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Provincial Tax Performance in Indonesia and Determinants of Tax Revenue

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Abstract. This research seeks to assess the efficacy of tax revenues across 34 provinces in Indonesia and analyse the determinants affecting provincial tax collections on a national scale. This research utilises yearly data released by the Central Statistics Agency of Indonesia from 2019 to 2023. The Tax Performance Index assesses tax revenue performance over a five-year period, using panel data regression analysis to evaluate the impact of various factors. A panel data regression analysis was performed using the Fixed Effects Model. The results of the regression analysis indicate that most provinces have not yet achieved optimal tax revenue levels. The regression study findings indicate that Gross Domestic Product (GDP) per capita, Human Development Index, Percentage of Workforce, and Gini Index strongly influence Tax Revenues, both individually and together. The research findings suggest that the government must consider both non-economic and economic factors that may influence tax collections.

Keywords: Tax Revenue, Provincial, Tax Performance, Government.

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Introduction

Examples of the benefits that the community derives from tax revenue include education, healthcare, and employment availability. The taxes imposed by the government are anticipated to influence income levels, quality of life, and community welfare (CİĞERC & EĞMİR, 2020). This is because taxes significantly contribute to the state's total revenue. Taxes provide the principal source of revenue for almost every country worldwide. Indonesia is among the top five countries globally in terms of population (World Bank, 2025). Indonesia is highly dependent on the revenue generated by taxation.

Indonesia is undoubtedly one of the countries that derives a substantial amount of its total state revenue from taxes. Nearly eighty percent of the state's overall revenue is derived from taxpayer payments. In 2023, tax receipts were 78% of the total, while the remainder was derived from grants and untaxed governmental resources (Finance, 2024). The Indonesian central government is urged to decentralize tax administration authority to optimize tax collections. This is due to the substantial share of tax income in the nation being mostly derived from taxes.

In Indonesia, government taxes may be categorized into two separate types: central taxes and regional taxes, also referred to as provincial taxes. The phrase "central tax" denotes a levy handled by the central government for national objectives. Previously mentioned national objectives including education, health, and employment. The regional tax is controlled by the provincial administration and is used for provincial development. The central government gives financial assistance to the provincial government, supplementing the revenue generated from provincial taxes. The funds are used to ensure the success of initiatives executed by the central government in each province.

There are thirty-eight provinces in Indonesia, four of which were only recently founded via the split of two more provinces that were already in existence. It is important to note that the income level of each province is unique, which results in different potentials for economic development across the provinces. Because of this, the level of development in each province is distinct from one another. Specifically, this study aims to analyze the performance of regional tax revenue in each province, investigate the factors influencing provincial tax revenue, and assess the performance of each province in terms of tax revenue.

Literature Review

Research by Li, Chen, Xie, and Wang (2024) and Zhou, Liu, and Wang (2025) indicates that tax incentives may affect the quality of human resources inside a company. Companies may enhance their investment in human capital by receiving tax benefits related to it. This impacts the enhancement of ideas generated by people inside the company. The subsequent innovation may provide more revenue for the company. Consequently, an augmentation in corporate income will lead to a corresponding rise in state tax collection. An increase in tax revenue will impact the improvement of the human resource development index (Song, 2000; Çiğerc & Eğmır, 2020; Yavuz, 2023; Kuyebi & Omodero, 2025).

Lestari (2024) found a significant correlation between tax revenue and the Human Development Index, consistent with previous study results. The quality of human life correlates positively with the allocation of tax revenue to education and healthcare. Jalles (2017), Chen, Kumru, and Zhang (2024), and Jacobs, Schindler, and Yang (2012) assert that enhancing human resource development positively influences tax revenues, making them more optimal. The studies indicate that better tax management, aimed at enhancing human resource development via the improvement of educational and health facilities and infrastructure, will positively impact the increase in tax collections. Individuals are more likely to meet their tax obligations when they possess a comprehensive awareness of the benefits associated with self-payment of taxes. Oyinlola and Adedeji (2021) assert that the inclusiveness of growth would be favorably influenced by the amalgamation of rising tax income and human resources.

Human resource concerns are among the characteristics that may influence tax revenues, while several other factors might also affect them. The analysis conducted by Garg, Goyal, and Pal (2016) reveals a favorable association between tax initiatives and gross domestic product per capita, literacy rates, and labor force participation. Alongside the characteristics identified by Garg, Goyal, and Pal (2016), Bird, Martinez-Vazquez, and Torgler (2008) uncovered other factors influencing tax efforts. Bird, Martinez-Vazquez, and Torgler (2008) found that corruption, voice, and accountability significantly influenced tax collection activities. McCoon (2012)

asserts that cultural traits, including individualism and collectivism, influence revenue collection activities.

Hypothesis Development

GDP Per Capita and Tax Revenue

GDP per capita is a metric employed to evaluate the rate of economic growth. Calculating the Gross Domestic Product (GDP) per capita entails dividing the entire gross domestic product by the total population. The gross domestic product (GDP) per capita of an area serves as an effective metric for assessing the average income of its residents. An increase in GDP per capita is expected to lead to a rise in tax revenue. An augmentation in Gross Domestic Product (GDP) per capita will result in an enhancement in individual income. The capacity for tax revenue can be augmented with a rise in income. This aligns with the results of a study conducted by Garg, Goyal, and Pal (2016). The study examined the influence of GDP per capita on the government's tax revenue. The author proposes the following regarding Hypothesis 1 based on this explanation:
H_1: GDP Per Capita has an effect on tax revenue

Human Development Index and Tax Revenue

The Human Development Index (HDI) is a variable employed to assess the standard of life of individuals in a specific area. A higher Human Development Index (HDI) score indicates that the people in the region enjoys extended life expectancy, a reasonable standard of living, and elevated total knowledge. An elevation in the HDI value may also result in an augmentation in tax revenue. The population's elevated income leads to an increased tax contribution. The public have a substantial understanding that enables them to grasp tax policy. Finally, the physical and mental well-being of the populace is robust, enabling them to remain productive in their endeavours. To optimise tax revenue, the government may opt to focus on improving specific components of the Human Development Index (Jalles, 2017; Chen, Kumru, & Zhang, 2024; Jacobs, Schindler, & Yang, 2012). Based on this investigation, the author presents Hypothesis 2 as follows:
H_2: Human Development Index affects tax revenues

Percentage of Workforce and Tax Revenue

The tax revenue will be directly influenced by the workforce size. A direct association exists between the workforce size of a region and the tax revenue collected by that region. Employed individuals' income will be liable for taxation. Moreover, they will apply the income generated from their employment to fulfil their needs and objectives, some of which are deemed taxable entities. Garg, Goyal, and Pal (2016) discovered a favourable link between labour market participation and tax revenue. Based on this study, the author proposes Hypothesis 3 as follows:
H_3: Percentage of Workforce affects tax revenues

Gini Index and Tax Revenue

The Gini Index is an indicator utilised to assess the level of inequality present within a region. The Gini Index can range from 0 to 1. A higher score indicates a larger degree of inequality present in the region. This results in a limited number of individuals in the region reaping the benefits of income. Increased inequality will impact tax revenue. The concentration of income among a limited demographic results in diminished tax revenues. Kozuharov, Petkovski, and Ristovska (2015) identified the influence of the Gini Index on state tax revenue. Based on this study, the author presents Hypothesis 4 as follows:
H_4: Gini Index affects tax revenue

GDP Per Capita, Human Development Index, Percentage of Workforce, Gini Index and Tax Revenue

The money generated from taxes may be influenced by a singular component or multiple variables. According to the research conducted by Garg, Goyal, and Pal (2016), it has been determined that gross domestic product per capita, literacy rate, and labour force participation can concurrently influence tax revenue. Consequently, the author proposes Hypothesis 5 as follows:
H_5: GDP Per Capita, Human Development Index, Percentage of Workforce, and Gini Index simultaneously affect tax revenue

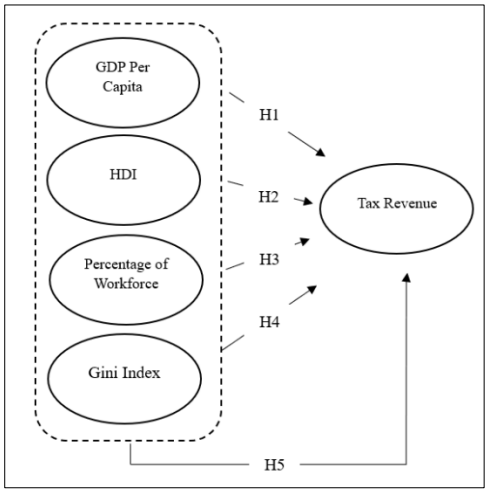

Fig. 1. Research Model
Source: Processed by the author

Research Method

Data Sources

This research makes use of secondary data that was gathered from the official websites of the Indonesian Ministry of Health and the Indonesian Central Statistics Agency. Between the years 2019 and 2023, information on the Gross Domestic Product (GDP), the GDP per Capita, income, tax revenue, workforce percentage, health, the Gini Index, and the Human Development Index will be gathered for each and every province in Indonesia.

Research Variables

This inquiry takes into account a total of six factors: four independent variables, namely Gross Domestic Product (GDP) per capita (X1), human development index (X2), workforce percentage (X3), and Gini Index (X4), and one dependent variable, which is tax revenue (Y).

Table 1
Operational Variable

No	Variable	Quantification	Source
1	Tax Revenue	Provincial Revenue Derived from Regional Taxes	Central Bureau of Statistics of Indonesia
2	GDP Per Capita	Provincial Gross Domestic Product divided by Provincial Population	
3	Human Development Index	Three measurement indicators are utilized: Life Expectancy, Knowledge, and Provincial Decent Living Standards.	
4	Percentage of Workforce	Proportion of the Population Employed in the Province	
5	Gini Index	Degree of inequality in the Province	

Source: Processed by the author

Analysis Methods

In order to evaluate the effectiveness of taxation across all of the provinces, this study makes use of trend analysis. In addition to this, it employs the Ordinary Least Squares method for doing multiple linear regression analysis with panel data in order to investigate the influence that the Gross Domestic Product (GDP) per capita, the Human Development Index, the rate of labor force participation, and the Gini index have on tax revenue. Ultimately, the purpose of the project is to investigate the impact that tax revenue has on health outcomes. For the purpose of the analysis, the software that was utilized was STATA version 17.0.

Result and Discussion

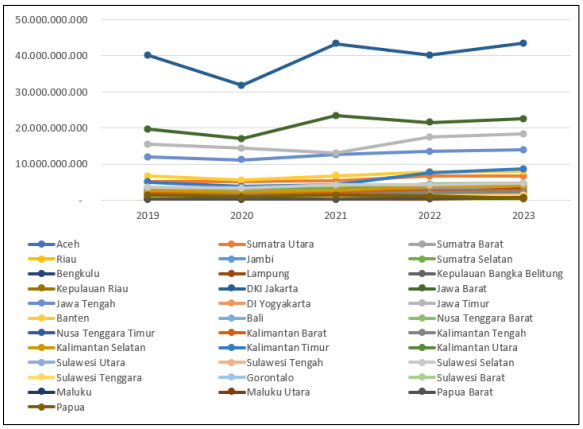

Fig. 2. Tax Revenue Across All Provinces
Source: Processed by the author

Tax Revenue

In terms of the number of archipelagic nations, Indonesia is among the greatest there are. It was reported that Indonesia has 17,380 islands in possession in the year 2023. This number encompasses both large and small islands in equal measure. Papua, Kalimantan, Sumatra, Sulawesi, and

Jawa are the five islands that make up the largest group of Indonesian islands. The number of provinces that were officially recognized in 2023 was 34.

A graph that demonstrates the performance of tax income for each province from 2019 to 2023 is presented in Table 2, which can be found above. During the course of the five-year period, general trends indicate that tax revenues across all provinces have been on an upward trajectory. In every year other than 2020, there was a significant drop in the outcome. This reduction occurred as a consequence of the pandemic caused by the COVID-19 virus. The province of DKI Jakarta is the one that brings in the most money from taxes. The capital of the Unitary State of the Republic of Indonesia is located in Jakarta, which is also known as DKI Jakarta. Indonesia's government and economic activity are centered in Jakarta, which acts as the epicenter of DKI Jakarta. Without a doubt, this province is the one that brings in the most money from taxes than any other province in Indonesia.

As an additional point of interest, the provinces of Jawa Barat and Jawa Timur are responsible for the second and third largest amounts of provincial tax revenue, respectively. Jawa Tengah come in at number four. When compared to the remaining thirty provinces, these four provinces are responsible for the highest rate of tax income generation. There are four provinces that may be found on Jawa, which is the largest island in Indonesia. The highest population density in all of Indonesia may be found on this particular island. This particular island is home to close to sixty percent of the total population of Indonesia. One of the factors that contributes to the increased tax revenues in these four provinces is this particular factor.

At the same time, the remaining thirty provinces have experienced tax receipts that are relatively comparable to one another. Based on these numbers, it appears that the taxes collected by the province continue to be inconsistent. The island of Jawa continues to be the primary focus. As can be seen in the map that is located above in Figure 3, there are other islands that have a larger area than Jawa. All of the provinces on the island of Jawa have to have collection rates for their respective taxes that are comparable to one another.

Gross Domestic Products

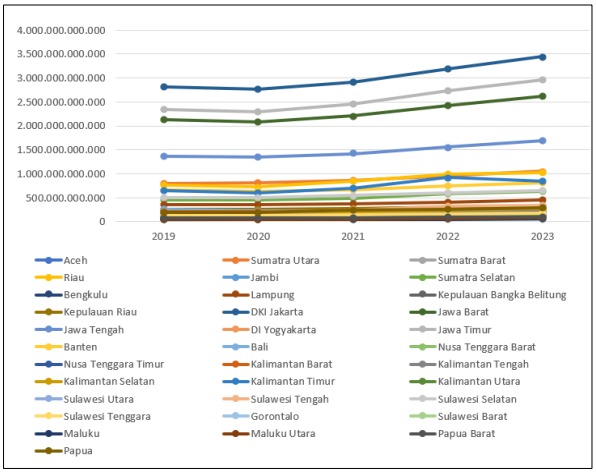

Fig. 3. Gross Domestic Products Across All Provinces
Source: Processed by the author

An illustration of the Gross Domestic Product (GDP) for each province is shown in the graph that can be seen in Figure 4. Since 2019, the gross domestic product (GDP) of every province in Indonesia has increased. The pandemic induced by COVID-19 resulted in a decrease in the year 2020. The decline, on the other hand, was not especially significant. Following the year 2020, the graph continued to show that there was a huge increase. As was the case with the Tax Revenue graph that came before it, where Jawa Provinces won the race in terms of revenue, this GDP graph likewise demonstrates that Jawa Provinces are the most dominant in terms of GDP. After DKI Jakarta, Jawa Timur, Jawa Barat, and Jawa Tengah come in second, third, and fourth, respectively. The island of Jawa is the location where the most significant economic activity now takes place. At the same time, other provinces have GDPS that are comparable to those of the province in question.

Tax Efforts and Tax Performance Index

As stated by Bird, Martinez-Vazquez, and Torgler (2008), the method for calculating tax efforts is the tax revenue divided by the gross domestic product. The term "tax efforts" refers to an indicator that is used for the purpose of assessing a province's capability to maximize the amount of taxes collected from economic activity that takes place within its jurisdiction. An increased tax revenue base is correlated with a larger gross domestic product. In the above figure, Figure 5, the Tax Efforts graph is shown for each and every province in Indonesia. During the period from 2019 to 2023, the Tax Effort graph displays significant variations, whereas the figures collected from the various provinces show very little movement. In contrast to the two graphs that came before it, the Tax Effort graph does not

demonstrate the degree to which the Province of Jawa Island is dominant at its highest possible value. This province, South Kalimantan, had the largest value of tax effort, followed by Bali and the Special Capital Region of Jakarta (DKI Jakarta), which had the second highest value. These three provinces have successfully maximized their provincial tax revenue in contrast to other provinces, despite the fact that the total is still relatively low in relation to GDP.

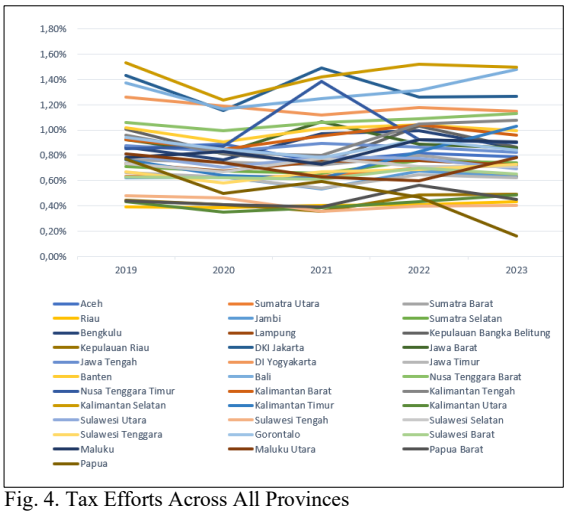

Fig. 4. Tax Efforts Across All Provinces
Source: Processed by the author

Table 2
Tax Performance Index 2019-2023

No	Province	TPI	No	Province	TPI
1	Kalimantan Selatan	98,04	18	Sulawesi Utara	48,63
2	DKI Jakarta	89,50	19	Sumatra Barat	48,48
3	Bali	88,90	20	Lampung	46,76
4	DI Yogyakarta	79,88	21	Sulawesi Selatan	46,18
5	Nusa Tenggara Barat	71,23	22	Maluku Utara	45,76
6	Banten	65,94	23	Sumatra Selatan	45,36
7	Nusa Tenggara Timur	65,25	24	Sulawesi Tenggara	42,03
8	Kalimantan Barat	62,39	25	Sumatra Utara	40,77
9	Kalimantan Tengah	61,73	26	Sulawesi Barat	40,65
10	Jawa Barat	59,93	27	Jawa Timur	38,96
11	Kepulauan Bangka Belitung	58,58	28	Jambi	38,94
12	Bengkulu	58,36	29	Papua	30,71
13	Gorontalo	57,08	30	Papua Barat	26,55
14	Jawa Tengah	56,27	31	Kepulauan Riau	25,45
15	Maluku	54,42	32	Sulawesi Tengah	24,74
16	Aceh	53,89	33	Kalimantan Utara	23,85
17	Kalimantan Timur	49,46	34	Riau	23,16

Source: Processed by the author

The Tax Efforts graph can be shown in Figure 3, and the Tax Performance Index (TPI) may be calculated by utilising the Tax Effort data for each province from 2019 to 2023. An evaluation of the efficiency with which tax income is maximised in relation to Gross Domestic Product (GDP) is carried out by the Tax Performance Index (TPI). When a province has a higher score, it shows that it is efficient in using its GDP to increase the amount of taxes it collects. The calculation of the Tax Performance Index is carried out in accordance with the methodology that was defined by Allahverdi and Alagöz (2023). The results of the calculations are shown in Table 2, and Table 3 provides an in-depth explanation of the methods used in the computations. On the basis of Tax Efforts data from the previous five years, the conclusions of the TPI calculation indicate that the province of Kalimantan attains the highest ranking in terms of tax revenue optimization performance. This is followed by the provinces of DKI Jakarta and Bali. In contrast to the graph that came before it, which was always dominated by provinces located on the island of Jawa, the TPI table demonstrates that the top 10 spots are mostly taken by provinces that are located outside of Jawa. It seems from the statistics that provinces that are not located in Jawa have the potential to increase their tax collection in relation to their available GDP. On the other hand, several provinces in Jawa have high GDPs, but they have not yet reached their full potential in terms of tax revenue efficiency. In addition, the author conducted a classification using the data provided by Allahverdi and Alagöz (2023) in order to determine which provinces displayed Very High, High, Medium, Low, and Very Low levels of performance. It has been determined via the process of grouping that provinces numbered 1-7 demonstrate Very High performance. Additionally, provinces numbered 8 to 14 show impressive levels of performance. In addition, provinces numbered 15-21 have a performance that is considered to be Medium. As an additional point of interest, provinces numbered 22-28 have poor performance. At the end of the day, provinces numbered 29-34 have very poor results. The performance of these provinces is categorised into quintiles of 20 percent each.

Table 3
Procedure for Computing the Tax Performance Index

Procedure 1	$Tax\ Effort\ (TE_{it}) = \frac{Tax\ Revenue_{it}}{GDP_{it}}$ **Note:** it = Province i's value at time t
Procedure 2	$Z_{it} = \frac{TE_{it} - \mu}{\sigma}$
Procedure 3	All data is established at a minimum value of 1. This procedure seeks to eradicate negative values and guarantee that all data consists of positive values. The lowest Z score is increased by -1 to remove negative values. Subsequently, 1 is appended to this value.
Procedure 4	$Z_{it} = \frac{Z_{it}}{Highets\ Z_t}\ x\ 100$
Procedure 5	$Tax\ Performance\ Index_{it} = \sqrt{\frac{(1-X1gi_{it})^2 + (1-X2gi_{it})^2 + \cdots + (1-Xngi_{it})^2}{n}}$

Source: Processed by the author

Descriptive Statistics

Table 3
Descriptive Statistics

No	Variable	Obs.	Mean	Std. Dev.	Min.	Max.
1	Tax Revenue	170	9,29173	0,52171	8,462	10,63
2	GDP Per Capita	170	70045,5	54576,5	19630	322619
3	Human Development Index	170	72,5454	3,88884	60,84	83,55
4	Percentage of Workforce	170	94,9875	1,61815	89,98	98,60
5	Gini Index	170	0,34665	0,04136	0,245	0,449

Source: Processed by the author

The findings of descriptive statistical analyses that were performed on 170 observations are shown in Table 4, which may be seen above. A minimum of 8.462 and a maximum of 10.63 are the values that are shown by the Tax Revenue variable. The average value of this variable is 9.29173, and its standard deviation is 0.52171. With a minimum of 19,630 and a maximum of 322,619, the GDP Per Capita variable has a mean value of 70,045.5, a standard deviation of 54,576.5, and a range that goes from low to high. The Human Development Index variable has a range that goes from a low of 60.84 to a high of 83.55, with an average value of 72.5454, a standard deviation of 3.88884, and a minimum value of 60.84. In terms of the variable known as "Percentage of Workforce," the average value is 94.9875, the standard deviation is 1.61815, the lowest value is 89.98, and the maximum value is 98.60. There is a minimum value of 0.245 and a maximum value of 0.449 for the Gini Index variable. The average value of the Gini Index is 0.34665, and the standard deviation is 0.04136.

Model Identification

Table 4
Chow and Hausman Test Result

	Chow Test	Hausman Test
Number of Observation	170	170
Number of Groups	34	34
Probability	0,0000	0,0000

Source: Processed by the author

Chow Test

A comparison of the Common Effect Model and the Fixed Effect Model is made using the Chow test in order to determine which of the two models is the most appropriate for panel data regression. The results of the test brought about a probability value of 0.000, which was produced by the STATA program. Given that the value is less than 0.05, it can be concluded that the Fixed Effect Model is the most appropriate technique for the interim period.

Hausman Test

This section presents the preliminary findings that were obtained through the utilization of the Chow Test and the Fixed Effects Model approach. It is necessary to conduct additional tests using the Hausman Test in order to determine whether or not this method is appropriate. The Hausman test compares the Fixed Effect Model to the Random Effect Model in order to measure their differences. According to the results of the Hausman Test, the probability value was 0.000. Since the number is less than 0.05, it can be concluded that the Fixed Effect Model is the most appropriate technique to employ.

Test of Classical Assumptions

Table 6
Result of Classical Assumptions Test

	Multicollinearity Test	Heteroskedasticity Test
Significance of test outcomes	0,0122*	0,0393**

Note: * < 0,85, **<0,05

Source: Processed by the author

A multicollinearity test is performed to ascertain if the regression model exhibits correlation with the independent variables. If the resultant value is less than 0.85, it indicates an absence of multicollinearity. If the value exceeds 0.85, multicollinearity is present. The test findings indicate a value of 0.0122, allowing the conclusion that all independent variables are devoid of multicollinearity. The heteroscedasticity test seeks to ascertain whether the regression model has unequal variances in the residuals across observations; if so, it is termed heteroscedasticity. An effective regression model is homoscedastic, indicating the absence of heteroscedasticity. The Glejser test is employed to ascertain the existence or absence of heteroscedasticity in this investigation. If the resultant value exceeds 0.05, it indicates the absence of heteroscedasticity. If the obtained value is < 0.05, heteroscedasticity is present. The test results indicate a value of 0.0393, which is less than 0.05. It can be inferred that heteroscedasticity is present in the regression model. A robust test is conducted on this regression model due to the presence of heteroscedasticity. Upon completion of the rigorous test, this model is devoid of heteroscedasticity.

Scatter Plot

GDP Per Capita - Tax Revenue

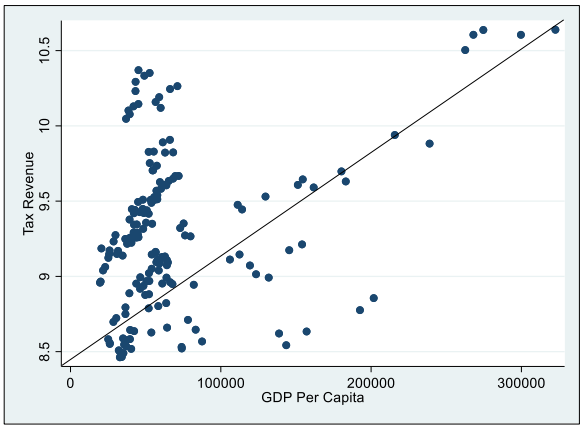

Fig. 5. GDP Per Capita and Tax Revenue
Source: Processed by the author

Figure 5 depicts the relationship between the gross domestic product (GDP) per capita and the amount of tax revenue collected in each of Indonesia's provinces from 2019 to 2023. The gross domestic product (GDP) per capita is a measure that is used to evaluate the degree of income within a certain region. An projected increase in tax revenue is correlated with a growth in the gross domestic product (GDP) per capita. The graphic demonstrates that the dots are concentrated in certain places, which indicates that there is a significant association between GDP per capita and practically all of the provinces.

Human Development Index - Tax Revenue

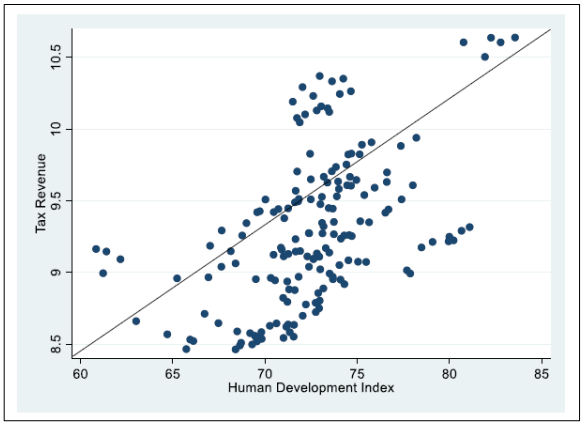

Fig. 6. GDP Per Capita and Tax Revenue
Source: Processed by the author

Figure 6 depicts the relationship between the gross domestic product (GDP) per capita and the amount of tax revenue collected in each of Indonesia's provinces from 2019 to 2023. The gross domestic product (GDP) per capita is a measure that is used to evaluate the degree of income within a certain region. An projected increase in tax revenue is correlated with a growth in the gross domestic product (GDP) per capita. The graphic demonstrates that the dots are concentrated in certain places, which indicates that there is a significant association between GDP per capita and practically all of the provinces.

Human Development Index - Tax Revenue

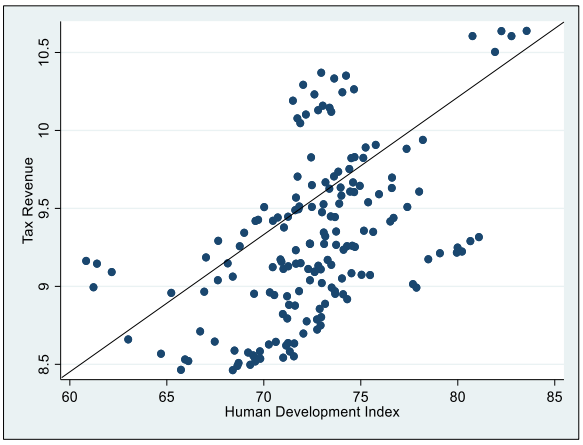

Fig. 7. Human Development Index and Tax Revenue
Source: Processed by the author

The relationship between the Human Development Index (HDI) and the amount of tax revenue collected in each of Indonesia's provinces is shown in Figure 7, which covers the period from 2019 to 2023. An indicator that is used to determine the amount of happiness that people in a certain region are experiencing is called the Human Development Index (HDI). A area is considered to have a high Human Development Index (HDI) if its inhabitants have a high level of education, are employed, and have an income that is higher than the average. When the HDI score is higher, there is a correlation with an increased tax revenue base. The information shown in the graphic suggests that the points are concentrated in certain places, which suggests that there is a substantial association between HDI and practically all provinces.

Percentage of Workforce - Tax Revenue

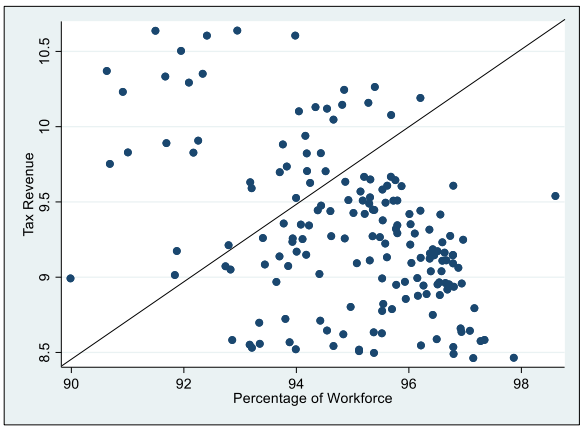

Fig. 8. Percentage of Workforce and Tax Revenue
Source: Processed by the author

The relationship between the percentage of the workforce and the amount of tax revenue collected in each of Indonesia's provinces from 2019 to 2023 is shown in Figure 8, which can be found above. The proportion of the workforce is an indicator that is used to determine the level of labor absorption in a certain region. It seems that a significant fraction of the local population is employed, which is evidence that they have a source of money. There is a correlation between a higher worker share and an increase in tax revenue. One may see that the points are concentrated in certain areas by looking at the picture that is shown above. On the other hand, there are a few data points that fail to fall inside the concentration, which suggests that the percentage of the workforce has a rather high link across practically all of the provinces considered.

Gini Index - Tax Revenue

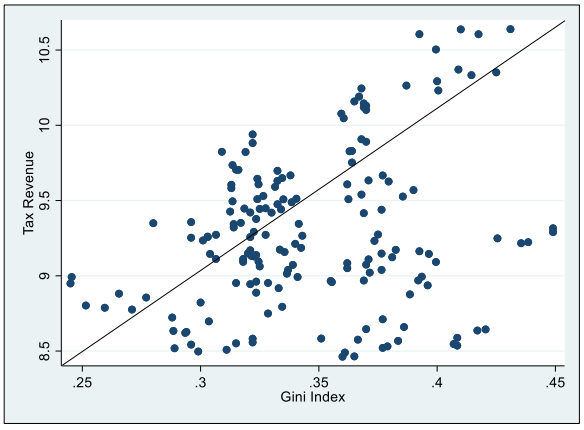

Fig. 9. Gini Index and Tax Revenue
Source: Processed by the author

To highlight the association between the Gini Index and Tax Revenue throughout all provinces in Indonesia from 2019 to 2023, the figure that can be seen above is referred to as Figure 7. The Gini Index is a statistic that is used to evaluate the level of inequality that exists within a certain region. When the Gini Index is high, it indicates that there is a significant amount of inequality in the area, which indicates that wealth is concentrated among a few number of people. Tax revenue decreases in proportion to the elevation of the property. Despite the fact that the dots seem to be distributed rather than concentrated in certain locations, the picture reveals that they do display a pattern, which suggests that the Gini Index has a weak association throughout all of the provinces.

Table 5
Results of the Regression Test

	Dependent Variable		
	Tax Revenue		
Independent Variable	Coefficient	t	P-value
GDP Per Capita	3,42	6,03	0,000*
Human Development Index	0,020	3,16	0,003*
Percentage of Workforce	0,027	3,25	0,003*
Gini Index	-1,241	-1,85	0,074***
Constanta		5,385	
Number of Observation		170	
Number of Groups		34	
F		0,000	
R^2		0,5081	

Note: *Significance at the 1% level, **Significance at the 5% level, **Significance at the 10% level.

Source: Processed by the author

Regression Equation

$$Y = 5{,}385 + 3{,}42\ X_1 + 0{,}020\ X_2 + 0{,}027\ X_3 - 1{,}241\ X_4 + e$$

The constant value of 5,385 indicates that, without considering the variables GDP Per Capita (X1), Human Development Index (X2), Percentage of Workforce (X3), and Gini Index (X4), the Tax Revenue (Y) variable will increase by 5,385. Then, the beta coefficient value of the GDP Per Capita (X1) variable is 3,42, meaning that if other variables are constant and variable X1 increases by 1 point, variable Y will increase by 3,42, conversely, if other variables are constant and variable X1 decreases by 1 point, variable Y will decrease by 3,42. Furthermore, the beta coefficient value of the Human Development Index (X2) variable is 0,020, meaning that if other variables are constant and variable X2 increases by 1 point, variable Y will increase by 0,020, conversely, if other variables are constant and variable X2 decreases

by 1point, variable Y will decrease by 0,020. Furthermore, the beta coefficient value of the Percentage of Workforce (X3) variable is 0,027, meaning that if other variables are constant and variable X3 increases by 1 point, then variable Y will increase by 0,027, conversely, if other variables are constant and variable X3 decreases by 1 point, then variable Y will decrease by 0,027. Furthermore, the beta coefficient value of the Gini Index (X4) variable is 1,241, meaning that if other variables are constant and variable X4 increases by 1 point, then variable Y will decrease by 1,241, conversely, if other variables are constant and variable X4 decreases by 1 point, then variable Y will increase by 1,241.

Hypothesis Testing

According to the findings of the panel data regression analysis that was performed with the Fixed Effect Model and provided in Table 5, the P-value is the metric that is utilized for the purpose of evaluating the partial influence that exists between the independent factors and the affected variables. There is no association between GDP per capita and tax revenue, and the P-value for this correlation is 0.000. Given that this value is lower than 1%, it may be concluded that Hypothesis 1 is correct. There is a substantial relationship between GDP per capita and tax revenue. A P-value of 0.003 indicates that there is a correlation between the Human Development Index and Tax Revenue. The fact that this value is lower than one percent suggests that Hypothesis 2 is correct. There is a substantial relationship between the Human Development Index and tax income. P-value is 0.003, which indicates that there is a correlation between the percentage of the workforce and tax revenue. The fact that this value is lower than one percent suggests that Hypothesis 3 is correct. A substantial amount of influence is exerted on tax revenue by the percentage of the workforce. P-value is 0.074, which indicates that there is a correlation between the percentage of the workforce and tax revenue. The fact that this figure is lower than 10% serves as evidence that Hypothesis 4 is correct. The Gini Index has a substantial impact on the funds collected via taxes. In the conclusion, the F-value is utilized in order to assess the simultaneous influence that the dependent variable has on the independent variable. A value of 0.000 was discovered for F. The fact that this value is lower than one percent suggests that Hypothesis 5 is correct. A number of factors, including the Gini Index, workforce proportion, GDP per capita, and Human Development Index, have a substantial impact on tax income.

Discussion

As of 2023, Indonesia consisted of 34 provinces. The five principal islands on which these provinces are distributed are Papua, Kalimantan, Sumatra, Jawa, and Sulawesi. The economics of each province are significantly influenced by the geographical disparities that exist among them. The allocation of economic output across different regions is inequitable. A considerable volume of economic activity remains concentrated on the provinces situated on the island of Jawa. The gross domestic product of each province elucidates this further. A robust correlation exists between the volume of tax income collected in each area and the GDP level. The graph indicates that provinces with the greatest GDP also generate the largest tax revenues. This condition is corroborated by panel data regression studies, which reveal a significant positive correlation between GDP per capita and tax collections. This state is corroborated by the collection of taxes. A positive association exists between elevated GDP and rising tax revenues. Conversely, a diminished GDP is associated with a reduced tax revenue collection. The conclusion is corroborated by the findings of the study done by Garg, Goyal, and Pal (2016). The link between GDP and tax revenues is elucidated via the use of TPI. The TPI enables the identification of provinces that have effectively transformed their GDP into tax revenue and those that have failed to meet their targets. Calculations using the TPI indicate that provinces with elevated GDP have not effectively optimised their tax income generation. The provinces outside Jawa are superior than those that are more advantageous. Furthermore, the TPI suggests that most provinces have yet to attain their optimal capacity for tax revenue. If advantageous, tax income will significantly grow, particularly in the Jawa provinces with the greatest GDP.

It is indisputable that GDP and other criteria, like the Human Development Index (HDI), labour participation rate, and the Gini Index, influence inadequate tax revenue. The researchers concluded via panel data regression analysis that a partial Human Development Index (HDI) significantly and positively influences tax revenue. This indicates that elevated levels of education, health, and income in an area, as quantified by the Human Development Index (HDI), correlate with increased tax revenue in that region. A positive association exists between an individual's

educational attainment and their comprehension of tax compliance standards. The findings of study by Jalles (2017), Chen, Kumru, and Zhang (2024), and Jacobs, Schindler, and Yang (2012) support the given conclusion.

Moreover, the proportion of the workers has a beneficial and substantial influence on the tax income generated. Conversely, there exists a link between a larger workforce and a rising number of individuals earning income. An increase in the number of individuals generating income is anticipated to lead to a rise in tax revenue. The study results of Garg, Goyal, and Pal (2016) support this concept. The Gini Index is a determinant of tax revenue. The Gini Index significantly adversely affects tax revenue. The Gini Index may be used to ascertain the level of inequality present within a location. A higher Gini Index correlates with less tax collection. This occurs when a limited number of individuals own an unequal share of financial resources. Some individuals get minimal earnings sufficient just to meet their daily necessities. These incomes may be enough at some periods, while they might also be inadequate at others. The government does not levy taxes on this little income. The conclusion is corroborated by the study results of Kozuharov, Petkovski, and Ristovska (2015).

Subsequently, the previously described components were examined concurrently. The analysis of the test findings indicated a substantial and favourable impact. Tax revenue is influenced by many variables, including the Human Development Index, labour force participation, GDP per capita, and the Gini coefficient. The conclusion is corroborated by the findings of the study done by Garg, Goyal, and Pal (2016). This indicates that, alongside economic issues, non-economic variables also influence tax revenue. The test results yielded an R^2 value of 0.5081, corresponding to 50.81 percent. This chart demonstrates that the independent variables in this study account for 50.81 percent of the variation, while additional factors explain the remaining fraction.

Conclusion

The purpose of this study is to assess the efficiency of tax collection and the factors that influence tax revenues in each of Indonesia's 34 provinces between the years 2019 and 2023. In the majority of Indonesian provinces, the performance of tax income continues to be unsatisfactory, as shown by the estimates that are obtained from the Tax Performance Index. It is still less than one percent of the proportion of tax revenues collected across all provinces to the Gross Domestic Product. At this time, there is still a significant possibility of increasing tax receipts in each province. In addition, there is a substantial disparity in terms of gross domestic product (GDP) and tax revenues between the provinces that are located on the island of Jawa and those that are located outside of it. Despite this, provinces that are located outside of Jawa do better than those that are located on the island of Jawa in terms of tax collecting performance. As a consequence of this, the central government has to begin playing a more major role in reducing the existing inequalities and providing incentives to the provincial governments so that they may improve the performance of their tax collection within their various jurisdictions.

The outcomes of the test, which were obtained via the use of panel data regression using the Fixed Effect Model, illustrate the influence that the Human Development Index, workforce percentage, GDP per capita, and Gini Index have on tax revenue. The impact arises either partially or simultaneously with the occurrence. The results of the study reveal both economic and non-economic factors have a substantial influence on the amount of money collected from taxes in the province. It is important to consider the Gross Domestic Product (GDP), the income of the people, the size of the workforce, and inequality. Both health and education are considered to be important non-economic factors at the same time. Both parts cannot be separated from one another. It is possible that tax non-compliance will be affected by a population with a high income but not enough education. Therefore, when there are a lot of job opportunities available but the workforce is not in the best possible condition, it will have a negative influence on the amount of taxes collected. The provincial government has to devise a plan in order to increase the number of job possibilities available and guarantee that there will be adequate educational and medical healthcare facilities.

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