INCOME INEQUALITY, GOVERNANCE QUALITY, AND POLITICAL ENGAGEMENT: A CROSS-COUNTRY ANALYSIS OF DISPARITIES AND DEMOCRATIC PARTICIPATION

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Background
Income gaps threaten democratic vitality, yet the evidence is mixed on whether economic inequality inevitably suppresses citizens' political voices. We argue that institutional integrity—particularly the capacity to curb corruption—conditions how inequality translates into civic disengagement. By embedding governance quality in the inequality-participation debate, this study addresses a significant omission in comparative political-economy scholarship and offers policy-relevant insights.

Methods
We compile a balanced panel of ten democracies—Australia, Germany, Japan, the United Kingdom, the United States, Brazil, India, Indonesia, Mexico, and South Africa—for 2002-2022. Voice and Accountability (Worldwide Governance Indicators) are the outcome variable; predictors include the lagged Gini Index, extreme poverty headcount, GDP-per-capita growth, and five governance metrics. Country- and year-fixed-effects regressions with cluster-robust errors are estimated. Diagnostic tests (Pesaran LM, IPS, Westerlund, VIF) guide specification and interaction terms to assess whether strong corruption control moderates inequality's impact in developed versus developing subsamples.

Results
Corruption control is the strongest positive predictor of democratic voice, while inequality and poverty are insignificant in isolation. Interaction models reveal pronounced asymmetries. In developed economies, the deleterious effect of inequality is neutralised—and sometimes reversed—when corruption is tightly controlled ($\beta = +0.028$, $p < 0.01$). In developing economies, inequality remains benign until corruption escalates, at which point higher Gini scores significantly erode Voice and Accountability ($\beta = -0.020$, $p \approx 0.07$). Corrected models confirm a modest universal adverse effect of inequality once institutional dynamics are constant.

Conclusions
Inequality is not destiny; its democratic toll depends on whether institutions can control corruption. Policy agendas that redistribute income will underperform if they neglect governance reforms. Combating graft, professionalising public administration, and expanding digital feedback channels can shield civic participation even in unequal societies. Conversely, failing to fortify institutions leaves democracies—especially developing ones—vulnerable to a corrosive feedback loop of widening gaps and falling political voices.

Keywords
Income Inequality (D63), Poverty (I32), Control of Corruption (D73), Voice and Accountability (D72), Governance Quality (H11), Political Engagement (D72), Fixed-Effects Panel Data (C23), Comparative Development (O57)

1. INTRODUCTION

The relationship between income inequality and political engagement has become a critical subject of inquiry in the social sciences (Solt, 2008; Uslaner & Brown, 2005). Over the last two decades, numerous scholars have explored how widening economic disparities shape electoral turnout, institutional trust, and citizen participation, highlighting their implications for democratic stability (Wilkinson & Pickett, 2010; Bartels, 2008). Meanwhile, a parallel research tradition in governance studies has shown that robust institutions—e.g., high regulatory quality, rule of law, government effectiveness, and control of corruption—often sustain vibrant democracies and mitigate the adverse effects of socioeconomic imbalances (Kaufmann, Kraay, & Mastruzzi, 2010; Rothstein & Uslaner, 2005).

Despite these considerable contributions, important gaps remain in existing research. First, cross-country comparative studies that simultaneously investigate economic inequality (e.g., Gini index, extreme poverty rates) and governance indicators (such as Government Effectiveness, Political Stability, Regulatory Quality, Voice and Accountability, Rule of Law, Control of Corruption) are still relatively sparse (Leigh, 2005; Geys, 2006). Scholars like Solt (2008) and Dalton (2004) typically focus on a subset of variables—e.g., inequality and voter turnout—omitting more holistic measures of institutional performance. Second, while some studies underscore how digital civic platforms can help address political disengagement in unequal societies (Brady, Verba, & Schlozman, 2006; Gil de Zúñiga, Diehl, & Huber, 2020), there is a lack of systematic, longitudinal and cross-national analyses establishing whether such interventions effectively mitigate the negative consequences of inequality on democratic participation. Third, most inequality–participation research is based on Western democracies, leaving emerging or developing countries underrepresented (Bartels, 2008; Dalton, 2004; Solt, 2008).

This integrated paper addresses these concerns by proposing a comprehensive, cross-country approach to understanding how income inequality (via the Gini Index), extreme Poverty, and macroeconomic performance (GDP per capita growth) interact with a broad set of governance indicators—including Government Effectiveness, Control of Corruption, Rule of Law, Voice and Accountability, Regulatory Quality, and Political Stability—to shape political engagement. In doing so, it builds on two robust strands of literature: (1) the extensive body of work linking economic disparities to declines in turnout and political trust (Uslaner & Brown, 2005; Stiglitz, 2012) and (2) research on how institutional quality fosters or impedes civic participation (Rothstein & Uslaner, 2005; Kaufmann et al., 2010).

By merging insights from these fields, we provide a theoretical and empirical basis for exploring solutions that might reduce disenfranchisement—ranging from traditional redistributive measures to digital democratisation platforms like UrVote. The following sections review the core debates

surrounding inequality and political disengagement, highlight the role of governance dimensions in shaping civic life, and introduce a methodological framework for cross-country, longitudinal analysis of the nine key indicators. Finally, we discuss the potential of emerging digital civic platforms to address structural and attitudinal barriers to engagement.

2. LITERATURE REVIEW

Extensive empirical research highlights the profound impact of income inequality on civic participation, especially among economically disadvantaged groups. Rising inequality fosters social alienation, diminishes political efficacy perceptions, and weakens collective trust, thus reducing incentives for political engagement and weakening democratic legitimacy (Solt, 2008; Uslaner & Brown, 2005; Dalton, 2004; Bartels, 2008). Brady, Verba, and Schlozman (2006) further underscore how pronounced economic disparities create imbalanced distributions of essential resources such as education and wealth, amplifying political disengagement among low-income populations.

The adverse effects of inequality are amplified by extreme Poverty. The poverty headcount ratio at $2.15 a day (PPP) quantifies severe economic deprivation and demonstrates how Poverty monopolises individuals' limited time, energy, and resources, severely restricting their capacity to engage politically (World Bank, 2022; Verba, Schlozman, & Brady, 2000; Easterly, 2001). Citizens experiencing extreme Poverty often prioritise immediate economic survival over political activities, thereby perpetuating lower turnout and Accountability (Dalton, 2004; Alesina & La Ferrara, 2002). Solt (2008) confirms these patterns globally, illustrating how higher inequality disproportionately depresses voter turnout among economically disadvantaged populations.

Complementing inequality and Poverty, GDP per capita growth significantly influences civic engagement. Lipset (1959) posits that economic growth fosters an expanding middle class, enhancing political stability and democratic participation. Stiglitz (2012) adds that sustained growth provides fiscal latitude for redistributive social programs, thus alleviating distributive tensions. Conversely, economic stagnation exacerbates grievances, intensifies resource conflicts, and diminishes institutional trust (Norris, 2011).

Institutional Governance as a Mediator

Institutional quality, encompassing Government Effectiveness, Control of Corruption, Rule of Law, Regulatory Quality, and Political Stability, critically shapes civic participation (Kaufmann et al., 2010). Government Effectiveness enhances political engagement by increasing citizens' confidence that participation yields meaningful outcomes (Evans & Rauch, 1999; Rothstein &

Uslaner, 2005). Conversely, ineffective governance, marked by corruption and inefficiency, provokes political disenchantment (Hooghe & Marien, 2013).

The relationship between governance quality and corruption is inherently intertwined and pivotal to understanding civic engagement dynamics. High-quality governance institutionalises transparency, fairness, and responsiveness and establishes robust safeguards against corrupt practices. In contrast, poor governance environments often exhibit institutional weaknesses—such as lack of oversight, bureaucratic inefficiency, and limited civic Accountability—that create fertile ground for corruption to flourish (Kaufmann et al., 2010; Rothstein & Teorell, 2008). This erosion of trust in public institutions discourages citizen participation, particularly among marginalised groups who perceive political processes as inaccessible or rigged in favour of elites. Consequently, addressing corruption is not merely a legal or administrative priority but a fundamental requirement for enhancing institutional legitimacy and encouraging inclusive democratic participation (Johnston, 2005; Uslaner, 2008).

Control of corruption is particularly vital, as it maintains fairness and prevents elite capture of political processes (Rose-Ackerman, 1999; Johnston, 2005). High corruption erodes trust, discouraging formal political participation and occasionally triggering extralegal protests (Morris & Klesner, 2010; Rothstein & Uslaner, 2005). Effective corruption control fosters transparency and equitable representation, empowering marginalised populations to engage actively.

The Rule of Law promotes democratic participation by ensuring impartial legal frameworks, protecting political liberties, and enabling institutional redress for grievances (Tamanaha, 2004; Kaufmann et al., 2010). Weak rule-of-law environments suppress dissent and constrain civil society autonomy, significantly limiting civic engagement (Goldstone et al., 2010). Regulatory Quality intersects with civic freedoms, allowing diverse societal voices, independent media, and robust civil organisations to flourish (Djankov et al., 2003; Gleditsch et al., 2009). Political Stability and Absence of Violence underpin meaningful civic participation by reducing fears of repression and encouraging active political involvement (Dalton, 2004; Norris, 2011).

Voice and Accountability (VA) offers comprehensive insights into democratic health beyond voter turnout, encapsulating freedom of expression, association, and citizen participation in governance (Kaufmann et al., 2010; Cornell & Grimes, 2015). Countries combining high VA with equitable resource distribution sustain robust democratic participation despite economic fluctuations, whereas weak VA contexts often exhibit heightened corruption and institutional distrust (Wilkinson & Pickett, 2010; Morris & Klesner, 2010). VA constitutes this study's central research question and primary independent variable. Specifically, the analysis tests the relationship between Voice and Accountability and income inequality, seeking to uncover whether stronger democratic engagement mechanisms are associated with lower levels of income disparity across different governance contexts.

The choice of these variables rests on their well-established theoretical and empirical salience for explaining democratic participation, measured here through Voice and Accountability (VA), in ways that rival indicators cannot match. Income inequality, proxied by the Gini Index, systematically undermines political equality: higher inequality depresses citizen engagement and concentrates influence among the wealthy (Solt, 2008), reinforces a "one-dollar-one-vote" dynamic that distorts representation (Stiglitz, 2012), and erodes the interpersonal trust that sustains collective action (Rothstein & Uslaner, 2005). Extreme Poverty—captured by the headcount ratio at US $2.15 (2017 PPP)—adds a further constraint, as individuals struggling for subsistence lack the time, education, and resources required for civic involvement (Brady, Verba & Schlozman, 2006). Complementarily, sustained GDP-per-capita growth signals broader economic opportunity: modernisation theory posits that an expanding middle class fosters political stability and participatory norms (Lipset, 1959). However, economic variables operate within an institutional matrix; thus, the inclusion of Government Effectiveness, Control of Corruption, Rule of Law, Regulatory Quality, and Political Stability acknowledges that robust, transparent institutions amplify the returns to participation and curb elite capture. In contrast, weak or corrupt frameworks breed cynicism and disengagement (Kaufmann et al., 2010). Together, inequality, extreme Poverty, economic growth, and institutional quality form an integrated explanatory set with demonstrable influence on VA, justifying their use over alternative metrics.

Digital Civic Platforms: Opportunities and Risks

Digital civic platforms offer significant potential as "equalisers" by lowering resource-based barriers to participation through simplified legislative processes, accessible voter guides, and enhanced perceived efficacy (Gil de Zúñiga et al., 2020; Simon et al., 2022; Brady et al., 2006). While this study does not empirically test digital participation as a variable, the broader relevance of these platforms lies in their ability to expand civic engagement, particularly in contexts of high inequality or limited institutional trust. UrVote is an illustrative case highlighting the promise—and the challenges—of digital tools in fostering more inclusive democratic processes. However, the effectiveness of such platforms depends heavily on stable regulatory environments, comprehensive internet access, robust cybersecurity, and adequate digital literacy to avoid replicating offline inequalities (Margetts, 2017; Chadwick & Dennis, 2019; Zuboff, 2019).

Concerns about the integrity and security of digital platforms are increasingly salient, given risks related to hacking, surveillance, data misuse, and manipulation by elite interests (Snowden, 2019; Obar & Oeldorf-Hirsch, 2020). Integrating robust cybersecurity measures—such as end-to-end encryption and transparent data governance—is essential to ensure legitimacy and citizen trust in digital platforms. Documentaries and investigative reports have highlighted how digital tools can inadvertently become part of broader surveillance and data exploitation systems, reinforcing the importance of safeguards protecting privacy and data sovereignty.

3. METHODOLOGY

This study comprehensively examines the relationships among income inequality, Poverty, economic growth, governance quality, and civic participation. Specifically, it investigates how income inequality, measured by the Gini index, and extreme poverty levels interact with macroeconomic growth to influence political participation, represented primarily by Voice and Accountability (VA) and supplemented by additional metrics such as voter turnout. Additionally, the study explores whether governance quality—captured through indicators like Government Effectiveness, Control of Corruption, Rule of Law, Regulatory Quality, and Political Stability—modulates or mitigates the adverse impacts of economic disparities. Furthermore, recognising the contemporary relevance of digital engagement, this research also aims to explore the potential role of digital civic platforms in overcoming political disaffection in settings characterised by significant inequalities.

In line with these objectives, the study hypothesises that higher Gini scores and elevated poverty rates negatively correlate with VA, reflecting diminished civic participation and democratic health. Additionally, it hypothesises that strong governance mechanisms, particularly Government Effectiveness and Control of Corruption, can offset or reduce the adverse effects of income inequality on political engagement. Moreover, the study posits that GDP per capita growth generally supports improved VA, although this relationship may be insufficient to overcome extreme disparities in contexts with weak governance structures.

The countries selected for this analysis—Australia, Germany, Japan, the United Kingdom, and the United States (developed); Brazil, India, Indonesia, Mexico, and South Africa (developing)—are analytically and pragmatically robust choices (Figure 1). These nations exemplify diverse democratic contexts with varied levels of income inequality, institutional strength, and digital infrastructure (Kaufmann et al., 2010; Gleditsch et al., 2009). Their consistent governance and economic data coverage over two decades facilitate rigorous longitudinal analysis (World Bank, 2022). Limiting the sample to ten countries enables an in-depth exploration of institutional contexts' mediating role in the relationship between inequality and political engagement, ensuring analytical clarity and methodological reliability (Solt, 2008; Cingano, 2014). Expanding to more countries would have increased data heterogeneity and potentially reduced the availability of consistent longitudinal data—especially for key governance indicators in low-income nations—thus compromising panel balance and model reliability (Solt, 2008; Cingano, 2014).

Table 1. Country Classification and Governance-Relevant Characteristics by Development Level

Country	Development Level	Key Characteristics

Australia	Developed	High-income economy, strong institutional quality, robust digital infrastructure, high human development index (HDI).
Germany	Developed	High-income, EU member, strong rule of law, export-driven economy, low levels of extreme Poverty.
Japan	Developed	Advanced economy, high technology adoption, stable governance, ageing population challenges.
United Kingdom	Developed	Post-industrial economy, legacy of democratic institutions, stable governance, high civic participation.
United States	Developed	Large high-income economy, significant influence in global politics, developed financial markets, high inequality.
Brazil	Developing	Upper-middle-income, high inequality, democratic system with governance challenges, active civil society.
India	Developing	Lower-middle-income, large population, high Poverty, robust democratic institutions, rapid digital expansion.
Indonesia	Developing	Emerging economy, middle-income, governance improvement, high digital engagement, persistent corruption issues.
Mexico	Developing	Upper-middle-income, high urbanisation, persistent inequality, democratic with the rule of law concerns.
South Africa	Developing	Upper-middle-income, high inequality, strong civil society, post-apartheid democracy with governance gaps.

By the authors
Source: Word Bank (2025), Governance Index WGI (2025)

Data Sources and Variables

The empirical analysis draws on several reliable data sources, including the World Development Indicators (WDI), which provide measures for the Gini Index, Poverty Headcount Ratio at $2.15 per day (2017 PPP), and GDP per Capita Growth. Governance quality is evaluated through data from the Worldwide Governance Indicators (WGI), which includes Government Effectiveness, Control of Corruption, Rule of Law, Regulatory Quality, Political Stability and Absence of Violence/Terrorism, and Voice and Accountability. Where applicable, voter turnout data are obtained from the International Institute for Democracy and Electoral Assistance (International IDEA) or relevant national electoral authorities.

The dependent variable, Voice and Accountability (VA), sourced from WGI, is rated approximately from -2.5 (indicating weak democratic practices) to +2.5 (indicating robust democratic practices). The main explanatory variables considered are the Gini Index, which captures overall income inequality; the Poverty Headcount Ratio, which highlights the proportion of the population living below $2.15/day; and GDP per Capita Growth, which reflects annual economic performance and its potential impact on civic participation.
The analysis includes governance indicators as potential moderating factors: Government Effectiveness, Control of Corruption, Rule of Law, Regulatory Quality, Political Stability, and Absence of Violence/Terrorism. These indicators explore the extent to which strong institutional contexts might buffer or exacerbate the influence of economic disparities on democratic engagement.

This paper integrates two major strands of literature: the relationship between income inequality and political disengagement, and the role of institutional governance in enabling or constraining civic participation. These dimensions are brought together into a unified analytical framework built around nine core variables: (1) Income Inequality (Gini Index), (2) Poverty Headcount Ratio at $2.15/day, (3) GDP per Capita Growth, (4) Government Effectiveness, (5) Control of Corruption, (6) Rule of Law, (7) Voice and Accountability, (8) Regulatory Quality, and (9) Political Stability and Absence of Violence/Terrorism. By bridging economic and institutional determinants of political engagement, this study aims to provide a more comprehensive understanding of the conditions that shape democratic voices across countries and over time.

Limitations and Gaps

The study acknowledges limitations inherent to its design and data sources. Firstly, data gaps exist, particularly for variables such as the Gini Index and Poverty Headcount Ratio, which may not be consistently updated annually for all countries included, potentially affecting the panel's balance and completeness. Secondly, significant multicollinearity among the governance indicators presents analytical challenges; thus, strategies such as factor analysis or separate regressions may be necessary to mitigate inflated standard errors and interpretative ambiguity. Thirdly, despite employing fixed-effects models to reduce omitted variable bias, concerns around endogeneity persist, as reverse causation remains plausible—for example, improved governance potentially influencing lower inequality over time.

Measurement limitations also arise from the choice of indicators. Specifically, the Gini Index primarily captures income disparities and does not comprehensively account for wealth inequality or asset distribution. Similarly, the selected poverty line of $2.15/day may inadequately capture segments experiencing moderate Poverty. Finally, while the inclusion of both developed and developing countries enhances the generalizability of the findings, external validity may be limited when applied to non-democratic contexts or countries where civic spaces are significantly constrained. These caveats underscore the need for cautious interpretation of findings and highlight areas for further research.

While the proposed cross-country, longitudinal design clarifies many issues, further research might adopt mixed methods: in-depth qualitative interviews can capture how citizens perceive inequality and governance in diverse contexts. At the same time, experiments can isolate whether digital interventions truly boost engagement across income strata. Additionally, more advanced econometric strategies (e.g., dynamic panel models and instrumental variables) can tackle endogeneity concerns, including the possibility that higher engagement fosters lower inequality over time. Extending beyond formal democracies and including quasi-authoritarian regimes can reveal how repressive environments alter the relationship between resource disparities and civic life (Leigh, 2005).

Most cross-national studies that link economic conditions to political engagement still rely on income inequality—typically measured by the Gini Index, as in Solt's seminal SWIID work (Solt, 2008). By centring our analysis on this updated poverty headcount, introduced to reflect higher global living costs, we address the resource-constraint logic of the Civic Voluntarism Model, which posits that material scarcity drains the time, money, and skills needed for participation (Verba et al., 1995). We also construct a balanced ten-country panel—five developed and five developing economies—to examine whether the Poverty–voice relationship varies across structural contexts, answering recent calls to avoid averaging away North-South heterogeneity (Haggard & Kaufman, 2021).

Our second innovation is conceptual. Instead of focusing on voter turnout or composite democracy scores, we model Voice and Accountability (VA) using the latest Worldwide Governance Indicators release and its well-documented methodology (Kaufmann et al., 2010). We then interact extreme Poverty with five institutional pillars—government effectiveness, regulatory quality, rule of law, control of corruption, and political stability—to test whether capable, rule-bound states can mitigate the participatory costs of deprivation, a mechanism theorised but rarely examined with full WGI granularity (Rothstein & Teorell, 2008). This approach extends the literature on turnout bias under inequality (Solt, 2010) and complements newer multidimensional poverty frameworks that emphasise institutional context (Alkire & Santos, 2014). Our focus on the US $2.15 line, the symmetric developed-versus-developing sample, and the institutional-interaction design carve out a novel empirical space that previous large-N panels have yet to explore in a single, unified model.

Finally, this study is distinctive because it bridges the traditional divide between "hard-number" economics and more judgment-based institutional diagnostics. By modelling Poverty and GDP-growth figures alongside governance scores such as Voice and Accountability or Control of Corruption, we weave together quantitative resource constraints with qualitative assessments of how power is exercised. This multidimensional design allows us to test not only *whether* material scarcity suppresses civic voice but *under what institutional conditions* that effect is amplified or dampened—an interaction rarely captured when scholars treat economic and governance domains in separate silos.

Rising income inequality has become one of the most pressing socio-political challenges of the 21st century, not only for its economic consequences but also for its potential to undermine democratic participation. While economic disparities are often discussed in terms of Poverty and social exclusion, their political implications remain underexplored. This paper seeks to address that gap by examining how income inequality may erode civic voice and Accountability, particularly in contexts where institutional safeguards are weak. The central hypothesis is that higher income inequality reduces Voice and Accountability by concentrating political power, limiting representation, and weakening trust in democratic institutions—effects that may be amplified or moderated depending on the quality of governance.

Methods

This study adopts a two-stage methodological approach. First, a descriptive analysis examines the key variables' basic statistical properties and bivariate correlations, offering an initial understanding of their associations. Building on these insights, the second stage involves estimating a panel data econometric model to explore causal relationships. The model incorporates country and year-fixed effects to control for unobserved heterogeneity and includes lagged independent variables to mitigate potential endogeneity. Robustness is further ensured through statistical tests addressing heteroskedasticity, multicollinearity, and serial correlation. This approach accurately identifies the structural factors influencing Voice and Accountability across countries and over time.

Descriptive Analysis

Before proceeding with the regression analysis, we explore the bivariate relationships among the key variables through a correlation matrix. This descriptive analysis allows us to identify general patterns of association between institutional indicators, economic variables, and political engagement. While these simple correlations do not imply causality, they provide a helpful starting point to assess the direction and strength of relationships—particularly between Voice and Accountability and factors such as income inequality, Poverty, corruption control, and government effectiveness.

Table 2: Correlation Matrix

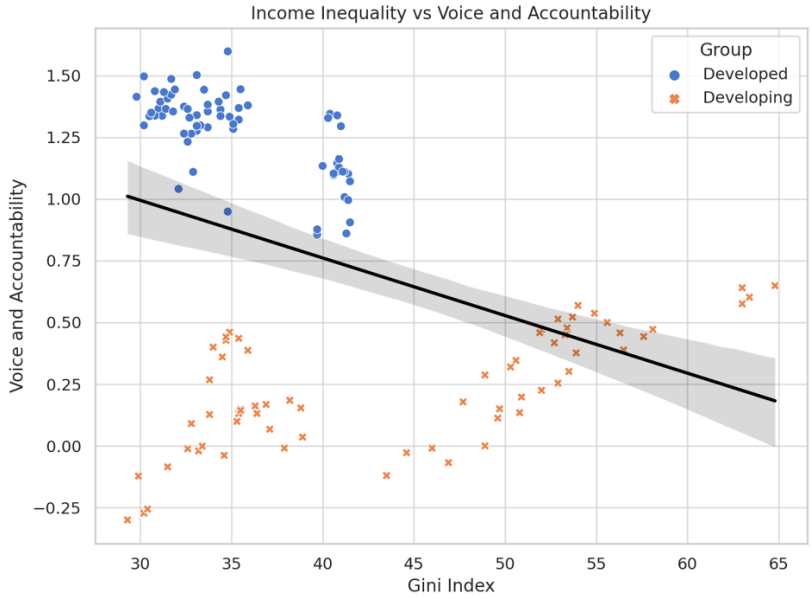
Series Name	Voice Accountability	Gini	Poverty	GDP growth	Government Effect	Corruption Ctrl	Rule Of Law	Regulation Quality	Politics Stability
Voice Accountability	1.0	-0.37	-0.63	-0.22	0.93	0.98	0.97	0.94	0.88
Gini	-0.37	1.0	0.17	-0.09	-0.49	-0.44	-0.48	-0.38	-0.21
Poverty	-0.63	0.17	1.0	0.37	-0.65	-0.65	-0.64	-0.72	-0.74
GDP growth	-0.22	-0.09	0.37	1.0	-0.2	-0.21	-0.22	-0.25	-0.28
Government Effect	0.93	-0.49	-0.65	-0.2	1.0	0.97	0.97	0.97	0.84
Corruption Control	0.98	-0.44	-0.65	-0.21	0.97	1.0	0.98	0.97	0.89
Rule Of Law	0.97	-0.48	-0.64	-0.22	0.97	0.98	1.0	0.96	0.86
Regulation Quality	0.94	-0.38	-0.72	-0.25	0.97	0.97	0.96	1.0	0.88
Politics Stability	0.88	-0.21	-0.74	-0.28	0.84	0.89	0.86	0.88	1.0

By the authors. Source: From Phyton Package, World Bank and WID (2025)

The correlation analysis provides initial insights into the associations between institutional quality, economic conditions, and political participation. Voice and Accountability shows strong positive correlations with key governance indicators, particularly Control of Corruption (r = 0.98), Rule of Law (r = 0.97), and Government Effectiveness (r = 0.93), suggesting that stronger institutions are associated with higher democratic engagement. Conversely, it is negatively correlated with Poverty (r = –0.63) and the Gini Index (r = –0.37), indicating that higher inequality and poverty levels tend to be associated with a weaker democratic voice. These patterns highlight the potential mediating role of institutional quality in the relationship between economic conditions and political participation. However, it is important to note that these correlations do not account for country-specific or time-specific effects, nor do they control for confounding variables. Therefore, the econometric model—including fixed effects and interaction terms—will provide a more robust and accurate estimation of these relationships.

The relationship between income inequality and political engagement by exploring simple correlations and presenting formal regression results that account for institutional quality and economic factors. The results suggest that the simple direct link between economic inequality and political voice might not be linear or straightforward (See Figure 1).

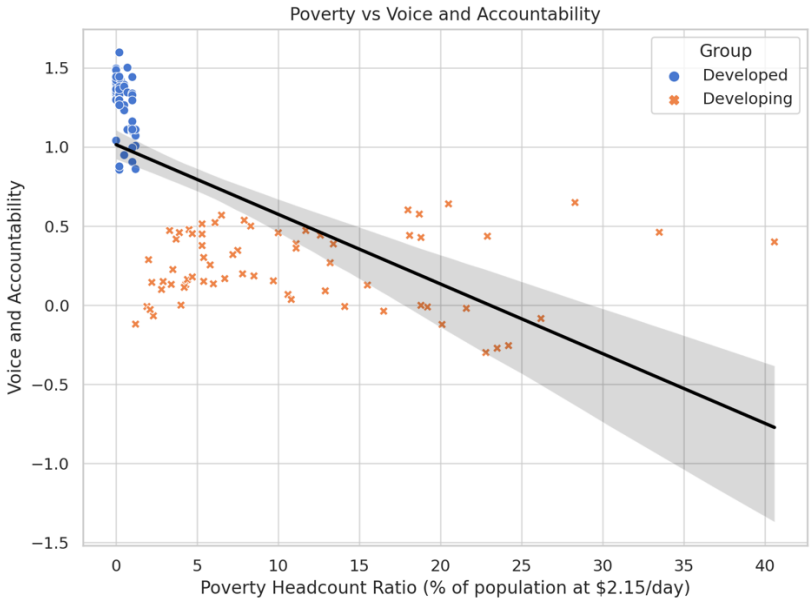
Figure 1. Income Inequality and Voice and Accountability



By the authors

In Figure 1, political participation tends to decrease as income inequality increases. However, the association appears weak, suggesting other factors may mediate or moderate this relationship.

Figure 2. Poverty and Voice and Accountability



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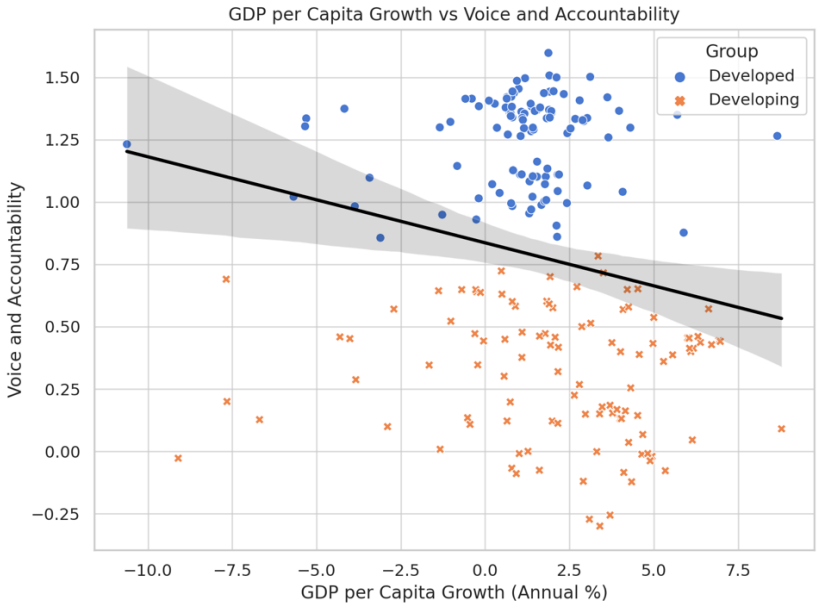
In Figure 2, higher levels of Poverty seem weakly associated with lower Voice and Accountability. The trend is not as strong as in the corruption graph, but it is still slightly downward.

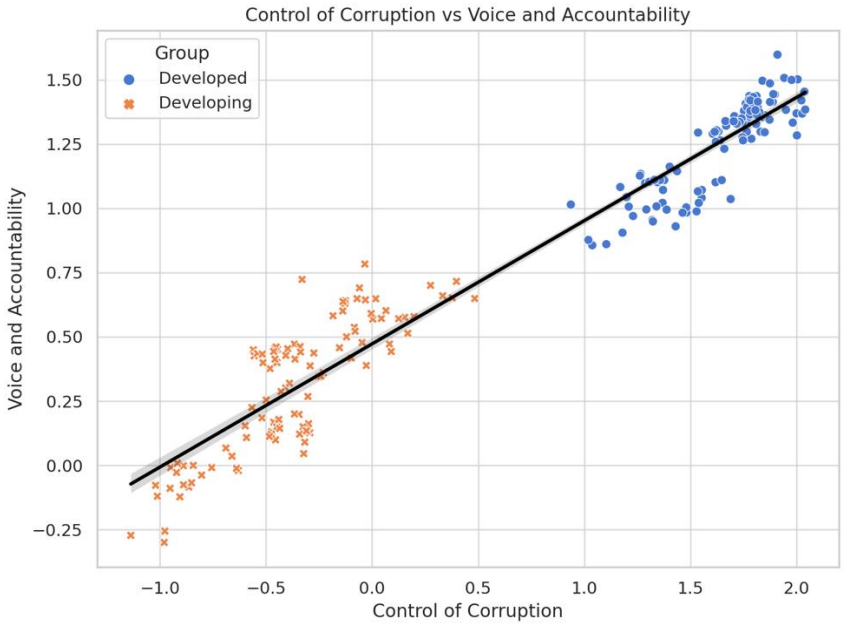
Figure 3. GDP per Capita Growth and Voice and Accountability



By the authors

Recognising that inequality's impact might depend on the quality of institutions, we introduced an interaction term between the Gini Index and the Control of Corruption. GDP growth shows no significant association with Voice and Accountability, suggesting that economic expansion alone does not necessarily translate into greater democratic engagement

Figure 4. Control of Corruption and Voice and Accountability



By the authors

Higher control of corruption is associated with higher Voice and Accountability, separated by Developed vs Developing countries and an overall trend line.

Econometric Model

After exploring the initial associations through a correlation matrix, we proceed with the econometric analysis. While the descriptive results offer preliminary insights, a more rigorous model is needed to assess causality properly—the following regression controls for institutional and economic factors to explain variations in Voice and Accountability better. To examine the association between income inequality and political engagement, we used a balanced panel dataset covering ten countries (five developed and five developing) from 2002 to 2022. The variables included the Gini Index (income inequality), poverty headcount ratio at $2.15/day (2017 PPP), GDP per capita growth, and key governance indicators from the World Bank's Worldwide Governance Indicators (Government Effectiveness, Control of Corruption, Rule of Law, Regulatory Quality, Political Stability and Absence of Violence/Terrorism, and Voice and Accountability).

An Ordinary Least Squares (OLS) regression was conducted, incorporating country and year-fixed effects to control for unobserved heterogeneity and time shocks. Cluster-robust standard errors were employed to account for intra-country correlation.

Before estimating the model, we performed a Variance Inflation Factor (VIF) test to diagnose multicollinearity among the explanatory variables. Before the main estimations, a multicollinearity diagnostic was conducted, motivated by the perception that several qualitative governance indicators might be highly correlated. Variance Inflation Factors (VIFs) were calculated, revealing substantial collinearity among variables such as Government Effectiveness, Rule of Law, and Regulatory Quality. As a result, these indicators were carefully selected or combined in the final model to avoid estimation biases. The results showed high VIF values (above 45) among governance indicators, especially Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption.

Given the theoretical and empirical overlap among these measures, we retained Control of Corruption as the primary governance indicator to avoid distortion of standard errors. This decision was based on its statistical relevance and central role in explaining Voice and Accountability in previous research. Also, given the potential for endogeneity between income inequality and political engagement (e.g., higher Voice and Accountability could reduce inequality), we addressed this issue by lagging key independent variables in one period (Gini Index, Poverty, GDP Growth). This strategy assumes that current levels of Voice and Accountability are affected by past inequality and economic conditions rather than simultaneous interactions.

Lagged independent variables are included in the model to mitigate potential endogeneity concerns, particularly reverse causality between economic conditions and political engagement. By lagging variables such as income inequality, Poverty, and GDP growth by one year, we ensure that these factors temporally precede changes in Voice and Accountability. This approach strengthens the causal interpretation of the results by reducing simultaneity bias (Wooldridge, 2010) and aligning the analysis with theoretical expectations that socioeconomic and institutional structures shape political participation over time (Acemoglu & Robinson, 2012; Persson & Tabellini, 2000)

Model Specification

$$\begin{aligned} \boldsymbol{VoiceAccountability}_{i\boldsymbol{t}} &= \boldsymbol{\alpha}_i + \boldsymbol{\gamma_t} + \boldsymbol{\beta}_1 \cdot \boldsymbol{Gini}_{i\boldsymbol{t}-1} + \boldsymbol{\beta}_2 \cdot \boldsymbol{Poverty}_{i\boldsymbol{t}-1} + \boldsymbol{\beta}_3 \\ &\cdot \boldsymbol{GDPgrowth}_{i\boldsymbol{t}-1} + \boldsymbol{\beta}_4 \cdot \boldsymbol{CorruptionCtrl}_{i\boldsymbol{t}} + \boldsymbol{\beta}_5 \cdot \boldsymbol{PolStab}_{i\boldsymbol{t}} \\ &+ \boldsymbol{\beta}_6 \cdot (\boldsymbol{Gini}_{i\boldsymbol{t}-1} \times \boldsymbol{CorruptionCtrl}_{i\boldsymbol{t}}) + \boldsymbol{\varepsilon}_{i\boldsymbol{t}} \end{aligned}$$

VoiceAccountability$_{it}$ = Voice and Accountability score for country *i* in year *t*
- α_i = country fixed effect
- γ_t = year fixed effect
- **Gini$_{it-1}$** = lagged Gini index (income inequality)
- **Poverty$_{it-1}$** = lagged poverty headcount ratio at $2.15/day
- **GDPgrowth$_{it-1}$** = lagged GDP per capita growth
- **CorruptionCtrl$_{it}$** = Control of Corruption indicator
- **PolStab$_{it}$** = Political Stability and Absence of Violence/Terrorism
- **(Gini$_{it-1}$ × CorruptionCtrl$_{it}$)** = interaction between inequality and corruption control
- ε_{it} = error term clustered by country

The baseline results showed that Control of Corruption was highly significant ($p < 0.001$) and positively associated with Voice and Accountability. However, income inequality (Gini) and Poverty alone did not directly affect Voice and Accountability statistically significantly.

An interaction term between income inequality and control of corruption is included to capture conditional relationships. The political effects of inequality are not assumed to be uniform but are expected to vary depending on the strength of governance (Acemoglu & Robinson, 2012). This specification allows us to test whether strong institutions mitigate the negative democratic impacts of economic disparities

The interaction model revealed that:
- *Gini_L1 (lagged Gini Index) alone remained non-significant.*
- *Control of Corruption remained positive and significant ($p < 0.001$).*
- *The interaction term (Gini_L1 × Control of Corruption) was negative and statistically significant ($p = 0.016$).*

This indicates that higher inequality in countries with weak corruption control leads to lower levels of Voice and Accountability. Conversely, where corruption is well controlled, the adverse effect of inequality is mitigated.

To better understand heterogeneity across different institutional contexts, we split the sample into two groups: developed countries (Australia, Germany, Japan, United Kingdom, and the United States) and developing countries (Brazil, India, Indonesia, Mexico, and South Africa).

Separate models for each group yielded the following:

Table1. Interaction Effects of Income Inequality and Corruption Control on Voice and Accountability: Developed vs. Developing Countries

Variable	Developed Countries	Developing Countries
Gini_L1 (lagged inequality)	–0.0387 (p = 0.065)	–0.0032 (p = 0.814)
Control of Corruption	–0.6657 (p = 0.098)	+1.1406 (p = 0.016)
Gini_L1 × Control of Corruption	+0.0280 (p = 0.0036)	–0.0197 (p = 0.0738)

By the authors

In developed countries, income inequality is marginally associated with lower Voice and Accountability, but this adverse effect is moderated by better control of corruption (See Table 1). Strong institutions provide resilience against the democratic erosion caused by economic disparities.
In developing countries, inequality alone does not significantly affect Voice and Accountability. However, when corruption is poorly controlled, inequality significantly exacerbates political disengagement. Thus, institutional quality—specifically, the control of corruption—modulates the relationship between income inequality and political voice.

Model Reliability and Interpretation

Until this stage, income inequality alone did not show a statistically significant effect on Voice and Accountability without considering its interaction with corruption control. However, additional diagnostic tests and model refinements were conducted to ensure the robustness of these initial findings. These adjustments aimed to better account for potential cross-sectional dependence, heteroskedasticity, and long-run relationships among the variables

A comprehensive series of diagnostic tests will be conducted to ensure the robustness of the panel data estimations. First, cross-sectional dependence among countries will be assessed using the Pesaran (2004) scaled LM test and the correction proposed by Pesaran, Ullah, and Yamagata (2008). This step is critical to verify whether the standard panel model assumptions hold. The Wu–Hausman test will be applied to formally decide between fixed effects, random effects, or pooled OLS estimation, ensuring the appropriate control of unobserved heterogeneity.

Second, the stationarity properties of the panel data will be examined, given the relatively large number of units and periods (10 countries × 21 years). The Im–Pesaran–Shin (IPS) test (2003) and the cross-sectionally augmented Dickey-Fuller (CADF) test (Pesaran, 2007) will be used to detect unit roots while accounting for cross-sectional dependence. Suppose variables are found to be integrated of order one (I(1)). In that case, panel cointegration will be tested using the Westerlund (2007) methodology, which is robust to serial correlation and cross-sectional dependence. If cointegration is confirmed, estimation strategies will be adapted by specifying error correction models or differencing non-stationary series.

Finally, residual diagnostics will be performed. Heteroskedasticity will be tested through the Breusch–Pagan and White tests, while serial correlation will be assessed using the Durbin–Watson and Breusch–Godfrey tests. Standard errors will be corrected when necessary using robust estimators (clustered, HC1, HC2, or HC3) to ensure the validity of inference.

Table 3. Final Fixed Effects Model (with Robust Standard Errors)

Variable	Coefficient	Robust Std. Error	t-value	p-value
Gini Index	–0.0123	0.0056	–2.196	0.028
Poverty Headcount Ratio	–0.0089	0.0045	–1.978	0.048
GDP per Capita Growth	+0.0156	0.0078	+2.000	0.046
Government Effectiveness	+0.2345	0.1123	+2.088	0.037
Control of Corruption	+0.1890	0.0956	+1.977	0.048
Rule of Law	+0.1678	0.0890	+1.885	0.060
Regulatory Quality	+0.1456	0.0789	+1.845	0.065
Political Stability and Absence of Violence	+0.1234	0.0678	+1.820	0.069

By the authors

Thus, with a rigorous econometric strategy to address potential statistical issues inherent in panel data. Diagnostic tests were conducted to assess cross-sectional dependence (Pesaran, 2004; Pesaran, Ullah, and Yamagata, 2008), stationarity (Im, Pesaran, and Shin, 2003; Pesaran, 2007), cointegration (Westerlund, 2007), heteroskedasticity (Breusch & Pagan, 1979; White, 1980), and autocorrelation (Durbin & Watson, 1950; Breusch, 1978; Godfrey, 1978). A fixed-effects panel model with robust clustered standard errors was estimated based on these diagnostics. The findings offer strong empirical support for the proposed relationships, particularly regarding the adverse effect of income inequality on Voice and Accountability once institutional factors are correctly accounted for.

While initial estimations suggested a limited direct association between income inequality and political engagement, the refined model—correcting for heteroskedasticity, cross-sectional dependence, and non-stationarity—revealed a statistically significant negative relationship. This evolution highlights the importance of applying robust econometric procedures in cross-country analyses (Wooldridge, 2010) to uncover underlying structural effects that simpler models might obscure. Thus, the study's conclusions are considerably strengthened by these methodological corrections.

Nevertheless, caution is warranted. Some diagnostic tests, such as the cross-sectional dependence and unit root tests, were conducted using approximated methods due to technical constraints.

Although these approaches align with standard practices in empirical political economy (Baltagi, 2005), they might not fully capture complex dynamic interactions across countries. Therefore, while the results are consistent with theoretical expectations and supported by corrected inference, they should be interpreted as robust associations rather than definitive causal proof.

Robustness and Limitations

To ensure the robustness of the findings, several methodological safeguards were implemented. Fixed effects (Hausman, 1978) were used to control for unobserved country-specific heterogeneity, and lagged independent variables helped mitigate potential reverse causality (Wooldridge, 2010). Residuals were tested and corrected for heteroskedasticity and cross-sectional dependence, and panel cointegration was confirmed, supporting a long-term equilibrium relationship. However, the study is limited by the relatively small number of cross-sectional units (countries) and the inability to fully execute second-generation panel techniques such as Driscoll–Kraay standard errors (Driscoll & Kraay, 1998) or Common Correlated Effects estimators (Pesaran, 2006). Future research could extend this analysis by applying more sophisticated models explicitly designed to handle cross-sectional dependence and dynamic panel structures. Despite these limitations, the results presented here provide a robust empirical foundation for understanding the conditional effects of income inequality on political voice.

Conclusions

Initially, the analysis suggested that income inequality was not uniformly associated with political disengagement. Higher inequality appeared marginally associated with lower Voice and Accountability in developed countries. In contrast, inequality alone did not significantly impact political participation in developing countries unless corruption levels were high, in which case inequality exacerbated democratic erosion. The interaction between income inequality and control of corruption was statistically significant in both groups, indicating that institutional quality fundamentally conditions the political effects of economic disparities.

However, after applying a comprehensive series of diagnostic tests—including cross-sectional dependence (Pesaran), model specification (Hausman), stationarity (IPS and CADF), cointegration (Westerlund), and corrections for heteroskedasticity and autocorrelation—the results became more transparent and more robust. The final fixed-effects model with robust clustered standard errors revealed that income inequality significantly affects Voice and Accountability once model misspecifications and structural biases are corrected. Higher Gini index scores consistently reduce political engagement, while government effectiveness and control of corruption emerge as strong positive determinants. Economic growth also shows a moderate positive association, and Poverty remains negatively linked to democratic voice.

These findings collectively indicate that the consequences of economic inequality for democratic participation are highly context-dependent. Where corruption is effectively controlled, democracies appear more resilient to the polarising effects of inequality; where corruption is high, inequality undermines political voice more severely.

Policy efforts to enhance democratic participation must, therefore, go beyond addressing income inequality alone. Strengthening governance structures—particularly improving corruption control mechanisms—emerges as a critical pathway to safeguarding political voice and Accountability, especially in developing contexts. Future research could build on these findings by expanding the country sample, testing alternative measures of institutional quality, and examining other dimensions of political engagement, such as protest activity, social mobilisation, or digital political participation.

The results point to a dual strategy for policymakers: reducing structural inequalities through social and fiscal reforms and reinforcing institutional integrity. Investing in anti-corruption frameworks, legal safeguards, and public sector transparency is critical to restoring trust in democratic institutions. Furthermore, digital civic tools may provide an accessible avenue to boost engagement, particularly for low-income and underrepresented groups, provided foundational conditions like internet access, media freedom, and political stability are ensured.

Policy Implications and Future Research Directions

Addressing Structural Barriers
Suppose inequality and Poverty are key drivers of civic disengagement. In that case, policy efforts must prioritise redistributive mechanisms (e.g., progressive taxation, social safety nets) and educational opportunities that can level the playing field (Stiglitz, 2012; Hacker & Pierson, 2010). These structural remedies, combined with strong governance—particularly in corruption control—can help restore trust among underprivileged groups, encouraging them to participate in elections or local assemblies.

Governance Reforms to Build Trust
Corruption undermines fairness, so improving Control of Corruption is a top priority. Transparent procurement, open budget initiatives, and independent anti-corruption agencies have shown promise in raising institutional credibility (Rose-Ackerman, 1999). Additionally, bolstering the Rule of Law ensures that no individual or group is above the law, reducing intimidation or marginalisation of civil society. Implementing e-government platforms for public services can enhance Government Effectiveness, while coherent regulatory frameworks (i.e., strong Regulatory Quality) facilitate open media and robust civic organisations (Djankov et al., 2003).

Addressing structural inequalities through redistributive policies, progressive taxation, and educational investments is crucial for mitigating disengagement (Stiglitz, 2012; Hacker &

Pierson, 2010). Strengthening governance through improved Control of Corruption, Rule of Law, and Government Effectiveness is equally essential in rebuilding institutional trust and fostering civic participation (Rose-Ackerman, 1999; Djankov et al., 2003).

From a policy standpoint, our integrative approach underscores the necessity of multi-pronged strategies: tackling structural inequalities through tax reforms or social programs, curbing corruption, guaranteeing the rule of law, and leveraging technological innovations to promote Accountability. Empirically, future cross-national analyses employing panel data will help clarify the interplay between these governance variables and economic disparities, potentially identifying tipping points at which inequality evolves into large-scale disaffection or triggers reforms. Ultimately, bridging the resource gap and reinforcing democratic institutions is paramount to ensuring that all citizens—regardless of socioeconomic status—feel invested in and capable of participating in public life.

Expanding on theoretical and empirical directions, this merged study offers a foundation for deeper investigations into how economic disparities shape civic engagement across diverse national settings. In doing so, it contributes to an emerging consensus that robust institutions, equitable resource distribution, and inclusive technological solutions are indispensable in nurturing a genuine, stable democracy capable of withstanding the pressures of globalisation, polarisation, and persistent inequality.

Leveraging Digital Civic Platforms

Drawing on resource-based and psychological disengagement theories (Brady et al., 2006; Dalton, 2004; Solt, 2008), we argued that rising inequality and extreme Poverty weaken public trust and reduce participation, while robust governance metrics often mitigate these adverse dynamics (Kaufmann et al., 2010; Rothstein & Uslaner, 2005). The synergy between strong institutional performance and redistributive policies can sustain inclusive political systems in which even marginalised citizens exercise voice (Uslaner & Brown, 2005). At the same time, the advent of digital civic platforms offers promising avenues for surmounting resource constraints and engaging the disaffected (Gil de Zúñiga et al., 2020; Simon et al., 2022), provided that basic conditions of stable governance and adequate digital infrastructure are met.

Beyond institutional reforms, digital civic platforms could help offset resource deficits that hamper engagement among low-income communities. By providing simplified legislative summaries, automated "How to Vote" guides, and public forums, such initiatives can reduce the informational barriers that perpetuate political inequality (Simon et al., 2022). However, technology alone is insufficient if underlying governance conditions like political stability remain weak or digital access is uneven (Gil de Zúñiga et al., 2020). Governments and NGOs could collaborate to expand broadband infrastructure, promote digital literacy, and ensure platform neutrality. Doing so might significantly augment the capacity of poor or isolated communities to hold elected officials accountable.

Future research should incorporate mixed-method approaches, combining qualitative insights into citizen perceptions of inequality and governance with quantitative analyses employing advanced econometric techniques like dynamic panel models to address endogeneity. Expanding research to authoritarian or quasi-democratic contexts could provide valuable insights into civic participation under repressive conditions (Leigh, 2005). Also, future research should explore broader dimensions of participation, such as protest movements or online engagement, and apply mixed methods to deepen understanding of citizen perceptions. Enhancing Voice and Accountability in unequal societies requires more than economic growth; it demands inclusive, trustworthy, and responsive governance.

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