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Spatial Patterns of Inequality and Governance in Decentralising Indonesia, 1999-2014

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ABSTRACT

This research examines the dynamic relationship between inequality and the quality of local governance at the district level, including an investigation of the main driving forces and spatial patterns of changes in this relationship. The analysis explores systematic relationships between inequality and a set of governance indicators across districts throughout Indonesia. The research utilizes panel data analysis with the Generalized Method of Moments (GMM) system estimator. The findings reveal that the relationship between inequality and institutional quality is not straightforward, depending on the specific indicator used as a proxy for institutional variables. In contrast, the relationship between inequality and governance proves more direct: good local governance consistently associates with lower inequality at the district level. Tests for reverse causality yield mixed evidence regarding inequality's role as a determinant of institutional quality. However, evidence of reverse causality emerges between inequality and governance when using the service delivery index as a governance proxy, indicating that lower inequality improves local governance.

KEYWORDS Inequality, regional development, Indonesia, economic growth, governance

INTRODUCTION

In recent years, Indonesia has experienced a high rate of economic growth. However, this growth has also been accompanied by increasing inequality in income distribution in society (Gordón & Resosudarmo, 2019; Sulistyaningrum & Tjahjadi, 2022; Sirait et al., 2025). In fact, looking back, the level of inequality in Indonesia as measured by the Gini ratio has been in a fairly low and stable condition for a long time, especially when compared to other ASEAN countries and developing countries in general (Nurdina, 2021). Over the past fifteen years or so, income development in Indonesia has shown an unequal pattern: high-income groups have enjoyed a rapid increase in income, while low-income groups have experienced a slowdown in income growth. On the other hand, the middle class has experienced relatively more stable income growth without significant spikes or declines (Istiqomah & Floresti, 2024).

However, it is interesting that when looking at the relationship between per capita income (average individual income) and the level of inequality, no definite pattern is found. That is, countries with high per capita income do not always have high inequality, and countries with low per capita income do not always have low inequality. This relationship is inconsistent or ambiguous (Kanbur et al., 2024; Anasta & Sylviana, 2024).

Since the introduction of decentralization in 2001 and the direct election of the president and regional heads in 2004, the role of local governments in more than five hundred districts and cities in Indonesia has become more significant in carrying out government functions (Baidhowah, 2022). This prompted us to examine how the quality of governance affects inequality, and vice versa, how inequality can affect the quality of governance. To answer this question, the researchers refer to the study of Chong and Gradstein (2007), which has shown that there is a reciprocal relationship between inequality and governance. This study then attempts to apply the approach to Indonesia, by adjusting the original model to better suit local conditions. In measuring inequality, the Gini coefficient calculated from household consumption data in *SUSENAS* is used because consumption is considered to reflect people's welfare more stably than income. Alternative measures such as the income ratio of the richest and poorest groups (quintiles) and the *Theil index* are also used to test the robustness and consistency of the results.

In this study, the concept of *"governance"* is not limited to formal aspects such as the existence of regulations or organizational structures. Instead, the definition is expanded to include how government institutions work in practice, including how well they manage the available budget (Sappe, 2019). This means that governance is assessed on two fronts: the quality of institutions and the efficient use of public funds. This study seeks to understand what actually drives changes in the relationship between governance and inequality at the subnational level. To obtain accurate results, the analysis also considers other factors that may affect the relationship, such as the economic condition of a region and the level of urbanization (population in urban areas). These two variables are used as control variables so that the direct influence between governance and inequality can be separated from other external influences.

This study relies on the *GMM system* method, a statistical technique commonly used in econometric studies to analyze panel data with endogeneity and dynamics over time (Hong et al., 2023). We propose four main hypotheses that reflect possible causal relationships between the strength of institutions, the quality of governance, and the level of income inequality. The first two hypotheses ask whether institutions or good governance can reduce inequality. The other two hypotheses reverse the direction of the relationship, asking whether the condition of inequality itself affects the strength of institutions and the quality of governance.

In addition, this study also assumes that if local governments have a good budget management system due to strong institutional support, it can help keep inequality low or stable. Overall, this research aims to broaden our understanding of how good governance processes can create a more economically equitable society and, conversely, how socioeconomic inequality can impact government performance, especially in Indonesia, which has great diversity across regions. This research contributes to the literature by providing empirical evidence on the governance-inequality nexus in Indonesia's decentralized context. The findings can inform policymakers on designing targeted interventions to reduce inequality while improving governance. By identifying the drivers of inequality and governance outcomes, this study offers practical insights for fostering equitable development and strengthening local institutions, ultimately supporting Indonesia's sustainable growth.

METHOD

This study employs a quantitative research design using panel data analysis to examine the dynamic relationship between inequality and governance in Indonesia. The analysis relies on secondary data from multiple sources, including the Central Bureau of Statistics (BPS) for household and village-level data, the Audit Board of Indonesia (BPK), the Ministry of Finance, and the Regional Autonomy Watch (KPPOD) for district-level indicators. Income inequality is

measured using the ratio of the top to the bottom quintile of the population (P90/P10), the Gini coefficient, and the Theil index, derived from the SUSENAS Consumption module (1999–2014). These metrics are calculated based on total household expenditure at the household level and aggregated to the district level, where a lower P90/P10 ratio, Gini coefficient, or Theil index indicates reduced inequality.

Similarly, we use audit results and disbursement rates of the government budget as a proxy for the institution. Audit result is issued annually from 2005 until 2014 by Audit Board of the Republic of Indonesia (BPK-RI). It measures the compliance of the government institutions in administering their expenditure and program implementation, ranging from -1 (best) to -4 (worst). It means higher audit result showing better budget administration and program implementation, and thus better institutions. Disbursement rate of government budget is a percentage of total expenditure realisation to its plan in the local budget (APBD) provided by the Ministry of Finance from 2002 to 2014. It shows how effective the local government in spending its budget based on its plan. A high disbursement rate could be perceived as a better capacity of local governments to absorb money as they planned.

We also use local regulation index and service delivery index as a proxy for governance. Local regulation index measures the perception of businesses to local regulation on business climates. The higher index means the local government has a higher ability to respond what matters to local businesses (better governance). This index is extracted from governance survey and investment climate survey conducted by Regional Autonomy Watch (KPPOD) from 2001 until 2011. The coverage survey area varies in each round.

Governance can also be measured through government outcomes such as roads, electricity, education, health, access to sanitation, and water. We construct service delivery index with equal weight consisting of those six variables as follows: percentage of village with asphalt road, percentage of households with electricity, percentage of population above 30 years old with senior high school diploma, percentage of birth attended by certified health workers, percentage of households with access to sanitation and percentage of households with access to clean water. These variables are calculated from Potential Village (PODES) at the village level, except the percentage of birth calculated from the SUSENAS core module at the household level from 1999 until 2014, and then aggregated at the district level. The higher service delivery index means better governance.

Further, we use several control variables such as economic condition and urban population. They are per capita GRDP in log form, share of agriculture to total GRDP, share of manufacturing to total GRDP, share of mining and quarrying to total GRDP, and share of population living in urban areas to total population. Those are available at the district in figures issued by the Indonesian Central Statistics Bureau (BPS) from 1999 to 2014. Summary statistics of the above operational variables can be found on Annex 1.

We limit the number of districts by excluding Aceh, Maluku, Papua and West Papua due to data availability. These four provinces were conflict areas in 1990s, so many districts were not surveyed by BPS in particular years. In addition, since decentralisation in 2001, there have been many new districts established, from less than 300 in 2000 to about 500 districts in 2014. We recode new districts back to the parent districts using the year 2000 as a reference to maintain data completeness as long as possible. Thus, in total we have 242 districts throughout Indonesia to analyse the pattern of inequality and governance. The list of districts is presented in Annex 2.

In this section we discuss the estimation model inspired by (Chong & Gradstein, 2007) for empirical analysis. To search for systematic causality between inequality and Institution and its reverse causality, we estimate inequality, institution, and governance with set of control variables. Our dependent variable for normal causality is inequality=ineq2, defined as ratio of

the top to the bottom quintile of the population (P90/P10). In this draft, we only use ratio P90/P10. We use institution and governance as explanatory variables and each of these variables has two operational variables:

Institution = audit, defined as audit result for government institution
= distotexp, defined as disbursement rate of total expenditure government budget
Governance = perda, defined as local regulation index
= sdi, defined as service delivery index

Moreover, we assume that changes in inequality and institution take longer time, so initial condition of those variables could be perceived as endowment factors that affect the causality between the inequality and institution and vice versa. Good initial condition of institution and or governance will lower inequality. Hence, we include the following initial conditions as our explanatory variables:

Inequality = ineq2_99, defined as ratio of the top to the bottom quintile of the population (P90/P10) in year 1999
Institution = audit05, defined as audit result of government institution in year 2005
= distotexp02, defined as disbursement rate of total expenditure government budget in year 2002

On the other hand, we use the above explanatory variables as our dependent variables to test reverse causality. We also use set of control variables for both normal and reverse causality as follows:

Economy = lgrdpcap_oil, defined as per capita GRDP with oil
= shr_agr_i, defined as share agriculture to total GRDP with oil
= shr_man_i, defined as share manufacture to total GRDP with oil
= shr_mng_i, defined as share mining and quarrying to total GRDP with oil
Urban = shr_urban, defined as share population living in urban areas to total population

We run regressions using the estimation method OLS and GMM with several specifications. It is expected that those variables have a negative relationship with inequality: lower inequality is determined by better institutions as well as better governance. More specifically, we test the following hypotheses:

1. A negative relationship between inequality and institutions: low inequality is determined by good institutions.
2. A negative relationship between inequality and governance: low inequality is determined by good governance.

Reverse Causality:

1. A negative relationship between institutions and inequality: low inequality will improve institutions.
2. A negative relationship between governance and inequality: Low inequality will improve governance.

RESULTS AND DISCUSSION

This section will discuss our preliminary results of normal causality between inequality and governance and its reverse causality. A summary of the main findings is presented in Table 1.

Normal Causality

Inequality and Institution

The first hypothesis in this study examines the relationship between income inequality and institutional quality, with the initial assumption that inequality will be lower if institutions are functioning well (negative relationship). However, the results of our regression analysis show that the relationship between inequality and institutions is not linear or consistent, and is highly dependent on the indicators used to represent institutions. In some models, we also use institutional initial conditions as an instrument variable to strengthen the estimates.

When using audit results as an indicator of institutions, we find that the relationship between inequality and institutions is positive and most of the results are statistically significant. This finding is observed across specifications when we use audit results as a proxy for institutions. Most of our results are statistically significant (Models 1a, 1e, 2a, 3d, 4a, except 3a and 6a). The regression results can be seen in Appendix 3. This means that better institutions are in fact associated with increased inequality. The explanation for this finding is that better administration indicates stronger institutions, which can attract more firms and open up higher wage employment opportunities. This leads to a widening gap between the rich and poor. It is important to note that the audit results focus more on administrative aspects and do not measure the quality of government spending or programs directly.

This finding is in line with (Ahrlind, 2021) who analyzed the relationship between government quality and income inequality in various US states. The results show that good quality of government can reduce inequality, but its effectiveness depends on local issues and policy implementation. The results also reinforce a study by Touitou (2020), which uses an instrument variable approach to evaluate the impact of institutional quality on economic growth and inequality across 81 countries. The results show that good institutional quality contributes to inclusive economic growth and reduced inequality.

In contrast, when using the level of government budget disbursement as a proxy for institutions, the relationship found is negative. This finding is evident from the various specifications when we use the level of government budget disbursement as a proxy for institutions, but none of them are statistically significant (Models 1a, 1e, 3a, 3d, 4a, 6a). The disbursement rate reflects the local government's efficiency in spending its budget as planned. We expect that higher budget efficiency will increase the effectiveness of government programs in reducing inequality. However, since the results are not statistically significant, the effect of budget disbursement rate on reducing inequality is considered relatively weak.

Inequality and Governance

The second hypothesis in this study is to test the relationship between inequality and the quality of governance, assuming that lower inequality is achieved through better governance (negative relationship). The regression analysis results show that there is a fairly consistent negative correlation between the two variables, although in some models a positive relationship is found that is not statistically significant. To address potential endogeneity bias, the initial condition of governance is used as an instrument variable in some model specifications.

Results show that inequality tends to decrease when the quality of governance is improved, especially when using the public service index and local regulation index as proxies for governance variables. The public service index, which includes indicators such as educational attainment, medical attendance at delivery, basic infrastructure (roads and electricity), and access to clean water and sanitation, shows a statistically significant negative relationship with income inequality in almost all estimation models (Models 1a, 1e, 2a, 3a, 3d, 4a, and 6a), except in Model 1e.

This finding is in line with research by Pacheco-Jaramillo & Malliaros (2025) who emphasize that inequality is not inevitable, but is highly dependent on the effectiveness of government institutions. They argue that income redistribution policies will not be effective without institutional reforms that strengthen governance. In contrast, when using the local

regulation index as a proxy for governance, the coefficient is positive but not statistically significant. Without improved governance, redistribution efforts risk not delivering the expected results and could even worsen inequality.

We calculate the service delivery index based on five indicators, namely educational attainment, skilled birth attendance, road infrastructure, and electricity, access to clean water and sanitation which represent government outcomes. We expect that a higher service delivery index will lead to better governance and thus lower inequality.

However, we also find that the coefficient of the local regulation index is positive indicating that better governance will increase inequality. Unlike the previous indicators, none of these coefficients are statistically significant. Since all the coefficients of the local regulations index are not statistically significant and the p-value is high, we conclude that the local regulations index has no relationship with inequality. The local regulation index is compiled by KPPOD as a sub-index of the governance index and the investment climate index. We choose the local regulation index instead of the governance index as a proxy for governance variables because this sub-index is available for more than 150 districts across Indonesia.

Reverse Causality

Following (Chong & Gradstein, 2007), we also search a reverse causality between inequality and institutions, and between inequality and governance. We do regressions with the same specifications by switching inequality as the dependent variable into the explanatory variable, and both institution and governance variables as the independent ones. We also use the initial condition of inequality as an instrument variable in some specifications. Detailed specification can be found on Annex 3.

Institution and Inequality

Our third hypothesis is to test the relationship between institution and inequality: low inequality will improve institution (negative relationship). From our regression results, the relationship is mixed. Some specifications resulted positive relationship with inequality and others are negative.

If we use audit as a proxy of institution, we expect that the lower inequality will improve the audit result or negative relationship. Our results show a positive relationship (Model 1b, 1f, 1g, 4b, and 5b) and a negative relationship for Model 2b. The latter is not statistically significant. These results are consistent with the first result, where a good institution will increase inequality. Similar arguments with a positive relationship between inequality and institutions could also support this finding. If higher inequality is a result of more economic activities where more good people with higher salaries and more firms operate in that area, the demand for better institutions will increase and thus the positive relationship between institutions and inequality is revealed. These results suggest that there is reverse causality between inequality and institutions if we use audit as a proxy of institutions, but this positive relationship is the opposite direction.

If we use the disbursement rate of the government budget as a proxy of the institution, we expect that the lower inequality will improve the disbursement rate or negative relationship. Our results also show mixed findings: negative coefficients for Model 1h and 1j and a positive coefficient for Model 5d. The latter is not statistically significant and high p-value so we ignore this result. These results indicate that lower inequality will improve the capacity of local governments to spend their budget. This suggests that there is reverse causality between inequality and institutions if we use the disbursement rate as a proxy for institutions.

Governance and Inequality

The fourth hypothesis is to test the relationship between governance and inequality: low inequality will improve governance (negative relationship).

If we use service delivery index as proxy of governance, we expect that the lower inequality will increase service delivery index (negative relationship). From our regression results, the relationship is also straight forward (Model 1d, 2c, 3c, 5c, 6b) and all the coefficients are statistically significant except Model 6b. These results suggest that service delivery index has strong negative relationship with inequality which is consistent with the previous result of higher service delivery index will lower inequality. Thus, we conclude there is reverse causality between inequality and governance if we use service delivery index as proxy of governance variable.

Table 1. Summary of Regression Results

Normal causality	Model	Reverse Causality	Model
Better institution determines lower inequality (negative relationship)		Lower inequality determines better institution (negative relationship)	
Higher inequality is determined by higher audit results (positive relationship)	1a**, 1e**, 2a**, 3a, 4a*, 6a	Better audit results is determined by higher inequality (positive relationship)	1b**, 1f***, 1g**, 2b(-), 4b**, 5b,
Lower inequality is determined by higher disbursement rate of government budget (negative relationship)	1a, 1e, 2a***, 3a, 3d, 4a, 6a	Higher disbursement rate of government budget is determined by lower inequality (negative relationship)	1h**, 1j
Lower inequality is determined by better governance (negative relationship)		Better governance is determined by lower inequality (negative relationship)	
Lower inequality is determined by higher service delivery index (negative relationship)	1a***, 1e, 2a***, 3a***, 3d***, 4a***, 6a***	Higher service delivery index is determined by lower inequality (negative relationship)	1d***, 2c*, 3c***, 5c***, 6b
Lower inequality is determined by higher local regulation index (negative relationship)	1a, 1e, 2a (+), 3a, 3d, 4a, 6a(+)	Higher local regulation index is determined by lower inequality (negative relationship)	1c, 3b(+), 4c, 5a

Note: *** p<0.01, **p<0.05, *p<0.1

Source: Author's compilation of GMM-system and OLS regression results

If we use the local regulation index as a proxy of governance, we expect that the lower inequality will increase the local regulation index (a negative relationship). From our regression results, the relationship is straightforward (Model 1c, 4c, and 5a) except Model 3b. However, none of those coefficients are statistically significant, and low p-value. So, the variable of local regulation index has a weak relationship with inequality.

In Figures 1-8 below, we provide scatter plots of our key predicted variables. The results can be summarised as follows: if we see the relationship between institution and income per capita (typical Acemoglu), it shows a different direction depending on what kind of variable we use as a proxy of institution (Acemoglu et al., 2002) . For instance, the relation between audit result as a proxy of the institution and income per capita is flat (Model 1g), while between the disbursement ratio of government budget and income per capita is negative (Model 1h). However, from the regression results, both show the consistent negative signs, which mean

higher income per capita will lower the institution. On the other hand, the relation between inequality and income per capita (typical Kuznet) is positive. It means higher income per capita will increase inequality (Figure 2a and Figure 2b). Figure 2b is derived from regression result of Kuznet model at district level.

The relation between institution and inequality as developed by Chong and Gradstein shows a different direction depending on which variable we use as a proxy of institution. If we use the audit result as a proxy of the institution, it is then positively related to inequality (Figure 3a). But, if we use the disbursement rate as a proxy of the institution, the relationship with inequality is negative as we expected (Figure 3b).

The relation between governance and inequality, as developed by Chong and Gradstein shows a different direction depending on which variable we use as a proxy of governance. If we use the local regulation index as a proxy of governance, the relationship with inequality is negative as we expected (Figure 6a). But if we use the service delivery index as a proxy of governance, it shows a positive relationship with inequality (Figure 6b). Since these scatter plots only depict the visualisation of data distribution between the predicted variable and one explanatory variable, those figures show different directions with regression results where both indicators have a negative relationship with inequality (Table 1). Detailed results of our regression analysis are presented in Annex 3.

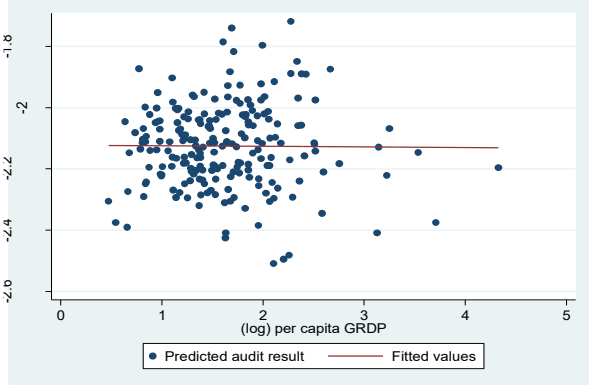

Figure 1a: Institution and per capita GRDP

Source: Processed data from Audit Board of Indonesia (BPK) and Indonesian Central Statistics Bureau (BPS), 1999-2014.

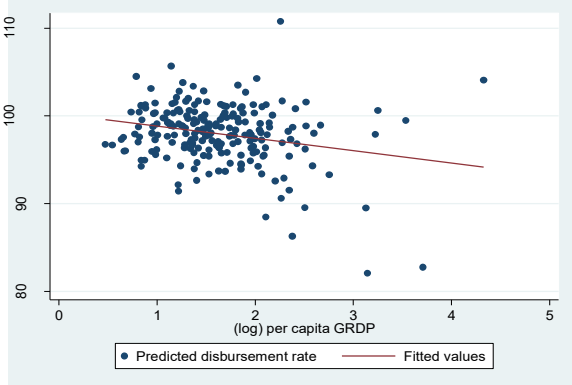

Figure 1b: Institution and per capita GRDP

Source: Processed data from Ministry of Finance and Indonesian Central Statistics Bureau (BPS), 1999-2014

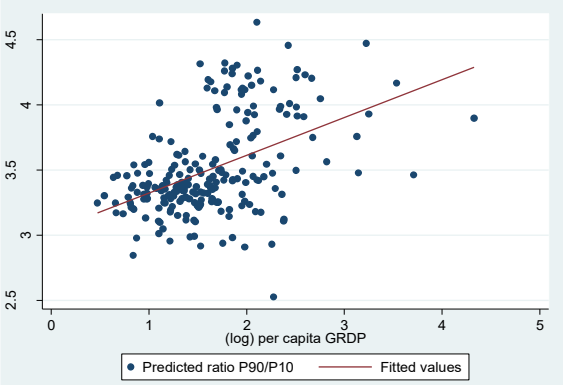

Figure 2a: Inequality and per capita GRDP

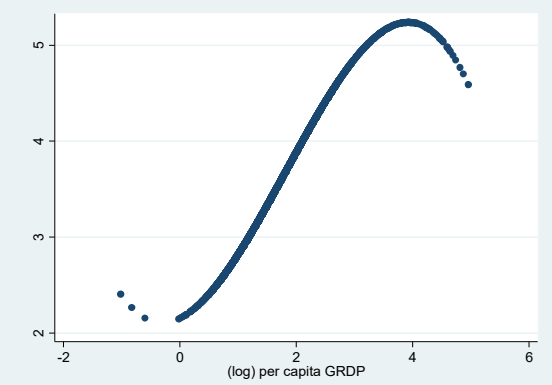

Figure 2b: Inequality and per capita GRDP

Source: Analysis of SUSENAS Consumption Module (BPS), 1999-2014.

Source: Author's calculation based on SUSENAS and GRDP data (BPS), 1999-2014

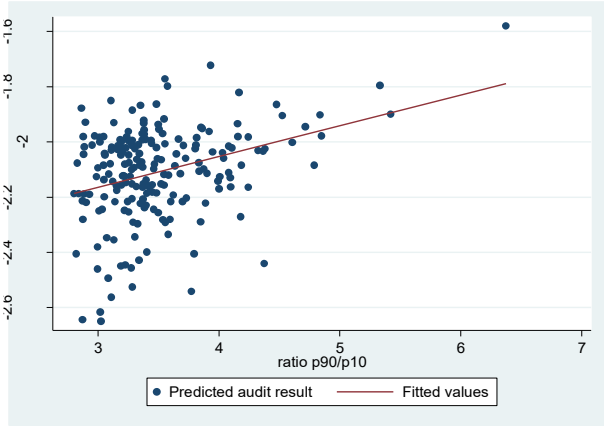

Figure 3a: Institution (audit result) and inequality

Source: Processed data from Audit Board of Indonesia (BPK) and SUSENAS (BPS), 2005-2014

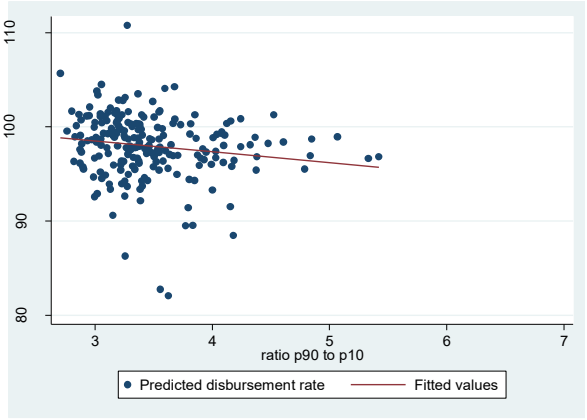

Figure 3b: Institution (disbursement rate) and inequality

Source: Analysis of Ministry of Finance budget data and SUSENAS (BPS), 2002-2014

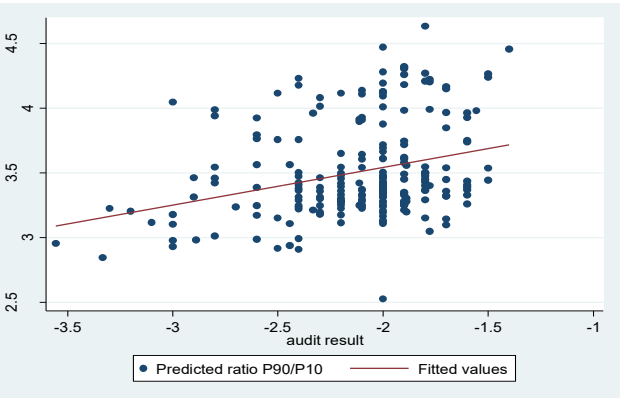

Figure 4: Reverse Causality Inequality and institution (audit result)

Source: Author's estimation using GMM-system, BPK audit data and SUSENAS, 2005-2014.

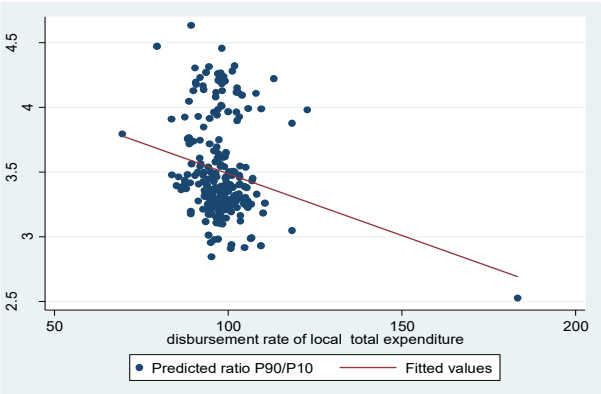

Figure 5: Reverse Causality Inequality and institution (disbursement rate)

Source: Author's estimation using GMM-system, Ministry of Finance and BPS data, 2002-2014

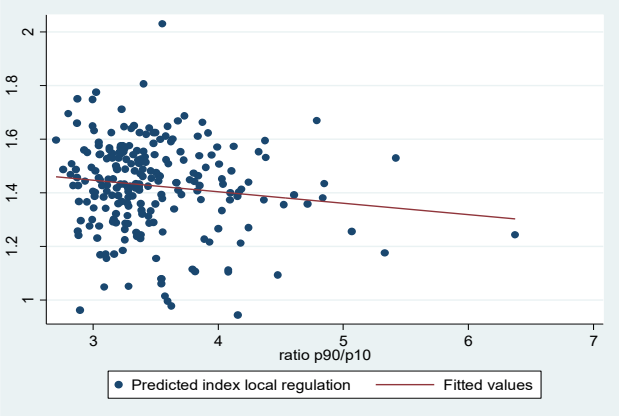

Figure 6a: Governance (local regulation index) and inequality
Source: Processed data from Regional Autonomy Watch (KPPOD) surveys and BPS, 2001-2011

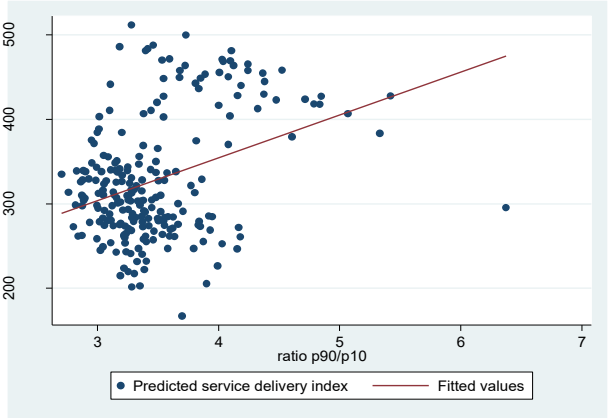

Figure 6b: Governance (service delivery index) and inequality
Source: Author's construction from PODES and SUSENAS data (BPS), 1999-2014

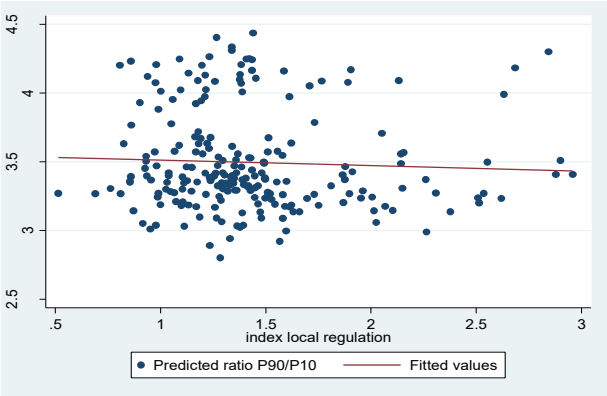

Figure 7: Reverse Causality Inequality and Governance (local regulation index)
Source: Author's estimation using KPPOD governance surveys and BPS data, 2001-2011

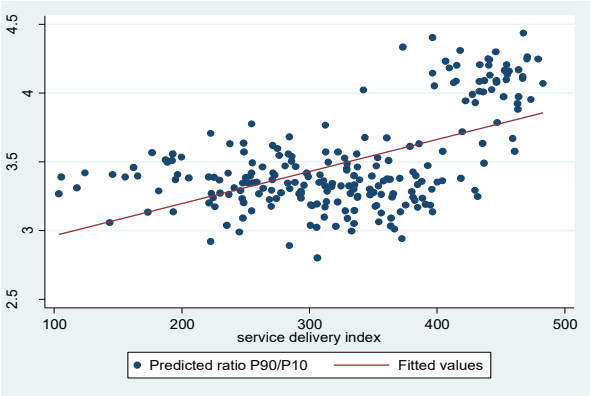

Figure 8: Reverse Causality Inequality and Governance (service delivery index)
Source: Author's GMM-system estimation using PODES and SUSENAS data, 1999-2014

CONCLUSION

This study investigates the dynamic interplay between inequality and local governance quality across Indonesian districts amid rapid economic growth and decentralization since 2001. Using a broad conceptualization of governance—including institutional quality and budget efficiency—and employing a GMM-system estimator with controls for economic conditions and urbanization, the research reveals that while the link between inequality and institutional quality varies by measurement, stronger local governance is consistently associated with reduced inequality. Additionally, there is evidence of bidirectional influence between inequality and governance, particularly showing that lower inequality can enhance governance quality as measured by service delivery outcomes. These findings deepen understanding of governance-inequality mechanisms in Indonesia's decentralized context. Future research could expand by exploring how specific governance reforms or sectoral policies at the local level mediate these relationships and by incorporating qualitative analyses to capture the nuanced political and social dynamics influencing this interplay.

REFERENCE

Acemoglu, D., Johnson, S., & Robinson, J. (2002). Reversal of fortune: Geography and institutions in the making of the modern world distribution. *Quarterly Journal of Economics*, *117*(4), 1231–1294. https://doi.org/10.1162/003355302320935859

Ahrlind, K. (2021). Governance and income inequality: A panel data analysis on the relationship between the quality of government and the Gini index.

Anasta, A., & Sylviana, W. (2024). Analysis of Income Inequality in ASEAN Countries. *Jurnal Ilmu Ekonomi Terapan*, *9*(1), 64-78. https://doi.org/10.20473/jiet.v9i1.53554

Baidhowah, A. (2022). Explaining decentralization performance in Indonesia: Member of parliament decision, political networks, and constitution amendment. *Jurnal Bina Praja*, *14*(1), 97-109. https://doi.org/10.21787/jbp.14.2022.97-109

Chong, A., & Gradstein, M. (2007). Inequality and institutions. *The Review of Economics and Statistics*, *89*(3), 454–465. https://doi.org/10.1162/rest.89.3.454

Gordón, I. G., & Resosudarmo, B. P. (2019). A sectoral growth-income inequality nexus in Indonesia. *Regional Science Policy & Practice*, *11*(1), 123-140. https://doi.org/10.1111/rsp3.12125

Hong, S., Su, L., & Jiang, T. (2023). Profile GMM estimation of panel data models with interactive fixed effects. *Journal of Econometrics*, *235*(2), 927-948. https://doi.org/10.1016/j.jeconom.2022.07.010

Istiqomah, I., & Floresti, D. (2024). Economic Growth And Poverty: The Moderating Effect Of Income Inequality. *Trikonomika: Jurnal Ekonomi*, *23*(1), 11-18. https://doi.org/10.23969/trikonomika.v23i1.9242

Kanbur, R., Ortiz-Juarez, E., & Sumner, A. (2024). Is the era of declining global income inequality over?. *Structural Change and Economic Dynamics*, *70*, 45-55. https://doi.org/10.1016/j.strueco.2024.01.002

Nurdina, W. (2021). Infrastructure and income inequality in Indonesia: 2009-2017. *The Journal of Indonesia Sustainable Development Planning*, *2*(2), 129-144. https://doi.org/10.46456/jisdep.v2i2.132

Pacheco-Jaramillo, W. A., & Malliaros, P. (2025). Income Inequality, Governance Quality, and Political Engagement: A Cross-country Analysis of Disparities and Democratic Participation. *F1000Research*, *14*, 561. https://doi.org/10.12688/f1000research.164654.1

Sappe, S. (2019). Bureaucracy reform and good governance implementation challenge in Indonesia. *Jurnal Ilmiah Administrasi Pemerintahan Daerah*, *11*(1), 61-78.

Sirait, S., Japina, H., Simanjuntak, H., & Sinaga, S. (2025). The Effect Of Gross Domestic Product, Inflation And Foreign Direct Investment On Inequality In Indonesia. *JIM UPB (Jurnal Ilmiah Manajemen Universitas Putera Batam)*, 15-26. https://doi.org/10.33884/jimupb.v13i2.10133

Sulistyaningrum, E., & Tjahjadi, A. M. (2022). Income Inequality in Indonesia: Which Aspects Cause the Most?.

Touitou, M. (2021). Estimating the relationship between governance, economic growth, inequality and poverty. *Theoretical and Practical Research in Economic Fields (TPREF)*, *12*(23), 21-30.