
The Analysis of Eminent Sectors and the Segment Shifting of Economic Sectors

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Abstract:

Purpose: North-North Cooperation encompasses three regencies, North Gorontalo, Buol and North Bolaang Mongondow. This research will analyze the eminent products and also identify the shifting of economic structure.

Desigh/Methodology/Approach: The analysis methods used are Location Quotient and Shift Share analysis.

Findings: The result of Location Quotient analysis shows that the eminent economic sectors which are becoming the basis sector of those North-North Cooperation area are agriculture, forestry, and mining. Their eminent commodities are corn, cattle, and Vannamie cultivation. The shift share analysis shows a positive result which means the potential of those sectors is highly competitive and there is a big opportunity to develop them.

Practical Implications: The study can be used to find out the region economy performance that is reflected by its growth, its rapid growth relative to sectors and its competitiveness.

Originality/Value: The results are original for the region and they can be used by the local government to organize the regional cooperation in a more effective way.

Keywords: Eminent product, regional cooperation, regional development.

JEL codes: O20, O21.

Article type: Research study.

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1. Introduction

Development is often seen by experts as the basis for policy-making, especially in relation to the problem of growth. From a Marxist perspective it is seen as a science that relates to the formation of cooperation from several countries or regions (Tilzey, 2017) to pass agreement on the development of various sectors to advance its territory (Umans & Arce, 2014). Based on this theory, the State University of Gorontalo initiated the formation of North-North cooperation. North-North Cooperation is the cooperation among three regencies in the northern part of Sulawesi Island. It encompasses North Gorontalo Regency Gorontalo Province, Buol Regency, Central Sulawesi Province, and North Bolaang Mongondow Regency, North Sulawesi Province. This cooperation was facilitated by Gorontalo State University. Therefore, it is expected that those three regencies become a more advanced area, rapidly-growing region and the prime mover of its surroundings.

The role of universities as the initiator of this cooperation can be seen from Tri Dharma Perguruan Tinggi dedication for society. Therefore, the university is not only the agent of knowledge, but also the agent of development. The scholar can implement their knowledge in working together with local government by sharing input, ideas, and innovation. The establishment of this North-North Cooperation was based on Constitution Nomor 23 Year 2014 about Local Government Article 363. It states that in order to improve people's lives, the local government can build cooperation by creating efficient and effective public services. The cooperation, as mentioned previously, can be done between one local government with other local government, third party, and/or institution and foreign local government, as stated in the constitution.

There are two types of cooperation from intern local governments. There is compulsory cooperation and voluntary cooperation. Compulsory cooperation is between two neighboring local governments, for governmental purpose, which have cross region externality. Their public services will be more efficient if they manage it together. In executing this compulsory cooperation, these regions can create a secretariat with function to facilitate Local Government Officers in doing their duty. Financial resources needed for this secretary will be covered by the APBD of each local government. Central Government can give funding for the execution of this compulsory cooperation through APBN.

This North-North Cooperation is also based on the Agreement of Three Governors made in 2014, the Governors of Gorontalo, Center Sulawesi and North Sulawesi. The core of that agreement is that the regions, together reach the goal, by developing the region of North Sulawesi into becoming the National Strategic Area in State Border. In addition, this cooperation also relates to Government Regulation Nomor 50 Year 2007 concerning the Procedures of Local Government Cooperation. At the back of this agreement, they then created this cooperation which was facilitated by Gorontalo State University. The MOU was signed by the Head of North Gorontalo

Regency, the Head of Buol Regency, the Head of North Bolaang Mongondow Regency, and the Rector of Gorontalo State University on September 17th 2014.

The purpose of this agreement is to fulfill the vision of being a National Strategic Area with various programs, including empowerment, product development, and industry. This mission is also important to support the program of government, food security and energy in particular.

Table 1. *Economic Macro Indicator of North-North Cooperation Area*

No.	Description	North Gorontalo Regency	North Bolaang Mongondow Regency	Buol Regency
1	Wide Area (KM2)	1.777,03	1.856,86	4.043,57
2	Economic Growth (%)	7,75	7,13	8,57
3	Population (person)	109.052	75.290	142.585
4	Poor Population (%)	19,16	9,32	15,06
5	IPM	69,37	64	70,75
6	PDRB AHK (IDR)	2.650 M	1.253,61 M	3.120 M

Source: BPS of Three Regencies Year 2015.

According to the Economic Macro Indicator above, those three regencies have potential in agriculture, plantation, farms, fishery, tourism, forestry, and mining. Therefore, the cooperation is very important, especially in managing its own natural resources. They will work together and bring the spirit of support and strength for each other. The social-economic life of those regencies as described in the Table above, showing that the poverty is quite high, except in North Bolaang Mongondow Regency which is 9,32%. Its IPM is quite low which means that the management of its own potential is not yet maximized. For years, each government ran its economic policy individually. Through this cooperation, they hope that they can support each other in making this development program a success. Therefore, this research is crucially important, especially to identify the strength of each regency, this then becomes its economic base. This will be developed as a long term project to support regency-cooperation authorities.

2. Literature Review

Activities in a regional economy are categorized into two sectors, namely base and non-base activities. The base economy tends to have a strong power to support the economy of its surrounding. While non-basis economy is the hinterland of the choosen sector that is selected by the basis economy.

According to Budiharsono (1989), the core of base economy and the growth of a region depends on its exports. They can export goods or services, including workers. Suyatno (2000) explained that the growth of an industry which uses local workers, including labor and raw material, will produce wealth and create jobs for that region. This assumption assumes that a region will have its eminent sector if it can win the competition with other regions for the same sector. Therefore, they can produce products to export. Basis economy theory tries to find out the basis activities of a region. After it needs to figure out and analyze the additional impact of its export activities. The core concept of this basis economy theory is that export activities are the route for development. The growth of a region is measured by its performance related to the demand of good and services.

The change in the structure of an economy shows that by shifting the sectoral role into another sector that has more competitive value, this contributes in creating additional value and can provide more job opportunities. The theory of structural change focusses on the mechanism of economic transformation that happens in developing countries and the shift is made from an agriculture oriented society to a more modern one, dominated by the industry and services sector (Todaro in Mudrajad Kuncoro, 1997). One of the techniques that is used to identify the changing of an economic structure is Shift Share Analysis. It describes the changes of the economic structure, using as reference, another economic structure that is more advanced administratively.

3. Research Methodology

The type of research is quantitative, where the data collected comes from GRDP and publication reports of related parties between 2011-2015. This research took place in the area of North-North Cooperation, which includes North Gorontalo Regency Gorontalo Province, Buol Regency Center Sulawesi Province, and North Bolaang Mongondow Regency, North Sulawesi Province. It used primary and secondary data such as published data, PDRB, export, and poverty. To identify the most important sector of its region, the author used basis economic approach through quotient location analysis. The core of this basis economy model is the direction and growth of a region determined by its export, including goods and services, and also workers. The Quotient Location Analysis uses the formula below:

$$LQ = \left[\frac{\left(\frac{Q_{ir}}{Q_r} \right)}{\left(\frac{Q_{in}}{Q_n} \right)} \right]$$

- Q_{ir} = Economical indicator at sector i region;
- Q_r = Economical indicator at sector whole regions;
- Q_{in} = Economical indicator at sector i wider reference region;
- Q_n = Economical indicator at sector i whole wider reference regions.

According to the formula above, there are three possibilities of LQ Value (Bendavid-Val, 1991) that can be found, and these are:

- ✓ LQ value at sector $i = 1$, meaning the rapid growth sector i at study area k is equal to the rapid growth of the same sector in the economy of reference area p ;
- ✓ LQ value at sector $i > 1$, meaning the rapid growth sector i at study area k is higher than the rapid growth of the same sector in the economy of reference area p . Therefore, sector i is the eminent sector of area study k as well as becoming the basis economy that will be developed by region k ;
- ✓ LQ value at sector $i < 1$, meaning the rapid growth sector i at study area k is lower than the rapid growth of the same sector in the economy of reference area p . Therefore, sector i is not the eminent sector of area study k as well as not the basis economy and not a prospect to be developed by region k .

Shift Share Analysis is used to find out the region economy performance that is reflected by its growth, its rapid growth relative to sectors, and its competitiveness, (Bendavid-Val, 1991). Shift Share Analysis refers to what portions of regional economic growth or decline can be attributed to national, economic industry, and regional factors (Isard, 1960; Hofstede, 1984; Blair, 1991). This analysis divides the changing or growing of local economic performance into three components:

Growth component: It reflects the economic growth of the study area, with the assumption that its growth is the same as the growth of the reference area during certain period.

Mix industry or proportional shift component: It measures the diversity of an economic sector's growth in the study area compared to a reference area.

Differential shift or regional share component: It measures the sector growth of the study area compared to the same sector of the reference area as follows:

$$SS = \left[\frac{Y^*}{Y} - 1 \right] + \left[\frac{Y'_k}{Y_k} - \frac{Y^*}{Y} \right] + \left[\frac{y'_k}{y_k} - \frac{Y'_k}{Y_k} \right]$$

where:

- Y^* = Economical indicator of wider refer area, at the end of the year;
- Y = Economical indicator of wider refer area, at the beginning of the year;
- Y'_k = Economical indicator of wider refer area sector k at the end of the year;
- Y_k = Economical indicator of wider refer area sector k at the beginning of the year;
- y'_k = Region economy indicator at sector k at the end of year;
- y_k = Region economy indicator at sector k at the beginning of year;

SS = Shift share, criteria of shift share: If positive (+), this means it has a competitive potential, if negative (-), this means that the sector has no value and is not competitive.

4. Results

4.1 Analysis Location Quotient

The LQ analysis tool is used to identify the leading sectors that become the base sector of a region using the Gross Regional Domestic Product (GRDP), as an indicator of regional growth. In this case the author analyzed several sectors that affect growth in these three areas, among others:

A. Agriculture, forestry and livestock. B. Mining and digging. C. Manufacturing industry. D. Supply of electricity and gas. E. Water supply, waste management, waste and recyclable materials. F. Construction of the buildings. G. Trading of retail rice, car and motorcycle repairs. H. Transportation and warehousing. I. Provision of accommodation and food and beverages. J. Information and communication. K. Financial services and insurance. L. Real estate. M-N. Company services. O. Government administration, defense and social security. P. Educational services. Q. Health services and social activities. R. Other services.

Table 2. Results of LQ analysis of North Gorontalo and Buol District

Sector	North Gorontalo						Buol District					
	2011	2012	2013	2014	2015	Mean	2011	2012	2013	2014	2015	Mean
A	1,154	1,154	1,174	1,165	1,180	1,166	1,372	1,386	1,390	1,395	1,408	1,390
B	1,405	1,437	1,487	1,523	1,542	1,470	1,029	1,031	1,044	1,085	1,112	1,060
C	0,496	0,495	0,481	0,479	0,469	0,488	3,394	3,345	3,329	3,383	3,439	3,378
D	0,564	0,597	0,629	0,639	0,652	0,607	0,353	0,348	0,368	0,372	0,401	0,368
E	0,303	0,303	0,303	0,302	0,297	0,301	4,099	4,084	3,921	3,859	3,955	3,984
F	0,882	0,898	0,909	0,910	0,903	0,898	0,591	0,605	0,622	0,622	0,504	0,589
G	0,885	0,898	0,868	0,855	0,843	0,877	22,30	0,629	0,617	0,609	0,299	4,891
H	0,774	0,770	0,741	0,726	0,710	0,757	0,520	0,519	0,520	0,522	0,084	0,433
I	0,917	0,966	0,927	0,921	0,910	0,927	0,225	0,228	0,226	1,412	0,569	0,532
J	0,684	0,702	0,700	0,705	0,699	0,694	0,433	0,433	0,435	0,175	0,287	0,352
K	0,175	0,185	0,200	0,209	0,208	0,193	0,227	0,225	0,227	0,341	0,020	0,208
L	0,878	0,866	0,855	0,853	0,846	0,862	1,534	0,039	1,487	0,428	0,039	0,705
M - N	0,538	0,575	0,589	0,612	0,616	0,576	28,58	0,7561	0,759	29,22	45,10	20,88
O	1,227	1,247	1,236	1,269	1,287	1,230	0,007	0,436	0,450	0,008	0,485	0,277
P	0,892	0,855	0,805	0,835	0,838	0,841	1,116	1,060	0,721	0,689	0,695	0,856
Q	1,109	1,037	1,006	1,053	1,050	1,047	0,859	0,855	0,498	0,498	0,487	0,640
R	1,169	1,171	1,181	1,190	1,176	1,173	0,971	0,985	0,950	0,953	0,955	0,963

The result of calculation using location quotients in north Gorontalo and Buol district show that North Gorontalo has two eminent economic sectors which get a value above 1, which are mine and digging sector with a value of 1.47, and agriculture, forestry and fishery sector with a value of 1.17. The sectors that need to be given more attention by the government are the financial services and water supply sectors. In other cases, Buol Regency has four eminent economic sectors, namely trade sector with a value of 4.89, the manufacturing sector with a value of 3.37, the agriculture sector with a value of 1.39 and mining and digging sector with a value of 1.06. The sectors that need to get more attention by the government are the financial services industry and the power and gas procurement company, because of a very small amount of contribution to regional economic development.

Table 3. *LQ analysis results for North Bolaang Mongondow*

Sector	North Bolaang Mongondow					Mean
	2011	2012	2013	2014	2015	
A	2.184	2.302	2.264	2.194	2.175	2.224
B	2.145	2.113	2.133	2.198	2.247	2.167
C	0.306	0.306	0.302	0.304	0.314	0.307
D	0.535	0.511	0.525	0.496	0.483	0.510
E	2.060	2.054	2.063	2.061	2.105	2.069
F	0.970	0.985	1.062	11.07	1.158	3.049
G	0.830	0.801	0.825	0.839	0.872	0.833
H	0.141	0.140	0.139	0.139	0.136	0.139
I	0.146	0.143	0.140	0.138	0.134	0.140
J	0.144	0.140	0.137	0.135	0.129	0.137
K	0.260	0.250	0.240	0.231	0.233	0.243
L	0.803	0.798	0.815	0.842	0.846	0.821
M - N	0.153	0.147	0.146	0.144	0.141	0.146
O	0.381	0.425	0.420	0.453	0.441	0.424
P	0.752	0.756	0.773	0.782	0.806	0.774
Q	0.286	0.277	0.276	0.277	0.277	0.279
R	0.438	0.424	0.422	0.433	0.437	0.431

For North Bolaang Mongondow Regency, the same for North Gorontalo regency, there are two economic sectors that seem to have a good impact on economic growth in that region, that is agriculture, forestry and fishery sector with a value of 2,22 and mining and digging with a value of 2,16. However, the sectors that need to be given attention by the government are the transportation and warehousing sectors, the provision of transportation facilities and the sale of food and beverages, and the supporting facilities for information and communication.

Looking at the magnitude of the geographical location, the natural resources, and the types of work that many people in the region are involved in, through focus group

discussions, the audience agreed that the basis sector of these three regencies are agriculture, forestry, and farms, with the following consideration.

Although the three regencies have a mining and digging sector, the authority of managing this sector is under the Mining Department of Regional Government. Therefore, the program and policy related to mining and digging are under the authority of the province. From a structural and geographical side, agriculture, forestry, and mining are worth being developed as a basis sector. Trading and industry are categorized as non base sectors that also support the development of those three regions even though Buol Regency got a value for LQ which is higher than 1.

Based on these considerations, we can identify the basic sectors in the three regions, namely, agriculture, forestry and fisheries, and the non-base sectors that support the development of the economic potential of the three regions, are the trade and industry sectors. The results of quotient location identification of those three regencies are shown below in Table 4:

Table 4. Average Point of LQ Economy Sector of Three Regencies at North-North Cooperation Are Year 2010-2015.

Regency/Sector	Agriculture, Forestry and Fishery	Mining and digging	Trading	Processing Industry	Other Services
North Gorontalo	1,17	1,47	0,87	0,48	1,17
North Bolaang Mongondow	2,22	2,16	0,83	0,30	0,43
Buol	1,39	1,06	4,89	3,37	0,96

Source: Data Year 2017.

Both basis and non-basis sectors are being debated in order to improve the cooperation among those three regencies. Therefore, one needs to identify the most important commodity of the basis sector of agriculture, forestry and fishery of each region. During a focus group discussion, attended by the head of district, public figures, and related institutions from North Gorontalo and Buol Regency, 90% of attendants decided to choose three eminent commodities, which are corn, cattle and Vannamie cultivation.

North Bolaang Mongondow Regency chose cattle and grouper as its main commodity. Corn is not a new commodity for farmers of North Gorontalo Regency because they had been developing it for many years, generation to generation. Even the Province of Gorontalo had determined corn as its eminent sector, as well as Buol Regency. The amount of corn production today is 150,000 tons and has been distributed to Surabaya and Pop One Ltd through a signed MOU.

Although some people from North Bolaang Mongondow Regency plant corn, this is not their dominant produce and therefore not a priority, especially when compared to cattle. The three regencies were programmed for cattle. Therefore, the North-North Cooperation was facilitated by Gorontalo State University working together with PUM Netherland Senior Experts in developing cattle, especially through Training of Trainer (TOT), technical training of Human Resources and cooperation with Faculty of Agriculture, Department of Farms. Those three regencies agree that the financial aid that is needed for the development of cattle will be coming from the government through APBN and APBD, and privately by inviting investors. They are now preparing themselves intensively, especially in terms of providing land.

Another commodity which is also considered as their priority is Vannamie cultivation. There are three considerations one should look at:

- 1) The strength of those regencies is located in the 300 km-coast that has the opportunity to develop Vannamie intensively. Moreover, this sector needs more sea water and less fresh water. The position of the causeway does not need to be very close to upstream. Even some people are successful using water from a well or PDAM.
- 2) The price of Vannamie is stable and easy to get sell because this type of shrimp is accepted in international markets. Therefore, those who cultivate have a stable segment. Moreover, the Vannamie cultivation gets support from the government and has been named as an eminent commodity by The Ministry of Fishery and Marine since 2001.
- 3) To preserve Vannamie is relatively easy and the cost to feed them is reachable.

4.2 Analysis Shift Share

The Shift Share Analysis is a tool that is used to find out the region's economy performance that is reflected by its growth, its rapid growth relative to other sectors, and its competitiveness, (Bendavid-Val, 1991). It describes the changes of the economic structure, using as reference, another economic structure that is more advanced administratively (Isard, 1960; Hustede, 1984; Blair, 1991). The result of Shift Share Calculation of each selected economic sector in North Gorontalo Regency, North Bolaang Mongondow Regency, and Buol Regency can be seen in Tables 5 and 6 below:

Table 5. *Shift Share Calculation of North Gorontalo and Buol Regency*

Sector	North Gorontalo Regency				Buol Regency			
	(Y*/Y)	(Y'k/Yk)	(y'k/yk) –	Total	(Y*/Y)	(Y'k/Yk)	(y'k/yk) –	Total
or	-1	-(Y*/Y)	(Y'k/Yk)	SS	-1	-(Y*/Y)	(Y'k/Yk)	SS
A	0,426	-0,083	0,0087	0,351	1.324	-0.1	0.0106	0.280
B	0,426	-0,185	0,0974	0,337	1.324	-0.2	0.0714	0.231
C	0,426	-0,029	-0,1077	0,288	1.324	0.0	-0.0056	0.290

D	0,426	0,083	0,2359	0,745	1.324	0.0	0.1578	0.521
E	0,426	-0,081	-0,0108	0,333	1.324	-0.1	-0.0656	0.195
F	0,426	0,067	-0,0115	0,481	1.324	0.0	0.0339	0.398
G	0,426	0,118	-0,1178	0,426	1.324	0.1	-0.1378	0.263
H	0,426	0,109	-0,2016	0,334	1.324	0.1	-0.0427	0.364
I	0,426	0,016	-0,0470	0,395	1.324	0.0	0.0113	0.349
J	0,426	0,100	0,0491	0,575	1.324	0.1	-0.0469	0.362
K	0,426	0,127	0,2675	0,820	1.324	0.0	-0.0279	0.322
L	0,426	0,074	-0,0695	0,430	1.324	0.1	-0.0518	0.335
M	0,426	-0,070	0,2267	0,582	1.324	0.0	0.0523	0.336
-								
N								
O	0,426	-0,112	0,2187	0,532	1.324	-0.1	0.1685	0.397
P	0,426	0,358	-0,0069	0,777	1.324	0.3	-0.2296	0.353
Q	0,426	0,084	0,0296	0,540	1.324	0.1	-0.0638	0.363
R	0,426	-0,113	0,0256	0,338	1.324	-0.1	-0.0422	0.208

Source: Data Year 2017.

Table 6. Shift Share Calculation of North Bolaang Mongondow

Sector	North Bolaang Mongondow Regency			Total SS
	$(Y^*/Y) - 1$	$(Y^k/Yk) - (y^k/yk)$	$(Y^k/Yk) - (y^k/yk)$	
A	0.283	0.1	-0.005	0.401
B	0.283	0.0	-0.074	0.189
C	0.283	0.0	-0.044	0.271
D	0.283	-0.3	0.146	0.082
E	0.283	0.0	-0.039	0.264
F	0.283	-0.1	-0.272	-0.040
G	0.283	-0.1	-0.082	0.113
H	0.283	-0.1	0.031	0.258
I	0.283	-0.1	0.100	0.288
J	0.283	-0.1	0.132	0.313
K	0.283	-0.1	0.129	0.350
L	0.283	-0.1	-0.085	0.128
M-N	0.283	-0.1	0.094	0.285
O	0.283	0.0	-0.213	0.085
P	0.283	0.0	-0.100	0.223
Q	0.283	-0.1	0.030	0.260
R	0.283	0.0	-0.010	0.242

Source: Data Year 2017.

5. Discussion

All economic sectors in North Gorontalo Regency, North Bolaang Mongondow Regency and Buol Regency are studied using Shift-Share Analysis. The outcome obtained consists of a positive result, whatever the value is, and meets the criteria of Shift-Share considered that the sector has competitive potential and there is a big opportunity for development.

It also describes the direction of the government's policy in the way of improving the economic sector. The structure is changing, from agriculture to industry and services, although from the data, the agriculture sector is still dominant. There are changes in the structure as the result of various elements that are changing of regional economy, for example, economic growth, job creation, and levels of poverty are decreasing. All of this will impact on the regional income and increase the quality of peoples' life in general.

According to a statistical model that was developed by Dunn (1960), the changing structure exhibits 3 components:

- 1) The impact of National Economic Growth is the variable that changes the economy, therefore it causes economic growth, such as production, consumption, and distribution. These three variables are expected to change and grow rapidly through a consistent and structural economy policy.
- 2) The amount of change in the industry in regional economy is consistently linear with the impact of national economic growth.
- 3) The impact of regional economy changes is the changing of variables which are linear with the changing of variables in the national and regional economy. Therefore, regional economic analysis through Shift Share Analysis of those three regencies is very important to see the direction of structure changes of those regions.

6. Conclusion

The result of Quotient Location Analysis of those three regencies at North-North Area, North Gorontalo Regency, Buol Regency and North Bolaang Mongondow Regency, shows that the eminent sectors which become the basis sectors are agriculture, forestry, and mining. Trading and industry are a non-basis sectors. After conducting a survey and a Focus Group Discussion with the society and stakeholder of those three regencies, local people decided to choose agriculture with rice, corn, and Vannamie cultivation as their eminent commodity.

The Shift Share Analysis of all the regencies shows a positive result, which means the potential of those sectors is highly competitive and there is a big opportunity for them to develop. It also describes the direction of the government's policy in the way of improving the economic sector. The structure is changing from agriculture to industry and services.

7. Recommendations

The local government of the three regions of North-North Cooperation Area, (North Gorontalo Regency, Buol Regency, and North Bolaang Mongondow Regency) is expected to focus on the development of the base sector of the economy, that is, the agriculture sector, with cattle, corn, and Vannamie cultivation as their eminent

commodity. In addition to funding resources, although there is funding from APBD and APBN, they also need to find another way such as inviting an investor.

Regency needs to make a business plan for those three commodities. Therefore, each role will be clear from the beginning, in order to help, support, and strengthening each other.

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