| **RESEARCH ARTICLE**

Forecasting North Kalimantan Provincial Budget for Infrastructures Analysis through Economic Recovering Program

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| **ABSTRACT**

The provincial budget for infrastructure tends to decrease because of the COVID-19 pandemic in 2020, which leads to the infrastructure provincial government's concerns in forecasting the budget, especially in distributing its budget to infrastructure priority programs such as bridge, road and public need building. This research aims to forecast the budget of North Kalimantan Infrastructures through its economic recovery program from 2023 to 2030 using the least square and index number method. The study found that North Kalimantan Infrastructures' budget forecasting slightly fluctuates to cover its economic recovery program. It is also predicted that the highest increase in budget will be experienced in 2023 because early this year, North Kalimantan launched its national strategic program, KIHI or Indonesia Industrial Green Environment.

1. Introduction

North Kalimantan Province is one of the provinces in Indonesia located in the border zone between Indonesia and Malaysia. It was formally announced as a new local government in 2012. North Kalimantan consists of 1 district, Tarakan District and 4 regencies, namely Nunukan, Malinau, Bulungan and Tana Tidung. It is occupied by less than 1 million people who live separately in this district and region and use potential natural resources such as coal, oil, and gas mining, as well as fishery and trading fields.

North Kalimantan is the youngest government; hence, it needs more attention from all levels of government, especially North Kalimantan Provincial government itself, particularly in terms of infrastructure needs. The provincial government of North Kalimantan needs to be focused on developing all infrastructures; in this case, the priority of infrastructures are not only the road and bridge but also the public need buildings. The main barrier to developing those infrastructures is the limited budget from the government, not only from the provincial government but also from the central government of Indonesia.

Regarding North Kalimantn's budget, it is indicated that it tends to increase slightly year by year. Because the increase in budget is not significant, the government should be more focused on distributing its budget for each sector, and the government should emphasise education, health and infrastructure as the main development priorities.

As a new provincial government, North Kalimantan is supposed to get more budget allocation from the central government. Unfortunately, the budget allocation is a relatively small amount, only about Rp 2,9 trillion in 2023. Unfortunately, it will be followed by a small amount of infrastructure.

The main aims of this research are to forecast and analyze the prospect of the North Kalimantan Infrastructures Budget in the economic recovery program from 2018 until 2030. It is expected that by optimizing all of the resources, the North Kalimantan budget could be greater than the existing budget.

2. Literature Review
2.1 Government Budget
A government budget is a document that presents a governing body's anticipated revenues and proposed spending for a fiscal year. Government budgets often require legislative approval and are subject to political pressure from interest groups that compete for resources.

Wang found that budget information was negatively associated with budget satisfaction but positively related to perceived public service performance through increased citizen trust (Wang & Niu, 2020), while Berrito argued that there is a positive relationship between national government fiscal balance and budget transparency: The more information the budget discloses, the less the politicians can use fiscal deficits to achieve opportunistic goals. (Benito & Bastida, 2009)

2.2 Performance Based Budgeting (PBB)
There are some definitions of the concept of Performance based Budgeting (PBB). Referring to GA(1999) in Sofyan, PBB was defined as the concept that connected information and budgeting. Technically, this concept is implemented by relating the funds allocated with the measurable results Sofyani, (2018), while according to Ahyaruddin and Akbar, budgeting itself was believed to be able to improve the quality of budget absorption, and it stimulated the use of performance information within each stage of budgeting (Sofyani, 2018)

2.3 Estimating and Functioning of Budget
Tzenios noted the budget needs to use the proposed program on domestic violence and must address all needs and meet social outcomes to undergo substantial improvements.(Tzenios, FRSPH, & FWAMS, 2022). Similarly, Chugunov argued that developing budgetary projection approaches in the context of improving fiscal policy efficiency is an important precondition for ensuring macroeconomic stability (Chugunov & Makohon, 2020).

Based on the estimating budget method, Markus Arnold argued that using a single budget level for both purposes at the beginning of the year does not imply using a single budget level at the end of the year, as firms often adjust budgets differently for planning and performance evaluation. (Arnold & Artz, 2019)

2.4 Relationship between Budget and Economic Recovery Program
A surplus or balanced budget could have positive effects on economic performance; Nyathi revealed that the estimated results revealed a negative and significant relationship between budget deficit and economic performance in Zimbabwe (Nyathi & Chivasa, 2021). It is also supported by Florin Oprea that the empirical evidence suggests a positive and significant relationship between some indicators of local budgets and our computed Regional Development Index (Oprea, Onofrei, Paraschiv, & Cojocariu, 2022).

3. Methodology
3.1 Type of Research
This research is quantitative because all of the data analyzed are quantitative data from the actual budget from 2018 until 2022.

3.2 Research Location
The location of this research is in the North Kalimantan, or North Kalimantan Capital City, Tanjung Selor.

3.3 Unit Analysis
The unit analysis in this research is the North Kalimantan Statistic Bureau in the case of the North Kalimantan Provincial Infrastructures Budget from 2018 to 2022.

3.4 Analysis Instruments
For forecasting the budget, the least square analysis can be used, such as:
   $$Y = a + bX + e$$
Whereas;
Y = Actual Budget
X = time function
e = error

Other instruments analysis is the average marginal increase of actual budget as the marginal multiplier for forecasting the next year's budget, while multiplier of increasing budget such as:

Multiplier = (n year budget – (n-1 year budget)/ (n-1 year budget)

4. Results and Discussion
4.1 Actual Budget
For the infrastructure income budget, the actual budget can be displayed as follows:

Table 4.1 Income Budget and Realization

Year	Income	
	Target (Rp)	**Realization (Rp)**
2018	918,520,787,189.70	550,132,913,353.00
2019	444,262,524,881.50	417,460,476,474.98
2020	457,101,424,879.47	432,274,931,115.12
2021	302,322,209,151.00	281,789,788,347.39
2022	410,967,565,927.00	346,660,239,151.00

Source: Statistic Beareau, 2023

Based on Table 4.1, it is indicated that the target budget and realization increased from 2018 to 2019; unfortunately, from 2020 to 2022, they decreased.

Annual spending plans tend to decrease, considering that most of the needs for road and bridge infrastructure were largely built in the early years of the establishment of the province of North Kalimantan, so budget plans for these purposes tend to decrease. For the planned budget for the Department of Public Works and Public Housing in 2019, there was a significant decrease of 28.12 percent. Likewise, in the following years, it decreased by 12.13 percent and 48.51 percent in 2020 and 2021, respectively. However, in 2022 because there is a continuation of the national economic recovery program and the North Kalimantan provincial economic recovery program so that in, 2022 there has been a decline in funding plans, but only by 920 percent. Annual spending tends to decline, considering that most of the road and bridge infrastructure needs were built in the early years of the establishment of the province of North Kalimantan, so budget plans for these purposes tend to decrease. For the PUPR Department's budget plan for 2019, there was a significant decrease of 28.12 percent. Likewise, in the following years, it decreased by 12.13 percent and 48.51 percent in 2020 and 2021, respectively. However, in 2022, because there is a continuation of the national economic recovery program and the North Kalimantan provincial economic recovery program 2022, there was a reduction in financing plans, but only by 920 percent.

For Infrastructures Spending Budget, the actual data can be broken down as follows:

Table 4.2 Spending Budget and Realization

Year	Spending	
	Target (Rp)	**Realization (Rp)**
2018	238,702,103,000.00	234,037,030,804.00
2019	171,568,721,666.50	164,301,076,460.10
2020	150,765,755,500.00	149,567,875,099.00
2021	77,629,518,812.00	75,957,387,300.00
2022	70,483,945,300.00	66,765,051,661.00

Source: Statistic Beareau, 2023

Seen from the realization of expenditure, as well as the planned expenditure budget, which tends to decrease, this is also followed by the realization of expenditure. In 2019 and 2020, there was a decrease in realization, namely 29.80 percent for 2019 and 8.97 percent. Considering that in 2021 there will be an economic recovery due to the pandemic, the realization of spending on road and bridge infrastructure will be reduced to be diverted to handling the impact of Covid-19, resulting in a drastic decline in the realization of spending, namely decreasing by 49.22 percent. In the following year, namely 2022, there will still be a decline, but it is not significant, namely only around 12.10 percent

4.2 Forecasting Budget

Based on Table 4.1, the forecasting can be done by using the leas square method as follows :

Table 4.3 Estimating Income Budget and Realization

Year	Income	
	Target (Rp)	Realization (Rp)
2023	521,154,804,313.93	439,421,306,038.15
2024	524,392,172,097.16	449,353,682,973.92
2025	527,629,539,880.40	459,286,059,909.69
2026	530,866,907,663.63	469,218,436,845.46
2027	534,104,275,446.86	479,150,813,781.23
2028	537,341,643,230.09	489,083,190,717.00
2029	540,579,011,013.32	499,015,567,652.77
2030	543,816,378,796.55	508,947,944,588.54

Source: Statistic Beareau, 2023 processed

In 2021, National Economic Recovery and Provincial Economic Recovery will begin; the provincial government is also directly involved in the economic recovery by providing assistance to local entrepreneurs, especially MSMEs and providing various forms of convenience for domestic and foreign investment, including providing various coaching and training for communities affected by Covid-19 so that the results were felt to be quite effective and in that year there was an increase in the infrastructures provincial budget, although not significant.

The planned revenue budget for 2023 is predicted to increase sharply in 2023, considering that 2023 is the last year that economic development will be carried out by every government considering that 2024 is a political year, so it is estimated that in 2023, there will be construction of road and bridge infrastructure to facilitate activities for the 2024 political year. It is predicted that there will be an increase in the spending budget of approximately 79 percent this year. In subsequent years, the planned spending budget is expected to tend to decrease, but not significantly, ranging from around 3 to 4 percent.

Judging from the realization of income, as well as the planned expenditure budget, which tends to decrease, this is also followed by the realization of expenditure. In 2019 and 2020, there was a decrease in realization, namely 29.80 percent for 2019 and 8.97 percent. Considering that in 2021 there will be an economic recovery due to the pandemic, the realization of spending on road and bridge infrastructure will be reduced to be diverted to handling the impact of Covid-19, resulting in a drastic decline in the realization of spending, namely decreasing by 49.22 percent. In the following year, namely 2022, there will still be a decline, but it is not significant, namely only around 12.10 percent. Realized spending is predicted to increase sharply in 2023, considering the importance of building road and bridge infrastructure to support and expedite all programs in the 2024 political year, so it is predicted that there will be an increase of 83.57 percent. However, it is predicted that in the following years, there will be an insignificant decline, namely around 3 to 4 percent, until 2030.

This is because, in North Kalimantan, there is a National Strategic Project (PSN), especially the construction of the Indonesian Green Industrial Zone (KIHI) with various forms of accompanying investment, such as the construction of a Petrochemical Factory, PLTA and PLTU, construction of a Petrochemical Factory, Lithium Battery Factory and so on, which will have an impact directly on the realization of North Kalimantan's revenue budget.

Based on Table 4.2, the estimating of spending budget can be done as follows:

Table 4.4 Estimating Spending Budget and Realization

Year	Income	
	Target (Rp)	**Realization (Rp)**
2023	126,195,673,655.73	122,557,428,738.92
2024	121,881,266,363.52	118,367,406,617.33
2025	117,566,859,071.31	114,177,384,495.75
2026	113,252,451,779.10	109,987,362,374.16
2027	108,938,044,486.89	105,797,340,252.58
2028	104,623,637,194.68	101,607,318,131.00
2029	100,309,229,902.47	97,417,296,009.41
2030	95,994,822,610.26	93,227,273,887.82

Source: Statistic Beareau, 2023 processed

Based on estimates using least squares, in the following years, it is predicted that there will be a decrease in spending plans, although not significant, which is more due to the conformity between income plans, which are predicted to increase significantly until 2030. This is predicted to continue to be consistent throughout the period from 2023 to 2030, which is around 97.12 percent each year, which is more due to the performance of budget absorption being quite good, and the readiness of the program with its supporting factors and the suitability of the budget that has been determined with internal capabilities both technically or non-technical adequate. This is also supported by timing know how or now is the time to carry out infrastructure development in North Kalimantan because there is still a great need for infrastructure in the form of roads and bridges, both in the capital city of North Kalimantan and other areas, city districts in North Kalimantan.

5. Conclusion

Finally, from 2018 to 2022, North Kalimantan's infrastructure budget showed a decline in revenue and expenditure. But, due to the expected economic recovery and increased political activity in 2024, there are hopeful projections for an increase in income and expenditure in the future years, especially in 2023. Although expenditure plans have decreased, it is important to note that this fall is not considered substantial. This is mainly because the spending plans are aligned with the income plans, which are expected to expand significantly until 2030. This fiscal strategy is smart and durable since it is balanced and demonstrates a strategic approach to managing finances.

A combination of a predicted economic recovery and a boom in political activity in 2024 supports the upward trend in income and expenditure projections for the years ahead. All things considered, these are going to put a spring into the region's economy, which might mean more money coming in and more infrastructure getting built. The predicted rise in spending is further underscored by the critical need for infrastructure development in North Kalimantan. The region's efforts to fill significant infrastructure gaps and strengthen its development are anticipated to be driven by this requirement, which is expected to lead to a continued rise in infrastructure spending.

All things considered, the results are encouraging for North Kalimantan's infrastructure budget. The region's budgetary prospects are looking good due to the alignment of income and spending plans, as well as the projected economic rebound and political actions. To make sure that the anticipated increase in spending goes towards North Kalimantan's infrastructure needs, stakeholders and lawmakers must be careful and proactive with the budget. For the sake of the region's economy and long-term sustainability, this will be pivotal.

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