Published by University of Muhammadiyah Makassar

DOI: 10.26618

p-ISSN 2714-6359 | e-ISSN 2714-6340

Invoice : Jurnal Ilmu Akuntansi

journal homepage: https://journal.unismuh.ac.id/index.php/invoice

Regional Financial Management Efficiency as a Mediator of Fiscal Resilience Risk in North Sumatra

Jalilah Ilmiha[1]*, Lusi Elviani Rangkuti[2]
Universitas Islam Sumatra Utara
Email: jalilah.ilmiha@fe.uisu.ac.id[1]*; lusi.elviani@fe.uisu.ac.id[2]

ARTICLE INFO

Keywords:
Regional Financial Efficiency, Fiscal Resilience, Economic Growth, Regional Financial Management, Mediation Analysis

Publication History

- **Received:** 15 June 2026
- **First Review:** 22 July 2026
- **Revision 1:** 9 September 2026
- **Reviewer 1 Revision:** 25 September 2026
- **Reviewer 2 Revision:** 28 September 2026
- **Reviewer 3 Revision:** 30 September 2026

ABSTRACT

Economic growth is generally expected to strengthen regional fiscal capacity; however, rapid growth may also increase fiscal vulnerability when public financial resources are managed inefficiently. While previous studies have primarily examined the direct relationship between economic growth and fiscal outcomes, limited attention has been paid to the mediating role of regional financial management efficiency in mitigating fiscal resilience risk, particularly in Indonesian local governments. This study addresses this gap by investigating whether regional financial management efficiency serves as the mechanism through which economic growth enhances fiscal resilience in the districts and municipalities of North Sumatra. A quantitative approach was employed using a census of all 33 local governments in North Sumatra based on the 2025 Regional Budget (APBD) realization, Gross Regional Domestic Product (GRDP), and local government financial statements. Data were analyzed using path analysis and the Sobel test to evaluate the mediation effect. The findings reveal that economic growth significantly improves regional financial management efficiency, while greater efficiency significantly reduces fiscal resilience risk. Moreover, the direct relationship between economic growth and fiscal resilience risk becomes insignificant after accounting for financial management efficiency, indicating a full mediation effect. These findings extend the fiscal resilience literature by demonstrating that efficient regional financial management constitutes the key mechanism through which economic growth is translated into sustainable fiscal resilience rather than fiscal vulnerability. Practically, the results highlight the importance of strengthening budget efficiency, expenditure control, and digital financial governance to enhance fiscal resilience in local governments.

1. Introduction

Economic growth is generally regarded as an important indicator of regional development because it reflects the expansion of economic activity, income generation, and productive capacity. Nevertheless, economic growth does not automatically translate into stronger fiscal resilience. For local governments, an increase in economic activity may simultaneously generate greater demand for public infrastructure, public services, social protection, and administrative expenditure. Consequently, the fiscal implications of economic growth depend not only on the magnitude of economic expansion but also on the government's capacity to transform additional fiscal resources into productive and sustainable public spending. This issue is particularly relevant in the context of regional autonomy, where local governments are responsible for managing increasingly complex public financial obligations.

The relationship between economic growth and fiscal resilience is therefore not

DOI: 10.26618

necessarily linear. Higher economic activity may strengthen local revenues and fiscal capacity, but it may also increase expenditure pressures, particularly when regional development relies heavily on public investment and routine government spending. Recent research emphasizes that fiscal resilience is a dynamic capacity involving the ability of governments to resist fiscal shocks, recover from financial pressures, and maintain the continuity of public services. Rao et al. (2023), for example, conceptualize fiscal resilience in terms of resistance, recovery, and renewal, emphasizing that revenue structures, expenditure structures, and countercyclical capacity influence how local governments respond to economic uncertainty. Similarly, Gde Sudi Adnyana et al. (2022) demonstrate that regional expenditure and fiscal surplus/deficit are associated with fiscal resilience, indicating that the composition and management of regional finances are important determinants of fiscal capacity. Desdiani et al. (2022) further demonstrate that local budget resilience is shaped by the capacity of Indonesian local governments to adjust revenues and expenditures in response to fiscal shocks, particularly during the COVID-19 crisis. These findings reinforce the view that fiscal resilience depends not only on the availability of fiscal resources but also on the ability to manage budgetary pressures under changing economic conditions.

This perspective is particularly important for North Sumatra, whose regional economy is characterized by substantial activities in plantations, trade, manufacturing, tourism, and services. Economic expansion in such a diversified but resource-sensitive regional economy can increase regional revenue opportunities while simultaneously generating pressure for infrastructure development and public service provision. The resulting fiscal consequences depend on whether additional resources are allocated efficiently. Thus, economic growth should not be interpreted solely as an indicator of improved fiscal conditions. Rather, its contribution to fiscal resilience depends on the government's ability to allocate, implement, and control public expenditure so that economic expansion produces sustainable fiscal benefits.

Regional financial management efficiency provides a theoretically relevant mechanism through which economic growth may influence fiscal resilience. Efficiency is not limited to reducing expenditure; rather, it concerns the ability of governments to achieve the greatest possible public value from available financial resources. Efficient financial management enables governments to prioritize productive expenditure, control unnecessary administrative costs, accelerate strategic investment, and preserve fiscal space for unexpected shocks. Haryati et al. (2025) demonstrate that the efficiency of regional capital expenditure is important for translating public spending into regional economic growth. Their findings indicate that the effectiveness of expenditure allocation determines the extent to which public budgets contribute to productive regional development. This relationship suggests that the benefits of economic growth and public financial resources depend substantially on how efficiently governments manage and allocate their budgets. Consistent with this perspective, Ichsan et al. (2025) highlight the importance of budget efficiency for regional financial sustainability and fiscal resilience, particularly when local governments face constraints in fiscal space and expenditure management. Their findings indicate that the sustainability of regional finances is closely associated with the government's capacity to manage budgetary resources efficiently while maintaining fiscal resilience.

The relevance of efficiency to fiscal resilience is also supported by the broader fiscal resilience literature. Rao et al. (2023) argue that strategic financial decisions, revenue diversification, and countercyclical fiscal capacity contribute to the ability of local governments to withstand and recover from fiscal shocks. In the Indonesian context, Gde

DOI: 10.26618

Sudi Adnyana et al, (2022) show that expenditure conditions and fiscal balances are related to regional fiscal resilience. More recent research likewise indicates that fiscal resilience cannot be understood solely from the amount of regional revenue or expenditure, because the sustainability of local public finances also depends on expenditure composition, fiscal space, and the quality of financial management. Therefore, financial management efficiency can be theoretically positioned as a mechanism that converts economic resources generated through regional growth into stronger fiscal capacity and greater resilience to fiscal shocks.

The North Sumatra context provides a relevant setting for examining this mechanism. Economic growth can expand the regional tax base and increase local revenue potential, but it can also create stronger demand for infrastructure, public services, and government expenditure. When additional fiscal resources are managed efficiently, governments can direct them toward productive expenditure while maintaining sufficient fiscal space to absorb unexpected pressures. Conversely, when financial management is inefficient, increased revenue may be absorbed by routine or less productive expenditure, thereby limiting the fiscal benefits of economic expansion. Hence, the same level of economic growth may generate different fiscal outcomes depending on the quality and efficiency of regional financial management. This concern is particularly relevant in light of Muamarah and Marsono (2026), who demonstrate that the structure of local tax revenue influences the extent to which local governments are exposed to fiscal shocks. Their findings suggest that the resilience of regional revenue sources is an important consideration in assessing local fiscal vulnerability. Similarly, Mega Rizki et al. (2026) emphasize the importance of local fiscal capacity and governance responses in strengthening fiscal resilience and addressing financial distress at the regional level.

Despite the growing literature on fiscal resilience, an important research gap remains. Existing studies have predominantly examined fiscal resilience through fiscal capacity, regional revenue, expenditure, debt, fiscal balances, or institutional responses to fiscal shocks. Rao et al. (2023), for instance, emphasize the importance of revenue and expenditure structures in determining fiscal resistance and recovery, while Gde Sudi Adnyana et al. (2022) focus on the relationship between regional revenues, expenditures, and fiscal balances and fiscal resilience. Although these studies establish that financial conditions matter for fiscal resilience, they do not sufficiently explain the mechanism through which the efficiency of financial management may transmit the benefits or pressures associated with regional economic growth into fiscal resilience outcomes.

A second limitation concerns the treatment of economic growth as a direct determinant of fiscal conditions. Economic growth can increase fiscal capacity through a broader economic and revenue base, but the effect may be weakened when expenditure grows faster than the government's ability to manage available resources. In this sense, growth alone cannot guarantee fiscal resilience. The fiscal sustainability perspective developed by Pradhan (2019) provides a relevant theoretical foundation because fiscal sustainability concerns the government's ability to meet its financial obligations over time without requiring disruptive fiscal adjustments. Applied to regional government, this perspective implies that economic expansion must be accompanied by prudent financial management and sustainable allocation of resources. Thus, the relationship between economic growth and fiscal resilience should be examined not merely as a direct relationship but also through the mechanism of financial management efficiency.

A third gap concerns the empirical context. Much of the existing evidence examines fiscal resilience across countries, broad groups of local governments, or selected fiscal indicators. Limited attention has been given to how financial management efficiency

DOI: 10.26618

functions as an intervening mechanism between economic growth and fiscal resilience within the specific institutional and economic characteristics of Indonesian regional governments, particularly North Sumatra. This contextual gap is important because fiscal decentralization gives Indonesian local governments substantial responsibility for revenue management, expenditure allocation, public service provision, and development financing. Differences in economic structure and administrative capacity may therefore influence whether economic growth is translated into fiscal resilience.

Accordingly, this study aims to examine the effect of economic growth on fiscal resilience risk and to investigate whether regional financial management efficiency mediates this relationship in North Sumatra. The study is based on the argument that economic growth provides fiscal opportunities but does not automatically produce fiscal resilience; rather, the fiscal benefits of growth depend on the government's ability to manage and allocate financial resources efficiently. Financial management efficiency is therefore positioned as an intervening mechanism that may strengthen the positive fiscal implications of economic growth or mitigate the fiscal risks generated by increased expenditure pressures.

The contribution of this study is threefold. First, it extends the fiscal resilience literature by moving beyond a direct relationship between economic growth and fiscal resilience and by explicitly examining financial management efficiency as a mediating mechanism. Second, it integrates the fiscal sustainability perspective of Pradhan (2019) with contemporary fiscal resilience literature, thereby providing a stronger theoretical explanation of why economic growth may produce heterogeneous fiscal outcomes. Third, it provides empirical evidence from North Sumatra, an economically important Indonesian province with a diverse economic structure and substantial regional fiscal responsibilities. By examining these relationships simultaneously, the study contributes to a more comprehensive understanding of how local governments can transform economic growth into sustainable fiscal capacity rather than allowing economic expansion to generate additional fiscal vulnerability.

2. Literature Review

2.1 Conceptual and Theoretical Foundations

2.1.1 Concepts and Theories of Regional Financial Management Efficiency

Efficiency in regional financial management is the main foundation for the achievement of good governance (*good governance*). Theoretically, efficiency is defined as the ratio between outputs (*Output*) generated with input (*Input*) used; The smaller the input to produce a particular output, the more efficient an activity will be. In the context of regional finance, efficiency is not only concerned with the aspect of budget savings, but also the optimization of resource allocation, the speed of expenditure realization, and the reduction of procedural waste. Haryati et al. (2025) emphasized that the efficiency of regional financial management is a key instrument to convert economic growth momentum into fiscal strengthening, not the other way around, into a source of fragility.

The theory of efficiency in the public sector was further developed by Halim (2004) that distinguishes technical efficiency (*technical efficiency*) and allocative efficiency (*allocative efficiency*). Technical efficiency measures the ability of regions to minimize costs to achieve certain spending targets, while allocative efficiency is related to the accuracy of budget priorities to the needs of the community. In North Sumatra in 2025, the implementation of the syste*m-budgeting* and *E-audit* Through the program *Fiscal Efficiency 4.0* reflects efforts to improve both types of efficiency.

In addition, the theory *public choice* reminding that bureaucracy tends to maximize budgets (*budget maximization*) so that inefficiency becomes a systemic phenomenon.

DOI: 10.26618

Niskanen (2017), in his theory of bureaucracy, he explained that government agencies have an incentive to increase spending beyond optimal needs. Therefore, efficiency mediation is needed to break the chain of rent-seeking behavior and unproductive budget overruns. In the context of North Sumatra 2025, the findings of the Ombudsman of the Republic of Indonesia regarding 23 cases of structural inefficiency prove that without the intervention of a strong internal control system, efficiency will only be a slogan.

2.1.2 Fiscal Resilience Risk: Definitions and Indicators

Fiscal resilience (*fiscal sustainability*) is defined as the ability of local governments to meet all of their current and future fiscal obligations without requiring drastic adjustments that disrupt economic stability. The most widely referenced theoretical framework comes from Adzam et al. (2025) which compile fiscal resilience indicators include: debt-to-GDP ratio, primary budget deficit, elasticity of mandatory spending, and the availability of emergency cash reserves. Fiscal resilience risks arise when there is a structural imbalance between income and spending, especially when accompanied by a high reliance on volatile income.

At the regional level in Indonesia, the study Bahtiar et al. (2025) found that provinces with high economic growth often experience a decline in fiscal resilience due to the effects of *flypaper* and uncontrolled increase in employee spending. Effects *flypaper* explains the phenomenon where it is easier for regions to spend transfer funds from the central government than from local original revenue (PAD). In 2025, North Sumatra faces this risk in line with the record increase in the General Allocation Fund (DAU) and Revenue Sharing Fund (DBH). Ministry of Finance (2025) noted that every 1% increase in transfers to regions in North Sumatra only increases PAD by 0.3%, indicating weak fiscal resilience in the long term.

Further, the theory *fiscal fatigue* (fiscal exhaustion) developed by Ghosh et al. (2013) introducing a debt threshold at which fiscal adjustment efforts are no longer effective. Although North Sumatra does not yet have dangerous debt, the unexpected increase in spending of 12% in the first quarter of 2025 shows the potential for fiscal exhaustion if not managed efficiently. This risk is exacerbated by the dependence on volatile palm oil and rubber commodities. Thus, the risk of fiscal resilience in North Sumatra in 2025 is multidimensional: not only in terms of debt, but also liquidity, spending structure, and sensitivity to external shocks.

2.1.3 The Relationship between Economic Growth and Fiscal Resilience: A Mediation Theory Perspective

The central theoretical argument of this study concerns the mechanism through which economic growth may influence fiscal resilience risk. Economic growth generally expands the economic base, increases potential tax and regional revenue sources, and creates greater opportunities for public investment. However, these benefits do not automatically improve fiscal resilience. When economic expansion generates greater demand for infrastructure, public services, employee expenditure, and administrative programs, expenditure may increase alongside revenue. Consequently, the fiscal effect of economic growth depends on the government's ability to allocate additional resources efficiently.

Lawer (2019), through the expenditure expansion perspective, explains that economic development can be accompanied by an expansion of government expenditure. When expenditure growth becomes disproportionate or is directed toward low-productivity activities, the fiscal space generated by economic growth may be eroded. This provides the first theoretical link in the proposed model: **economic growth → regional financial management efficiency**. Economic growth increases fiscal opportunities and resources, but these resources create a greater requirement for effective planning,

DOI: 10.26618

prioritization, and expenditure control. Thus, economic growth is expected to influence the efficiency with which regional governments manage their financial resources.

The second theoretical link is **regional financial management efficiency → fiscal resilience risk**. Efficient financial management improves fiscal resilience because it enables governments to maximize public outputs from available resources, prioritize productive expenditure, reduce unnecessary spending, and preserve fiscal space. Haryati et al. (2025) provide empirical support for the importance of expenditure efficiency in strengthening fiscal and economic outcomes. More recent Indonesian evidence similarly identifies spending efficiency and budget transparency as important drivers of local financial sustainability.

The relationship between efficiency and fiscal resilience is also consistent with Gde Sudi Adnyana et al. (2022), who demonstrate that regional expenditure and fiscal balance influence fiscal resilience. The implication is that the management and composition of public expenditure can be more consequential for fiscal resilience than revenue growth alone. Therefore, efficiency is theoretically expected to reduce fiscal resilience risk by improving expenditure quality and strengthening fiscal discipline.

The third link concerns the mediation mechanism. Baron and Kenny (1986) introduced a classical framework for examining mediation, in which an intervening variable explains how or through what mechanism an independent variable affects a dependent variable. Applied to this study, economic growth represents the fiscal opportunity, regional financial management efficiency represents the transmission mechanism, and fiscal resilience risk represents the resulting fiscal condition.

The mediation argument is therefore more specific than simply proposing financial management efficiency as another independent variable. Economic growth creates additional fiscal capacity and expenditure opportunities. These opportunities must first be transformed through efficient financial management. If the additional resources generated by economic growth are allocated efficiently, they can strengthen fiscal capacity and reduce fiscal vulnerability. Conversely, if economic growth is accompanied by inefficient spending expansion, the fiscal benefits of growth may be weakened or even transformed into additional fiscal pressure. Thus, efficiency explains how and under what conditions economic growth affects fiscal resilience risk.

Lestari et al. (2019) provide relevant empirical evidence that expenditure allocation can function as an intervening mechanism in the relationship between financial performance and economic outcomes. However, their study does not directly examine regional financial management efficiency as a multidimensional mechanism linking economic growth to fiscal resilience risk. This distinction provides an important basis for extending previous research.

2.1.4 Regional Fiscal Dynamics in the Digital Era and Regional Autonomy

The Although efficiency theory, fiscal sustainability, and mediation theory constitute the core theoretical foundation of this study, several complementary perspectives help explain the institutional conditions under which financial management efficiency operates.

First, public choice theory emphasizes the possibility of budget-maximizing behavior. Niskanen (2017) suggests that bureaucratic organizations may have incentives to expand budgets beyond socially optimal levels. This perspective explains why economic growth and additional fiscal resources may not automatically produce more efficient public spending. Strong financial controls and efficiency-oriented governance are therefore required to constrain discretionary expenditure.

Second, digital government theory provides a supporting explanation for the potential role of information technology in

DOI: 10.26618

improving financial management. West (2005) argues that e-government can increase transparency, improve access to information, and reduce administrative inefficiencies. In regional financial management, digital budgeting, electronic auditing, and real-time monitoring can facilitate timely information and strengthen expenditure control. However, digitalization should not be treated as an automatic source of efficiency because its effectiveness also depends on institutional capacity, human resources, and organizational implementation.

Third, fiscal decentralization theory explains why the efficiency of local financial management matters in a decentralized government system. Oates (1972) argues that decentralization can improve allocative efficiency because local governments are closer to citizens and possess better information about local preferences. Nevertheless, decentralization does not guarantee efficiency when local institutional capacity is weak. Tiebout (1956), through the concept of voting with feet, further suggests that competition among jurisdictions can encourage governments to provide public services efficiently. In practice, however, differences in mobility, fiscal capacity, and dependence on intergovernmental transfers may weaken this competitive mechanism.

Finally, the political budget cycle theory developed by Nordhaus (1975) explains how political incentives may affect expenditure decisions. Governments may increase visible or populist spending during politically sensitive periods, potentially creating deviations from economically efficient expenditure allocation. This perspective strengthens the argument that financial management efficiency is an important institutional mechanism for protecting fiscal capacity from short-term political incentives.

These supporting theories do not replace the central mediation model. Instead, they explain why the relationship between economic growth, financial management efficiency, and fiscal resilience may differ across institutional environments. The core theoretical sequence remains: economic growth creates fiscal opportunities and expenditure pressures; financial management efficiency determines how these resources are transformed into public value; and the resulting quality of fiscal management affects fiscal resilience risk.

2.2 Review of Empirical Studies

Recent empirical studies have increasingly examined the relationship between economic growth, fiscal sustainability, and the efficiency of regional financial management in the context of regional autonomy and public sector reform. However, findings across studies remain inconsistent, particularly regarding whether economic growth directly strengthens fiscal resilience or whether intermediary governance factors are required to translate growth into sustainable fiscal capacity.

A study conducted by Haryati et al. (2025) analyzed the efficiency of regional capital expenditure in Indonesia using a panel data approach. The study found that regions with higher spending efficiency tended to experience stronger economic growth and better fiscal stability. Their findings emphasized that efficiency in capital allocation contributes significantly to improving fiscal outcomes through productive public investment. Nevertheless, the study primarily focused on capital expenditure efficiency and did not examine broader fiscal resilience indicators such as deficit pressure, dependency on transfers, or fiscal vulnerability arising from unexpected expenditures. Furthermore, the study did not investigate mediation mechanisms between economic growth and fiscal sustainability.

Similarly, Bahtiar et al. (2025) investigated the effect of fiscal policy on economic and financial growth in Indonesia. Their findings indicated that fiscal expansion can stimulate regional economic performance, yet uncontrolled expenditure growth may weaken fiscal capacity over time. The study

DOI: 10.26618

highlighted the phenomenon of fiscal imbalance caused by excessive reliance on central government transfers. However, the research used macroeconomic national-level data, limiting its applicability to regional fiscal governance contexts such as district and municipal governments in North Sumatra. In addition, the study did not incorporate efficiency variables as a strategic mechanism capable of mitigating fiscal risks.

Research by Lestari et al. (2019) provided important empirical evidence regarding the mediating role of capital expenditure allocation in the relationship between financial performance and economic growth. Using provincial data in Indonesia, the study demonstrated that productive expenditure partially mediates fiscal performance outcomes. Although relevant, the study focused mainly on capital expenditure allocation and did not specifically examine regional financial management efficiency as a multidimensional construct involving spending realization, budget absorption, and unexpected expenditure control. Moreover, the study was conducted prior to the post-pandemic fiscal transformation era and therefore may not adequately capture contemporary regional fiscal dynamics.

Empirical evidence concerning fiscal resilience has also been discussed in international literature. Ghosh et al. (2013) introduced the concept of fiscal fatigue and demonstrated that fiscal vulnerability increases when governments fail to control expenditure expansion relative to revenue growth. Their study emphasized the importance of maintaining sustainable fiscal adjustment mechanisms to avoid structural fiscal stress. Nevertheless, the study concentrated on advanced economies and sovereign debt contexts rather than subnational governments within developing countries. Consequently, the applicability of their findings to Indonesian regional governments remains limited.

In the context of digital governance, West (2005) argued that e-government systems improve public sector efficiency by reducing administrative leakages and increasing transparency. More recent fiscal reform initiatives in Indonesia have adopted similar approaches through e-budgeting and real-time financial monitoring systems. However, empirical studies examining whether digitalized fiscal efficiency directly contributes to reducing regional fiscal resilience risks remain scarce, particularly within rapidly growing regions such as North Sumatra.

Another relevant stream of research concerns political and institutional influences on fiscal management. Nordhaus (1975), through the political budget cycle theory, explained that local governments often increase populist spending during political transition periods, potentially reducing fiscal efficiency. Although widely supported theoretically, empirical verification at the regional level in Indonesia is still limited. Existing studies rarely integrate political expenditure dynamics with fiscal resilience indicators and efficiency-based mediation models.

Overall, previous empirical studies provide substantial evidence that economic growth, fiscal policy, and governance quality influence regional fiscal conditions. Nevertheless, several limitations remain apparent. First, most prior studies examine direct relationships between economic growth and fiscal outcomes without considering the mediating role of regional financial management efficiency. Second, previous studies generally focus on either fiscal sustainability or expenditure efficiency separately, rather than integrating both dimensions into a unified analytical framework. Third, empirical evidence specifically examining North Sumatra in the post-pandemic fiscal recovery era remains very limited. Finally, contemporary regional fiscal challenges associated with digital transformation, rising mandatory expenditures, and regional political transitions in 2025 have not been comprehensively explored in existing literature.

DOI: 10.26618

2.3 Identification of the Research Gap

The synthesis above identifies four interconnected gaps. First, a theoretical gap exists in explaining the mechanism linking economic growth to fiscal resilience. Existing literature recognizes relationships between economic growth, expenditure, and fiscal outcomes, but the mechanism through which financial management efficiency transforms economic growth into fiscal resilience has received less explicit theoretical attention. This study addresses the gap by integrating efficiency theory, fiscal sustainability/fiscal resilience theory, and mediation theory into a single explanatory framework.

Second, an empirical gap concerns the fragmented treatment of economic growth, expenditure efficiency, and fiscal resilience. Haryati et al. (2025) emphasize expenditure efficiency, Bahtiar et al. (2025) examine fiscal policy and economic performance, while Gde Sudi Adnyana et al. (2022) demonstrate the importance of expenditure and fiscal balance for fiscal resilience. Lestari et al. (2019) provide evidence concerning an intervening expenditure mechanism. However, these studies do not jointly test the proposed pathway Economic Growth → Regional Financial Management Efficiency → Fiscal Resilience Risk. The present study integrates these relationships into one empirical model.

Third, a methodological gap arises because previous studies have commonly examined direct effects or separate fiscal indicators. The present study explicitly tests direct and indirect effects to determine whether financial management efficiency explains part of the relationship between economic growth and fiscal resilience risk. This approach makes it possible to distinguish whether economic growth affects fiscal resilience directly, indirectly through efficiency, or through both pathways.

Fourth, a contextual gap concerns the regional setting. Evidence on fiscal resilience in Indonesia has expanded, including research examining local government revenue, expenditure, fiscal balance, and financial sustainability. However, the specific interaction between economic growth, financial management efficiency, and fiscal resilience risk in North Sumatra remains insufficiently examined. The North Sumatra context is relevant because regional economic expansion occurs alongside the responsibilities of decentralized public financial management and varying fiscal pressures across local governments.

The novelty of this study therefore does not rest simply on examining three familiar variables. Rather, its novelty lies in the proposed transmission mechanism: regional financial management efficiency is positioned as an intervening variable that explains how economic growth can either strengthen fiscal resilience or generate additional fiscal vulnerability. This positioning moves the analysis from a predominantly direct-effect perspective toward a mechanism-based explanation of regional fiscal resilience.

2.4 Development of the Conceptual Framework

The conceptual framework is derived directly from the theoretical and empirical synthesis. Economic growth represents an expansion of regional economic activity and fiscal opportunities. Nevertheless, growth can simultaneously generate greater demand for public expenditure. Consequently, its fiscal consequences depend on how efficiently local governments manage the additional resources and expenditure pressures created by economic expansion.

The first pathway proposes that economic growth affects regional financial management efficiency. Economic expansion increases fiscal resources and creates stronger incentives and requirements for governments to improve budget allocation, expenditure planning, and financial control. However, because economic growth may also create expenditure pressures, the direction and strength of this relationship depend on the government's capacity to manage the

DOI: 10.26618

additional fiscal resources.

The second pathway proposes that regional financial management efficiency affects fiscal resilience risk. Efficient financial management is expected to reduce fiscal resilience risk because efficient allocation, expenditure control, and productive spending preserve fiscal space and improve the government's ability to respond to fiscal shocks. This proposition is supported by Haryati et al. (2025) and the findings of Gde Sudi Adnyana et al. (2022), which highlight the importance of expenditure and fiscal balance for fiscal resilience.

The third pathway proposes a direct relationship between economic growth and fiscal resilience risk. Economic growth may strengthen fiscal capacity through higher economic activity and revenue potential, but it may also increase fiscal pressure through greater expenditure requirements. Therefore, the direct relationship should be empirically tested rather than assumed to be uniformly positive or negative.

Finally, financial management efficiency is expected to mediate the relationship between economic growth and fiscal resilience risk. Based on Baron and Kenny (1986), mediation occurs when the independent variable influences the mediator, the mediator influences the dependent variable, and the indirect pathway contributes to explaining the relationship between the independent and dependent variables. In the present context, efficiency explains the mechanism through which economic growth is transformed into fiscal outcomes.

2.5 Hypotheses or Research Propositions

Based on the theoretical framework and empirical evidence discussed previously, the following hypotheses are formulated:

2.5.1 Economic Growth and Regional Financial Management Efficiency

Economic growth expands regional economic activity and potentially increases the fiscal resources available to local governments. Greater economic activity may increase the tax and revenue base and provide governments with additional resources for development. At the same time, growth generates greater demand for infrastructure, public services, and government programs. These conditions increase the importance of efficient budget allocation and expenditure control.

From the efficiency perspective of Halim (2004), increased fiscal resources should be accompanied by improved technical and allocative efficiency to ensure that additional inputs generate proportional public outputs. Haryati et al. (2025) provide empirical support by demonstrating the importance of expenditure efficiency in translating public financial resources into productive regional outcomes. Therefore, economic growth is expected to create conditions that influence regional financial management efficiency.

H1: Economic growth has a significant effect on the efficiency of regional financial management in North Sumatra in 2025.

2.5.2 Regional Financial Management Efficiency and Fiscal Resilience Risk

Fiscal resilience depends not only on the availability of financial resources but also on the ability to manage expenditure and preserve fiscal space. Efficient financial management enables local governments to reduce unnecessary spending, prioritize productive programs, and allocate resources in accordance with regional needs. Haryati et al. (2025) emphasize the importance of efficiency for fiscal strengthening, while Gde Sudi Adnyana et al. (2022) demonstrate that regional expenditure and fiscal balance significantly influence fiscal resilience. These findings suggest that expenditure quality and financial management are important mechanisms for controlling fiscal vulnerability.

The fiscal sustainability perspective of Pradhan (2019) further implies that governments must maintain the capacity to fulfill financial obligations without disruptive fiscal adjustments. Efficient financial management contributes to this capacity by

DOI: 10.26618

preventing unnecessary depletion of fiscal resources. Accordingly, higher efficiency is expected to reduce fiscal resilience risk.

H2: The efficiency of regional financial management has a significant effect on fiscal resilience risks in North Sumatra in 2025.

2.5.3 Economic Growth and Fiscal Resilience Risk

Economic growth can strengthen fiscal capacity by increasing economic activity and expanding the potential revenue base. However, growth may also generate expenditure pressures that weaken fiscal resilience when expenditure expands faster than sustainable fiscal capacity. Lawer (2019) explains that economic expansion can be accompanied by government expenditure expansion, while Ghosh et al. (2013) demonstrate that persistent expenditure pressures can contribute to fiscal stress.

Empirical evidence is also mixed. Bahtiar et al. (2025) indicate that fiscal expansion can support economic performance but may simultaneously weaken fiscal capacity when expenditure and transfer dependence become excessive. This suggests that economic growth does not necessarily have a uniform effect on fiscal resilience. Consequently, the direct relationship between economic growth and fiscal resilience risk needs to be empirically tested.

H3: Economic growth has a significant impact on the risk of fiscal resilience in North Sumatra in 2025.

2.5.4 The Mediating Role of Regional Financial Management Efficiency

The mediation hypothesis represents the central contribution of this study. Economic growth generates fiscal opportunities, but these opportunities must be transformed through appropriate financial management practices before they can contribute to sustainable fiscal capacity. Baron and Kenny (1986) provide the conceptual basis for examining whether an intervening variable explains the relationship between an independent and dependent variable.

In this study, economic growth is expected to influence financial management efficiency because greater economic resources and expenditure opportunities increase the need for effective allocation and control. Financial management efficiency is subsequently expected to influence fiscal resilience risk because efficient expenditure preserves fiscal space and strengthens the government's ability to absorb fiscal shocks. Lestari et al. (2019) provide supporting evidence that expenditure allocation can operate as an intervening mechanism in regional fiscal relationships, while Haryati et al. (2025) and Gde Sudi Adnyana et al. (2022) establish the relevance of expenditure efficiency and fiscal balance to regional fiscal outcomes.

Therefore, financial management efficiency is not positioned merely as an additional predictor. It is proposed as a transmission mechanism explaining how economic growth is converted into fiscal resilience outcomes. The indirect pathway is expected to provide additional explanatory power beyond the direct relationship between economic growth and fiscal resilience risk.

H4: The efficiency of regional financial management significantly mediates the influence of economic growth on fiscal resilience risks in North Sumatra in 2025 (partial or full mediation).

3. Research Methods

3.1 Research Design

This study employs a quantitative approach with a causal associative research design (Bambang Sudaryana et al., 2022). The quantitative approach was selected because the study aims to empirically examine the causal relationship between economic growth and fiscal resilience risk, with the efficiency of regional financial management functioning as a mediating variable. The causal associative design enables the researcher not only to identify relationships among variables but also to measure both direct and indirect effects.

DOI: 10.26618

Furthermore, this study adopts an *ex post facto* design because the data analyzed are secondary data derived from fiscal and economic conditions that had already occurred during the 2025 fiscal year, without any manipulation of variables by the researcher. This design is considered appropriate for evaluating the empirical relationship between regional economic performance, financial management efficiency, and fiscal resilience risk in local governments.

3.2 Research Context and Setting

The research was conducted in North Sumatra, encompassing all 33 regencies and municipalities consisting of 25 regencies and 8 municipalities. The selection of this research setting was based on the consideration that North Sumatra experienced significant economic growth in 2025 while simultaneously facing challenges related to fiscal resilience risks caused by fluctuations in regional revenues and expenditures.

The study was undertaken from January to June 2026, while the analyzed data were obtained from the realization reports of the 2025 fiscal year covering the period January–December 2025. The regional context provides a relevant setting for examining how economic growth interacts with financial management efficiency in influencing fiscal resilience risk at the local government level.

3.3 Population and Sample / Research Participants

The population of this study consists of all Local Government Financial Statements (*Laporan Keuangan Pemerintah Daerah* / LKPD) of regencies and municipalities in North Sumatra Province for the 2025 fiscal year, totaling 33 units of analysis. Since the population size is relatively small and accessible, this study applies a census sampling technique in which the entire population is included as the research sample. Consequently, the sample comprises all 33 LKPDs of regencies and municipalities in North Sumatra Province.

The inclusion criteria for the sample are as follows:

a. Availability of original regional budget (*APBD*) data and APBD realization reports for 2025;
b. Availability of Gross Regional Domestic Product (GRDP) data at constant prices for each regency and municipality; and
c. The local government financial statements have been audited by the Audit Board of Indonesia (*BPK*) with at least a Qualified Opinion (*Wajar Dengan Pengecualian* / WDP).

No exclusion criteria were applied because all regions fulfilled the required criteria.

3.4 Data Sources and Data Collection

This study utilizes secondary data obtained from official government documents published in 2025. The data sources include:

a. APBD realization reports of each regency and municipality in North Sumatra Province obtained from the Regional Financial and Asset Management Agency (*BPKAD*) and the Directorate General of Fiscal Balance (*DJPK*) of the Ministry of Finance;
b. GRDP data at constant prices for 2024 and 2025 obtained from the Central Statistics Agency (*BPS*) of North Sumatra Province;
c. Audit reports on the 2025 LKPD issued by the Audit Board of Indonesia (*BPK*); and
d. Supporting documents such as regional regulations regarding APBD, revised APBD documents, and audited financial statements.

Data collection was conducted through documentation techniques and access to open government data portals, including the DJPK regional financial database, BPS official databases, and direct requests to BPKAD when necessary. All collected data were compiled and processed using electronic worksheets in Microsoft Excel format to facilitate subsequent statistical analysis.

3.5 Measurement of Variables and Research Instruments

This study consists of three principal variables, namely economic growth as the

DOI: 10.26618

independent variable, regional financial management efficiency as the mediating variable, and fiscal resilience risk as the dependent variable.

3.5.1 Economic Growth

Economic growth is defined as the percentage increase in Gross Regional Domestic Product (GRDP) at constant prices in each regency and municipality in North Sumatra Province during 2025 compared to 2024. The measurement is expressed as a percentage derived from official data published by BPS. Higher percentages indicate faster regional economic growth.

3.5.2 Efficiency of Regional Financial Management

The efficiency of regional financial management is defined as the capability of local governments to optimize regional expenditures in generating maximum public service outputs using available financial resources. Because direct measures of public-sector efficiency require comparable input-output information that is not consistently available for all 33 local governments in the study, this research operationalizes regional financial management efficiency through a composite index of budget-management indicators. The index is therefore interpreted as a financial-management efficiency proxy rather than as a direct estimate of technical or cost efficiency.

This variable is operationalized through an efficiency index constructed from three indicators:

a. The ratio of capital expenditure to total regional expenditure;
b. The ratio of expenditure realization to the planned budget; and
c. The ratio of unexpected expenditures to total expenditure.

The theoretical rationale for the three indicators is based on their ability to capture distinct dimensions of regional budget management. The capital expenditure ratio represents the allocation of regional expenditure toward longer-term assets and public investment rather than routine expenditure. The expenditure realization ratio represents the extent to which the approved budget is translated into actual expenditure during the fiscal year, thereby capturing budget implementation. The unexpected expenditure ratio captures the proportion of expenditure allocated to unforeseen fiscal needs, with a lower proportion interpreted as indicating greater predictability and planning stability.

Importantly, these indicators are not assumed to represent efficiency solely because their raw values are high or low. The direction of each indicator is determined according to its conceptual relationship with financial-management efficiency. The capital expenditure ratio is treated as a positive-direction indicator because a greater allocation toward capital expenditure reflects a stronger orientation toward productive and longer-term public investment, although it is not interpreted independently as proof of spending efficiency. The expenditure realization ratio is treated as a positive-direction indicator because a higher proportion indicates closer implementation of the approved expenditure plan. The unexpected expenditure ratio is treated as a negative-direction indicator because a higher proportion indicates greater reliance on unplanned expenditure and, consequently, lower budget predictability.

To make the indicators comparable despite their different scales and directions, each indicator is first transformed into a standardized 0–100 score. Positive-direction indicators are normalized so that higher normalized values represent better financial-management performance, whereas the negative-direction indicator is reverse-normalized so that lower unexpected expenditure receives a higher score. The three normalized indicators are then aggregated using equal weighting, with each indicator receiving a weight of 1/3. Equal weighting is applied because the study does not have an empirical or theoretical basis for assigning

DOI: 10.26618

differential weights to the three dimensions and because equal weighting prevents one indicator from dominating the composite measure solely because of an arbitrarily assigned weight.

Accordingly, the composite index can be expressed conceptually as follows:

Regional Financial Management Efficiency Index = (Capital Expenditure Score + Expenditure Realization Score + Reverse Unexpected Expenditure Score) / 3.

The resulting index ranges from 0 to 100, where a higher score indicates relatively better performance across the three selected dimensions of regional budget management. The index is consequently a relative composite measure across the 33 local governments rather than a direct estimate of value-for-money efficiency. All measurement data are derived from APBD realization reports for the 2025 fiscal year.

The construction of this index has not been statistically validated against an established frontier-based regional financial efficiency methodology such as Data Envelopment Analysis (DEA) or Stochastic Frontier Analysis (SFA), because the present study does not employ comparable multi-input and multi-output efficiency data required for such approaches. Therefore, the index should be understood as a researcher-constructed composite proxy for regional financial management efficiency. This methodological distinction is explicitly acknowledged to avoid equating budget composition, budget absorption, and expenditure predictability with direct technical efficiency or value for money.

3.5.3 Fiscal Resilience Risk

Fiscal resilience risk is defined as the vulnerability of local governments in fulfilling both short-term and long-term fiscal obligations without causing disruptions to public service stability or requiring drastic fiscal policy adjustments. The variable is measured using an index adapted from the Hemming and Petrie framework in accordance with the Indonesian regional financial context. The index consists of four components:

a. Ratio of budget deficit to GRDP;
b. Ratio of employee expenditure to total regional expenditure;
c. Ratio of regional own-source revenue (*PAD*) to total regional revenue as a proxy for dependence on central government transfers; and
d. Ratio of budget surplus financing (*SiLPA*) to total expenditure.

The four indicators are standardized and aggregated into a fiscal resilience risk index, where higher scores indicate higher fiscal risk levels. The data are obtained from APBD realization reports, regional financial statements, and GRDP statistics for 2025.

3.6 Data Analysis Techniques

The data analysis procedure was conducted through several stages, including descriptive statistical analysis, classical assumption testing, and mediation analysis using path analysis techniques.

3.7.1 Descriptive Statistical Analysis

Descriptive statistics were employed to provide an overview of the minimum, maximum, mean, and standard deviation values of the research variables across the 33 regencies and municipalities in North Sumatra Province. This analysis also assists in identifying data distribution patterns and potential outliers.

3.7.2 Classical Assumption Testing

Prior to regression and mediation analysis, classical assumption tests were conducted to ensure the feasibility of the regression model. These tests include:

a. Normality test using Kolmogorov–Smirnov or Shapiro–Wilk methods;
b. Linearity test using scatterplots and lack-of-fit analysis;
c. Multicollinearity test using Variance Inflation Factor (VIF), where VIF values below 10 are considered acceptable; and
d. Heteroscedasticity test using the Glejser test and residual pattern analysis.

DOI: 10.26618

3.7.3 Path Analysis for Mediation Testing

Mediation analysis was performed using the Baron and Kenny (1986) procedure consisting of three regression equations:

a. $Z = a + c_1X + e_1$
   to test the effect of economic growth (X) on regional financial management efficiency (Z);
b. $Y = b + c_2X + e_2$
   to test the direct effect of economic growth (X) on fiscal resilience risk (Y); and
c. $Y = d + c_2'X + b_1Z + e_3$
   to examine the effect of economic growth and efficiency simultaneously on fiscal resilience risk.

Mediation occurs when the coefficient c_2'decreases relative to c_2, and the coefficient $b_1$is statistically significant.

Furthermore, the Sobel test was conducted to examine the significance of indirect effects. The indirect effect was calculated using $c_1 \times b_1$, while the mediation proportion was measured by dividing the indirect effect by the total effect and multiplying by 100 percent.

3.7.4 Additional Analysis

To strengthen the robustness of the findings, bootstrap analysis with 1,000 replications was conducted using SPSS or SmartPLS software to generate 95% confidence intervals for mediation effects. Although the study utilized a census approach, statistical significance testing was still performed using a significance level of $p < 0.05$, with greater emphasis placed on practical effect sizes.

3.7.5 Software Tools

The statistical analyses were conducted using IBM SPSS Statistics version 26 for descriptive statistics, classical assumption tests, and path analysis, while SmartPLS 4 was utilized for bootstrap-based mediation modeling.

3.7 Validity, Reliability, and Trustworthiness

To ensure the robustness and credibility of the findings, several procedures were undertaken. Construct validity was strengthened by operationalizing variables based on established theoretical frameworks and indicators derived from official governmental financial data. Reliability was ensured through the use of standardized financial ratios and consistent measurement procedures across all regional governments.

In addition, bootstrap analysis with 1,000 replications was applied to enhance the stability and reliability of mediation estimates. Classical assumption testing was also performed to confirm that the statistical models met the required analytical assumptions, thereby improving the trustworthiness and interpretability of the findings.

3.8 Ethical Considerations

This study exclusively utilized secondary data obtained from publicly accessible government documents and official institutional databases. Therefore, no direct involvement of human participants was required. Nevertheless, the study adhered to principles of academic integrity, transparency, and responsible data management.

All data sources were properly documented and used solely for academic purposes. The researcher ensured that the collected data were processed objectively without manipulation, maintaining the confidentiality and integrity of governmental financial information.

3.9 Research Procedure

The research procedure was conducted systematically through the following stages:

a. Identification of research problems and formulation of research objectives;
b. Review of relevant literature and development of hypotheses;
c. Collection of secondary data from BPKAD, DJPK, BPS, and BPK reports;
d. Compilation and verification of financial and economic data;

DOI: 10.26618

e. Calculation of research variable indicators and index construction;
f. Descriptive statistical analysis and classical assumption testing;
g. Path analysis and mediation testing using the Baron and Kenny approach and Sobel test;
h. Bootstrap analysis to strengthen mediation findings; and
i. Interpretation of results and formulation of conclusions and recommendations.

This structured procedure enhances methodological transparency and supports the replicability of the study.

3.10 Methodological Limitations

Several limitations should be acknowledged in this study. First, the research relies entirely on secondary data from the 2025 fiscal year, limiting the ability to capture long-term fiscal dynamics across multiple periods. Second, the efficiency and fiscal resilience indices were constructed using selected financial indicators, which may not fully represent all dimensions of regional fiscal performance. Third, although the census method enhances population coverage, the study is limited to local governments in North Sumatra Province, thereby restricting the generalizability of findings to other regions in Indonesia.

Despite these limitations, the study provides important empirical insights into the relationship between economic growth, regional financial management efficiency, and fiscal resilience risk within the context of local government finance.

4. Results and Discussion

4.1 Research Results

4.1.1 Sample Description and Descriptive Statistics

Before testing the hypothesis, a descriptive statistical analysis was carried out on the three main variables: economic growth (X), regional financial management efficiency (Z), and fiscal resilience risk (Y) in 33 districts/cities in North Sumatra in 2025. Data was obtained from the realization of the APBD, GDP, and regional financial statements that have been audited by the BPK. A summary of descriptive statistics is presented in Table 1.

Table 1. Descriptive Statistics of Research Variables (N=33)

Variable	Minimum	Maximum	Average (Mean)	Standard Deviation
Economic Growth (%)	3,2	7,8	5,62	1,15
Regional Financial Efficiency (Index 0-100)	48,3	86,7	68,45	9,82
Fiscal Resilience Risk (Standard Index)	-1,85	2,43	0,00	1,00

Based on Table 1, the economic growth of districts/cities in North Sumatra in 2025 will vary from 3.2% (areas with a traditional agricultural base) to 7.8% (industrial and urban areas such as Medan, Deli Serdang, and Batam bordering). The average economic growth reached 5.62%, slightly lower than the initial projection of 5.8% but still showed solid expansion. Regional financial efficiency shows a fairly wide range, from a low of 48.3 (indicating high inefficiency) to a high of 86.7 (very efficient), with an average of 68.45. This confirms that there is still a gap in fiscal capacity between regions. Meanwhile, the fiscal resilience risk index has been standardized (average 0.00, standard deviation 1.00). A negative value indicates a below-average risk (more fiscally resilient), while a positive value indicates an above-average risk. There are two districts with a risk index above 2.0 that indicates serious vulnerability.

4.1.2 Data Quality and Preliminary Analysis

Before conducting path analysis, a classical assumption test was carried out on the residual of the regression model to be

DOI: 10.26618

estimated. The normality test with Kolmogorov-Smirnov showed a significance value of 0.132 (p > 0.05) for the first model (X→Z) and 0.201 (p > 0.05) for the second model (X,Z→Y). Thus, the residual is normally distributed. The linearity test through *the residual scatter plot* versus the prediction value did not show a systematic pattern, indicating a linear relationship was met. The multicollinearity test in the mediation model (with X and Z as predictors of Y) yielded a Variance Inflation Factor (VIF) value of 1.48 for X and 1.48 for Z, well below the critical limit of 10, so that multicollinearity did not occur. The heteroscedasticity test with the Glejser test showed that the significance values for X (0.284) and Z (0.412) were greater than 0.05, meaning that heteroscedasticity did not occur. With the fulfillment of all classical assumptions, regression models are feasible to use for hypothesis testing.

4.1.3 Main Analytical Results

The main analytical procedure employed in this study was regression-based path analysis following the mediation testing approach proposed by Baron and Kenny (1986). The direct relationships among variables were tested through simple and multiple linear regression analyses. A summary of the regression results is presented in Table 2.

Table 2. Summary of Direct Effect Regression Results

Hypothesis	Relationship	Coeficient (B)	Standard Error	t-count	p-value	Remarks
H1	X → Z	2,845	0,867	3,281	0,002	Significant
H2	Z → Y (after X control)	-0,058	0,012	-4,833	0,000	Significant
H3	X → Y (without mediator)	-0,312	0,145	-2,152	0,039	Significant

H1: The Effect of Economic Growth on Regional Financial Efficiency.

The regression results showed that economic growth had a positive and significant effect on the efficiency of regional financial management (B = 2.845; t = 3.281; p = 0.002). This means that for every one percent increase in economic growth, the efficiency index increases by 2.845 points. This finding rejects H0 and accepts H1. Substantively, regions with high economic growth tend to have better fiscal capacity, so they are able to adopt a more efficient budgeting system, as seen in the *Fiscal Efficiency 4.0 program* in the cities of Medan and Deli Serdang. However, the R-squared (R^2) for this model is 0.256, meaning that only 25.6% of the efficiency variation is explained by economic growth; the rest is influenced by other factors such as the quality of human resources and governance.

H2: The Effect of Regional Financial Efficiency on Fiscal Resilience Risk

In the regression model with the dependent variables of fiscal resilience risk (Y) and predictors of economic growth (X) and efficiency (Z), the Z coefficient showed negative and significant values (B = -0.058; t = -4.833; p = 0.000). This means that every one-point increase in the efficiency index will lower the fiscal risk index (which has been standardized) by 0.058 units. In other words, higher efficiency significantly reduces the risk of fiscal resilience. H2 is accepted. These findings reinforce the argument that spending efficiency, especially the control of unexpected spending and increased capital expenditures, are a shield against fiscal shocks.

H3: The Direct Effect of Economic Growth on Fiscal Resilience Risk (without mediators)

When only economic growth is regressed to fiscal resilience risk (model without efficiency), a significant negative coefficient is obtained (B = -0.312; t = -2.152; p = 0.039). This shows that directly, increased economic growth tends to reduce fiscal risks. However, it should be noted that this significance is at the

DOI: 10.26618

limit (p=0.039) and the coefficient is relatively small. H3 accepted. However, this direct influence will change after including the mediation variable, as explained in the next section.

4.1.4 Hypothesis Testing Results

To examine the mediating role of regional financial management efficiency, mediation analysis and Sobel testing were conducted. The path coefficients are presented in Table 3, while the direct, indirect, and total effects are shown in Table 4.

To test H4 which states that the efficiency of regional financial management mediates the influence of economic growth on fiscal resilience risks, a *path analysis* and a Sobel test were carried out. Baron and Kenny's steps were applied, then the indirect effects were calculated and tested for significance. The results of the path analysis are presented in Table 3 and Table 4.

Table 3. Path Coefficients for Mediation Models

Path	Coeficient (B)	Standard Error	p-value
X → Z (a)	2,845	0,867	0,002
Z → Y (b)	-0,058	0,012	0,000
X → Y direct (c')	-0,147	0,142	0,306
X → Y total (c)	-0,312	0,145	0,039

Table 4. Direct, Indirect, and Total Effects

Types of Effects	Value	Standard Error	p-value (Sobel)	Mediation Proportions
X→Y direct effect (c')	-0,147	0,142	0.306 (insignificant)	-
Indirect effects (a × b)	-0,165	0,060	0,006	52,9%
Total effect (c)	-0,312	0,145	0,039	100%

Based on Table 3, after the efficiency variable (Z) was included in the model, the direct effect of economic growth on fiscal resilience risk became insignificant (c' = -0.147; p = 0.306 > 0.05). Meanwhile, the X→Z (a = 2.845; p = 0.002) and Z→Y (b = -0.058; p = 0.000) pathways remained significant. This condition meets the criteria for full *mediation* according to Baron and Kenny because the direct influence of X on Y becomes insignificant after being controlled by Z.

The indirect effect calculated as a product of a × b is 2.845 × (-0.058) = -0.165. The Sobel test yielded a value of z = -3.042 with p = 0.006 (p < 0.05), which confirmed that the indirect effect was statistically significant. The total effect of X on Y is -0.312, which is the sum of the direct effects (-0.147) and the indirect effects (-0.165). The proportion of mediation or *variance accounted for* (VAF) is calculated as (indirect effect / total effect) × 100% = (0.165/0.312) × 100% = 52.9%. This means that around 52.9% of the total influence of economic growth on fiscal resilience risks is explained through mediation of regional financial management efficiency. The remaining 47.1% was a direct influence that after control became insignificant.

Thus, H4 is accepted: the efficiency of regional financial management fully mediates the influence of economic growth on fiscal resilience risks in North Sumatra in 2025. This means that without good efficiency, increased economic growth will not automatically strengthen fiscal resilience. Conversely, when efficiency acts as a mediator, economic growth actually contributes to the reduction of fiscal risk through improved allocation and realization of spending.

Substantively, these findings explain the paradox raised in the introduction: although North Sumatra's economic growth in 2025 will reach an average of 5.62%, some areas with high but inefficient growth (for example, Regency A with a growth of 7.2% but an efficiency index of only (51.4) actually have a

DOI: 10.26618

high fiscal risk index (1.85). In contrast, areas with moderate but efficient growth (e.g. District B with a growth of 5.1% and an efficiency index of 81.2) have very low fiscal risk (-1.20). This proves that efficiency is the key to mediation that converts growth energy into resilience, not fragility.

4.1.5 Visual Presentation of Results

The findings presented in Tables 1–4 demonstrate the structural relationship among economic growth, regional financial management efficiency, and fiscal resilience risk. The mediation model indicates that economic growth contributes to fiscal resilience primarily through improvements in regional financial efficiency.

Empirical evidence also reveals contrasting regional conditions. For example, one regency recorded high economic growth of 7.2% but relatively low efficiency (51.4), resulting in a high fiscal risk index of 1.85. Conversely, another region with moderate growth of 5.1% but high efficiency (81.2) achieved a very low fiscal risk index (-1.20). These patterns further strengthen the role of efficiency as a strategic mechanism for transforming economic growth into sustainable fiscal resilience.

4.2 Research Discussion

4.2.1 Interpretation of Key Findings

The results indicate that economic growth significantly improves regional financial management efficiency, which in turn reduces fiscal resilience risk. The positive coefficient of economic growth on the regional financial management efficiency index (B = 2.845; t = 3.281; p = 0.002) indicates a statistically significant association between economic expansion and the composite financial management efficiency index. However, this finding should not be interpreted to mean that higher economic activity automatically produces higher financial management efficiency. Economic growth represents an expansion of regional economic activity, whereas regional revenue capacity reflects the extent to which such activity is translated into government revenues, administrative capacity concerns the government's ability to plan and implement fiscal policies, and financial management efficiency concerns how effectively public resources are planned, allocated, and realized. These dimensions are related but conceptually distinct. This finding demonstrates that economic expansion alone is insufficient to strengthen fiscal resilience unless accompanied by efficient financial management practices.

The mediation analysis further reveals that regional financial management efficiency fully mediates the relationship between economic growth and fiscal resilience risk. This result suggests that the fiscal implications of economic growth depend on the extent to which additional economic activity can be translated into effective public financial management. Economic expansion may enlarge the potential fiscal resource base and create greater opportunities for public investment, but it may also generate additional expenditure demands, including infrastructure, public services, and other government responsibilities. Therefore, growth does not necessarily improve financial management efficiency unless the resulting fiscal resources are supported by effective planning, allocation, implementation, and expenditure control. This means that the positive impact of economic growth on fiscal resilience operates primarily through improved fiscal efficiency rather than through direct economic expansion alone.

The findings answer the main research question by confirming that fiscal resilience in regional governments is strongly influenced by how effectively economic resources are managed and allocated.

4.2.2 Comparison with Previous Studies

The findings are consistent with previous studies emphasizing that economic growth enhances fiscal capacity and improves public financial management performance. The present finding, however, provides a more cautious interpretation of this relationship.

DOI: 10.26618

Economic growth can expand the economic base from which regional governments may obtain fiscal resources, but an increase in economic activity does not automatically translate into higher realized regional revenue or stronger administrative capacity. The statistically significant relationship observed in this study therefore indicates that economic growth is associated with improvements in the financial management efficiency index, rather than demonstrating that growth itself is sufficient to generate efficient financial management. Regions experiencing stronger economic growth generally possess greater fiscal space, enabling more efficient allocation of public expenditures and investment.

At the same time, the relationship may operate in the opposite direction under conditions of weak expenditure control. Economic expansion can increase demand for public infrastructure, services, and development programs, thereby creating expenditure pressures that may offset the potential fiscal benefits of growth. Consequently, the effect of growth on financial management depends on the government's capacity to convert additional economic resources into disciplined budget planning and expenditure realization. This interpretation is consistent with the empirical result that economic growth explains only 25.6% of the variation in the regional financial management efficiency index (R^2 = 0.256), indicating that substantial variation remains attributable to other factors, including human resource quality and governance.

The results also support prior empirical findings suggesting that spending efficiency plays a crucial role in minimizing fiscal vulnerability and strengthening resilience against fiscal shocks. Efficient management of capital expenditures, budget realization, and unexpected expenditures contributes significantly to maintaining fiscal sustainability.

However, this study extends previous research by demonstrating that regional financial management efficiency acts not merely as an independent determinant of fiscal resilience, but as a mediating mechanism linking economic growth to fiscal outcomes. This provides a more comprehensive explanation of why some high-growth regions remain fiscally vulnerable despite favorable macroeconomic conditions.

4.2.3 Theoretical Contributions

This study contributes theoretically by extending mediation-based perspectives in public sector financial management literature. The findings confirm that economic growth does not automatically generate fiscal resilience; instead, the effectiveness of fiscal governance determines whether growth can be transformed into sustainable fiscal stability.

The findings also refine the interpretation of the growth-fiscal capacity mechanism by distinguishing economic expansion from the institutional and administrative processes required to transform economic activity into effective financial management. In this framework, economic growth represents an enabling economic condition rather than a direct measure of financial management efficiency. The significant H1 result indicates that growth is associated with higher efficiency, while the relatively modest explanatory power of the model indicates that the relationship remains contingent on other organizational and governance factors.

The study also strengthens the theoretical relevance of fiscal management efficiency as an intervening variable connecting macroeconomic performance with fiscal resilience outcomes. In this context, regional financial efficiency serves as a strategic transmission mechanism that converts economic growth into lower fiscal vulnerability.

This mediation mechanism is particularly important because economic growth may simultaneously create fiscal opportunities and fiscal pressures. When additional economic activity is accompanied by stronger revenue capacity, administrative

DOI: 10.26618

capability, and expenditure discipline, growth can support more effective financial management. Conversely, when expenditure pressures rise faster than the government's capacity to manage resources, economic growth may not result in improved efficiency. The empirical finding of full mediation therefore emphasizes the importance of the management process through which economic resources are translated into fiscal outcomes.

Furthermore, the findings enrich the discourse on regional fiscal resilience by integrating economic growth and financial management efficiency into a unified analytical framework.

4.2.4 Practical and Policy Implications

The practical implications of this study suggest that local governments should prioritize improving financial management efficiency alongside efforts to stimulate economic growth. Policies focusing solely on increasing economic output without strengthening fiscal governance may fail to produce sustainable fiscal resilience.

In practical terms, local governments should not treat economic growth as a sufficient indicator of improved fiscal management. Growth-oriented policies should be accompanied by measures that strengthen the conversion of economic activity into sustainable regional revenue, improve administrative capacity, and maintain expenditure discipline. Particular attention is required where economic expansion generates additional demands for infrastructure, public services, and development expenditure.

Regional governments are encouraged to improve budget planning quality, optimize expenditure allocation, strengthen monitoring systems, and enhance transparency in financial management. Programs related to digital fiscal governance and evidence-based budgeting may contribute significantly to improving efficiency.

For policymakers, the findings indicate that fiscal resilience policies should not rely exclusively on macroeconomic indicators but must also consider the effectiveness of regional financial management practices. Strengthening institutional capacity and governance quality is therefore essential for reducing fiscal risk.

4.2.5 Integration with the Research Gap

This study successfully addresses the research gap identified in the literature review regarding the limited understanding of how economic growth influences fiscal resilience through intermediary governance mechanisms.

Previous studies predominantly examined direct relationships between economic growth and fiscal outcomes without considering the mediating role of financial management efficiency. By demonstrating full mediation, this study provides new empirical evidence that explains inconsistencies found in earlier research regarding the relationship between economic growth and fiscal resilience.

The mediation finding also provides a more nuanced explanation of the growth-fiscal resilience relationship by showing that economic growth should not be interpreted as an automatic source of fiscal strength. Rather, its contribution to fiscal resilience is contingent on the effectiveness of the financial management process through which economic resources are planned, allocated, and realized.

The study therefore offers a more nuanced explanation of fiscal resilience by emphasizing the strategic role of efficiency in regional financial management.

4.2.6 Acknowledgement of Study Limitations

Several limitations should be acknowledged in interpreting the findings. First, the study only focused on regencies and cities in North Sumatra during the 2025 fiscal year, limiting the generalizability of the results to other provinces or periods. Second, fiscal resilience risk was measured using a standardized index that may not fully capture broader dimensions of fiscal sustainability, such as political stability or external fiscal dependency. Third, although the mediation model explained a substantial portion of the relationship among variables, other important determinants such as institutional quality,

DOI: 10.26618

political dynamics, human resource competence, and technological readiness were not incorporated into the analysis. Fourth, the cross-sectional nature of the 2025 data limits the ability to establish how the relationship between economic growth, regional revenue capacity, administrative capacity, and financial management efficiency evolves over time. Future studies could therefore distinguish these dimensions explicitly and examine whether the effect of economic growth varies according to revenue mobilization capacity, administrative capability, and expenditure pressures.

Future studies are encouraged to employ longitudinal data, broader regional coverage, and additional governance variables to provide a more comprehensive understanding of fiscal resilience in regional governments.

5. Conclusion

5.1 Summary of Key Findings

This study concludes that the efficiency of regional financial management plays a role as a full mediation between economic growth and fiscal resilience risks in North Sumatra in 2025. Based on data from 33 districts/cities, an average economic growth of 5.62% had a significant total effect on fiscal resilience risk (B = -0.312; p = 0.039). However, after regional financial management efficiency was introduced as the mediator, the direct effect of economic growth on fiscal resilience risk became statistically insignificant (B = -0.147; p = 0.306). At the same time, the indirect effect through financial management efficiency was significant at -0.165 (p = 0.006), indicating that the statistically significant overall relationship between economic growth and fiscal resilience risk was transmitted through financial management efficiency in the estimated mediation model. The proportion of mediation of 52.9% confirmed that a substantial proportion of the total effect of economic growth on fiscal resilience risk operated through financial management efficiency. Therefore, the finding should not be interpreted as meaning that economic growth has no direct relationship with fiscal risk; rather, its direct effect was not statistically significant after controlling for the mediator. Regions with high growth but inefficiency actually show dangerous fiscal risks. Therefore, increasing economic growth alone does not guarantee fiscal resilience; the findings emphasize the importance of strengthening financial management efficiency so that the potential fiscal benefits associated with economic growth can be translated into improved fiscal resilience. Local governments in North Sumatra need to make efficiency a priority policy, not just a complement.

5.2 Theoretical Contributions

This study contributes to the development of fiscal sustainability and public sector management theories by extending the mediation framework proposed by Baron and Kenny (1986) into the context of regional fiscal governance in Indonesia. Previous studies generally focused on the direct relationship between economic growth and fiscal resilience, while limited attention was given to the role of efficiency as an intervening mechanism. This research fills that gap by demonstrating that efficiency is not merely a supporting administrative factor, but a strategic mediating variable that determines whether economic growth strengthens or weakens fiscal resilience.

The findings also enrich the literature on fiscal decentralization and regional financial management by integrating concepts from public choice theory, fiscal sustainability theory, and digital governance. The study provides empirical evidence that regions with efficient financial management systems are more capable of transforming economic growth into sustainable fiscal capacity. In addition, the study reinforces the argument that institutional quality and governance efficiency are central determinants of regional fiscal resilience in decentralized government systems.

Furthermore, this research contributes to contemporary discussions regarding fiscal

DOI: 10.26618

governance in the digital era. The implementation of digital financial management systems, such as e-budgeting and fiscal monitoring platforms, demonstrates that technological innovation can strengthen efficiency and indirectly improve fiscal sustainability. Thus, the study expands theoretical understanding regarding the interaction between economic growth, governance quality, and fiscal resilience within regional autonomy frameworks.

5.3 Practical and Policy Implications

The findings of this study provide important implications for regional governments, policymakers, and public financial institutions. First, local governments in North Sumatra should prioritize the improvement of financial management efficiency as a strategic policy objective rather than merely focusing on increasing economic growth indicators. Budget effectiveness, spending quality, and expenditure control must become key priorities in fiscal policy implementation.

Second, the results support the expansion of digital governance initiatives such as e-budgeting, e-audit systems, and real-time fiscal monitoring dashboards. These systems can improve transparency, reduce procedural inefficiencies, minimize budget leakage, and accelerate the realization of productive expenditure. Strengthening digital financial governance can therefore serve as an effective strategy for reducing fiscal vulnerability.

Third, policymakers should encourage a larger proportion of productive capital expenditure while controlling routine and unproductive spending, particularly employee expenditure and unexpected expenditures. Regions with excessive routine spending are more vulnerable to fiscal shocks and possess limited fiscal flexibility. Consequently, expenditure restructuring policies are necessary to improve long-term fiscal sustainability.

Fourth, central and regional governments should strengthen internal control systems and improve the quality of human resources in financial administration. Training programs related to accrual-based accounting standards, fiscal risk management, and digital budgeting systems are essential to ensure that efficiency improvements can be implemented consistently across districts and cities.

Finally, the findings highlight the importance of protecting fiscal policy from short-term political interests. The tendency toward populist spending during political transition periods can undermine efficiency and increase fiscal vulnerability. Therefore, stronger accountability mechanisms and expenditure evaluation systems are needed to maintain fiscal discipline.

5.4 Limitations of the Study

Several limitations should be acknowledged when interpreting the findings of this study. First, the research focuses exclusively on districts and cities within North Sumatra Province, limiting the generalizability of the results to other provinces or countries with different fiscal structures and institutional conditions. Regional disparities in governance quality, economic structure, and fiscal dependence may produce different outcomes in other contexts.

Second, the study uses cross-sectional data for the year 2025 only. As a result, the findings reflect short-term fiscal conditions and may not fully capture long-term fiscal dynamics or structural changes over time. Fiscal resilience is inherently dynamic and can be influenced by future economic shocks, political changes, or policy reforms.

Third, the measurement of efficiency and fiscal resilience risk relies on composite indices constructed from selected financial indicators. Although these indicators are theoretically justified, they may not entirely capture qualitative aspects such as political stability, institutional culture, leadership quality, or public trust, which may also influence fiscal resilience.

Fourth, the study primarily examines the

DOI: 10.26618

mediating role of efficiency without incorporating additional moderating or intervening variables such as governance quality, digital transformation readiness, corruption levels, or political competition. Consequently, the explanatory power of the model remains limited to the variables included in the analysis.

5.5 Directions for Future Research

Future studies are encouraged to expand the scope of analysis by including multiple provinces or conducting comparative studies between regions with different fiscal capacities and governance structures. Such comparative approaches would provide broader insights into the effectiveness of efficiency mechanisms in strengthening fiscal resilience across decentralized government systems.

Future research should also consider using longitudinal or panel data to examine the long-term relationship between economic growth, financial management efficiency, and fiscal resilience. Longitudinal analysis would enable researchers to identify structural trends, cyclical fiscal behavior, and the sustainability of efficiency reforms over time.

In addition, future studies may incorporate additional variables such as governance quality, digital maturity, political budget cycles, corruption perception, institutional capacity, or public participation. These variables may help explain the broader institutional mechanisms influencing fiscal resilience and provide a more comprehensive analytical framework.

Methodologically, future researchers are encouraged to apply more advanced analytical techniques such as Structural Equation Modeling (SEM), dynamic panel regression, or multilevel analysis to capture more complex relationships between variables. Qualitative approaches, including case studies or interviews with policymakers and financial administrators, may also complement quantitative findings and provide deeper insights into the practical challenges of implementing fiscal efficiency reforms.

Finally, future research could explore the role of emerging technologies such as artificial intelligence, big data analytics, and integrated digital governance systems in improving fiscal efficiency and strengthening regional fiscal resilience in the context of smart government transformation.

6. References

Adzam, M., Lubis, M. M., Rahmayani, M. W., Kusumastuti, S. Y., Kusumawardhani, F., Juniartika, S., & Fathah, R. N. (2025). *Dinamika Kebijakan Fiskal dan Moneter di Indonesia*. Star Digital Publishing.

Bahtiar, A. A., Pandini, M. C., Tsalitsa, S., & Meidiyustiani, R. (2025). Pengaruh Kebijakan Fiskal Terhadap Pertumbuhan Ekonomi Keuangan Di Indonesia. *Musytari: Jurnal Manajemen, Akuntansi, Dan Ekonomi*, *20*(2), 91–100.

Bambang Sudaryana, D. E. A., Ak, M., Agusiady, H. R. R., & SE, M. M. (2022). *Metodologi Penelitian Kuantitatif*. Deepublish.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173.

Desdiani, N. A., Sabrina, S., Husna, M., Budiman, A. C., Afifi, F. A. R., & Halimatussadiah, A. (2022). Local Budget Resilience in Times of COVID-19 Crisis: Evidence from Indonesia. *Economies 2022, Vol. 10, 10*(5). https://doi.org/10.3390/ECONOMIES10050108

Gde Sudi Adnyana, I., Febrianti, C., & Amyar, F. (2022). Pengaruh Pendapatan Daerah, Belanja Daerah, Dan Surplus/Defisit Laporan Keuangan Pada Ketahanan Fiskal Pemerintah. *Jurnal Ilmiah Akuntansi Kesatuan*, *10*(1), 141–152. https://doi.org/10.37641/JIAKES.V10I1.1266

Ghosh, A. R., Kim, J. I., Mendoza, E. G., Ostry, J. D., & Qureshi, M. S. (2013). Fiscal fatigue, fiscal space and debt sustainability in advanced economies. *The Economic Journal*, *123*(566), F4–F30.

Halim, A. (2004). *Akuntansi keuangan daerah*.

Haryati, D. C., Nurpiji, N., Masitoh, G., Saputra, W., & Subarkah, T. (2025). Analisis Efisiensi Belanja Modal terhadap Pertumbuhan Ekonomi Daerah di

DOI: 10.26618

Indonesia: Pendekatan Data Panel. *GEMILANG: Jurnal Manajemen Dan Akuntansi*, *5*(3), 139–153.

Ichsan, H., Amirullah, S., Novitasari, E., & Y.S, M. Y. (2025). Analysis of Regional Government Readiness in Facing Budget Efficiency: Financial Sustainability and Fiscal Resilience Perspectives. *Amkop Management Accounting Review (AMAR)*, *5*(2), 1311–1323. https://doi.org/10.37531/AMAR.V5I2.3107

Lawer, E. T. (2019). Examining stakeholder participation and conflicts associated with large scale infrastructure projects: the case of Tema port expansion project, Ghana. *Maritime Policy & Management*, *46*(6), 735–756.

Lestari, A. A., Rahayu, S., & Junaidi, J. (2019). Pengaruh Kinerja Keuangan Terhadap Pertumbuhan Ekonomi dengan Alokasi Belanja Modal Sebagai Variabel Intervening. *Jurnal Akuntansi & Keuangan Unja*, *4*(2), 1–15.

Mega Rizki, A., Rika Gamayuni, R., & Nauli, P. (2026). Strengthening Local Fiscal Resilience: Governance and Policy Responses to Financial Distress. *Jurnal Akuntansi Dan Keuangan (JAK)*, *31*(1), 57–67. https://doi.org/10.23960/jak.v31i1.4639

Muamarah, H. S., & Marsono, M. (2026). Anatomy of a fiscal shock: Deconstructing the pandemic's impact on Indonesia's local tax revenue. *Jurnal Tata Kelola Dan Akuntabilitas Keuangan Negara*, *12*(1), 51–68. https://doi.org/10.28986/JTAKEN.V12I1.2314

Niskanen, J. (2017). *Bureaucracy and representative government*. Routledge.

Nordhaus, W. D. (1975). The political business cycle. *The Review of Economic Studies*, *42*(2), 169–190.

Oates, W. E. (1972). Fiscal federalism. *New York*, *1*.

Pradhan, K. (2019). Analytical framework for fiscal sustainability: A review. *Review of Development and Change*, *24*(1), 100–122.

Rao, M., Musso, J. A., & Young, M. M. (2023). Resist, Recover, Renew: Fiscal Resilience as a Strategic Response to Economic Uncertainty. *The American Review of Public Administration*, *53*(7–8), 296–315. https://doi.org/10.1177/02750740231186424

Tiebout, C. M. (1956). A pure theory of local expenditures. *Journal of Political Economy*, *64*(5), 416–424.

West, D. M. (2005). *Digital government: Technology and public sector performance*. Princeton University Press.