What Determines Financial Sustainability in Local Government? Evidence from Aceh Province, Indonesia

Syahriyal[1], Syukriy Abdullah[2], Rita Meutia[3]

[1]Accounting Program, Faculty Economics and Business, Syiah Kuala University
[2]Accounting Program, Faculty Economics and Business, Syiah Kuala University
[3]Accounting Program, Faculty Economics and Business, Syiah Kuala University

email: syahriyal@mhs.unsyiah.ac.id

Keywords:
Financial Sustainability; Financial Independence; Budget Solvency; Service Solvency; Population; GRDP.

ABSTRACT

This research aims to determine the influence of financial independence, budget solvency, service solvency, population, and GRDP on local government financial sustainability. The results of this research are important to provide input for local governments in arranging appropriate policies to encourage financial sustainability. This research was conducted on 23 regional governments in Aceh by using the panel data regression analysis method with the assistance of the Eviews 12 version. The data was taken from the audited financial reports of regional governments in the 2017-2021 period. This research employed income surpluses in operational reports to measure regional government financial sustainability. The research results show that financial independence has no effect on financial sustainability, but budget solvency and service solvency have a significant positive effect. In contrast, population and GRDP have a negative effect on financial sustainability.

INTRODUCTION

The asymmetric decentralization policy implemented specifically for the Aceh region, mandates the delegation of authority to the Special Autonomous Region (Otsus) to regulate its own government in accordance with the context and aspiration of its people. The granting of Special Autonomy status to the Aceh Government has fiscal implications in the form of a transfer of funds from the APBN with a very significant nominal amount. As one of the Special Autonomy Regions, since 2008, the Aceh Government has received quite large transfers of funds from the Central Government. The Aceh government then followed up on this policy by issuing Qanun number 2 of 2013 to give full authority to the Regency/City Government to manage Special Autonomy funds. It is hoped that this budget will provide great benefits for the welfare of the people of each region in Aceh.

Even though Aceh has received a significant amount of allocated funds, the condition of public facilities and the level of welfare of the population in Aceh are still relatively behind when compared to other provinces in Indonesia. An evaluation carried out by the Ministry of Finance in 2021 showed that the management of Aceh's special autonomy allocation funds has not been optimal. The large budget received by the regional government (Pemda) is still not able to solve community problems. Poverty is still the main problem for the Aceh Government (Jais, 2023). The population of Aceh in 2021 was 5,274,871 people, of which 15.53 percent still live in poverty. Apart from poverty, the Aceh government also continues to face education problems. The growth in income received by the Aceh regional government from special autonomy apparently did not have a significant effect on increasing education spending (Abdullah et al., 2019). Even though there has been an increase in the amount of the education budget, it is minimal at the time of its realization (Fahlevi & Kurniawan, 2017).

In 2023, the Aceh special autonomy fund will enter a new phase with a reduction to only one percent of the national DAU (General Allocation Fund) platform. The Aceh Special Autonomy Fund has been running for fifteen years and will expire in 2027. The Aceh government must be prepared to experience budget pressure due to no longer receiving Special Autonomy funds from Central Government transfers. Apart from that, the realization of regional government budgets also slowed down when PMK 212 of 2022 was issued regarding the implementation of DAU which determines its use. This regulation forces the Regional Government to make budget changes, for the 2023 budget which was set in the previous year. The regional government must refocus the DAU budget whose allocation is not in accordance with the PMK. The budget cuts were made since this regulation recommends that regional governments prioritize DAU budget allocations for the education and health sectors. The budget allocation for these priority areas must be increased by reducing other previously planned budgets.

In the conditions of financial difficulties that will be faced, the regional government in Aceh is still required to maintain service standards to the community. If there is no other source of income that can replace the special autonomy portion of the funds, it is certain that the regional government will not be able to cover operational expenses which will continue to increase. This condition will worsen the budget solvency and financial sustainability of local governments. Budget shortages cause services to the community to be less optimal and even disappear, making it impossible to achieve service solvency. In fact, intergenerational fairness of public services is an important factor as a measure of the success of local government financial sustainability (Bolívar et al., 2014).

Goal Setting Theory (GST) proposed by Edwin Locke (1968) explains that individuals will be motivated to do better if they are driven by clear and measurable goals. Law Number 32 of 2004 explains that the aim of establishing regional governments is to improve public services between generations in order to improve community welfare. Sustainable services are largely determined by the regional government's financial sustainability. Using the goal setting theory approach, to achieve optimal local government performance, it is necessary to align the goals of employees, public managers, and politicians with the goals of local government. The performance of all parties in providing public services can be considered as a regional government goal to be achieved. The GST concept is considered capable of providing the right instrument for stakeholders in the Regional Government. Therefore, they understand well the

driving factors and risks of financial sustainability. In addition, it is very important for them to be given the information necessary for decision-making to achieve government financial balance (Burritt & Schaltegger, 2010).

Financial sustainability in local governments is influenced by internal and external factors (Wällstedt et al., 2014). Internal factors come from local government management, while external factors are factors from outside so they are more difficult to control. Gardini & Grossi (2018) group internal factors into two types, namely managerial factors and political factors. Managerial factors need to receive great attention from local governments, especially those related to revenue and expenditure. This determinant is easier to control and is related to policymaking in order to achieve financial sustainability. According to Gardini & Grossi (2018), managerial factors, especially those related to finance, such as income capacity, high expenditure, and debt levels influence financial sustainability in local governments.

Research by (Rodríguez Bolívar et al., 2016), suggested that the study should not only measure financial sustainability performance but also identify and analyze sustainability risk factors. Indicators of demographic, social, economic, and financial factors are considered relevant for achieving financial sustainability and can even become dominant variables (IFAC, 2013). Research (Lopez Subires et al., 2019; Rodríguez Bolívar et al., 2021) examines the influence of socio-demographic factors on financial sustainability and identifies risk factors such as population size and unemployment rate.

Even though it has begun to be widely researched, further and in-depth research is still needed to examine the influence of variables that influence financial sustainability (Bolívar et al., 2014; García-Sánchez et al., 2012). Carmeli et al. (2008), also acknowledged that the need for research related to financial sustainability is still very necessary considering that local governments are service providers in ensuring the health, safety, welfare, and quality of life of the community (Honadle, 2003).

According to Lysiak et al. (2020), the analysis for assessing financial sustainability is very complex and open to many methodological approaches and scenarios. Thus, the systems and indicators

for assessing financial sustainability differ in each country. The set of indicators used by the central government can be different from indicators at the regional government level and also different between regional governments. Considering the many indicators for assessing financial sustainability, it is important for local governments to make the right choice. Irrational indicators will cause excessive burden (Sebestova et al., 2018).

The concept of financial sustainability in this research focuses on assessing the ability of local governments to provide public services and maintain them. Measurement model of the concept of financial sustainability in this research refers to the research of Rodríguez Bolívar et al. (2016), which uses surplus income and removes the element of extraordinary income as an indicator. This extraordinary income under normal conditions is not expected to be repeated. According to Rodríguez Bolívar et al. (2016), the accrual-based revenue approach is considered effective for assessing the ability of local governments to maintain their financial sustainability in the future.

The gap of this research is the budget solvency variable which is also included as an internal factor. This variable needs to be researched to find out and evaluate whether local government financial management has been implemented well so that it has an impact on financial sustainability and continuity of public services. Another consideration is that factors originating from internal regional government management are also easier to control than external factors. This research seeks to find theoretical and empirical gaps regarding how regional government financial factors act as supporting factors or risk factors for financial sustainability.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Goal Setting Theory

The theory put forward by Locke (1968) emphasizes the importance of the relationship between set goals and performance results. Individual behavior is strongly influenced by their understanding of organizational goals (Locke & Latham, 2002). Regional government officials are expected to have an adequate understanding that quality and sustainable service to the community

is one of the government's goals. Optimal performance requires strong motivation and is based on good intentions from every individual in the organization. Regional governments that have set goals as strategic goals and then formulated them into budget targets make it easier to achieve performance targets.

Based on the Goal Setting Theory approach, setting specific local government goals will increase employee motivation to work better. Setting realistic goals in strategic plans will really help local governments achieve financial sustainability in order to provide sustainable services (Navarro-Galera et al., 2016). To achieve optimal local government performance, it is necessary to align the goals of employees, public managers, and politicians with the goals of local government. The performance of all parties in providing public services can be considered as a regional government goal to be achieved. Regional governments need to set financial sustainability as a target which is then formulated in the budget plan.

Previous Research

Financial management research initially focused on studying the financial difficulties of public sector entities and the factors causing them (Carmeli et al., 2008; Cohen et al., 2012; Zafra-Gomez et al., 2009), which then turned to the issue of how to improve financial conditions public sector (Adams et al., 2014; Drew & Dollery, 2014). Recent research analyzes the issue of financial sustainability by investigating the determinants of financial sustainability implemented by the government (Bisogno et al., 2017; Navarro-Galera et al., 2016; Rodríguez Bolívar et al., 2016). Financial sustainability information is not only to anticipate and resolve financial sustainability risks but also aims to maintain the continuity of public services between generations (Wardhani & Payamta, 2020).

A number of previous studies have tried to examine the definition of financial sustainability and develop measures of financial sustainability (Bisogno et al., 2017; Carmeli et al., 2008; Hoque & Adams, 2011; Navarro-Galera et al., 2016; Rodríguez Bolívar et al., 2016). Denek & Dylewski (2013)argue that financial sustainability not only reflects the ability to generate sufficient income but also the methods taken by local governments

to meet their expenditure. According to Gorina (2013), it is important to analyze the local government's financial capabilities to ensure that budget expenditures can be covered by their own revenues.

According to Brusca et al. (2015), financial sustainability is the government's ability to continue to provide public services now and maintain them in the future. Financial sustainability by considering the dimensions of income, services, and debt (Rodríguez Bolívar et al., 2018; Santis et al., 2021). Long-term financial sustainability is assessed by the local government's ability to generate a financial surplus to pay all its debts (Slembeck et al., 2014).

Financial sustainability in the public sector can be assumed to be the regional government's goal to provide services in a sustainable manner (Rodríguez Bolívar et al., 2018), while the variables of financial independence, financial efficiency, budget solvency, service solvency, population, and GRDP are considered as determining factors for financial sustainability. If these determining factors can be managed well then financial sustainability as a regional government goal will be achieved.

Hypothesis Development
1. Financial Independence

Financial independence shows the ability of local governments to finance their own government operational activities, development, and public services (Halim, 2002). Financial independence influences regional government operational surpluses (Brusca et al., 2015). Furthermore, internal income can increase the financial sustainability of local governments (Navarro-Galera et al., 2016).

Research by Wardhani & Payamta (2020) found that the financial independence variable of autonomous regions had a positive effect on financial sustainability. Subsequent research by Lhutfi & Sugiharti (2022) also found a positive relationship between financial independence and financial sustainability. Regional governments as autonomous regions will find it easier to achieve financial balance, thereby showing better financial sustainability than other regional governments (Bisogno et al., 2019).

H1: Financial independence influences financial sustainability.

2. Financial Efficiency

Research by Wardhani & Payamta (2020) found that regional government financial efficiency has a positive effect on financial sustainability. Local governments that can manage their finances efficiently will be better able to maintain their financial sustainability. Efficiency in the context of local government finances means optimizing government spending and spending in order to improve community welfare. The more efficient the use of local government financial resources, the better the financial health of public services (Cuadrado-Ballesteros et al., 2019). Therefore, increasing financial efficiency is very important in order to achieve financial sustainability (Luo et al., 2022).

H2: Financial efficiency influences financial sustainability.

3. Budget Solvency

Budget solvency refers to the local government's financial ability to maintain the quality of services provided in accordance with income levels. Thus, budget solvency will affect the level of quality of services provided and financial sustainability.

Budget solvency is very important for regional governments in order to achieve financial sustainability (Mbulawa, 2019). Cuadrado-Ballesteros et al. (2019), found that budget solvency and service level solvency have a positive influence on financial sustainability. Good solvency and liquidity will increase financial sustainability at all levels of government (Caruana et al., 2019).

H3: Budget solvency influences financial sustainability.

4. Service Solvency

Regional governments as managers of public funds have an important role in developing their regions by providing quality public facilities and services to their communities (Sarosa, 2020; Soares et al., 2015).

Public service delivery is linked to welfare needs (García-Sánchez et al., 2014). Service solvency refers to the ability of local governments to maintain or modify the volume and quality of services provided according to income levels. Research by Navarro-Galera et al. (2016), found that different levels of regional government expenditure determine the level of service to the community.

H4: Service solvency affects financial sustainability.

5. Population

Previous research explains that population is an important factor in public finances. According to Lopez Subires et al. (2019), residents are the main stakeholder group that can increase demand for public goods and services. Local governments with large populations tend to achieve higher financial sustainability due to their larger economic scale and scope (Andrews, 2015).

H6: Population influences financial sustainability.

6. GRDP

Rodríguez Bolívar et al. (2016) , found that the gross domestic product variable had no effect on financial sustainability. Furthermore Batuo et al. (2018), found that financial sustainability was negatively influenced by economic growth as measured by GDP per capita. This result is in line with research Wardhani & Payamta (2020), where GRDP has no influence on the financial sustainability of local governments in Indonesia.

H6: GRDP has no effect on financial sustainability.

RESEARCH METHODS

Research Population and Data

This research employed the Aceh Regency/ City Government in 2017-2021 as the population. In contrast to previous research, the population taken in this study was regional governments of all sizes, not only focusing on large regional governments (Rodríguez Bolívar et al., 2021; Santis et al., 2021). The secondary data source for this research used audited Regional Government Financial Reports within the Aceh Province. The documents were information on the APBD Realization Report and Balance Sheet for the 2017-2021 fiscal year period. Meanwhile, population and GRDP data were collected based on data published by BPS.

Operational Definition and Measurement of Variables

1. Dependent variable

This research examines financial sustainability (FS) in local governments as a dependent variable. FS is defined as the local government's ability to provide services to the community today without

reducing the ability of these services in the future (Rodríguez Bolívar et al., 2018). The FS concept in this research focuses on assessing the ability of local governments to provide public services and maintain them. This concept is considered more relevant for measuring local government FS in Indonesia because it is in accordance with the government's goal, namely providing services to the community.

The FS measurement in this study refers to the research of Rodríguez Bolívar et al. (2016), which uses the income surplus contained in the operational report, with the following formula:

$$FS = \frac{(1) - (2) + (3)}{\text{Total Population}}$$

(1): Operational surplus

(2): Extraordinary income

(3): Extraordinary burden

2. Independent variable

This research applies five independent variables, namely: financial independence, budget solvency, service solvency, population, and GRDP as variables that influence financial sustainability.

a. Financial Independence (FI)

Financial Independence shows the region's ability to execute its financial rights effectively and efficiently (Ritonga, 2014). FI describes the ability of local governments to independently finance government activities, regional development, and community services. A regional government that is financially independent means that it does not depend on external funding and the Central Government.

This research uses the proxy used Ritonga (2014), with the following formula:

$$FI = \frac{\text{Locally-generated revenue}}{\text{Total Income}}$$

b. Budget Solvency (BS)

In the context of government budgeting and finance, budget solvency refers to the government's ability to generate income to fulfill its services and financial obligations in one budget year (Jimenez, 2017).

According to Ritonga (2014), budget solvency shows the local government's ability to obtain revenue that will be used to fund its operations during one budget year. Ritonga (2014) calculates BS using several ratios. The BS ratio

in this study does not take into account special autonomy income and capital expenditure incurred by the Regional Government. The BS ratio used is as follows:

$$BS = \frac{\text{Total Income} - \text{Total DAK}}{\text{Total Budget} - \text{Capital Expenditures}}$$

c. Service Solvency (SS)

Kamnikar & Deal (2006), define service solvency as the local government's capability to maintain the continuity of public services to the community. The service solvency ratio is measured using the formula used by Ritonga (2014), as follows:

$$SS = \frac{\text{Capital Expenditure}}{\text{Total Population}}$$

d. Population

An increase in population can influence financial sustainability which is assessed by acceptance or rejection of policies implemented by local governments (Lopez Subires et al., 2019). Population growth increases demand for public services and resources (Rodríguez Bolívar et al., 2021). However, high expenditure is not always directly proportional to the income that the regional government will receive. Increasing public revenues depends not only on population growth but also on financial capacity and economic activity.

e. GRDP

GRDP is defined as the amount of added value produced from all goods and services produced in an area during one year. GRDP is usually used as an indicator to measure regional economic growth which can be seen from the increase in goods and services produced so that the welfare of the population also increases (Sukirno, 2016). GRDP is also related to regional revenues. When revenue increases, regional finances also have the potential to be sustainable because revenue is an indicator of financial sustainability (Wardhani & Payamta, 2020).

Data Analysis Method

Data analysis used Microsoft Excel to recapitulate and measure the ratio of each variable. The next step was panel data regression testing using Eviews version 12. Panel data testing was intended to measure the extent of the relationship between

the dependent variable and the independent variable. Previously, the best model in the research would first be selected and then continued with testing classical assumptions. The results of the regression testing then were interpreted into the research results.

In panel data regression which combines cross-section and time series data, there were three types of models, namely: fixed effect, common effect, and random effect (Widarjono, 2018). Then from the three models, the best model would be selected which best suited the research objectives. The model testing stages were based on panel data criteria, namely: the Chow Test to determine whether fixed effects or common effects would be used. If the probability < significance (0.050) then the fixed effect would be applied, and if the probability > significance (0.050) then the common effect would be applied. The Hausman Test was carried out to determine whether it was a fixed effect or a random effect. If the probability < significance (0.050) then the fixed effect would be applied, and if the probability > significance (0.050) then the random effect approach would be applied. If different models were selected from the two tests, the Lagrange Multiplier (LM) Test would be carried out. The LM Test was carried out to determine whether it was a random effect or a common effect. If the probability < significance (0.050) then random effects would be applied, and if the probability > significance (0.050) then the common effect approach would be applied.

The next stage was testing the classical assumption. The normality test was carried out to prove whether the residual values are normally distributed or not. Multicollinearity test as proof of whether in the selected panel data regression, there was a correlation between the independent variables. Heteroscedasticity test to prove whether there was a residual variance between observations. Then the autocorrelation test was carried out because there were independent residuals between the observations made. There were three hypothesis tests to test the influence of the independent variable on the dependent variable, namely: simultaneous test, partial test, and coefficient of determination test (Ghozali & Ratmono, 2017).

RESULTS AND DISCUSSION

Research Models

Measurements using the Chow test were carried out to select fixed effects or common effects as the best model.

Table 1. Chow Test

Effect_Test	Cross-section_Chi-square
Statistic	41,0841
Prob.	0,0000

Source: Eviews 12 output

Table 1 shows the Chi-square probability value < significance value (0.00 < 0.05), so the decision to choose the fixed effect model is taken. Next, the Hausman test is carried out to select between fixed effects or random effects as the model to be used.

Table 2. Hausman Test

Test_Summary	Cross-section_Random
Chi-Sq_Statistic	54,5903
Prob.	0,0000

Source: Eviews 12 output

The Hausman test produces a Random probability value < significance value (0.00 < 0.05), and then a decision is made on the selected fixed effect model. From the two tests, a fixed effect decision was made as the selected model, so it was concluded that the most appropriate regression test for this research was the fixed effect model.

Classic Assumption Test
Normality Test

Assumptions that provide the view that the data used in the regression model are normal or vice versa are defined as normality tests. The Jarque-Bera probability test is used to compare probability with constants.
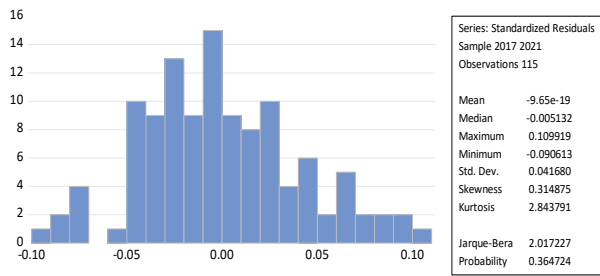
Figure 1. Normality Test
Source: Eviews 12 output

The test results show a probability of 0.364 > 0.05. In conclusion, the data used in the regression model is normal.

Multicollinearity Test

The assumption that aims to assess whether correlation is found between independent variables in the regression model is called the Multicollinearity test. If a correlation between dependent variables is found < 0.90 then the data used is free from multicollinearity.

Table 3. Multicollinearity Test

	FI	BS	Log_SS	Log_Pop	Log_PDRB
FI	1,000	-0,215	0,347	0,355	0,229
BS	-0,215	1,000	0,452	-0,261	-0,144
Log_SS	0,347	0,452	1,000	-0,851	-0,646
Log_Pop	0,355	-0,261	-0,851	1,000	0,825
Log_PDRB	0,229	-0,144	-0,646	0,825	1,000

Source: Eviews 12 output

The test results illustrate the relationship between independent variables (financial independence, budget solvency, service solvency, population, and GRDP), with the highest correlation value being 0.825. There is a fairly high correlation between population variables and GRDP variables. However, from the overall data, there is no correlation coefficient > 0.9, so it is concluded that this regression model is free from multicollinearity.

Heteroscedasticity Test

The Heteroscedasticity Test aims to test the inequality of residual variance between observations. If there is a similarity with the probability results >

0.05 then the regression model meets the required assumptions, also called homoscedasticity.

Table 4. Heteroscedasticity Test

Variable	Significance
Financial independence	0,7237
Budget solvency	0,8337
Log_Service Solvency	0,6716
Log_Population	0,3927
Log_GRDP	0,6183
Prob. F-statistic	**0,8362**

Source: Eviews 12 output

The test results in Table 4 show that the residual significance value is greater than 0.05, with a prob. F-statistic value of 0.8362 which is also greater than 0.05, so the regression model meets the requirements (homoscedasticity).

Autocorrelation Test

The autocorrelation test is carried out to determine whether in the regression model, there is a correlation between the residuals in several observation periods. Test results that meet the requirements are that the regression model must be free from autocorrelation. The Durbin-Watsons test is used with the assumption that 4-du < dw < 4-dl is met.

Table 5. Panel Data Regression Test

Test_Summary	Cross-section_Fixed
Durbin-Watson stat	2,2909
F-statistic	15,3215
Prob. F-statistic	0,0000
Adjusted R-squared	0,9794

Source: Eviews 12 output

The test results show that the Durbin-Watsons stat value is 2.2909, which is greater than 4-du (2.2126) and smaller than 4-dl (2.3937). Autocorrelation requirements are met, and it can be concluded that there are no autocorrelation symptoms in the regression model. Prob value. The F-statistic in the model is 0.000 < 0.05, meaning that the dependent variable in this research can be explained significantly by the independent variable used.

Table 6. Panel data regression equation uses a fixed effect model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-16,5767	1,761	-9,413	0,000
FI	0,0368	0,163	0,023	0,821
BS	1,1280	0,314	3,592	0,005
Log_SS	2,0954	0,048	43,899	0,000
Log_Pop	-0,6619	0,059	-11,060	0,000
Log_PDRB	-0,0705	0,030	-2,278	0,025

Source: Eviews 12 output

From Table 6, a panel data regression equation for the selected fixed effect model can be created which is formulated as follows:

LN_FS = -16,576 + 0,036FI + 1,128BS+ 2,095Log_SS – 0,6619Log_Pop – 0,070Log_PDRB

Information:

LN_FS   : log natural FS
FI   : Financial Independence
BS   : Budget Solvency
Log_SS : log Service Solvency
Log_Pop   : log Population
Log_PDRB   : log PDRB

Hypothesis Testing

In Table 5 it can be seen that the F-statistic value is 15.321 > from the F-table value of 2.688 which is calculated using the formula (F.INV.RT(probability; deg_freedom1; deg_freedom2)) and the prob. The f-statistic value is 0.000 < 0.05. These results explain the influence of the independent variables (financial independence, budget solvency, service solvency, population, and GRDP) on the dependent variable (financial sustainability).

The t-statistical test in Table 6 shows that the t-statistic value for FI is 0.023, which is smaller than the t-table of 1.658, and the probability value is 0.821 > 0.050 (significance value), so the result is that the financial independence variable has no effect on financial sustainability. The t-table value is calculated using the formula TINV(probability; deg_freedom). In Table 6 it can also be seen that the t-statistic value for BS is 3.592 which is greater than the t-table of 1.658, and the probability value is 0.005 < 0.050, these results show that the budget solvency variable has a significant positive effect on financial sustainability.

It can also be seen that the t-statistic value for Log_SS is 43.899 which is greater than the t-table of 1.658, with a probability value of 0.000 < 0.050, these results show that the service solvency variable has a significant positive effect on financial sustainability. Then, the t-statistic value for Log_Pop is -11.060, which is smaller than the t-table of 1.658, with a probability value of 0.000 < 0.050, and a coefficient value of -0.661. This scale shows that population variables have a negative effect on financial sustainability. Finally, the t-statistic value for Log_GRDP is 2.278, which is greater than the t-table of 1.658, with a probability value of 0.025 < 0.050, and a coefficient value of -0.070. This scale shows that the GRDP variable has a negative effect on financial sustainability.

Adjusted R-squared of 0.9730 in Table 5 shows that the financial sustainability variable can be expressed by independent variables (financial independence, budget solvency, service solvency, population, and GRDP) of 97.30%. Meanwhile, 2.70% is expressed by other variables outside the indicators in this study.

DISCUSSION

The Influence of Financial Independence on Financial Sustainability of Regional Governments

The results of the panel data regression test show that the financial independence variable has no effect on financial sustainability in the Regional Government in Aceh. In general, the regional government in Aceh has not been able to implement regional autonomy as indicated by a very low independence score, so it is still very dependent on Central Government transfer funds or external loans. Regional original income (PAD) is the main component in assessing the regional government's financial independence. Regional governments with high PAD do not guarantee that the region will achieve sustainable financial sustainability. The allocation of capital expenditure for the benefit of the community is not determined by the amount of PAD generated by the region, many local governments use PAD for personnel expenditure and direct expenditure (Pradita, 2013). In fact, there are local governments that have high financial independence but low financial sustainability because the PAD generated is not used for public service spending (Wardhani, 2022). The allocation of the capital expenditure budget is not based on the real needs of the community but on the mere availability of funds (Abdullah & Halim, 2006).

According to goal setting theory, optimizing the management of existing resources in order to obtain regional income is greatly influenced by the regional government's goal of producing financial management policies. Policies that support the community can improve financial management performance so that it will have an impact on increasing regional income. So that in the end, the regional government is expected to be able to finance all expenses and expenditures. The results of this research are not parallel with research (Lhutfi & Sugiharti, 2022; Wardhani & Payamta, 2020) which examined regional governments on the island of Java and provincial governments in Indonesia as samples.

The Influence of Budget Solvency on Financial Sustainability of Regional Governments

The regression results for the Budget Solvency variable have a significant positive effect on financial sustainability in the Regional Government in Aceh. Local governments that have high budget solvency will continue to improve their performance in order to achieve financial sustainability. This is in line with goal setting theory, where the performance of regional governments to improve their solvency is greatly influenced by the policies taken in order to meet financial needs in a sustainable manner. Budget solvency is needed by local governments for the continuity of public services in order to improve community welfare between generations.

The results of this study support previous research by Cuadrado-Ballesteros et al. (2019), who found that budget solvency and service level solvency have a positive influence on financial sustainability. Caruana et al. (2019), also found that there is an influence of budget solvency on financial sustainability at all levels of government. Thus, the increasing solvency of regional government budgets has an impact on increasing financial sustainability.

The Influence of Service Solvency on Financial Sustainability of Regional Governments

Based on the regression results, the Service Solvency variable also has a significant positive effect on financial sustainability. Service solvency is measured by comparing capital expenditure with population. In general, capital expenditure is allocated for infrastructure development and public facilities. Adequate service facilities will influence

the quality of public services and community participation as users, which in turn is expected to increase capital expenditure allocations to increase regional revenues to support local government financial sustainability.

Using the goal setting theory approach, regional governments need to set budget implementation goals to provide public services on an ongoing basis in order to improve community welfare. It is hoped that this concept will improve the performance of all regional government officials, so that the regional government's goal of sustainable public services will be easier to achieve. The solvency of local government services in maintaining the quality of services required by the community will increase the sustainability of public services.

The Influence of Population on the Financial Sustainability of Regional Governments

The Population variable shows the number of residents who live in the Regency/City with the aim of settling. The regression results show that the Population variable has a negative effect on financial sustainability. The higher the population in an area, the higher the public's demand for services that must be provided by the Regional Government. Demand for public services will increase along with population growth and rising prices of goods/services. Local governments will have many demands to provide facilities or assistance to the community. Thus, increasing local government spending will have an impact on the financial sustainability and continuity of local government services. The results of this study are in line with research by Lopez Subires et al. (2019), who found that population has a negative effect, while dependent population and unemployment are risk factors for financial sustainability (Rodríguez Bolívar et al., 2021).

The Influence of GRDP on the Financial Sustainability of Regional Governments

The results of the analysis show that GRDP has a negative effect on financial sustainability. The more a region produces GRDP will increase the expenditure budget, and this condition will make it difficult for regional governments to allocate public service budgets. Therefore, an increase in GRDP production will reduce public services by the Regional Government. This research is in line

with previous research which found that economic growth as proxied by GDP per capita (Batuo et al., 2018), and GRDP had a negative impact on financial sustainability (Lhutfi & Sugiharti, 2022).

CONCLUSION

Based on testing and analysis data, the conclusion is drawn that budget solvency and service solvency have a positive and significant influence, population and GRDP have a negative influence, while financial independence has no influence on local government financial sustainability. It is hoped that the results of this research can provide contributions and input for the regional government in Aceh in order to increase budget effectiveness, especially for managing financial resources in an effort to maintain financial sustainability. Local government management and politicians are expected to have appropriate knowledge about the driving factors and risk factors that influence financial sustainability, they will improve the decision-making process.

In measuring the dependent variable, this research only uses the income surplus indicator contained in the operational report, henceforth it is best to also consider other proxies that are more related to financial sustainability such as regional debt. The data in this research is in the form of secondary data in the form of Regional Government Financial Reports in Aceh for the 2017-2021 period. This could be one of the research limitations because special autonomy funds will begin to decrease in 2023, apart from that, Regional Government Financial Reports are also only prepared by regional government executives. It would be better if there was primary data as a comparison from the legislature as a policy maker within the regional government. The results of this research cannot be generalized to regional governments in other countries which have different regional financial characteristics and regulations. Future researchers need to carry out further research, especially in the use of proxies and measurements so as to produce more accurate empirical evidence.

REFERENCE

Adams, A. C., Muir, S., & Hoque, Z. (2014). Measurement of sustainability performance in the public sector. *Sustainability Accounting, Management and Policy Journal*, *5*(1), 46–67. https://doi.org/10.1108/SAMPJ-04-2012-0018.

Abdullah, S., & Halim, A. (2006). Studi atas belanja modal pada anggaran pemerintah daerah dalam hubungannya dengan belanja pemeliharaan dan sumber pendapatan. *Jurnal Akuntansi Pemerintah*, *2*(2), 17–32.

Abdullah, S., Saputra, M., Fazella, D., Hasnawati, H., & Afridzal, A. (2019). Determinan kinerja anggaran belanja pendidikan pada kabupaten/kota di Aceh. *Media Riset Akuntansi, Auditing & Informasi*, *19*(2), 149–166. https://doi.org/10.25105/mraai.v19i2.3253.

Andrews, R. (2015). Vertical consolidation and financial sustainability: evidence from English local government. *Environment and Planning C: Government and Policy*, *33*(6), 1518–1545. https://doi.org/10.1177/0263774X15614179.

Batuo, M., Mlambo, K., & Asongu, S. (2018). Linkages between financial development, financial instability, financial liberalisation and economic growth in Africa. *Research in International Business and Finance*, *45*, 168–179. https://doi.org/10.1016/j.ribaf.2017.07.148.

Bisogno, M., Cuadrado-Ballesteros, B., & García-Sánchez, I. M. (2017). Financial sustainability in local governments: Definition, measurement and determinants. *Financial Sustainability in Public Administration*. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-319-57962-7_3.

Bisogno, M., Cuadrado-Ballesteros, B., Santis, S., & Citro, F. (2019). Budgetary solvency of Italian local governments: an assessment. *International Journal of Public Sector Management*, *32*(2), 122–141. https://doi.org/10.1108/IJPSM-11-2017-0328.

Bolívar, M. P. R., Galera, A. N., Muñoz, L. A., & Subirés, M. D. L. (2014). Factors influencing local government financial sustainability: An empirical study. *Lex Localis*, *12*(1), 31. https://doi.org/10.4335/12.1.31-54.

Brusca, I., Rossi, F. M., & Aversano, N. (2015). Drivers for the financial condition of local government: A comparative study between Italy and Spain. *Lex Localis*, *13*(2), 161.

Burritt, R. L., & Schaltegger, S. (2010). Sustainability accounting and reporting: fad or trend? *Accounting, Auditing & Accountability Journal*, *23*(7), 829–846. https://doi.org/10.1108/09513571011080144.

Carmeli, A., Yitzhak, Y., & Vinerski-Peretz, H. (2008). Fiscal distress in local authorities in Israel: The convened committee as a method and a solution. *Local Government Studies*, *34*(3), 323–347. https://doi.org/10.1080/03003930802044528.

Caruana, J., Brusca, I., Caperchione, E., Cohen, S., & Manes Rossi, F. (2019). Exploring the relevance of accounting frameworks in the pursuit of financial sustainability of public sector entities: A holistic approach. *Financial Sustainability of Public Sector Entities*. Public Sector Financial Management. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-06037-4_1.

Cohen, S., Doumpos, M., Neofytou, E., & Zopounidis, C. (2012). Assessing financial distress where bankruptcy is not an option: An alternative approach for local municipalities. *European Journal of Operational Research*, *218*(1), 270–279. https://doi.org/10.1016/j.ejor.2011.10.021.

Cuadrado-Ballesteros, B., Santis, S., Citro, F., & Bisogno, M. (2019). Does financial health influence the re-election of local governments? *Journal of Public Budgeting, Accounting & Financial Management*, *31*(3), 345–363. https://doi.org/10.1108/JPBAFM-10-2018-0114.

Denek, E., & Dylewski, M. (2013). *Estimating the level of indebtedness of local government units in conditions of increased risk of losing financial liquidity*. Difin.

Drew, J., & Dollery, B. (2014). The impact of metropolitan amalgamations in Sydney on municipal financial sustainability. *Public Money & Management*, *34*(4), 281–288. https://doi.org/10.1080/09540962.2014

.920201.

Fahlevi, H., & Kurniawan, Y. (2017). Revenue budget variance and capital expenditure spending: emperical evidence from Indonesian Local Governments. *Journal of Academic Research in Economics*, 9(2), 185–198.

García-Sánchez, I.-M., Cuadrado-Ballesteros, B., Frías-Aceituno, J.-V., & Mordan, N. (2012). A new predictor of local financial distress. *International Journal of Public Administration*, 35(11), 739–748.

García-Sánchez, I.-M., Mordán, N., & Cuadrado-Ballesteros, B. (2014). Do electoral cycles affect local financial health? *Policy Studies*, 35(6), 533–556. https://doi.org/10.1080/01900692.2012.679173.

Gardini, S., & Grossi, G. (2018). What is known and what should be known about factors affecting financial sustainability in the public sector: A literature review. *Financial Sustainability and Intergenerational Equity in Local Governments*, 179–205. https://doi.org/10.4018/978-1-5225-3713-7.ch008.

Ghozali, I., & Ratmono, D. (2017). *Analisis multivariat dan ekonometrika: teori, konsep, dan aplikasi dengan eview 10*. Semarang: Badan Penerbit Universitas Diponegoro.

Gorina, E. (2013). *Fiscal sustainability of local governments: Effects of government structure, revenue diversity, and local economic base*. Tempe: Arizona State University.

Halim, A. (2002). *Akuntansi dan Pengendalian Keuangan Daerah*. UPP AMP YKPN.

Honadle, B. W. (2003). The states' role in US local government fiscal crises: A theoretical model and results of a national survey. *International Journal of Public Administration*, 26(13), 1431–1472. https://doi.org/10.1081/PAD-120024405.

Hoque, Z., & Adams, C. (2011). The rise and use of balanced scorecard measures in Australian government departments. *Financial Accountability & Management*, 27(3), 308–334. https://doi.org/10.1111/j.1468-0408.2011.00527.

IFAC (2013). Reporting on the Long-Term Sustainability of an Entity's Finances.

Jimenez, B. S. (2017). The effects of hierarchy, centralization and formalization on municipal fiscal health: An empirical test of the bureaucratic ideal. *Public Administration*, 95(3), 791–806.

Lhutfi, I., & Sugiharti, H. (2022). Financial Sustainability of Local Governments in Indonesia. *Jurnal ASET (Akuntansi Riset)*, 14(1), 159–170. https://doi.org/10.17509/jaset.v14i1.48133.

Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist*, 57(9), 705–717. https://doi.org/10.1037/0003-066X.57.9.705.

Lopez Subires, M. D., Alcaide Munoz, L., Navarro Galera, A., & Rodriguez Bolivar, M. P. (2019). The influence of socio-demographic factors on financial sustainability of public services: A comparative analysis in regional governments and local governments. *Sustainability*, 11(21), 6008. https://doi.org/10.3390/su11216008.

Luo, D., Luo, M., & Lv, J. (2022). Can digital finance contribute to the promotion of financial sustainability? A financial efficiency perspective. *Sustainability*, 14(7), 3979.

Lysiak, L., Kachula, S., Hrabchuk, O., Filipova, M., & Kushnir, A. (2020). Assessment of financial sustainability of the local budgets: case of Ukraine. *Public and Municipal Finance*, 9(1), 48–59.

Mbulawa, A. (2019). Understanding the impact of financial sustainability on South African municipalities. *Economies,* 9(3), 105. https://doi.org/10.3390/economies9030105.

Navarro-Galera, A., Rodríguez-Bolívar, M. P., Alcaide-Muñoz, L., & López-Subires, M. D. (2016). Measuring the financial sustainability and its influential factors in local governments. *Applied Economics*, 48(41), 3961–3975. https://doi.org/10.1080/00036846.2016.1148260.

Pradita, R. R. (2013). Pengaruh PAD dan DAU Terhadap Belanja Modal di Provinsi Jawa Timur. *Jurnal Akuntansi UNSESA*.

Ritonga, I. T. (2014). Developing a measure of local government's financial condition. *Journal of Indonesian*

Economy & Business, *29*(2), 142–164.

Rodríguez Bolívar, M. P., López Subires, M. D., Alcaide Muñoz, L., & Navarro Galera, A. (2021). The financial sustainability of local authorities in England and Spain: A comparative empirical study. *International Review of Administrative Sciences*, *87*(1), 97–114.

Rodríguez Bolívar, M. P., Navarro Galera, A., Alcaide Muñoz, L., & López Subirés, M. D. (2016). Risk factors and drivers of financial sustainability in local government: An empirical study. *Local Government Studies*, *42*(1), 29–51. https://doi.org/10.1080/03003930.2015.1061506.

Rodríguez Bolívar, M. P., Navarro Galera, A., López Subirés, M. D., & Alcaide Muñoz, L. (2018). Analysing the accounting measurement of financial sustainability in local governments through political factors. *Accounting, Auditing & Accountability Journal*, *31*(8), 2135–2164. https://doi.org/10.1108/AAAJ-10-2016-2754.

Santis, S., Incollingo, A., & Citro, F. (2021). How to Manage the Components of Financial Sustainability in Local Governments. *J. Mgmt. & Sustainability*, *11*, 111. https://doi.org/10.5539/jms.v11n2p111.

Sarosa, W. (2020). *Kota untuk semua: hunian yang selaras dengan sustainable development goals dan new urban agenda*. Expose.

Sebestova, J., Majerova, I., & Szarowska, I. (2018). Indicators for assessing the financial condition and municipality management. *Administration & Public Management Review*, *31*.

Slembeck, T., Jans, A., & Leu, T. (2014). A politico-economic perspective on financial sustainability. *Journal of Public Budgeting, Accounting & Financial Management*, *26*(1), 140–164. https://doi.org/10.1108/JPBAFM-26-01-2014-B006.

Soares, A., Nurpratiwi, R., & Makmur, M. (2015). Peranan pemerintah daerah dalam perencanaan Pembangunan daerah. *Jurnal Ilmu Sosial Dan Ilmu Politik (JISIP)*, *4*(2).

Sukirno, S. (2016). *Makroekonomi Teori Pengantar*. Rajawali Pers.

Wällstedt, N., Grossi, G., & Almqvist, R. (2014). Organizational solutions for financial sustainability: A comparative case study from the Swedish municipalities. *Journal of Public Budgeting, Accounting & Financial Management*, *26*(1), 181.

Wardhani, D. T., & Payamta, P. (2020). Menguji Faktor Determinan Financial Sustainability pada Sektor Pemerintah. *Jurnal Kajian Akuntansi*, *4*(1), 13–27. http://dx.doi.org/10.33603/jka.v4i1.3305.

Wardhani, D. T. (2022). *Determinan Financial Sustainability Pada Sektor Pemerintah: Studi Empiris pada Kabupaten/Kota di Indonesia*. Sebelas Maret University.

Widarjono, A. (2018). Pengantar dan Aplikasinya Disertai Panduan Eviews. *Buku Ekonometrika. Edisi*, *5*.

Zafra-Gomez, J. L., Lopez-Hernandez, A. M., & Hernández-Bastida, A. (2009). Developing a model to measure financial condition in local government: Evaluating service quality and minimizing the effects of the socioeconomic environment: An application to Spanish municipalities. *The American Review of Public Administration*, *39*(4), 425–449.