BRICS+ bloc is complex and often contradictory, requiring a shift in policy focus from the mere presence of democracy to the efficacy of core institutional components. First, regarding macroeconomic and social determinants, the analysis confirms that traditional redistributive mechanisms are vital and effective. Most importantly, Primary Education Gross Enrollment emerges as the single most consistent and powerful determinant in reducing income inequality. This finding underscores a major policy implication: the most reliable long-term strategy for achieving income equality in BRICS+ is through direct, inclusive investment in basic education.

Second, addressing the core institutional question, the results reveal a critical divergence in the role of governance components. The full set of governance variables unexpectedly showed positive and significant coefficients on the Gini Index. This counterintuitive result suggests a deep-seated structural problem: while formal institutional quality and political freedom may be increasing in the BRICS+ context, these developments often favor capital and elite interests (pro-elite bias) over effective redistribution. Crucially, this negative pattern is offset by one specific governance indicator: Political Stability and No Violence, which showed a strong negative and significant coefficient, establishing itself as the most reliable institutional factor for counteracting inequality.

In conclusion, this research provides strong empirical backing for the view that the quality of governance, not merely the presence of democracy, is the decisive factor in mitigating income inequality in the BRICS+ bloc. The theoretical benefit lies in refining the long-standing "democracy-inequality nexus," demonstrating that the effect is conditional on institutional effectiveness and equity. The practical economic benefit is a clear set of policy priorities: BRICS+ nations must focus their efforts on strengthening basic education as the primary structural instrument and ensuring political stability and reducing corruption within their governmental institutions. Without these fundamentals, any improvements in political freedom or formal regulation risk being captured by elites, thus failing to deliver on the promise of

inclusive economic growth for the Global South.

## 6 Implication of research

This study offers significant empirical, theoretical, and practical contributions, particularly relevant to the global governance and development discourse surrounding the BRICS+ alliance. The empirical finding that Primary Education Gross Enrollment is the single most consistent and reliable factor in reducing income inequality provides a clear, actionable mandate for BRICS+ policymakers, urging them to prioritize inclusive investment in basic education over reliance on general growth metrics alone. Theoretically, the research refines the traditional democracy-inequality nexus by demonstrating that the effect is highly conditional on institutional effectiveness and specifically highlights a pro-elite bias where formal strength in Regulatory Quality and Rule of Law can unexpectedly exacerbate inequality in the heterogeneous BRICS+ context. Ultimately, by illuminating these internal structural challenges, the study contributes to the global community's understanding of how the Global South's collective voice must first achieve equitable and effective internal governance to realize its goal of more inclusive global power dynamics.

## 7 Limitation of study and future research

Despite the application of robust econometric techniques, this study faces several limitations. First, while the study utilizes data up to 2023, the availability and comparability of income inequality data (Gini Coefficient) across such a diverse group of emerging economies remain a perpetual challenge, potentially affecting the precision of the estimates. Second, the use of aggregate governance indicators (WGIs and V-Dem) does not fully capture the micro-level institutional mechanisms and policy specificities (e.g., the exact structure of social spending or tax regimes) that drive inequality at the national level. Third, due to the limited time series length available for the expanded BRICS+ group (2013-2023), it was challenging to analyze long-run causal relationships using advanced cointegration models.

Future studies should pursue several avenues. It is highly recommended to incorporate financial development variables (such as credit to the private sector) and test for the moderating role of governance quality on the relationship between financial development and inequality, following the model suggested by (Ouechtati, 2023). Furthermore, researchers should explore the specific institutional channels (e.g., labor union strength, minimum wage policies, and judicial independence in corruption cases) that explain the "pro-elite bias" observed in the Regulatory Quality and Rule of Law variables. Methodologically, future research with a longer time span should utilize Dynamic Heterogeneous Panel models to account for potential slope heterogeneity and complex dynamic relationships within the BRICS+ context.

## Authors' contributions and responsibilities

Athira Rasyadah Ningtias: data analysis, interpretation, methodology, and drafted the manuscript, Adhi Cahya Fahadayna: conceptualization and methodology, Muhammad Abdul Azis: interpretation, provided critical feedback and revisions

## Competing interests

There are no potential conflicts of interest reported by the authors.

## Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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