The Effect of Regional Financial Management on Financial Distress of Local Government in Indonesia

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KEYWORDS	ABSTRACT
Financial Distress; Financial Independence; Financial Flexibility; Operational Solvency; Short Term Solvency; Service Solvency; Local Government	Deficits experienced by local governments can lead to financial difficulty, often referred to as financial distress. Although local governments experience deficits, local governments can avoid these conditions with good regional financial management. This research aims to determine regional financial management's effect on local governments' financial distress in 2019-2022. The sample in this research uses a total sampling technique at all provincial and local government levels in 2019-2022. This research uses secondary data with documentation techniques. Binary logistic regression was obtained to perform data analysis. The results showed that financial independence significantly negatively affects financial distress. Financial flexibility has a significant negative effect on financial distress. Operational solvency does not have a significant adverse effect on financial distress. Short-term solvency has a significant positive effect on finances. Service solvency has a significant negative effect.

1. Introduction

The purpose of regional autonomy is to provide rights to manage their own region, including the region's financial management (Dwitayanti et al., 2020). Regional autonomy can help local governments to know their regional ability to implement regional authority and freedom of management in developing regions guided by applicable regulations. The success of regional autonomy can be seen from various circumstances, such as regional independence, regional financial performance, and the quality of public services (Tumija, 2022; Ningrum, 2022). However, the implementation of regional autonomy needs to be monitored, considering that various obstacles must be resolved, one of which is the problem of financial distress or financial difficulties (Indriaty et al., 2019).

Jones and Walker (2007) and Wulandari (2020) describe financial distress as the inability to provide services based on existing service standards. Financial distress in the government or public

sector is defined as the government's inability to provide services and facilities caused by limited resources due to being used for routine expenditures that are less productive (Sari & Arza, 2019). Financial distress in provincial and local governments can occur due to several factors, including imbalances between regional revenues and expenditures, inefficient financial management, and improper debt management (Xie et al., 2011). A high dependence on fund transfers from the central government often causes this imbalance. At the same time, Regional Original Revenue (PAD) has not been able to support the increasing needs of regional spending. The financial distress experienced by several provincial-level local governments in Indonesia shows structural problems in the regional financial management system. For example, in (2023), the North Sumatra Provincial Government experienced a significant budget deficit. This deficit was triggered by a decline in regional revenue due to the COVID-19 pandemic, while regional spending on public services and infrastructure could not be reduced. The impact is far-reaching, ranging from delayed payment of employee salaries and disruption of public services to the inhibition of infrastructure development needed by the community. Local governments can handle the deficit by applying for loans to various parties, often called regional loans. Based on the Indonesian Public Sector Debt Statistics (SUSPI) released by Bank Indonesia, Indonesia's Gross Local Government Debt position in Q2 2023 reached IDR78.26 trillion. This figure tends to decrease from previous periods, but the debt interest rate continues to increase until the interest payable in Q2 of 2023 reaches IDR531.82 billion. Increasing debt can disrupt spending that supports community services. In the public finance literature, the condition where the government cannot fulfil public services using its budget for several years is referred to as financial difficulties or often referred to as financial distress (Kadafi & Amirudin, 2020).

The government's financial distress conceptual framework is an adoption of the financial distress framework in the private sector where the debt repayment ability ratio, often referred to as the Debt Service Coverage Ratio (DSCR), is used by creditors when providing loans to entities. DSCR is an analysis to predict the ability of an entity to meet its obligations when receiving a loan (Udayana et al., 2022). Government Regulation (PP) 56 of 2018 on Regional Loans explains that DSCR shows the local government's capability to pay off its loans. Furthermore, Government Regulation No. 23 of 2003 on The Control of the Cumulative Amount of State Budget and Regional Budget Deficits and the Cumulative Amount of Central Government and Regional Government Loans stated that one of the requirements that local governments must meet to obtain a loan is having DSCR value of more than or equal to 2.5. If a region's DSCR falls below 2.5, it is ineligible to apply for a regional loan due to concerns about its ability to meet principal and interest payment obligations (Indriaty et al., 2019). Thus, it is necessary to control the financial condition of a local government (Ningrum & Sholihah, 2023). The financial condition of local governments can be seen in various analyses. Article 6 of the Regulation of the Minister of Home Affairs (Permendagri) Number 19 of 2020 on The Measurement of the Regional Financial Management Index explains that the Regional Financial Management Index (IPKD) is measured by six dimensions, namely the alignment of planning and budgeting documents; the composition of the budget in the APBD; openness of regional financial management; budget use; regional financial conditions; and the opinion of the Financial Audit Board on the LKPD (Regional Government Financial Statements). Furthermore, Article 11 explains that regional financial conditions consist of indicators, which are financial independence, financial flexibility, operational

solvency, short-term solvency, long-term solvency, and service solvency. These indicators can inform the public about the condition of a Regional Government.

Local government financial ratios can be used to assess the government's financial health, especially in the context of accountability for the implemented regional autonomy (Wulandari, 2020). Furthermore, Wulandari (2018) explained that financial ratio analysis can describe the capability to carry out government operations and predict potential financial difficulties. On the other hand, the ability of a region to carry out regional autonomy can be reflected in its level of financial independence. Financial independence describes the level of dependence of local governments on assistance from the central government. Local governments with greater financial independence will be more capable of surviving and avoiding financial crises (Ilahi et al., 2021). Local governments' ability to increase PAD and develop their government can be reflected in fiscal decentralisation. The need for funds from other sources will arise if the local government has a low PAD (Ilahi et al., 2021). Pranoto et al. (2022) explained that the contribution of PAD, as measured by the degree of decentralisation, can indicate potential financial distress for local governments.

This research was developed from similar previous studies. Previous research used private company ratios, which aimed at generating profits from their operations, to predict financial distress in Indonesia's local government. Indriaty et al. (2019) found that the current ratio, debt to equity, operating revenues to total revenues ratio, return on assets, return on equity, population, and regional status significantly influence predicting financial distress. Revenue growth does not predict financial distress. For this reason, this study aims to examine the influence of regional financial management identified through the dimension of regional financial conditions. This study must at least answer some basic questions to conclude that regional financial management influences financial distress.

Based on current conditions, many local governments are experiencing significant deficits. The researcher aims to examine ratios that depict regional financial conditions, precisely financial independence, financial flexibility, operational solvency, short-term solvency, long-term solvency, and service solvency, as stated in Permendagri Number 19 of 2020 on The Measurement of IPKD. This research seeks to predict the financial distress of local governments in Indonesia by utilizing these variables, setting it apart from previous studies that did not use the ratios listed in Permendagri Number 19 of 2020. Therefore, this research is titled "The Influence of Regional Financial Management on Financial Distress of Local Governments in Indonesia."

2. Materials and Methods

This study aims to measure the influence of independent variables on the dependent variable. Therefore, the appropriate research models are correlation and regression studies. Correlation studies help identify relationships between variables, while regression measures the strength of these relationships. The independent variables in this study are financial independence, financial flexibility, operational solvency, short-term solvency, and service solvency. The dependent variable is financial distress. The hypothesis in this research can be described as follows:

The Effect of Financial Independence on Financial Distress

Permendagri on IPKD explains that financial independence is the level of sensitivity to sources of funds local governments outside their control, either from the country or abroad. Independence means that a region can generate revenue independently and manage it to fulfill obligations and perform regional operations. The higher the level of financial independence, the more independent the region is in fulfilling its regional activities. This allows the region to allocate more funds to capital expenditure so that the government has sufficient assets to provide services and improve public welfare. Thus, the higher the level of financial independence, the more likely the local government will be released from financial distress (Sari & Arza, 2019).

H1: Financial independence has a negative effect on the financial distress of local governments in Indonesia.

The Effect of Financial Flexibility on Financial Distress

Permendagri on IPKD explains that financial flexibility is the local government's capability to face increased commitments caused by internal and external local governments, either through increased revenue or debt capacity. Commitments refer to events that must be completed by the local government (Putri, 2022). In this case, financial flexibility refers to the availability of funds to handle an unexpected event increase. The higher the financial flexibility, the more funds are available to handle unexpected events. Thus, the higher the level of financial flexibility of the local government, the more likely the local government will be released from financial distress.

H2: Financial flexibility hurts the financial distress of local governments in Indonesia.

The Effect of Operational Solvency on Financial Distress

Permendagri on IPKD explains that operational solvency is the level of local government revenue that can cover operational expenses during the budget period. The definition states that "revenue to cover operating expenses", so it is related to the accrual system reported in the Operational Report. Operational Solvency describes the level of revenue that can be used to cover local government operational expenses, so the higher the degree of operational solvency, the more excess funds remaining after covering operational expenses during the budget period. The remaining funds can be used to finance other activities. Thus, the higher the level of operational solvency, the more likely the local government will be released from financial distress.

H3: Operational solvency has a negative effect on the financial distress of local governments in Indonesia.

The Effect of Short-Term Solvency on Financial Distress

Permendagri on IPKD explains that short-term solvency is the level of ability of local governments to meet their obligations in less than 12 months. The higher the level of short-term solvency, the greater the liquid assets remaining after settling current liabilities. Thus, the higher the short-term solvency, the more likely the local government will be released from financial distress.

H4: Short-term solvency has a negative effect on the financial distress of local governments in Indonesia.

Effect of Service Solvency on Financial Distress

The Permendagri on IPKD explains that service solvency is the value of the local government's capability to provide and maintain the quality of services that the public needs and desires. Before local governments provide services, local governments need assets to perform service operations. So, service solvency is illustrated by the ratio between the source of facilities owned by the government and the total population that can get these services. The more assets owned by the local government, the more services the local government is able to provide than local governments with lower assets. Thus, the higher the solvency of the service, the more likely the local government is to be free from financial distress.

H5: Service Solvency has a negative effect on the financial distress of local governments in Indonesia.

The analysis unit in this research is an organisational unit, namely, provincial governments in Indonesia. The data population in this research will be all provincial governments from 2019 to 2022. This research uses a total sampling technique. Thus, all the populations are used for the data sample. This study utilizes a panel data approach that combines time series and cross-sectional data. Secondary data are used in this study, as well as the Financial Report on Local Government (LKPD) obtained from the Audit Board of the Republic of Indonesia (BPK), data from the Central Statistics Agency (BPS), and the official provincial government website. The data covers 34 of the 38 provinces in Indonesia, excluding Papua Pegunungan, Papua Selatan, Papua Tengah, and Papua Barat Daya, as these provinces were established in 2022. The research employs binary logistic regression performed with SPSS 25 to evaluate the hypothesis. The dependent variable is binary, where 0 describes the local government having a DSCR of less than or equal to 2.5, indicating it is in financial distress, and 1 describes the local government having DSCR above 2.5, indicating it is not in financial distress.

3. Result and Discussion
Research Results
1. Test for Outliers

The initial dataset comprised 136 data from 34 provincial government reports during 2019-2022. In the first outlier test, four outlier data were identified from the Casewise List Table in SPSS with a ZResid value of more than 2.5 or less than -2.5. The outliers are case numbers 29, 60, 105, and 119; those data were excluded.

Table 1
List of Outliers in the First Test

Case Number	ZResid
29	-2.801
60	-2.770
94	-2.454
105	3.654
119	12.006

In the second outlier test, three outlier data were identified with a ZResid value of more than 2.5 or less than -2.5. The outliers are case numbers 26, 92, and 116; those data were excluded.

Table 2
List of Outliers in the Second Test

Case Number	ZResid
26	-3.835
48	-2.322
92	-4.111
116	3.592

In the third outlier test, three outlier data were identified with a ZResid value of more than 2.5 or less than -2.5. The outliers are case numbers 47, 106, and 120; those data were excluded.

Table 3
List of Outliers in the Third Test

Data Number	ZResid
47	-3.815
106	2.722
120	2.566

In the fourth outlier test, no outlier data were identified due to no case data from datasets with a Zresid of more than 2.5 or less than -2.5.

Table 4
List of Outliers in the Fourth Test

Data Number	ZResid
98	2.147

Based on the outlier test, 12 cases were identified as outliers. Those data were excluded from hypothesis testing. Therefore, the data for the next steps are 136-12 or 126.

2. Multicollinearity Test

Multicollinearity testing indicates that independent variables have little or no multicollinearity. If the tolerance value is less than 0.1, it can be indicated that the predictor variable is highly correlated with other predictor variables in the model. The results of this test showed that all predictor variables had a tolerance value of more than 0.1. The tolerance value of financial independence (KK) is 0.869. The tolerance value of financial flexibility (FK) is 0.408. The tolerance value of the operational solvability (SO) is 0.471. The tolerance value of short-term solvency (SJP) is 0.439. The tolerance value of service solvency (SL) is 0.515.

Table 5 Multicollinearity Test

Predictor Variable	Collinearity Statistic	
	Tolerance	VIF
KK	0.869	1.151
FK	0.408	2.451
SO	0.471	2.121
SJP	0.439	2.276
SL	0.515	1.940

3. Linearity Test

The results of the linearity test show that all the predictor variables have significance greater than 0.05, which means that linearity is not a problem for the dataset. The significance value of financial independence is 0.551. The significance value of financial flexibility is 0.362. The significance value of the operational solvability is 0.793. The significance value of short-term solvency is 0.239. The significance value of service solvency is 0.305.

Table 6 Linearity test

Research Variables (Multiplication of Variables by the result of LN Variables)	Significance
KK by LN_KK	0.551
FK by LN_FK	0.362
LN_SO by SO	0.793
LN_SJP by SJP	0.239
LN_SL by SL	0.178
Constant	0.403

4. Descriptive Statistical Analysis

Financial independence (KK) has an average value of 0.3820, the highest value of 0.73, the lowest value of 0.04, and the standard deviation of 0.15901. The financial flexibility (FK) has an average value 2.4287, the highest value is 9.18, the lowest value is 0.97, and the standard deviation is 1.18583. The operational solvency (SO) has an average value 0.9290, the highest value 2.93, the lowest value 0.36, and the standard deviation 0.24288. The short-term solvency (SJP) has an average value 2.9198, the highest value 23.59, the lowest value 0.05, and the standard deviation 3.94252. The service solvency (SL) has an average value of 4,274,334.4823, the highest value is 49,448,064.60, the lowest value is 502,615.26, and the standard deviation is 7,481,345.66573.

Table 7 Descriptive Statistical Analysis

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
KK	126	.04	.73	.3820	.15901
FK	126	.97	9.18	2.4287	1.18583
SO	126	.36	2.93	.9290	.24288
SJP	126	.05	23.59	2.9198	3.94252
SL	126	502615.26	49448064.60	4274334.4823	7481345.66573
Valid N (listwise)	126				

5. Data Statistical Analysis

a. Test of the entire model

This test is used to evaluate binary logistic regression models by focusing on improving the quality of the model with the addition of independent variables. The results of this test can be seen by comparing the -2 log-likelihood before (step 0) and after (step 1) the addition of the predictor variable. If there is a decrease in value, the model used is adequate. Here are the model's overall test results.

Table 8
Comparison of -2 Log likelihood values

Iteration	-2 Log likelihood
Step 0	160.402
Step 1	33.180

The table above shows a significant decrease of -2 log-likelihood. The value before adding the predictor variable (step 0) is 160.402, and after adding the predictor variable (step 1) is 33.180. The decreased -2 log-likelihood indicates that the overall model is adequate to test the hypothesis.

b. Hosmer and Lemeshow's Goodness of Fit Test

Hosmer and Lemeshow's Goodness of Fit Test revealed a significance value of 0.979, more significant than 0.05. From these values, it can be concluded that the data used for research is adequate with the regression model used in the research; in other words, the research model fits with the model, and the research can be performed.

Table 9
Hosmer and Lemeshow Test

Step	Chi-square	df	Significance
1	2.075	8	0.979

c. Nagelkerke R^2

The Nagelkerke R^2 test measures the degree to which the predictor variable impacts the predicted variable in the model.

Table 10
Nagelkerke R^2 Test

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	33.180	0.636	0.883

The Nagelkerke R^2 value is 0.876, which means the predicted variable in the form of financial distress is explained by the predictor variables, which are financial independence, financial flexibility, operational solvency, short-term solvency, and service solvency of 88.30% and other variables out this study explain the remaining 11.70%.

6. Hypothesis Testing

a. Omnibus Test of Model Coefficients

The Omnibus Test of Model Coefficients is evaluated through its significance value. With a confidence level of 95%, the significance value obtained from the test is 0.00, which is well below the threshold of 0.05. This result indicates that the independent variable has a simultaneous significant impact on the predicted variable.

Table 11
Omnibus Tests of Model Coefficients

		Chi-square	df	Significance
Step 1	Step	127.221	5	.000
	Block	127.221	5	.000
	Model	127.221	5	.000

b. Wald Test

Based on the results of the Wald test, the predictor variable that has a significance value less than 0.05 are financial independence (KK), whose value is 0.002, financial flexibility (FK) whose value is 0.004; short-term solvency (SJP), which value is 0.004, and service solvency (SL) which value is 0.0011. Meanwhile, the significance of more than 0.05 is operational solvency (SO), whose value is 0.445.

Table 12 Wald Test
Wald Test

Variable	Coefficient	Significance
KK	-68.404	0.001
FK	-4.136	0.001
SO	-3.757	0.449
SJP	1.030	0.002
SL	0.000	0.013
Constanta	34.160	.002

7. Logistic Regression Analysis

Based on the Wald Test, the coefficient of each variable and the constant can be obtained to form an equation. The equations obtained based on the Wald test are as follows:

$$\text{Ln } \frac{p}{p-1} = 34.160 - 68.404(KK) - 4.136(FK) - 3.757(SO) + 1.030(SJP) - 9x10^{-7}(SL)$$

Discussion
Financial independence negatively affects the financial distress of local governments in Indonesia

The first hypothesis test (H1) is that financial independence negatively affects local government financial distress. Based on the Wald Test, financial independence has a significance value of 0.001 with a coefficient value of -68.404, indicating that this variable has an inverse or negative effect. The significance value of the test was smaller than the significance value of 0.05, so it can be concluded that financial independence has a significant effect inversely related to the financial distress of the local government. Thus, H1 is accepted.

The results of this research align with several previous studies, one of which is the study by Pranoto et al. (2022), which described that the degree of decentralisation is inversely related to

financial distress conditions. In Pranoto's research, the degree of decentralization was calculated using the same formulation as the financial independence used in this research.

The results of this study are also in line with the research of Elfiyana and Arza in 2022, which shows that the degree of decentralization is inversely related to conditions of financial distress. In Elfiyana's research, the degree of decentralization is calculated using the same formulation as the financial independence used in this research.

Financial flexibility negatively affects the financial distress of local governments in Indonesia.

The results of the second hypothesis test (H2), financial flexibility negatively affects local government financial distress, has a significance value of 0.001 with a coefficient value is -4.136 and has an inverse or negative effect. The significance value of the test is smaller than the significance value of 0.05 so it can be concluded that financial flexibility has a significant impact inversely related to the financial distress condition of the local governments. Thus, H2 is accepted.

Operational solvency negatively affects the financial distress of local governments in Indonesia

The results of the third hypothesis test (H3), operational solvency negatively affects local government financial distress, has a significance value of 0.449 with a coefficient value is -3.757 and has an inverse or negative effect. The significance value is greater than 0.05, so it can be concluded that financial solvency does not have a significant impact on the financial distress of local governments but has an inverse relationship with the financial distress of local governments is still in sync with the hypothesis. Thus, H3 is rejected.

This study's results align with Waninda and Arza's (2019) statement that the ratio of operating income to operating expenses cannot predict financial distress. The local government financial statements explain that the ability of local governments to fulfil the requirements of operating expenses does not guarantee that local governments will experience financial distress, considering the relatively small amount of revenue compared to the operating expenses that must be covered.

Short-term solvency negatively affects the financial distress of local governments in Indonesia.

The results of the fourth hypothesis test (H4), short-term solvency negatively affects local government financial distress, has a significance value of 0.002 with a coefficient value of 1.1030, and has a direct or positive effect. The significance value of the test is smaller than the significance value of 0.05, so it can be concluded that short-term solvency has a significant impact on the financial distress condition of local governments, but the resulting relationship is positive for the financial distress condition of local governments, which is not in sync with the hypothesis. Therefore, H4 is rejected.

This research is in line with the research of Indriaty et al. (2019), which shows that the current ratio can predict financial distress. Research by Winarna, et al. (2017) stated that Cash Quick Ratio have a positive significant impact as a predictor of financial distress.

The result of this research is also different from the developed hypothesis. This can be explained starting from the formula used, which compares cash, cash equivalents, and short-term investments to short-term liabilities. The higher value of the short-term solvency ratio can trigger the

occurrence of financial distress for local governments and indicates that local governments have too many liquid assets, which are cash, cash equivalents, and short-term investments. This illustrates that the local government has not been able to manage liquid assets to be used for spending that can support public services. Large number of liquid assets increases the risk of corruption or fraud on cash, so local governments lose assets that can be used to support public services. This opinion is also supported by the analysis in the private sector, if a private company has liquid assets more than 3 times its short-term liabilities, the company is indicated to be unable to maximize the available money to make a profit.

Solvency of services negatively affects the financial distress of local governments in Indonesia

The results of the fifth hypothesis test (H5), service solvency negatively affects local government financial distress, has a significance value of 0.013 with a coefficient value of -0.0000009 or 9×10^{-7} and has an inverse or negative effect. Thus, H5 is accepted. The significance value of the test is smaller than the significance value of 0.05 so it can be concluded that financial solvency has a significant impact inversely related to the financial distress of the local governments.

Limitations

The research is not separated from some limitations. The main limitation of this research is that the long-term solvency variable cannot be calculated and analysed according to the Regulation of the Minister of Home Affairs on IPKD because not every local government has long-term debt, so no data is available for research. Another limitation is that this research is still at the provincial local government level, has not considered the level of district/city local governments, and has not yet considered the policies or strategies taken by each local principal.

4. Conclusion

Based on the research that has been performed, several conclusions can be made that can answer the formulation of the problems that have been formulated at the beginning, namely as follows: 1) Financial independence has a significant effect and is negatively correlated with the financial distress of local governments in Indonesia in 2019-2022. This is shown by a significance value of 0.001, less than 0.05. 2) Flexibility has a significant effect and is negatively correlated with the financial distress of local governments in Indonesia in 2019-2022. This is shown by a significance value of 0.001, less than 0.05. 3) Operational solvency has no significant effect and is negatively correlated with the financial distress of local governments in Indonesia in 2019-2022. This is shown by a significance value of 0.449, more than 0.05. 4) Short-term solvency has a significant effect and is positively correlated with the financial distress of local governments in Indonesia in 2019-2022. This is shown by a significance value of 0.02 which is less than 0.05. 5) Service solvency has a significant effect and negatively correlates with local government financial distress in Indonesia in 2019-2022. This is shown by a significance value of 0.013 which is less than 0.05.

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