


## Impact of local revenue (PAD) and transfer funds on regional financial independence in North Sumatra province

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Article Info	ABSTRACT
<b>Keywords:</b> Local Revenue, Transfer Funds, Regional Financial Independence, North Sumatra Province	The impact of Regional Original Revenue (PAD), General Allocation Fund (DAU), Special Allocation Fund (DAK), and Natural Resource Revenue (DBH) are very important as regional financial for each region. This study aims to analyze the influence of Local Revenue (PAD) and Transfer Funds on the level of regional financial independence in North Sumatra Province. The research employs a combined quantitative and qualitative approach, with a focus on key variables such as Local Revenue, Transfer Funds, and the level of financial independence. Data was collected from publications by the Central Statistics Agency (BPS) and related sources on regional income, fund allocation, and regional development for the period from 2017 to 2021. The findings reveal that Local Revenue (PAD) has a positive and significant impact on the level of regional financial independence, while Transfer Funds exhibit a significant negative influence. This implies that an increase in Local Revenue enhances financial independence, while reliance on Transfer Funds tends to diminish it. These insights are relevant for regional financial planning and development strategies in North Sumatra Province.
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### INTRODUCTION

The planning of human activities within a region is essential for successful development, requiring a nuanced understanding of multidimensional factors [1]. The transition from centralized to decentralized governance during the reform era has significantly impacted regional development dynamics, with financial autonomy emerging as a crucial aspect [2]. This study delves into the complexities of regional financial autonomy, particularly in the context of North Sumatra Province, aiming to address existing gaps in understanding and strengthen the discourse on effective fiscal decentralization.

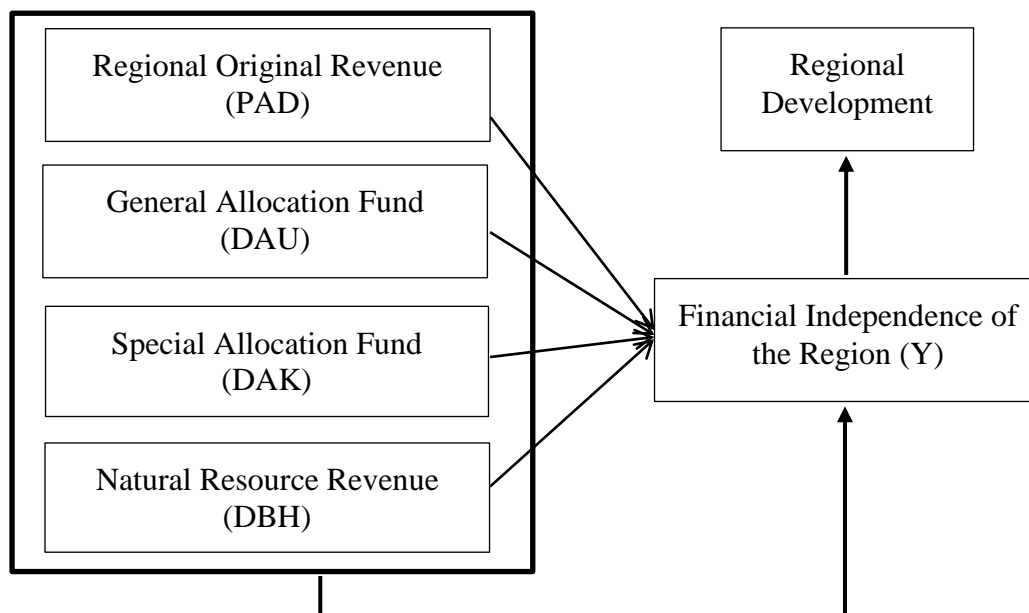
Despite the principles of decentralization embracing fiscal, political, administrative, governance, and socio-economic aspects [3], the effectiveness of decentralized mechanisms, such as the General Allocation Fund (DAU), has faced challenges. The reduction in DAU during the 2020 Covid-19 pandemic has raised questions about the fund's ability to achieve financial equalization among regions [4]. These challenges underscore the need for a comprehensive examination of financial instruments such as

DAU, Special Allocation Fund (DAK), and Natural Resource Revenue (DBH) to understand their impact on regional financial autonomy.

Previous studies, as highlighted by Kustianingsih and Kahar [5], Tjahjono and Oktavianti [6], Rapma [7], Anikmah [8], and Fitriyani and Suwarno [9], provide diverse perspectives on the relationship between financial instruments and regional financial autonomy. The findings range from negative impacts of DAU on autonomy [10] to positive effects of PAD and DAK. These varied perspectives lay the groundwork for our investigation, emphasizing the need for a more synthesized understanding of the factors influencing regional financial autonomy.

Despite the valuable insights from existing studies, gaps and inconsistencies persist in comprehensively understanding the nuanced relationship between funds like DAU, DAK, DBH, and regional financial autonomy. The unique case of the North Sumatra Province, characterized by fluctuating DBH values and the decline in DAU during the pandemic, provides an opportunity to bridge these gaps. This study aims to contribute to the literature by offering a more nuanced analysis of the impact of PAD, DAU, DAK, and DBH on the financial autonomy of the North Sumatra Provincial Government.

To achieve these objectives, the study adopts a rigorous methodology, building on established frameworks proposed by researchers such as Halim [11] and Patarai [12]. Through a meticulous examination of the fiscal gap and the ratio of PAD to transfer funds, including DAU, DAK, and DBH, the research aims to provide a comprehensive understanding of the dynamics shaping regional financial autonomy. By doing so, this study aspires to offer strategic recommendations for enhancing financial autonomy and promoting sustainable regional development in North Sumatra Province.



**Figure 1** Research Conceptual Framework

## METHOD

This research employs a combination of quantitative and qualitative approaches. The quantitative approach is utilized to analyze numerical data using statistical techniques, while the qualitative approach is employed to explain and synthesize information obtained through the research process. This study falls under the category of associative research, employing inferential statistics to determine the relationships and influences between independent and dependent variables.

The research period extends from February to June 2023, covering 33 regencies/cities in North Sumatra Province. The data utilized consists of secondary data, primarily time series and cross-sectional data (panel data) derived from publications by the Central Statistics Agency (BPS) and related publications on regional income, fund allocation, and regional development.

Quantitative data analysis employs the panel data regression method, with the dependent variable being regional financial autonomy and independent variables involving Regional Original Revenue (PAD), General Allocation Fund (DAU), Special Allocation Fund (DAK), and Natural Resource Revenue (DBH). Prior to analysis, a model selection test is conducted to determine whether the Fixed Effect (FEM), Random Effect (REM), or Common Effect (CEM) model is most suitable. Classic assumption tests, such as multicollinearity and heteroskedasticity tests, are performed to ensure data quality. Hypothesis tests, including t-tests and F-tests, are employed to test the statistical significance of regression coefficient.

Thus, this research methodology integrates both quantitative and qualitative approaches to yield a holistic understanding of the factors influencing regional financial autonomy in North Sumatra Province.

## RESULT AND DISCUSSION

### Overview of the Research Location

North Sumatra Province, situated near the equator ( $1^{\circ}$  –  $4^{\circ}$  North Latitude and  $98^{\circ}$  –  $100^{\circ}$  East Longitude), falls within the tropical climate zone, covering a land area of 71,680.68 km<sup>2</sup>. Mandailing Natal Regency is the largest (9.24% of the total provincial area), followed by Langkat and Simalungun Regencies. Sibolga City, with an area of 10.77 km<sup>2</sup>, is the smallest. Geographically, North Sumatra Province borders Aceh (North), Malaysia and the Malacca Strait (East), Riau and West Sumatra Provinces (South), and the Indian Ocean (West). The province is divided into three geographical regions: West Coast, Highlands, and East Coast, and is rich in natural resources, including petroleum, coal, aluminum, sulfur, and gold.

### Regional Financial Autonomy

Data on regional financial autonomy from 2017 to 2021 show significant variations among regencies/cities in North Sumatra Province. The autonomy ratio, measured through Regional Own-source Revenue (PAD), provides an indication of the level of regional dependence on internal resources. Mandailing Natal Regency leads with 9.24% of North Sumatra Province's total area, while Sibolga City, with an area of 10.77 km<sup>2</sup>, represents the smallest region. Geographic observations involve the provincial boundaries from various directions.

### Regional Own-source Revenue (PAD)

Regional Own-source Revenue (PAD) data reveal significant variations among regencies/cities in North Sumatra Province. The autonomy ratio, measured through PAD, provides an overview of the level of regional dependence on internal resources. Mandailing Natal Regency leads with 9.24% of North Sumatra Province's total area. Sibolga City, with an area of 10.77 km<sup>2</sup>, represents the smallest region. Geographical observations involve the provincial boundaries from various directions.

**Table 1.** Regional Own-source Revenue (PAD) Regency/City in North Sumatera

Year	2017	2018	2019	2020	2021
Mean	164.249	156.386	168.430	160.032	172.846
Maximum	1.739.757	1.636.205	1.829.666	1.509.484	1.906.512
Minimum	18.450	19.606	18.411	16.599	18.293

Source: BPS, 2023 (data processed)

### General Allocation Fund (DAU)

General Allocation Fund (DAU) data show fluctuations in the average DAU from 2017 to 2021. In 2019, DAU reached its highest peak but experienced a decline in 2020 and 2021. Medan City has the highest DAU, indicating dependence on central government assistance. The decrease in DAU in 2021 can be associated with the focus on pandemic handling, reflecting an increase in regional financial autonomy.

**Table 2.** General Allocation Fund (DAU) Regency/City in North Sumatera

Year	2017	2018	2019	2020	2021
Mean	649.523	649.768	676.577	620.385	570.676
Maksimum	1.583.624	1.583.624	1.660.239	1.493.920	1.526.070
Minimum	338.611	339.272	354.722	323.371	112.079

Source: BPS, 2023 (data Processed)

### Special Allocation Fund (DAK)

Special Allocation Fund (DAK) data show fluctuation in the average DAK from 2017 to 2021. An increase in the DAK amount occurred in 2018 and 2019 but decreased in 2020 before rising again in 2021. The decrease in DAK in 2020 and the increase in 2021 may be related to the impact of the pandemic. Tapanuli Utara Regency has the highest DAK, while Pakpak Bharat Regency has the lowest. The fluctuation in DAK values reflects the dynamics of regional development, which is a national priority.

**Table 3.** Special Allocation Fund (DAK) Regency/City in North Sumatera

Year	2017	2018	2019	2020	2021
Mean	189.991	194.179	196.339	172.725	195.166
Maksimum	459.510	455.242	431.040	399.215	597.640
Minimum	70.813	71.532	67.329	56.051	63.450

Source: BPS, 2023 (data processed)

The regency with the highest DAK in 2017-2020 is Deli Serdang Regency, with each year's respective nominal values being 459,510 million Rupiah, 455,242 million Rupiah, 431,040 million Rupiah, and a decrease to 399,215 million Rupiah. In 2021, the highest DAK is owned by Tapanuli Utara Regency with a nominal value of 597,640 million Rupiah. The lowest DAK in 2017, 2019, 2020, and 2021 is owned by Sibolga City, and in 2018, it is owned by Pakpak Bharat Regency with a nominal value of 71,532 million Rupiah.

#### Revenue Sharing Fund (DBH)

Revenue Sharing Fund (DBH) takes the spotlight in this sub-analysis as the only transfer fund from the state budget originating from the region. Although its nominal value is, on average, smaller than DAU and DAK, the fluctuation in DBH from 2017 to 2021 reflects the dynamics of regional income. In 2018, there was an increase in DBH, but it decreased again in 2019. In 2020, there was a significant increase, reaching its peak in 2021 at 73,001 million Rupiah.

The highest DBH in 2017 and 2018 was owned by Medan City, but in 2019, Langkat Regency held the highest position. Medan City again dominated in 2020, while Tapanuli Selatan Regency became the highest in 2021. In contrast, West Nias Regency had the lowest DBH in 2017, while Nias Regency held the lowest position in 2018, 2019, and 2020. In 2021, Nias Regency held the lowest DBH with a nominal value of 21,050 million Rupiah.

**Table 4.** Revenue Sharing Fund (DBH) Regency/City in North Sumatera

Year	2017	2018	2019	2020	2021
Mean	33.899	40.553	33.595	39.700	73.001
Maksimum	199.321	216.767	149.951	217.185	330.440
Minimum	10.179	12.818	10.247	12.059	21.050

Sumber: BPS, 2023 (data processed)

#### Results of Data Processing - Hypothesis Testing

Hypothesis testing was conducted to validate the hypotheses and was generated using the Fixed Effect Model (FEM). The results of the hypothesis testing can be observed in the table below:

**Table 5.** Fixed Effect Model Result Data

Dependent Variable: Y  
 Method: Panel Least Squares  
 Date: 06/16/23 Time: 15:35  
 Sample: 2017 2021  
 Periods included: 5  
 Cross-sections included: 33  
 Total panel (balanced) observations: 165

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.31927	1.298848	11.02460	0.0000

X1	4.60E-05	3.29E-06	14.00431	0.0000
X2	-1.27E-05	1.44E-06	-8.794398	0.0000
X3	-7.61E-06	3.19E-06	-2.387820	0.0184
X4	-1.18E-05	4.30E-06	-2.738992	0.0070

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.972575	Mean dependent var	11.88703
Adjusted R-squared	0.964861	S.D. dependent var	7.966082
S.E. of regression	1.493264	Akaike info criterion	3.834375
Sum squared resid	285.4191	Schwarz criterion	4.530860
Log likelihood	-279.3359	Hannan-Quinn criter.	4.117103
F-statistic	126.0901	Durbin-Watson stat	2.571410
Prob(F-statistic)	0.000000		

Sumber: Output EViews, 2023 (data diolah)

The interpretation of the results indicates the following:

1. **R-squared:** The value of 0.972575 suggests a high capacity of the independent variables (PAD, DAU, DAK, and DBH) to explain changes in the dependent variable (local financial independence). Approximately 97.26% of the changes in financial independence can be explained by the independent variables used.
2. **Constant (C):** The value of C at 14.31927 indicates that local financial independence will persist even if the independent variables do not change. About 14.32% of local financial independence is constant.
3. **Coefficient X1 (PAD):** The positive value (0.000046) indicates that Regional Original Income (PAD) has a positive and significant impact on financial independence in North Sumatra Province. For every increase in PAD by 1 million Rupiah, financial independence increases by 0.000046%.
4. **Coefficient X2 (DAU):** The negative value (-0.0000127) indicates that General Allocation Fund (DAU) has a negative and significant impact on financial independence in North Sumatra Province. For every increase in DAU by 1 million Rupiah, financial independence decreases by 0.0000127%.
5. **Coefficient X3 (DAK):** The negative value (-0.00000761) indicates that Special Allocation Fund (DAK) has a negative and significant impact on financial independence in North Sumatra Province. For every increase in DAK by 1 million Rupiah, financial independence decreases by 0.00000761%.
6. **Coefficient X4 (DBH):** The negative value (-0.0000118) indicates that Revenue Sharing Fund (DBH) has a negative and significant impact on financial independence in North Sumatra Province. The hypothesis stating that DBH has a positive and significant effect is rejected.

Based on the results of the hypothesis test, it can be concluded that the equation model for the variables used in the study is:

$$KKD = 14,31927 + 0,000046PAD_{it} - 0,0000127DAU_{it} - 0,00000761DAK_{it} - 0,0000118 DBH_{it}$$

#### **Impact of Local Own-source Revenue (PAD) on Regional Financial Independence of Districts/Cities in North Sumatra Province**

The research results indicate a positive and significant relationship between Local Own-source Revenue (PAD) and the regional financial independence. This finding is consistent with previous studies, indicating that an increased proportion of PAD in regional revenue leads to an improvement in financial independence. However, the research highlights a decline in PAD in 2020, triggered by the COVID-19 pandemic and Large-Scale Social Restrictions (PSBB) policies. Deli Serdang District and Medan City achieved high levels of financial independence in 2021, while most districts/cities still maintained low levels of financial independence.

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#### **Impact of General Allocation Fund (DAU) on Regional Financial Independence of Districts/Cities in North Sumatra Province**

The General Allocation Fund (DAU) has a negative and significant impact on regional financial independence. This aligns with previous findings, indicating that a reduction in DAU can increase the level of financial independence. However, a decrease in DAU can also create fiscal gaps and present new challenges. The increase in financial independence in 2020 and 2021 was due to the reduction in DAU disbursement related to relaxations during the pandemic.

#### **Impact of Special Allocation Fund (DAK) on Regional Financial Independence of Districts/Cities in North Sumatra Province**

The study found that the Special Allocation Fund (DAK) has a negative and significant impact on regional financial independence. The reduction in DAK can increase the level of financial independence, although its impact is smaller compared to the General Allocation Fund (DAU). This result is consistent with the findings of some previous studies, but there are exceptions showing a positive impact of DAK on the financial independence of the region.

## **Impact of Revenue Sharing Fund (DBH) on Regional Financial Independence of Districts/Cities in North Sumatra Province**

The research results indicate that the Revenue Sharing Fund (DBH) has a negative and significant impact on regional financial independence. DBH, which should support producing regions, actually acts as a divider of Local Own-source Revenue (PAD), reducing financial independence. Although DBH has a small portion in transfer funds, its role is crucial in redistributing income from producing regions to non-producing regions.

## **Role of PAD and Transfer Funds in Regional and Rural Development Planning in North Sumatra Province**

Regional development planning programs require significant resources to be successful. These resources involve aspects of planning, implementation, and evaluation, including human resources, equipment, and capital to support the operationalization of these programs. Regional development goes beyond physical aspects and also includes community empowerment and improved public services, all of which require financial support.

The importance of capital resources, especially in terms of financing, is evident in the dependence on the Regional Revenue and Expenditure Budget (APBD) in accordance with Laws No. 32 of 2004 and No. 33 of 2004 regarding Regional Government and the Financial Balance between the Central Government and Regional Governments. Financial sources involve Local Own-source Revenue (PAD), transfer funds, and government assistance, all of which form the foundation for the implementation of regional development.

## **CONCLUSION**

This research concludes that Local Own-source Revenue (PAD) has a positive and significant impact on the financial independence of regions in North Sumatra Province. This implies that an increase in Local Own-source Revenue directly supports the level of regional financial independence. Conversely, the General Allocation Fund (DAU) shows a negative and significant impact, indicating dependence on central government assistance through DAU that can reduce regional financial independence. Special Allocation Fund (DAK) and Revenue Sharing Fund (DBH) also have significant negative impacts, although the impact of DAK tends to be smaller than other variables. The importance of Regional and Rural Development Planning in North Sumatra Province is acknowledged, with Local Own-source Revenue and transfer funds playing a crucial role as capital resources. Therefore, it is recommended to increase Local Own-source Revenue by focusing on leading sectors, encouraging active participation of businesses in tax payments, improving public services, and streamlining bureaucracy. The implementation of these recommendations is expected to optimize regional financial independence and support sustainable regional development. Periodic evaluations are necessary to ensure the effectiveness of the improvement measures taken.

## REFERENCES

- [1] Rauf Alauddin Said, "Division of the Central Government and the Regional Government Authority in the Autonomy Based on the Constitution 1945," *Fiat Justisia Jurnal Ilmu Hukum*, vol. 9, no. 4, 2015.
- [2] R. Nuradhawati, "Dinamika Sentralisasi dan Desentralisasi di Indonesia," 2019.
- [3] R. Satiadi, "Fiscal Decentralization In Bandung (The Study Of Tax Collection Bphtb In The City Government Of Bandung)," *Jurnal Transformasi Administrasi*, vol. 11, no. 2, 2021.
- [4] D. Jenderal, P. Provinsi, and S. Utara, *Kementerian Keuangan*, vol. Semester I. 2020.
- [5] N. Kustianingsih and M. dan Abdul Kahar, "Pengaruh Pendapatan Asli Daerah (Pad), Dana Alokasi Umum (Dau), Dana Alokasi Khusus (Dak) Terhadap Tingkat Kemandirian Daerah Pada Pemerintah Daerah Kabupaten Kota Di Provinsi Sulawesi Tengah.," *Untad Jurnal*, vol. 6, no. 6, pp. 82–91, 2018.
- [6] A. Tjahjono and R. Oktavianti, "Pengaruh Rasio Efektivitas Pendapatan Asli Daerah, Dana Alokasi Umum Dan Dana Alokasi Khusus Terhadap Tingkat Kemandirian Keuangan Daerah Di Provinsi Diy," *Journal Kajian Bisnis*, vol. 24, no. 1, pp. 25–34, 2016.
- [7] R. W. Siringo, "Pengaruh Pertumbuhan ekonomi, pendapatan asli daerah, dana alokasi umum dan dana bagi hasil terhadap kemandirian keuangan daerah pemerintahan Kabupaten kota di Provinsi Sumatera utara," *Ekopem, Jurnal Ekonomi Pembangunan*, vol. 4, no. 4, pp. 200–213, 2022.
- [8] A. Musfirati and H. Sugiyanti, "Pengaruh Dana Alokasi Umum, Dana Alokasi Khusus, Dana Bagi Hasil, Dan Dana Keistimewaan Terhadap Tingkat Kemandirian Keuangan Daerah," *Jurnal PKN STAN*, vol. 5, no. 1, 2021.
- [9] Fitriyani, E. N., & Suwarno, A. E, "Pengaruh PAD, DAU, Belanja Modal, Belanja Pegawai Terhadap Tingkat Kemandirian Keuangan Daerah. *Seminar Nasional Akuntansi*", 1(1), 2021.
- [10] Lestari, Anita, Nasrullah and Abdullah, "Pengaruh dana Alokasi Umum (DAU) dan Pendapatan Asli Daerah (PAD) Terhadap Belanja Modal dan Kemandirian Keuangan Daerah Provinsi Sulawesi Tenggara," *Jurnal Progres Ekonomi Pembangunan*, 1(2). 44-55, 2016.
- [11] Halim, Abdul and Kusufi, "Akuntansi Keuangan Daerah-Akuntansi Sektor Publik," *Salemba Empat*, 2014.
- [12] Patarai and M Idris, "Kinerja Keuangan Daerah", *Makasar: De La Macca*," 2017.