Government Spending by Function and Economic Growth in Maluku Utara: I-O Table and Panel Data Regression Analysis

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Abstract

The government has a contribution to ensuring the stability of economic growth. The existence of regional autonomy and fiscal decentralization gives the authority to develop their regions independently by utilizing their potential. In 2020, Maluku Utara's economic growth grew by 4.92 percent, the value tends to be stable, but the contribution to the national economy is very slight. From a fiscal perspective, a component that determines the economic direction is government spending. However, Maluku Utara's government spending tends to be weak and fluctuating. The condition indicates that the relationship between government spending and economic growth is inconsistent. Several objectives were set to provide an overview of the economic structure, analyze the impact of government spending on the output and value-added of the economic sector, and identify government spending by the function that affects economic growth in Maluku Utara. This study uses the I-O table impact analysis and panel data regression analysis. Based on the impact analysis of the I-O table, capital spending has the most output impact and added value in the construction sector. Meanwhile, government consumption and total government spending impact the Government Administration sectors most. Then, from the panel data regression analysis results, three variables have a significant influence, namely spending by function on economics, education, and health. However, there is an anomaly in the government spending on the economy with a negative effect of 0.003190. That indicates the items allocated to government spending by function on economics in Maluku Utara are ineffective.

Keywords: Maluku Utara; government spending; panel data analysis.

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I. Introduction

1.1. Background of problems

Economic stability has a substantial role in providing certainty for business actors and the welfare of society. A stable economy in a region is characterized by the number of quality economic growth while maintaining the independence of the economy. One indicator used to measure economic growth at the regional level is the rate of Gross Domestic Regional Product (GDRP).

The government has a contribution to ensure the stability of the economic growth in the region. One of the variables that can be controlled to maintain stable economic growth is government spending at both the central and regional levels, which is one component of fiscal policy to encourage economic growth. In addition, building a stable and growing economy can be done by mobilizing economic potential that covers all aspects of people's lives effectively and efficiently.

The existence of regional autonomy and fiscal decentralization gives power to every regency in Indonesia until the low level to develop their regions independently by making the most of their regional potential. Regencies with low regional original income will receive an abundance of balancing funds as regulated in Law Number 33 of 2004 concerning the financial balance between the central and county governments.
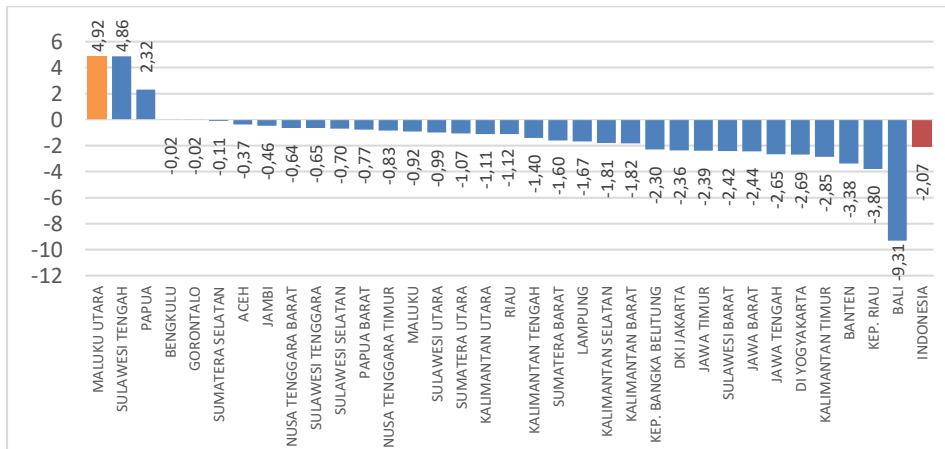

Figure 1. Economic Growth by Province in Indonesia, 2020 (percent)

Source: Badan Pusat Statistik

Every year, the central and regional governments constantly attempt to encourage economic growth in each region to create prosperity for the community. The year 2020 is a tough year to be faced by most regions in Indonesia, especially areas whose economies are supported by the tourism and trade sectors as the leading sectors. Restrictions on public activities and the closure of mobility due to the Covid-19 pandemic limit the movement of the government at the central and regional levels to develop the economy. Based on Figure 1, as many as 31 (thirty-one) of 34 (thirty-four) provinces in Indonesia experienced negative economic growth. Even the national economic growth fell by 2.07 percent. Three regions were able to maintain positive regional economic growth although not better than the previous year, namely Maluku Utara at 4.92 percent, Sulawesi Tengah at 4.86 percent, and Papua at 2.32 percent. All three are areas located in the eastern part of Indonesia.
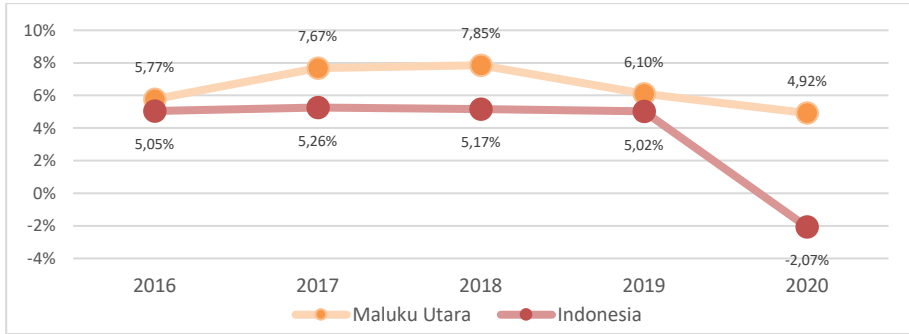
Figure 2. Economic Growth of Maluku Utara and Indonesia, 2016-2020 (percent)

Source*: Badan Pusat Statistik*

As the province with the highest economic growth in 2020, Maluku Utara is an archipelago in the northeastern part of Indonesia. In the last 5 (five) years, Maluku Utara's economic growth has consistently been above 5 percent, respectively at 5.77 percent (2016), 7.67 percent (2017), 7.85 percent (2018), 6.10 percent (2019), and 4.92 percent (2020). From 2016 to one year before the pandemic of Covid-19 (2019), the value of Maluku Utara's economic growth was always higher than the national economic growth which had an average economic growth of 5.13 percent. Even in 2020, the gap between Maluku Utara's economic growth and national economic growth is getting bigger, reaching 6.99 percent. That indicates that the economy in Maluku Utara tends to be stable.

Although the economy in Maluku Utara tends to be stable and growing, its contribution to the national economy is still minor at 0.27 percent or the second-lowest out of a total of 34 provinces. This condition has attracted the attention of researchers. What sectors that encourage economic growth in North Maluku tend to be stable and grow.
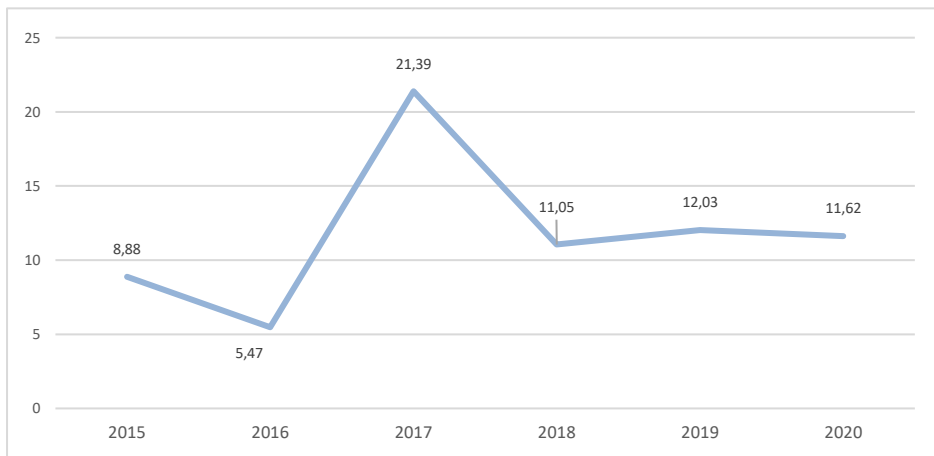

Figure 3. Government Spending in Maluku Utara, 2015-2020 (percent)

Source*: Directorate General of Fiscal Balance, Ministry of Finance (processed)*

If viewed from the fiscal side, the local government spending (provincial and regency/municipality) of Maluku Utara ranks the 5th (five) lowest with 11.62 trillion rupiahs in 2020. Since 2015, the amount of regional spending in Maluku Utara has fluctuated, different from economic growth, which tends to be stable. The condition shows that the relationship between government spending and economic growth is not aligned.

1.2. The problems

In law number 32 of 2004, government spending is prioritized to improve the people's quality of life through improvements in the health sector, education, public facilities, public services, and the development of social security. Based on the classification of functions, government spending is divided into public service functions; order and security; economy; environment; housing and public facilities; health; tourism and culture; education; and social protection.

From 2015 to 2020, the average percentage of government spending on consumption and gross fixed capital formation (GFCF) to GRDP in Maluku Utara was 30.78 percent and 36.07 percent, respectively. That condition means that more than 50 percent of the Maluku Utara economy in terms of spending is used for government consumption and GFCF.

Based on data from the Ministry of Finance, during the last six years, the average government spending of Maluku Utara was dominated by public service functions by 37.92 percent, education by 20.03 percent, housing and public facilities by 16.05 percent, health by 13.24 percent, and the remaining under 5 percent for other functions. The average amount of spending allocated for public services is most allocated for salary payments, access to services/licenses, ease of information, and operating expenses for daily office needs. According to research from Saidah (2011), spending on public service functions has a negative influence on economic growth because of its unproductive nature.
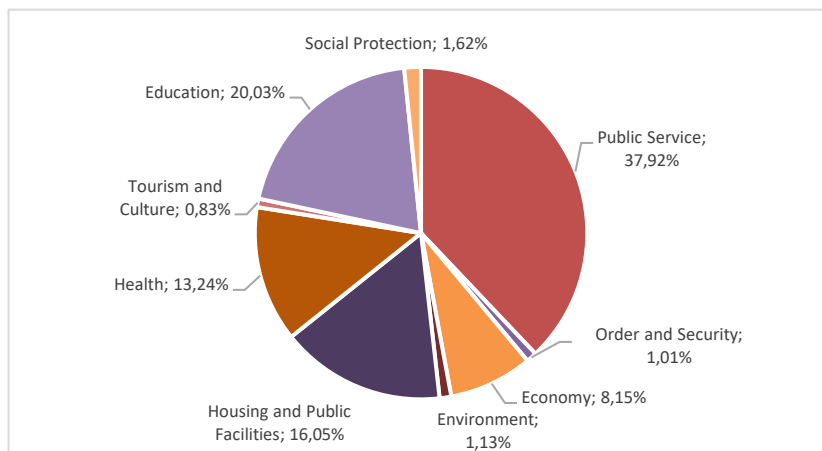

Figure 4. Average Distribution of Government Spending by Function in Maluku Utara, 2015-2020 (percent)

Source: Directorate General of Fiscal Balance, Ministry of Finance (processed)

Based on the explanation above, there are several questions related to economic conditions and local government spending in Maluku Utara that will be answered in this study:

1. What is the general description of Maluku Utara's economic structure?
2. What is the impact of government spending (consumption and capital expenditure) on the output and value-added of the economic sector in Maluku Utara?
3. Government spending by what function affects the economic growth of Maluku Utara?

To answer the question above, several objectives were set in this study. They are to provide an overview of the economic structure of Maluku Utara; analyze the impact of government spending on the output and value-added of the sector economy in Maluku

Utara; identify government spending by the function that affects economic growth in Maluku Utara.

1.3. Logical Framework

In this study, to see the impact of government spending on the economic growth of Maluku Utara using the Input-Output Table analysis. Meanwhile, to allow this function of government spending aimed at Maluku Utara economic growth using a panel regression analysis.
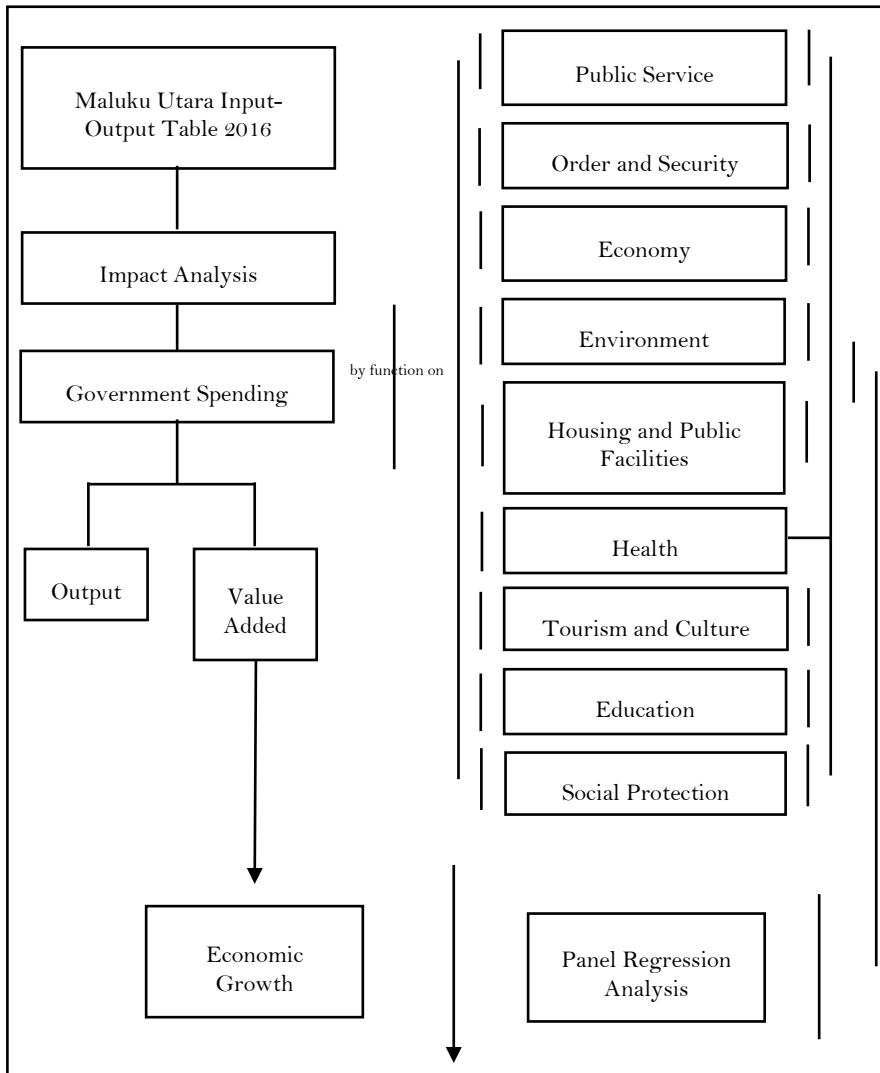

Figure 5. Research Logical Framework

II. Methodology

2.1. Theoretical Basis

The classical Keynesian theory in Sukirno (2006) explains that economic growth can run optimally influenced by government intervention. The government's role in managing the economy through monetary policy (interest rates and money supply) and fiscal policy (taxes and government spending) can ensure stability in economic growth.

According to Mangkoesoebroto (2002), there are three classifications of the government's role in its intervention in the economy, namely, allocation role, the role of distribution, and the role of stability. The allocation role means that the government needs to allocate goods and services that the market cannot provide. The distribution role means that the government can regulate the distribution of income and expenditure according to needs. The stability role means that the government makes an effort to maintain economic stability by making various regulations.

2.2. Method of Collecting Data

The data used in this research is secondary data. To carry out an impact analysis using the 2016 Maluku Utara Input-Output Table obtained from the publications of the Statistics Office (BPS) of Maluku Utara Province. In addition, to analyze panel data with a time series of 2015 to 2020 using GDRP Constant Rate data published by BPS and the data of government spending by function (Public Service; Order and Security; Economy; Environment; Housing and Public Facilities; Health; Tourism and Culture; Education; Social Protection) sourced from the Directorate General of Fiscal Balance, Ministry of Finance.

2.3. Analysis Method

Three analyzes will be used in this research. The first one is a descriptive analysis that will provide a general description of economic structure and government spending in Maluku Utara in 2015-2020. The second is an analysis of the impact of the Input-Output Table that will provide an overview of the government spending impact on the output of the economic sector and the added-value of the sector economy in Maluku Utara. The third is inferential analysis in the form of panel data regression analysis to determine the function of government spending that affects economic growth in Maluku Utara 2015-2020.

In the Input-Output model, output and final demand have a reciprocal relationship. The amount of output produced depends on the amount of final demand. The output formed due to the impact of final demand in the I-O model of domestic transactions can be calculated using the following formula.

$$X_{FD} = (I - A^d)^{-1} F^d \tag{1}$$

X_{FD} = Output formed due to the impact of final demand F^d

$(I - A^d)^{-1}$ = The multiplier matrix obtained from the inverse of the identity matrix is reduced by the domestic input coefficient matrix

F^d = Final demand component

Gross Value Added (GVA) is the primary input with a linear relationship with the output. It means that an increase or output decrease will be followed proportionally by an increase or decrease in GVA. The relationship can be described by the following equation.

$$V = [v_1 \ldots 0 \ldots 0 \vdots 0 \vdots 0 \quad \vdots \ldots v_i \quad \vdots$$
$$\ldots 0 \quad \ldots \ldots \quad \vdots 0 \vdots v_n \ ] X_{FD} \tag{2}$$

V = GVA matrix

$v_i = \dfrac{GVA\ sector_i}{Output\ sector_i}$

Inferential analysis in the form of panel data regression analysis was carried out using 6 (six) time series, namely 2015-2020 and 10 individuals representing all regencies/municipalities in Maluku Utara (Ternate Municipality, Kepulauan Tidore Municipality, Halmahera Barat Regency, Halmahera Tengah Regency, Halmahera Timur Regency, Halmahera Selatan Regency, Halmahera Utara Regency, Pulau Morotai Regency, Kepulauan Sula Regency, and Pulau Taliabu Regency) The following model will be tested to obtain the best panel data regression model:

a. *Common Effect Model* (CEM)

$$lnY_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + \beta_7 X_{7it} \qquad (3)$$
$$+ \beta_8 X_{8it} + \beta_9 X_{9it} + u_{it}$$

b. *Fixed Effect Model* (FEM)

$$lnY_{it} = (\alpha + \mu_{it}) + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} \qquad (4)$$
$$+ \beta_7 X_{7it} + \beta_8 X_{8it} + \beta_9 X_{9it} + v_{it}$$

c. *Random Effect Model* (REM).

$$lnY_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + \beta_7 X_{7it} \qquad (5)$$
$$+ \beta_8 X_{8it} + \beta_9 X_{9it} + (\mu_{it} + v_{it})$$

Explanation:

Y_{it}	: dependent variable from the i-th individual in the t-period
α	: intercept
$\beta_1, \ldots, \beta_6$	: regression parameter for 1st, 2nd, ..., 9th variable
$X_{1it}, \ldots, X_{6it}$	: independent variable 1st to 6th from i-th individual in t-period
i	: individual (1, 2, ..., N), N=10
t	: time series (1, 2, ..., T) , T=6
u_{it}	: total error
μ_i	: individual effect
v_{it}	: error from i-th individual in t-period

III. Result and Discussions

3.1 Maluku Utara Economy Structure

For the last 6 (six) years from 2015 to 2020, Maluku Utara's economic growth has been constantly above 5 percent. Although the percentage fluctuates, the value remains positive and nominally has increased. In 2020, North Maluku's economy grew 4.92 percent with a GDRP value based on current prices of 42.14 trillion rupiahs. The Maluku Utara economy that continues to grow is supported by five business fields, namely the category A sector (Agriculture, Forestry, Fisheries), the category G sector (Wholesale and Retail Trade, Car and Motorcycle repairs), the category O sector (Government Administration, Defense,

and Social Security Mandatory), category B sector (Mining and Quarrying), and category C sector (Manufacturing Industry).
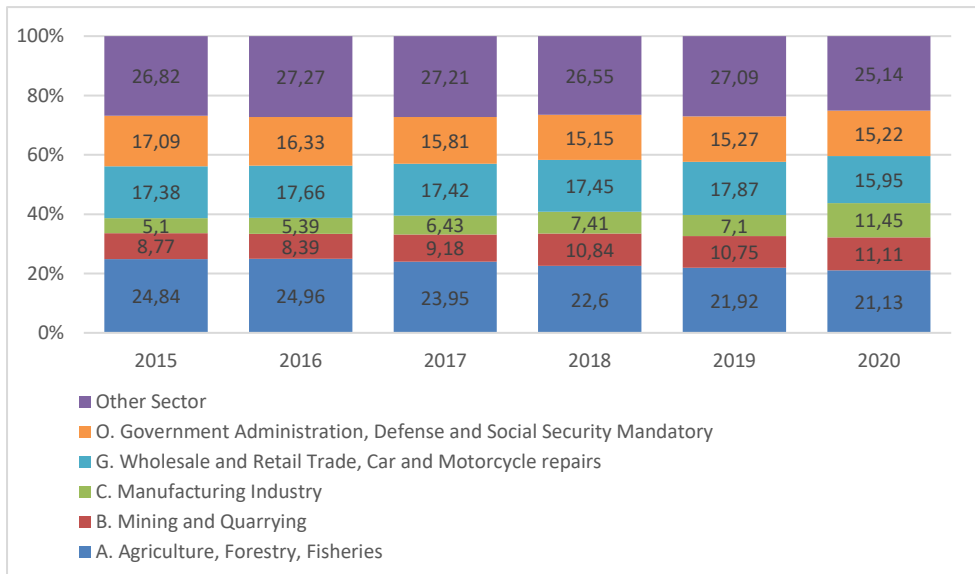

Figure 5. Distribution of GDRP based on current prices by business field in Maluku Utara, 2015-2020 (percent)

Source*: Badan Pusat Statistik*

As an archipelagic area with diverse biological wealth, the agriculture, forestry, and fisheries sector is the sector with the highest contribution to the economy of Maluku Utara by an average ante of more than 20 percent every year. However, the processing industry in Maluku Utara is currently experiencing goodly rapid growth with contribution tends to increase every year from 8.77 percent in 2015 to 11.11 percent in 2020.
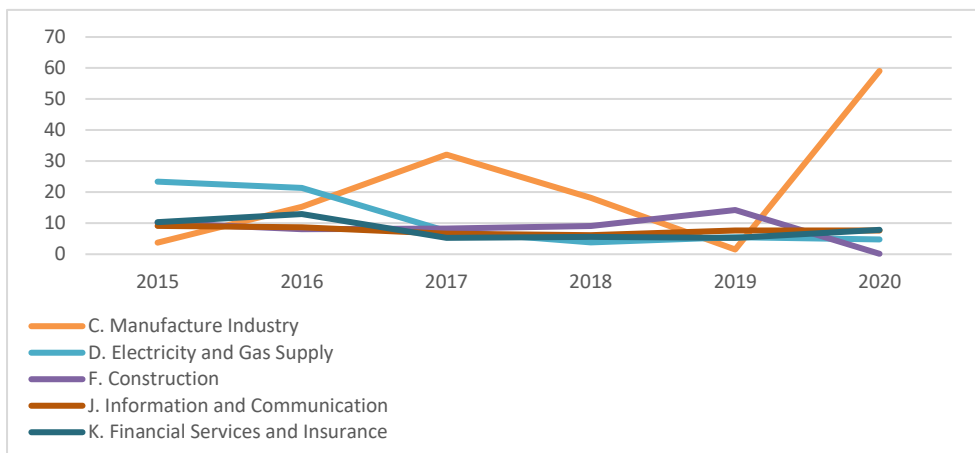

Figure 6. GDRP Growth Rate at constant prices 5 largest business fields in Maluku Utara, 2015-2020 (percent)

Source*: Badan Pusat Statistik*

The manufacturing industry is one of the drivers of economic growth in Maluku Utara, with a growth average during the 2015-2020 period reaching 21.65 percent, the peak of which occurred in 2020, where the growth rate reached 59.07 percent. The rapid growth of the manufacturing sector is driven by the development of the nickel manufacturing industry that spread across the regency of Halmahera Selatan, Halmahera Timur, and Halmahera Tengah. The target of the Indonesian government is to make Indonesia the largest producer of lithium batteries in the world by 2024. The target of making the nickel manufacturing industry in Maluku Utara continue to move and provide a boost to the local economy.
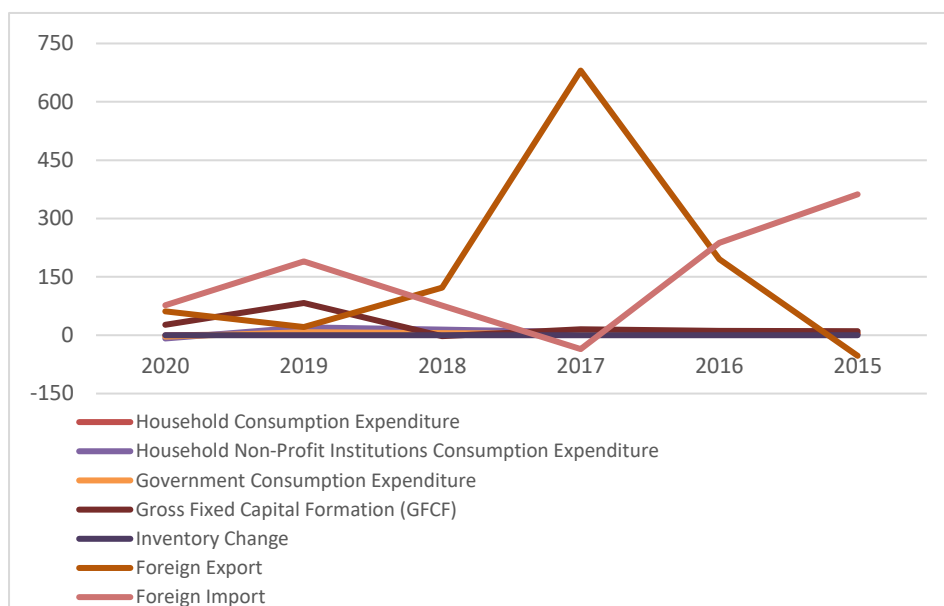

Figure 7. GDRP Growth Rate at constant prices by expenditure in Maluku Utara, 2015-2020 (percent)

Viewed from the government spending side, from 2015 to 2020 household consumption became the highest contributor with an average contribution to Maluku Utara's GDRP of 54.31 percent, followed by GFCF with an average of 40.91 percent, and government consumption expenditure of 36.65 percent. In terms of economic growth, based on Figure 7, the expenditure components that drive Maluku Utara's economic growth are gross fixed capital formation and foreign exports with an average growth rate of 23.88 percent and 171.20 percent, respectively. The development of road infrastructure, nickel smelters, residential, and economic areas around the industry are the driving forces for GCFC.

In terms of foreign exports, input commodities such as lithium batteries, in the form of nickel alloys, are the dominant import commodities besides agricultural commodities (Clove, mace, and others). Foreign export growth had declined in 2019 due to the issuance of regulation number 11 of 2019 from the Minister of Energy and Mineral Resources (ESDM) concerning the ban on exports of ore nickel with a grade of 1.7 percent. The regulation was made to encourage the downstream of the nickel industry into the electric vehicle battery industry to create added value and quality for the Indonesian nickel industry.

3.2 Realization of Maluku Utara Government Spending

Table 1. Government Spending by Function in Maluku Utara,
2015-2020 (trillion rupiahs)

Government Spending by Function	Years					
	2015	2016	2017	2018	2019	2020
Public Service	3.50	1.89	4.20	4.27	4.26	4.49
Order and Security	0.11	0.06	0.10	0.10	0.12	0.11
Economy	0.90	0.48	0.89	0.87	0.94	0.77
Environment	0.12	0.05	0.12	0.11	0.15	0.12
Housing and Public Facilities	1.40	1.03	1.84	1.77	1.97	1.57
Health	1.01	0.68	1.18	1.42	1.77	1.83
Tourism and Culture	0.08	0.04	0.07	0.09	0.12	0.09
Education	1.60	1.03	2.11	2.23	2.52	2.46
Social Protection	0.15	0.08	0.18	0.18	0.18	0.18

During the last 6 (six) years from 2015 to 2020, there were three functions of government spending whose realization value was above 1 trillion rupiahs, namely the function of public service, Housing and public facilities, and education. Every year, spending on public services has the highest value in Maluku Utara, while the tourism and culture function is the component with the lowest spending value.

3.3 The Impact of Government Consumption and Government Capital Spending on Sectors Output and Value Added with Input-Output Table Analysis

In the Table I-O analysis, there are two objectives, first one is to find out the impact of government spending (consumption and capital spending) on the output and GVA of the economic sector in Maluku Utara. The following is a summary table of five sectors of the economy that have the most impact on government spending on the economic growth of Maluku Utara in 2016.

Table 2. Five Sector with The Biggest Impact from Government Consumption (302), Government Capital Spending (303), and The Total of Government Spending on Maluku Utara Economic Sector Output, 2016 (trillion rupiahs)

Rank	Sector	Impact of 302	Sector	Impact of 303	Sector	Total Impact
1	O	6.12	F	6.04	O	6.16
2	P	1.51	A	1.87	F	6.06
3	H	0.94	G	1.41	A	2.04
4	Q	0.69	C	0.95	G	1.74
5	D	0.43	H	0.37	P	1.51
	Others	1.68	Others	0.66	Others	5.17
	Total	11.39	Total	11.30	Total	22.69

Explanation :

Sector A : Agriculture, Forestry, and Fishery   Sector H : Transportation and Warehousing

Sector C : Manufacturing Industry   Sector P : Education Services

Sector D : Electricity and Gas Supply   Sector Q : Health Services and Social Activities

Sector F : Construction   Sector O : Government Administration, Defense
Sector G : Wholesale and Retail Trade; Car and   and Mandatory Social Security
  Motorcycle Repair

The most impact given by the value of government consumption in 2016 on the output value in sectors in Maluku Utara, was felt by the Government Administration, Defense, and Mandatory Social Security sector, which was 6.12 trillion rupiahs. Meanwhile, the impact given by the value of government capital spending on output value in sectors in Maluku Utara was felt by the construction sector, which amounted to 6.04 trillion rupiahs. The total government spending in consumption and capital spending had the most impact on output in the Government Administration, Defense, and Mandatory Social Security sectors of 6.16 trillion rupiahs.

Table 3. Five Sector with The Biggest Impact from Government Consumption (302), Government Capital Spending (303), and The Total of Government Spending on Gross Value Added of Maluku Utara Economic Sector, 2016 (trillion rupiahs)

Rank	Sector	Impact of 302	Sector	Impact of 303	Sector	Total Impact
1	O	3.31	F	2.25	O	3.33
2	P	1.00	A	1.52	F	2.25
3	H	0.40	G	1.03	A	1.66
4	Q	0.36	C	0.38	G	1.27
5	G	0.24	H	0.16	P	1.00
	Others	0.85	Others	0.44	Others	2.43
	Total	6.17	Total	5.78	Total	11.94

Explanation :

Sector A : Agriculture, Forestry, and Fishery   Sector H : Transportation and Warehousing

Sector C : Manufacturing Industry   Sector P : Education Services

Sector F : Construction   Sector Q : Health Services and Social Activities

Sector G : Wholesale and Retail Trade; Car and   Sector O : Government Administration, Defense
  Motorcycle Repair   and Mandatory Social Security

Next is the impact given by the government consumption and government capital spending on the gross value-added of the economic sector in Maluku Utara. Based on table 3, the sector that receives the most Value Added impact is almost the same as the sector that accepts the most Output impact. The construction sector was the largest to receive the value-added impact of Maluku Utara government capital spending in 2016 with 2.25 trillion rupiahs. The Government Administration, Defense, and Mandatory Social Security sectors

are the sectors that receive the most value-added impact from government consumption spending and total government spending, respectively at 3.31 trillion rupiahs and 3.33 trillion rupiahs.

Based on the analysis of the impact of the I-O table on government consumption, government capital spending, and total government spending on the output and value-added of the economic sector in Maluku Utara, the Government Administration, Defense, and Mandatory Social Security sectors are the sectors that are most positively affected. Even though in terms of contribution, this sector is not the most contributor to the economy of Maluku Utara, even in some previous research it is said that the Government Administration, Defense, and Mandatory Social Security sector is not a productive sector that can encourage the economy in a region.

3.4 Government Spending by Function that Affects Economic Growth with Panel Data Regression Analysis

In using panel data regression as an analytical tool, some steps must be passed to get the best model, and then an estimator is obtained that can provide a correct picture of the available data. From all the stages carried out starting from the model selection stage, residual variance-covariance test, and classical assumption test of the selected model, the Fix Effect Model (FEM) - Seemingly Unrelated Regression (SUR) was chosen as the model that was able to provide the best estimator. The following is a summary table of test results using the FEM-SUR estimation method:

Table 4. Model Meaning Criteria

Variable	Coefficient	Std.Error	t-Statistics	Probability
C	7.380466	0.072936	101.1912	0.0000
Public Service (PS)	0.000043	0.000190	0.227164	0.8214
Order and Security(OS)	0.001317	0.004732	0.278444	0.7821
Economy (ECO)	-0.003190	0.000789	-4.042945	0.0002
Environment (ENV)	-0.001249	0.002829	-0.441525	0.6612
Housing and Public Facilities (HPF)	-0.000372	0.000291	-1.276615	0.2089
Health (HLT)	0.001960	0.000266	7.355457	0.0000
Tourism and Culture (TC)	0.003422	0.003468	0.986672	0.3296
Education (EDU)	0.001106	0.000376	2.942523	0.0053
Social Protection (SP)	0.001835	0.001759	1.042817	0.3031
Statistics Summary				
R^2	0.992198	F-Statistics		289.6882
Adjusted R^2	0.988773	P-Value		0.000000

The following are the selected models:

$$ln(\widehat{PDRB})_{it} = (7.380466 + \mu_{it}) + 0.000043PS_{it} + 0.001317OS_{it} - 0.003190ECO^*{}_{it}$$
$$- 0.001249ENV_{it} - 0.000372HPF_{it} + 0.001960HLT^*{}_{it} + 0.003422TC_{it}$$
$$+ 0.001106EDU^*{}_{it} + 0.001835SP_{it} \qquad (6)$$

Explanation: *significant in $\alpha = 5\%$; μ_{it} is the individual effect of the regency/municipality

Based on the processing results presented in table 4, there is at least one independent variable that affects dependent variables. The explanation is by a p-value of 0.000000, which is smaller than the significance level in the study, which is 5 percent (0.05). Then, 98.88 percent (adjusted R2) of economic growth in Maluku Utara can be explained by the government expenditure variable in the model, while the rest is included in the intercept.

Partially based on the selected model, there are three of nine functions of government spending variables that have a significant effect on economic growth in Maluku Utara, namely spending by functions on the economy, health, and education. That can be seen through the probability values of the three variables that are smaller than the 5 percent significance level. While the remaining 6 (six) variables still have an influence, the effect is not significant on the economic growth of Maluku Utara.

The first variable that has a significant effect is spending on the economic function with a coefficient of -0.003190. The meaning is, when the government increases spending on a functioning economy by 1 billion rupiahs, it will suppress the economic growth rate by 0.0032 percent. The result is quite an anomaly because when the government should issue a budget for spending on a functioning economy, the aim is to create jobs, build public facilities and infrastructure, and trigger an increase in community economic activity, but what happened was the opposite. The condition may indicate that the posts allocated by the Maluku Utara government from the budget for the spending on a functioning economy have not been effective.

The second variable that has a significant effect is spending on health function with a coefficient of 0.001960. The meaning is, when the government increases spending on health by 1 billion rupiahs, it will encourage Maluku Utara's economic growth by 0.0019 percent. The resulting output shows that government spending on health functions is significant to drive economic growth even though the percentage is still weak. Spending on health functions aims to improve health both in terms of infrastructure and services to the community, healthy and well-served communities will indirectly increase their productivity at work.

The third variable that has a significant influence is spending on the education function by a coefficient of 0.001106. The meaning is, when the government increases spending on education function by 1 billion rupiahs, Maluku Utara's economic growth will increase by 0.001106 percent. That shows the government spending on education function in Maluku Utara has been quite effective and needs to be increased. Government spending on the education function aims to improve the quality of education in terms of programs, facilities, and equipment. In addition, this expenditure will increase the community's ability, both hard skills and soft skills. Improving the skills possessed by the community encourages them to utilize resources to advance their region. Government investment in education as an effort to prove the quality of human resources is a long-term investment, so the Maluku Utara government needs to increase the allocation of spending on the education function so that it has a superior impact on economic growth.

In addition to the three variables that significantly affect the economic growth of Maluku Utara, there is one variable which in percentage allocation and realization is always dominant every year, its effect on economic growth in Maluku Utara is not significant,

namely the variable of spending on the Public Services function. During the last 6 (six) years, the average budget issued by the government for the expenditure of the Public Services function was 37.92 percent, but the effect on Maluku Utara's economic growth was not significant. The conditions confirm previous research from Saidah (2011) that shows government spending on public service functions is an unproductive expenditure.

Table 5. Cross-Section Fixed Effect

District/City	Cross-section Effect
Halmahera Tengah Regency	-0.240932
Ternate Municipality	1.195296
Halmahera Barat Regency	-0.333578
Halmahera Timur Regency	0.169989
Halmahera Selatan Regency	0.471161
Halmahera Utara Regency	0.537973
Kepulauan Sula Regency	-0.202181
Tidore Kepulauan Municipality	-0.175987
Pulau Morotai Regency	-0.713517
Pulau Taliabu Regency	-0.708225

In the fixed-effect model, there are individual effects that differ between regency/municipality in Maluku Utara with the magnitude remaining over a long period. The Ternate Municipality, Halmahera Utara Regency, Halmahera Selatan Regency, and Halmahera Timur Regency had positive individual effects, namely 1.195296; 0.537973; 0.471161; and 0.169989. The four regency/municipality has a higher average than the other six regencies and municipality, namely Pulau Morotai Regency, Pulau Taliabu Regency, Halmahera Barat Regency, Halmahera Tengah Regency, Kepulauan Sula Regency, and Tidore Kepulauan Municipality with negative individual effects, each of -0.713517; -0.708225; -0.333578; -0.240932; -0.202181; and -0.175987. Based on the above results, at the level of expenditure according to the same function and in the same period, the average economic growth of Ternate Municipality is always higher than that of other agencies/municipalities, at the same time the average of Pulau Morotai is always lower than that of other agencies/municipalities.

IV. Conclusion and Recommendation

Based on the analysis and discussion that has been carried out in this study, some conclusions can be drawn as follows:

1. The economic growth of Maluku Utara on average from 2015 to 2020 has been constantly above 5 percent. In terms of business fields, the agricultural, plantation,

and fishery sectors are the supporting sectors of the Maluku Utara economy with the most contribution, and then the manufacturing industry is the most progressive sector with an average growth of 21.65 percent. From the expenditure side, the components of household consumption and GFCF are the most contributors to the Maluku Utara economy, while GFCF and foreign exports are the components of expenditure with the highest growth.

2. Based on its function, from 2015 to 2020, government spending on the public service function has the highest value in Maluku Utara, while the tourism and culture function has become the component with the lowest spending value.

3. Based on the impact analysis of the I-O table, the components of government expenditure in the form of capital spending have the most output impact and added value in the construction sector, which are 6.04 trillion rupiahs and 2.25 trillion rupiahs, respectively. The government spending component on consumption has the most output impact and added value in the Government Administration, Defense, and Mandatory Social Security sectors, which are 6.12 trillion rupiahs and 3.31 trillion rupiahs, respectively. In addition, the component of government spending in the form of total government spending also has the most output impact and added value in the Government Administration, Defense, and Mandatory Social Security sectors, which amounted to 6.16 trillion rupiahs and 3.33 trillion rupiahs, respectively.

4. Based on the results of panel data regression analysis, three government spending variables have a significant effect on economic growth in Maluku Utara, namely spending by functions on the economy, health, and education. However, there is an anomaly in the spending on a functioning economy with a negative effect of 0.003190, which will indicate that the posts allocated by the Maluku Utara government from the budget for economic functions have not been effective enough. Then seen from the cross-section effect of the Fixed Effect Model, out of 10 regencies/municipalities in Maluku Utara, Ternate Municipality has the most individual effect value, which means Ternate Municipality has a higher average economic growth compared to other agencies/municipalities at the lowest level of spending according to the same function at the same time.

To provide benefits to the research that has been carried out, here are some suggestions and inputs that can be given based on the research results:

1. As the sector with the most contribution, the Maluku Utara government can focus more on agriculture, plantation, and fishery. The natural wealth in the form of abundant land, forest, and marine resources should be an opportunity for the government to produce greater output and added value from this sector, one of which is by providing seeds for secondary crops and horticulture to farmers, providing business capital for fisherman, capture fisheries, and aquaculture, build infrastructures such as irrigation and fishing houses.

2. The prospecting manufacture industry in Maluku Utara can also be utilized to prove people welfare by creating partnerships with industry to build economic zones around the industry, provide training to the surrounding community, constructing educational centers such as schools of expertise that can provide opportunities for local communities to learn expertise so that their productivity increases and can work in the industry. In addition, the government also needs to be stricter in making policies for industry players to recruit workers from the surrounding community, so that people can feel the economic impact presented by the industry, which will indirectly improve the economy in Maluku Utara.

3. Government spending is mostly allocated to unproductive sectors, so the impact is only felt by sectors not directly related to economic growth. The government can place more spending allocations for sectors that give a high contribution to Maluku

Utara's economic growth, such as agriculture, plantation, fishery, and the manufacturing industry.

4. In terms of spending by function, the government can increase spending on education and health functions which have a positive and significant impact. Meanwhile, for economic spending, the government needs to review the items that need to be allocated, because based on research results, the allocated items for spending on economic functions are not effective enough, which causes their effect on Maluku Utara's economic growth to be negative and significant.

5. Researchers who will conduct further research can add human development variables, socio-economic variables, and employment variables to increase the benefits of research so that it is more comprehensive covering all regional strategic indicators.

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