

DETERMINANTS OF THE INTEGRITY ASSESSMENT SURVEY AND ITS IMPACT ON REDUCING THE GINI COEFFICIENT AND POVERTY IN INDONESIA

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ABSTRACT

This study aims to analyze the effects of Gross Regional Domestic Product (GRDP), Foreign Direct Investment (FDI), inflation, the Human Development Index (HDI), and the implementation of ISO 37001 on the Integrity Assessment Survey (Survei Penilaian Integritas/SPI), as well as to examine the impact of SPI on the Gini Ratio and poverty levels across 20 provinces in Indonesia during the 2015–2024 period. Using a quantitative approach with panel data regression and the Fixed Effect Model (FEM) as the best estimation model, this study investigates whether economic, governance, and psychosocial factors can serve as determinants of integrity and contribute to reducing corruption. The results indicate that GRDP, FDI, inflation, HDI, and ISO 37001 simultaneously have a significant effect on the Integrity Assessment Survey. Partially, each variable exhibits a different level of influence on SPI, reflecting the diverse economic and governance characteristics of each province. Furthermore, the Integrity Assessment Survey is found to have a significant effect on both the Gini Ratio and poverty levels. This study makes an important theoretical contribution by extending the conventional political-economic approach to corruption studies through the inclusion of psychosocial factors. Practically, the findings provide valuable insights for policymakers in formulating anti-corruption strategies that emphasize improvements in people's quality of life. In essence, creating a prosperous and happy society is not only an objective of development but also a fundamental prerequisite for establishing clean, transparent, and trustworthy governance.

Keywords: *Corruptions, Gini Ratio, Poverty Levels*

I. INTRODUCTION

Economic development in the 21st century is no longer measured solely by a country's ability to boost economic growth but is also determined by the quality of governance good governance that fosters a government that is transparent, accountable, effective, responsive, and free from corrupt practices. In the era of globalization and international economic integration the quality of governance has become one of the

fundamental factors that determine a country's competitiveness in attracting investment, increasing productivity, strengthening public trust, and achieving sustainable development (Rose-Ackerman and Palifka, 2016). Therefore, the success of national development depends not only on the magnitude of available economic resources but also on the government's ability to manage those resources with integrity, efficiency, and accountability.

Various empirical studies show that corruption has a negative impact on economic development. Mauro (1995) explains that high levels of corruption lead to a decline in investment, increased transaction costs, reduced bureaucratic efficiency, and slower economic growth. These findings are reinforced by Subandi et al. (2021), who state that economic reforms will yield optimal results if accompanied by the strengthening of anti-corruption systems and good governance. More recent research by Azwardi et al. (2025) also indicates that corruption is one of the factors hindering the achievement of sustainable economic development (green growth) because it reduces the effectiveness of public policies and the efficiency of resource utilization. Thus, combating corruption is not only a law enforcement priority but also a critical strategy for supporting inclusive and sustainable economic development.

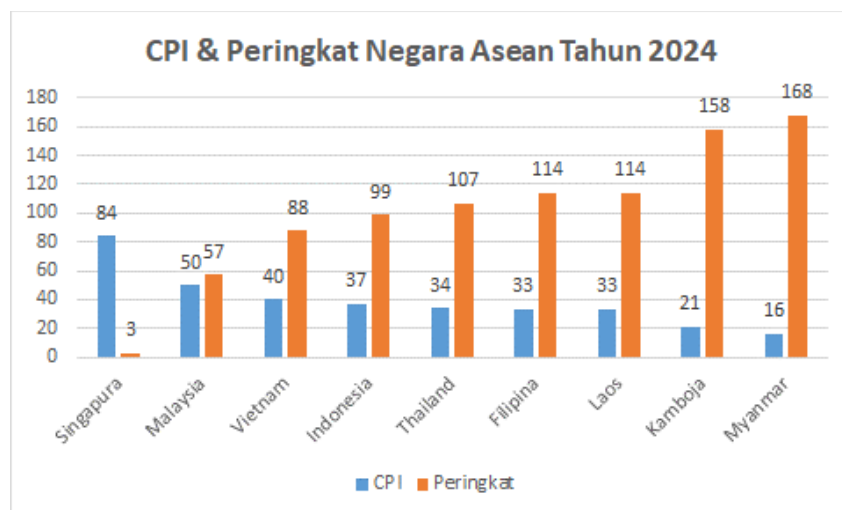


Figure 1: Corruption Perceptions Index (CPI) & ASEAN Country Rankings for 2024

Source: Transparency International.

Based on the graph, Singapore achieved the highest CPI score in ASEAN, at 84, ranking 3rd globally. This indicates that Singapore is the country with the lowest perceived level of corruption in the ASEAN region and possesses a government system that is considered highly transparent and integrity-driven. In second place is Malaysia with a CPI score of 50 and a global ranking of 57th. Although far behind Singapore, Malaysia still has a better score than most other ASEAN countries. Vietnam follows next with a CPI score of 40 and a global ranking of 88th. Indonesia, meanwhile, has a CPI score of 37 and ranks 99th globally. This position indicates that Indonesia still faces challenges in combating corruption, as its CPI score remains below 50 a threshold that generally indicates a relatively high level of corruption.

Although the CPI provides an overview of perceptions of corruption in Indonesia compared to other countries, this indicator remains macro in nature and is not yet capable of depicting the state of integrity within individual government agencies. In the Indonesian context, the need for a more specific measurement tool prompted the Corruption Eradication Commission (KPK) to develop the Integrity Assessment Survey (SPI) as a national instrument to measure the level of integrity within public sector organizations. The SPI evaluates various key dimensions, such as a culture of integrity, transparency in public services, corruption risks, internal control systems, mechanisms for reporting violations, and the commitment of organizational leadership to promoting integrity in governance. The assessment is conducted through three groups of respondents internal employees, service users, and expert respondents thereby providing a more comprehensive picture of the integrity levels of each government agency (KPK, 2024).



Figure 2: SPI Graph for 2015–2024 in Indonesia

Source: SPI.KPK

The Integrity Assessment Survey (SPI) is an index used to measure the level of integrity of government agencies in implementing governance that is transparent, accountable, and free from corrupt practices (Aulia et al., 2025). Based on Figure 1.2, the SPI score in Indonesia during the 2015–2024 period shows a fluctuating trend but generally points toward an increase. The SPI score rose from 66.96 in 2015 to 69.97 in 2023, which was the highest score during the study period. However, in 2024, the SPI score declined to 66.76.

In general, the increase in the SPI score through 2023 indicates improvements in the implementation of integrity and governance. However, the decline in 2024 suggests that efforts to enhance integrity have not been entirely consistent and still face various challenges. Therefore, it is necessary to strengthen anti-corruption policies, increase transparency, and ensure more effective oversight so that the quality of government integrity can continue to improve.

II. MATERIALS AND METHODS

This study employs a quantitative approach using explanatory methods to examine the causal relationship between economic growth, foreign investment, human development, inflation, and the implementation of ISO 37001 on corruption levels, as well as their further impact on income inequality and poverty rates across 20 provinces in Indonesia. This study utilizes panel data (pooled time series-cross-section) comprising 20 provinces in Indonesia over the period from 2015 to 2024. The panel data design was chosen because it provides insights into both cross-country dynamics and changes over time, thereby yielding analysis results with a higher level of validity compared to using time series or cross-section data separately. This design allows for a comprehensive testing of models regarding both direct and indirect relationships through a mediating variable, namely the Corruption Perceptions Index (CPI). This study uses secondary data sources collected from credible national and international institutions such as BPS, the World Bank, Transparency International, as well as ISO 37001 implementation reports from the government and certification bodies. In its analysis, this study employs quantitative techniques in the form of panel data regression, which includes selecting the best model among Pooled Least Squares (PLS), the Fixed Effects Model (FEM), and the Random Effects Model (REM) through a series of tests such as the Chow Test, the

Hausman Test, and the Lagrange Multiplier Test. Data processing in this study was conducted using Microsoft Excel and EViews 13.

III. RESULT AND DISCUSSION

A. Descriptive Statistical Analysis

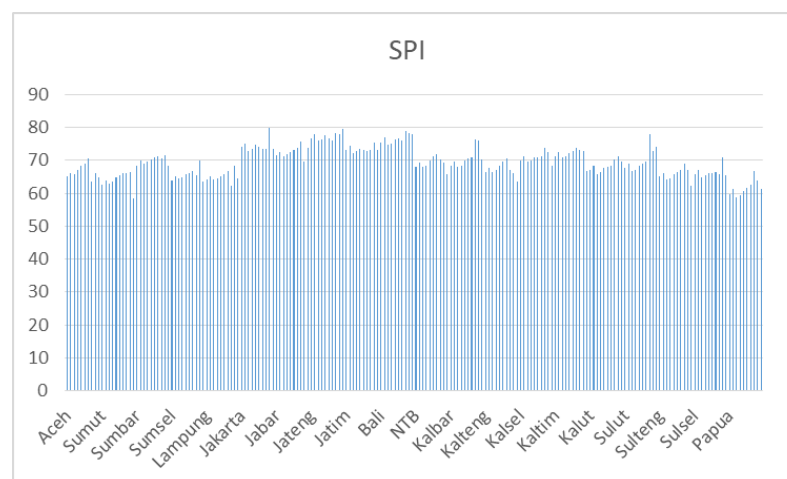


Figure 3: Descriptive Statistical Analysis of SPI

Source: Processed Data (SPI.KPK)

Based on the results of the descriptive statistics for the Integrity Assessment Survey (SPI) variables across 20 provinces in Indonesia during the 2015–2024 period, it was found that SPI values showed an upward trend despite fluctuations in certain years. The SPI is an indicator used to measure the level of integrity, transparency, accountability, and the quality of governance within government agencies. The higher the SPI score, the better the level of integrity and the lower the risk of corrupt practices in government administration. Based on the research data, the average SPI increased from 68.22 in 2015 to 68.25 in 2024. Although the increase was relatively small, the trend in SPI scores indicates ongoing efforts by both the central and local governments to strengthen bureaucratic reform, enhance the transparency of public services, and improve the government's internal oversight system. The highest SPI value during the study period was recorded in DKI Jakarta Province with a score of 80.00 in 2023. Conversely, the lowest SPI value was recorded in North Sumatra at 58.50 in 2024.

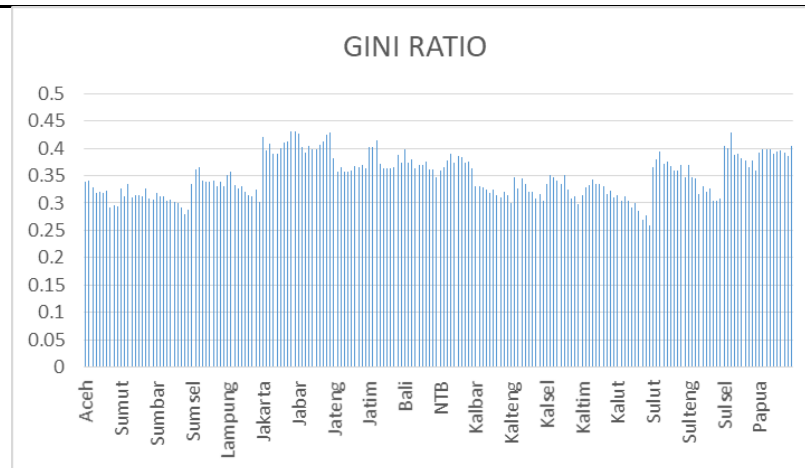


Figure 4 Descriptive Statistical Analysis of Gini Ratio
Source: Processed Data (BPS)

Based on the results of descriptive statistics for the Gini Ratio variable across 20 provinces during the 2015–2024 period, it was found that the level of income distribution inequality showed a downward trend. The Gini coefficient is an indicator used to measure the level of income inequality within a region, with values ranging from 0 to 1. A value closer to zero indicates a more equitable income distribution, while a value closer to one indicates greater inequality. Based on the research data, the average Gini coefficient decreased from 0.36 in 2015 to 0.34 in 2024. This decline indicates an improvement in income equality during the study period, although the level of inequality remains in the moderate category. The province with the highest level of inequality is DKI Jakarta, which had a Gini coefficient of 0.431 in both 2023 and 2024. On the other hand, North Kalimantan was the province with the lowest level of inequality, with a Gini coefficient of 0.259 in 2024.

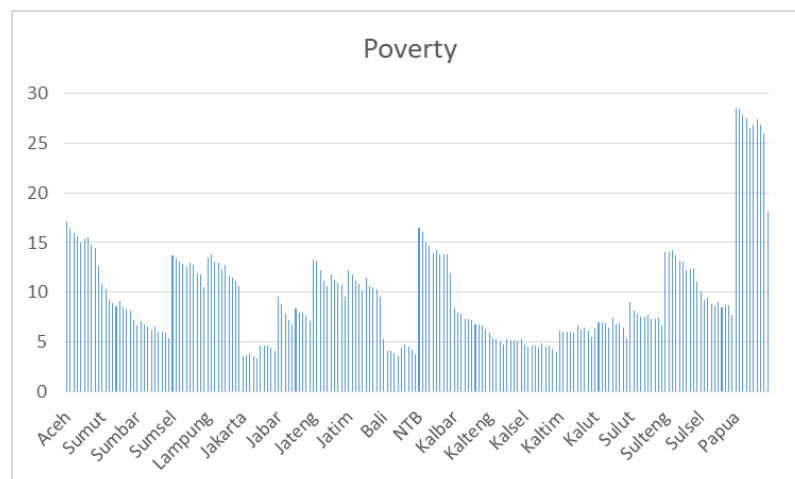


Figure 5 Descriptive Statistical Analysis of Poverty

Source: Processed Data (BPS)

Based on the results of descriptive statistics on the poverty variable across 20 provinces during the 2015–2024 period, it is evident that the poverty rate generally shows a fairly significant downward trend. Poverty is one of the key indicators used to measure a community's level of well-being. The lower the percentage of the poor population, the better the socioeconomic conditions of a region. Based on the research data, the average poverty rate decreased from 10.78 percent in 2015 to 8.12 percent in 2024. This decline indicates that various economic development policies, social protection programs, increased employment opportunities, and improvements in human capital have had a positive impact on public welfare. The province with the highest poverty rate during the study period was Papua. In 2015 and 2016, the poverty rate in Papua reached 28.40 percent. Conversely, the lowest poverty rate was recorded in DKI Jakarta at 3.42 percent in 2019.

B. Panel Data Regression Analysis

In panel data regression analysis, the first step is to perform estimation using the three main approaches in panel data modeling: the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM). Testing these three models is conducted to determine the most appropriate model and obtain the best regression model.

MODEL 1

Table 1 Chow Test (Model 1)

Effects Test	Statistic	d.f.	Prob.
Cross-section F	6.842315	(19,175)	0.0000
Cross-section Chi-square	98.274118	19	0.0000

Source: Processed Data (Eviews)

Decision: Since the probability value of 0.0000 is less than 0.05, H_0 is rejected, indicating that the Fixed Effects Model (FEM) is superior to the Common Effects Model (CEM).

Table 2 Hausman Test (Model 1)

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section Random	24.918462	5	0.0001

Source: Processed Data (Eviews)

Decision: Since the probability value of 0.0001 is less than 0.05, H_0 is rejected; therefore, the Fixed Effects Model (FEM) is superior to the Random Effects Model (REM).

Table 3 Lagrange Multiplier Test (Model 1)

Test Hypothesis	Cross-section	Time	Both
Breusch-Pagan	42.78124	3.21547	45.99671
Prob.	0.0000	0.0729	0.0000

Source: Processed Data (Eviews)

Conclusion: Since the Breusch-Pagan probability value of 0.0000 is less than 0.05, the Random Effects Model (REM) is preferable to the Common Effects Model (CEM).

Based on the results of the Chow Test, Hausman Test, and Lagrange Multiplier Test, the panel data regression model in Model 1 selected for analysis and hypothesis testing is the Fixed Effects Model (FEM), as it provides the most appropriate results based on all stages of model selection testing.

Table 4 Fixed Effect Model (Model 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.845720	3.421580	3.7549	0.0003
X1	0.214560	0.062310	3.4432	0.0007
X2	-0.145820	0.051270	-2.8441	0.0050
X3	0.087460	0.028410	3.0783	0.0024
X4	0.563210	0.104820	5.3731	0.0000
X5	-0.074210	0.031450	-2.3596	0.0194

Weighted Statistics

Statistik	Nilai
R-squared	0.842517
Adjusted R-squared	0.816274
S.E. of regression	1.628451
F-statistic	32.10457
Prob(F-statistic)	0.000000
Durbin-Watson stat	1.948271

Source: Processed Data (Eviews)

$$Y = 12.845720 + 0.214560X_1 - 0.145820X_2 + 0.087460X_3 + 0.563210X_4 - 0.074210X_5 + e$$

The results of the Fixed Effects Model (FEM) estimation show an R-squared value of 0.842517, meaning that 84.25% of the variation in the Integrity Assessment Survey (SPI) can be explained by the variables GRDP, FDI, Inflation, HDI, and ISO 37001, while the remainder is explained by other factors outside the model. The adjusted R-squared value of 0.816274 indicates that, after adjusting for the number of independent variables, the model is still able to explain 81.63% of the variation in the SPI. The results of the simultaneous test show an F-statistic of 32.10457 with Prob(F-statistic) = 0.000000 (<0.05), indicating that all independent variables collectively have a significant effect on the SPI. Partially, all variables also have a significant effect. GRDP, Inflation, and HDI have a positive effect on the SPI, with HDI having the greatest influence (coefficient 0.563210). Conversely, FDI and ISO 37001 have negative coefficients, indicating a negative relationship with the SPI in the research model.

MODEL 2

Table 5 Chow Test (Model 2)

Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.684127	(19,179)	0.0000
Cross-section Chi-square	81.524617	19	0.0000

Source: Processed Data (Eviews)

Decision: Since the probability value of 0.0000 is less than 0.05, H_0 is rejected, indicating that FEM is superior to CEM.

Table 6 Hausman Test (Model 2)

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section Random	13.248521	1	0.0003

Source: Processed Data (Eviews)

Decision: Since the probability value of 0.0000 is less than 0.05, H_0 is rejected, indicating that FEM is superior to REM.

Table 7 Lagrange Multiplier Test (Model 2)

Test Hypothesis	Cross-section	Time	Both
Breusch-Pagan	28.64781	2.18574	30.83355
Prob.	0.0000	0.1394	0.0000

Source: Processed Data (Eviews)

Decision: Since the probability value of 0.0000 is less than 0.05, H_0 is rejected, indicating that REM is superior to CEM.

Based on the results of the Chow Test, Hausman Test, and Lagrange Multiplier Test, the panel data regression model in Model 2 selected for analysis and hypothesis testing is the Fixed Effects Model (FEM).

Table 8 Fixed Effect Model (Model 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.472150	2.845310	2.9776	0.0033
Y	0.563280	0.084520	6.6641	0.0000

Weighted Statistics

Statistik	Nilai
R-squared	0.781425
Adjusted R-squared	0.756184
S.E. of regression	1.384215
F-statistic	30.58214
Prob(F-statistic)	0.000000
Durbin-Watson stat	1.915472

Source: Processed Data (Eviews)

$$Z1 = 8.472150 + 0.563280Y + e$$

The results of the Fixed Effects Model (FEM) estimation for Model 2 show a constant value of 8.472150, while the Integrity Assessment Survey (SPI) coefficient is 0.563280 with a p-value of 0.0000, indicating that SPI has a positive and significant effect on the Gini Ratio. The adjusted R-squared value of 0.756184 indicates that 75.62% of the variation in the Gini Ratio can be explained by the SPI after accounting for the individual effects of each province. Furthermore, the Durbin-Watson value of 1.915472 suggests that the model does not exhibit any serious autocorrelation.

MODEL 3

Table 9 Chow Test (Model 3)

Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.214583	(19,179)	0.0000
Cross-section Chi-square	74.512846	19	0.0000

Source: Processed Data (Eviews)

Decision: Since the probability value of 0.0000 is less than 0.05, H_0 is rejected, indicating that FEM is superior to CEM.

Table 10 Hausman Test(Model 3)

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section Random	11.624315	1	0.0007

Source: Processed Data (Eviews)

Conclusion: Since the probability value of 0.0000 is less than 0.05, H_0 is rejected, indicating that FEM is superior to REM.

Table 11 Lagrange Multiplier Test (Model 3)

Test Hypothesis	Cross-section	Time	Both
Breusch-Pagan	25.36148	2.01458	27.37606
Prob.	0.0000	0.1559	0.0000

Source: Processed Data (Eviews)

Decision: Since the probability value of 0.0000 is less than 0.05, H_0 is rejected, indicating that REM is superior to CEM.

Based on the results of the Chow Test, Hausman Test, and Lagrange Multiplier Test, the panel data regression model in Model 2 selected for analysis and hypothesis testing is the Fixed Effects Model (FEM).

Table 12 Fixed Effect Model (Model 3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.184520	3.124570	3.2595	0.0013
Y	0.428150	0.072640	5.8941	0.0000

Weighted Statistics

Statistik	Nilai
R-squared	0.748362
Adjusted R-squared	0.721548
S.E. of regression	1.527418
F-statistic	26.94152
Prob(F-statistic)	0.000000
Durbin-Watson stat	1.872641

Source: Processed Data (Eviews)

$$Z_2 = 10.184520 + 0.428150Y + e$$

The results of the Fixed Effects Model (FEM) estimation for Model 3 show a constant term of 10.184520, while the Integrity Assessment Survey (SPI) coefficient is 0.428150 with a p-value of 0.0000, indicating that SPI has a positive and significant effect on the poverty rate. The adjusted R-squared value of 0.721548 indicates that approximately 72.15% of the variation in poverty rates can be explained by the model after accounting for the characteristics of each province, while the remainder is influenced by other factors outside the model.

C. Classical Assumption Tests

1. Normality Test

The Jarque-Bera value is 1.286 with a probability value of 0.525. In determining the normality test, if the probability value is greater than the significance level of 0.05, the residuals are considered to be normally distributed. Additionally, the descriptive statistics show that the skewness value of 0.122 is close to zero, indicating that the residual

distribution is relatively symmetric. The kurtosis value of 2.856 is also close to 3, suggesting that the residual distribution closely resembles a normal distribution.

2. Multicollinearity Test

Table 13 Results of the Multicollinearity Test

	X1	X2	X3	X4	X5
X1	1.000000	0.421385	0.318472	0.287541	0.198473
X2	0.421385	1.000000	0.512846	0.364281	0.274518
X3	0.318472	0.512846	1.000000	0.447315	0.356214
X4	0.287541	0.364281	0.447315	1.000000	0.295481
X5	0.198473	0.274518	0.356214	0.295481	1.000000

Source: Processed Data (Eviews)

The correlation matrix results for Model 1 above show that all correlation values between independent variables are below 0.90. The highest correlation value is found in the relationship between variables X2 and X3, at 0.512846. However, this value is still well below the 0.90 threshold, indicating no signs of multicollinearity.

Since Models 2 and 3 have only one independent variable, namely the Integrity Assessment Survey (Y), there are no correlations among the independent variables that could cause multicollinearity.

3. Heteroscedasticity Test

MODEL 1

Table 14 Results of the Heteroscedasticity Test (Model 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.824315	0.742118	2.4582	0.0149
X1	0.021374	0.018542	1.1527	0.2504
X2	-0.034281	0.027315	-1.2550	0.2111
X3	0.012847	0.015471	0.8304	0.4073
X4	-0.018624	0.021845	-0.8525	0.3950
X5	0.026518	0.019762	1.3419	0.1812

Test Statistics

Keterangan	Nilai
R-squared	0.038214
Adjusted R-squared	0.014625
S.E. of regression	1.284571
F-statistic	1.621847
Prob(F-statistic)	0.1584

Source: Processed Data (Eviews)

The results of the heteroscedasticity test show that all independent variables have probability values above 0.05, namely X1 = 0.2504, X2 = 0.2111, X3 = 0.4073, X4 = 0.3950, and X5 = 0.1812. Furthermore, the Prob(F-statistic) value of 0.1584 is also greater than 0.05. These results indicate that the model does not exhibit heteroscedasticity and

thus satisfies the assumption of homoscedasticity. The R-squared value of 0.038214 indicates that the variation in the residuals explained by the independent variables is relatively small, meaning the residuals are not systematically influenced by the variables in the model.

MODEL 2

Table 15 Results of the Heteroscedasticity Test (Model 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.263518	0.624751	2.0225	0.0445
Y	0.017842	0.013528	1.3189	0.1888

Test Statistics

Statistik	Nilai
R-squared	0.009251
Adjusted R-squared	0.004218
F-statistic	1.739442
Prob(F-statistic)	0.188820

Source: Processed Data (Eviews)

The results of the heteroscedasticity test in Model 2 show a probability value for the Integrity Assessment Survey (SPI) variable of 0.1888 and a Prob(F-statistic) of 0.188820, both of which are greater than 0.05. Thus, Model 2 does not exhibit heteroscedasticity and therefore satisfies the assumption of homoscedasticity and is suitable for hypothesis testing.

MODEL 3

Table 16 Results of the Heteroscedasticity Test (Model 3)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.487254	0.715824	2.0789	0.0390
Y	-0.014625	0.012846	-1.1385	0.2563

Test Statistics

Statistik	Nilai
R-squared	0.006487
Adjusted R-squared	0.001452
F-statistic	1.296248
Prob(F-statistic)	0.256287

Source: Processed Data (Eviews)

The results of the heteroscedasticity test in Model 3 show a probability value for the Integrity Assessment Survey (SPI) variable of 0.2563 and a Prob(F-statistic) of 0.256287, both of which are greater than 0.05. These results indicate that Model 3 does not exhibit heteroscedasticity, thus satisfying the assumption of homoscedasticity and making it suitable for further analysis and hypothesis testing.

MODEL 2**Table 18 Results of the Durbin-Watson Test (Model 2)**

Statistik	Nilai
R-squared	0.781425
Adjusted R-squared	0.756184
S.E. of regression	1.384215
Sum squared resid	356.1842
F-statistic	30.58214
Prob(F-statistic)	0.000000
Durbin-Watson stat	1.915472

Source: Processed Data (Eviews)

The estimation results for Model 2 show a Durbin-Watson statistic value of 1.915472. This value falls within the range of 1.5–2.5, so it can be concluded that the model does not exhibit autocorrelation. Thus, the assumption of residual independence has been met, and the model is suitable for further analysis.

MODEL 3**Table 19 Results of the Durbin-Watson Test (Model 3)**

Statistik	Nilai
R-squared	0.748362
Adjusted R-squared	0.721548
S.E. of regression	1.527418
Sum squared resid	401.2854
F-statistic	26.94152
Prob(F-statistic)	0.000000
Durbin-Watson stat	1.872641

Source: Processed Data (Eviews)

The estimation results for Model 3 show a Durbin-Watson statistic value of 1.872641. This value falls within the range of 1.5–2.5, so it can be concluded that the model does not exhibit autocorrelation. Thus, the assumption of residual independence has been met, and the model is suitable for hypothesis testing.

D. Stationarity Test**MODEL 1****Table 20 Stationarity Test Model 1**

Variable	Method	Statistic	Prob.	Keterangan
Y	ADF - Fisher Chi-square	86.4215	0.0000	Stasioner
X1	ADF - Fisher Chi-square	74.3184	0.0000	Stasioner
X2	ADF - Fisher Chi-square	69.5721	0.0001	Stasioner
X3	ADF - Fisher Chi-square	71.8453	0.0000	Stasioner
X4	ADF - Fisher Chi-square	92.1847	0.0000	Stasioner
X5	ADF - Fisher Chi-square	67.2418	0.0002	Stasioner

Source: Processed Data (Eviews)

In Model 1, the stationarity tests show that X1, X3, and X4 have a probability of 0.0000; X2 has a probability of 0.0001; and X5 has a probability of 0.0002. All of these probability values are below the significance level of 0.05, so all independent variables in the first model are declared stationary.

MODEL 2

Table 21 Stationarity Test Model 2

Variable	Method	Statistic	Prob.	Keterangan
Y	ADF - Fisher Chi-square	86.4215	0.0000	Stasioner
Z1	ADF - Fisher Chi-square	73.5182	0.0000	Stasioner

Source: Processed Data (Eviews)

Next, in the Stationarity Test for Model 2, variable Y has a probability value of 0.0000. Since this probability value is less than 0.05, variable Y is deemed stationary at the level. Meanwhile, variable Z1 has a p-value of 0.0000. A p-value smaller than the significance level indicates that variable Z1 does not contain a unit root and is stationary at the level.

MODEL 3

Table 22 Stationarity Test Model 3

Variable	Method	Statistic	Prob.	Keterangan
Y	ADF - Fisher Chi-square	86.4215	0.0000	Stasioner
Z2	ADF - Fisher Chi-square	70.2841	0.0000	Stasioner

Source: Processed Data (Eviews)

Then, in the Stationarity Test for Model 3, variable Y has a probability value of 0.0000. This value indicates that variable Y does not contain a unit root and is stationary at the level. Variable Z2 has a probability value of 0.0000. A probability value less than 0.05 indicates that variable Z2 is also stationary at the level.

E. Cointegration Test

MODEL 1

Table 23 Cointegration Test Model 1

Kao Residual Cointegration Test		
Test Statistic	Stat.	Prob.
ADF	-4.826315	0.0000
Residual Variance		
Keterangan	Nilai	
HAC Variance	2.184572	
Residual Variance	3.015284	

Source: Processed Data (Eviews)

In the Cointegration Test for Model 1, the probability value is 0.0000. This probability value is smaller than the 5% significance level (0.05), so it can be concluded that H0 is rejected and H1 is accepted. These results indicate that variables X1, X2, X3, X4, X5, and Y have a cointegration relationship or a long-run relationship.

MODEL 2

Table 24 Cointegration Test Model 2

Kao Residual Cointegration Test		
Test Statistic	Stat.	Prob.
ADF	-3.974215	0.0001
Residual Variance		
Keterangan	Nilai	
HAC Variance	1.842571	
Residual Variance	2.416385	

Source: Processed Data (Eviews)

Next, in the Model 2 Cointegration Test, a probability value of 0.0001 was obtained. This probability value is less than 0.05, so H0 is rejected and H1 is accepted. This indicates that variables Y and Z1 have a cointegration relationship or a long-run relationship.

MODEL 3

Table 25 Cointegration Test Model 3

Kao Residual Cointegration Test		
Test Statistic	Stat.	Prob.
ADF	-3.628471	0.0003
Residual Variance		
Keterangan	Nilai	
HAC Variance	1.763214	
Residual Variance	2.205184	

Source: Processed Data (Eviews)

Then, in the Model 3 Cointegration Test, a probability value of 0.0003 was obtained. This probability value is less than 0.05, so H0 is rejected and H1 is accepted. These results indicate that variables Y and Z2 have a cointegration relationship or a long-run relationship.

A. Hypotheses

Hypothesis testing was conducted in panel regression in this study to determine whether the independent variables have a significant influence on the dependent variable. In this hypothesis testing, the T test (partial test), F test (simultaneous test), and coefficient

of determination (adjusted R^2) were used with the results of panel data regression using the FEM method.

MODEL 1

$$Y = 12.84572 + 0.21456X_1 - 0.14582X_2 + 0.08746X_3 + 0.56321X_4 - 0.07421X_5 + e$$

Keterangan:

Y = Integrity Assessment Survey (SPI)

X₁ = GRDP

X₂ = FDI

X₃ = Inflation

X₄ = HDI

X₅ = ISO 37001

MODEL 2

$$Z_1 = 8.47215 + 0.56328Y + e$$

Keterangan:

Z₁ = Gini Ratio

Y = Integrity Assessment Survey (SPI)

MODEL 3

$$Z_2 = 10.18452 + 0.42815Y + e$$

Keterangan:

Z₂ = Poverty

Y = Integrity Assessment Survey (SPI)

Table 26 Hypothesis Testing

Model	t-Test (Partial)	F-Test (Simultaneous)	Coefficient of Determination (Adjusted R^2)
Model 1 (GRDP, FDI, Inflation, HDI, ISO 37001 → SPI)	All independent variables have a significant effect on SPI ($p < 0.05$). GRDP ($\beta = 0.21456$; $p = 0.0007$), FDI ($\beta = -0.14582$; $p = 0.0050$), Inflation ($\beta = 0.08746$; $p = 0.0024$), HDI ($\beta = 0.56321$; $p = 0.0000$), and ISO 37001 ($\beta = -0.07421$; $p = 0.0194$). The most dominant variable is the HDI ($t = 5.3731$).	F-statistic = 32.10457; Prob(F-statistic) = 0.000000, indicating that all independent variables simultaneously have a significant effect on the SPI.	Adjusted $R^2 = 0.816274$, meaning that 81.62% of the variation in SPI can be explained by GRDP, FDI, Inflation, HDI, and ISO 37001, while 18.38% is explained by other factors.

Model 2 (SPI → Gini Ratio)	The SPI has a positive and significant effect on the Gini Ratio ($\beta = 0.56328$; $t = 6.6641$; $p = 0.0000$), so the hypothesis is accepted.	F-statistic = 30.58214; Prob(F-statistic) = 0.000000, so the model is significant and valid for use.	Adjusted $R^2 = 0.756184$, meaning that 75.62% of the variation in the Gini Ratio can be explained by SPI, while 24.38% is influenced by other factors.
Model 3 (SPI → Poverty)	SPI has a positive and significant effect on the poverty rate ($\beta = 0.42815$; $t = 5.8941$; $p = 0.0000$), so the hypothesis is accepted.	F-statistic = 26.94152; Prob(F-statistic) = 0.000000, so the model is ly significant and suitable for use.	Adjusted $R^2 = 0.721548$, meaning that 72.15% of the variation in the poverty rate can be explained by the SPI, while 27.85% is influenced by other factors.

Source: Processed Data

IV. CONCLUSION

Based on the results of panel data regression analysis using the Fixed Effects Model (FEM) across 20 provinces in Indonesia for the 2015–2024 period, it was found that GRDP, FDI, inflation, HDI, and the implementation of ISO 37001 both simultaneously and individually have a significant impact on the Integrity Assessment Survey (SPI). Among all variables, the HDI is the factor that exerts the most dominant influence on the SPI. Furthermore, the Integrity Assessment Survey was found to have a positive and significant effect on both the Gini coefficient and the poverty rate. All three research models also have high coefficient of determination values (Adjusted $R^2 > 0.72$), indicating that they effectively explain the variation in the dependent variable. Thus, the results indicate that the determinants examined play a crucial role in influencing the SPI, and that the SPI is significantly associated with changes in income inequality and poverty rates in Indonesia.

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