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Contribution Analysis of the Leading Sector; Using Location Quotient Method and Klassen Typology

Wahyu Tri Nur Ahmad Firdaus[1]
National Development University "Veteran" Yogyakarta[1]
Correspondence Email: fwahyu895@gmail.com

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ABSTRACT

Regional economic development has an important role in the national economy, because it is part of creating superior quality resources to determine the direction of the economy. This study aims to determine the basic and non-basic sectors with the calculation of Location Quotion (LQ) and quadrant type in the typology of the economy of Batang Regency, Central Java Province from 2011 to 2018 seen based on Gross Regional Domestic Product to see what sectors are superior and not superior. The type of research uses secondary data from the publication of the Central Statistics Agency (BPS) of Batang and Central Java, with quantitative methods. The results of the study show that there are 9 basic sectors and 7 non-basic sectors from 2011 to 2018, with a slight difference specifically in the electricity and gas sector 2011-2015 became a basic sector but 2016-2018 turned into a non-basic. And the results of the Claseen Typology show that there are still 6 relative sectors left behind and 6 potential fast-growing sectors.

Keywords: Base and Non-Base, Klasen Typology, Leading Sector, Regional Economy

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INTRODUCTION

Increased economic growth is one indicator of the success of regional development. The benchmark for the achievement of regional development will be influenced by the results of the implementation of planning strategies through the optimization of all potential and all resources, this is the implementation of law number 32 of 2004 concerning autonomy, when regions are asked to always carry out programs in various aspects of development through their own abilities without relying on the central government except those specifically stipulated by law which then remain the authority of the central government such as state security and national defense (Hakim & Suhendi, 2021). In relation to regional development based on the rules of Law Number 25 of 2004 concerning national development planning article 5 that all regional development plan efforts must refer to the national development plan by containing financial policy directions, development strategies, general policies, and regional work unit programs, cross-regional and various programs with a framework. In line with the enactment of Law (UU), Republic of Indonesia Number 24 of 2022 concerning regional comprehensive economic partnership agreements to encourage national economic development in order to promote general welfare. Then the process of regional economic development is also determined by several factors, such as regional economic potential, population, infrastructure, quality of human resources, capital and macroeconomic variables such as inflation and exchange rates. This economic development provides a ray of hope for regional economic progress, as well as being a priority part of local government policy which is always the centre of attention (Rini, 2006 in Hutapea, Koleangan, & Rorong, 2020).

The regional economy has an important position in the achievement of national development, because the level of growth rate of the national economy is seen from the state of the regional economy, so the success of regional development will determine the success of national level development (Pratama, 2020). Regional economic development can be seen through the total Gross Regional Domestic product at constant prices, which shows the added value of goods and services calculated using prices in a certain year as the base year (Maslowan, 2017). As the sum of the added value of the total of all district and provincial business units.

Gross Regional Domestic Product is used to determine the amount of economic growth and contribution each year. Geographically and comprehensively, Batang is described as one of the districts in Central Java. The area is a combination of coastal, lowland and mountainous. Through these conditions, Batang has great potential to carry out various agro-industrial, agro-tourism and agribusiness activities in accordance with the Regional Medium-Term Development Plan of Batang Regency for the period 2017-2022. The economic growth rate of Batang Regency is as follows:

Table 1. Gross Regional Domestic Product at Constant Prices (Business Field) Batang

Category	Description	Average for 2011-2018
A.	Forestry, Agriculture and Fisheries	4181085,29
B.	Quarrying and Mining	633002,46
C.	Industrial Quarrying	6964171,94
D.	Gas and Electricity Procurement	13002,95
E.	Procurement of Recycling, Garbage, Waste and Water Management	21144,91

F.	Construction	1149571,74
G.	Retail Trade, Wholesale and Repair of Motorcycles and Automobiles	2617230,73
H.	Warehousing and Transport	452060,78
I.	Provision of Drinking and Dining Accommodation	750914,53
J.	Communication, Information	518948,47
K.	Insurance and Financial Services	352044,55
L.	Real Estate	210244,34
M, N.	Corporate Services	78879,81
O.	Government Administration, Compulsory Social Security and Defense	482288,48
P.	Education Services	1224573,58
Q.	Social Activity Services, Health	147548,12
R, S, T, U.	Other services	383863,79
	Total GRDP	**20180576,47**

Source: BPS processed using excel.

Based on the data table 1 above, it explains that the Gross Regional Domestic Product sector has its own role in the economy, and has different potential, as evidenced by the fluctuating increase and decrease in all categories. On this basis, development planning in improving the regional economy of Batang Regency must be better directed and integrated in order to achieve maximum results in accordance with the Regional Medium Term Development Plan. The Regional Medium Term Development Plan aims to encourage the regional economy to have high competitiveness both between regions and nationally and even between other countries through the contribution of economic growth. One of the efforts in realizing economic development requires looking at various special criteria, the criteria referred to are looking at the base sector or superior and non-base sectors each year in each category. On the other hand, in designing regional economic development strategies, both short and long term, an understanding of the theory of regional economic growth, which is formulated on the basis of studies of economic growth patterns of various regions, is a factor in the development of regional economic growth. determine the quality of regional economic development plans (Prabowo, Ananda, & Bintoro, 2023). Base economics classifies all economic activities into two sectors, namely the base sector and the non-base sector. The basis and non-basis sectors in the regional economy can be measured whether the relevant sectors are able to contribute income to their own regions or vice versa, because the good and bad economic growth of Batang Regency will have a major impact on the province of Central Java. On that basis, the utilization of regional potential must be optimized through real work and collaboration of all levels of government stake holder in particular and society in general to realize social justice.

Through the above background, research on leading sectors using Location Quotient analysis and typology of Batang Regency, Central Java Province as a benchmark for determining potential and non-potential sectors as a basis for formulating a more focused and well-planned regional economic development strategy and becoming the basis for decision making for each regional development priority policy. In addition, the development of potential sectors is an integral part of the process of determining superior economic areas through a process of adjusting all forms of natural resource potential, human resource capabilities, information knowledge and technology.

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LITERATURE REVIEW

Base and Non-Base Theory

Location Quotient (LQ) analysis is a theory to calculate and determine the base and non-base sectors of the economy based on the results obtained each year. The other side of Location Quotient (LQ) is used to calculate the size and level of specializations of each sector by comparing its role in the economy and the role of similar activities or industries in the regional economy (Hasanah, 2021). As an example, in this base and non-base theory is aligned through the results of research conducted by Morrissey (2016) Location Quotient aims to determine Ireland's potential sectors by presenting an entire exploration of regional industrial specialization in each related sector.

Klassen Typology

Klassen's typology analysis is used to determine the pattern and structure of economic growth in each region. Klassen typology basically divides regions based on two main indicators, namely regional economic growth and regional per capita income (Bank Indonesia). Klassen typology divides various categories of business fields in economic growth based on regional economic growth and contribution to Gross Regional Domestic Product (Hutapea, Koleangan, & Rorong, 2021). Klassen's typology shows the position of growth and market share, subsectors, businesses, or commodities forming regional variables in a region into 4 (four) types of quadrants, namely quadrant 1 is developed and growing fast, quadrant 2 is potential and growing fast, quadrant 3 is developed but depressed and quadrant 4 is relatively lagging.

RESEARCH METHOD

This research uses secondary data obtained through the Central Statistics Agency (BPS) Batang and Central Java Province website from 2011 to 2018. The research method used is quantitative because all forms of analysis use numbers, starting from data collection, interpretation of data, and appearance of the data results obtained (Siyoto & Sodik, 2015). This research uses the Location Quotient Analysis approach to calculate the role of Gross Regional Domestic Product (GRDP). GRDP itself is the total value of output or added value produced by each sector (business field) based on prices during the current year referred to as GRDP at current prices (Kesuma & Utama, 2015). As well as classifying the categories of basic and non-basic sectors and using Klassen Typology analysis to be able to read whether it includes fast-growing and advanced, potential and fast-growing, depressed and relatively underdeveloped sectors.

Analysis Technique

Location Quotient (LQ)

$$LQ = \frac{E_{ij}/E_j}{E_{in}/E_n}$$

Description:
Eij = Regional category of sector related to Batang region
Ej = Regional category of Batang region
Ein = Regional category of related sectors in Central Java
En = Regional category of Central Java region

Location Quotient (LQ) i > 1 indicates that the sector is a base sector and has the potential to increase the growth rate of the regional economy, this result explains that the related sector is good and able to provide economic impetus and the community has participated in receiving the benefits. While Location Quotient (LQ) < 1 is called non-base sector, this result translates that there is still a need for careful planning in order to turn into a base. Location Quotient (LQ) value category more than (>) 1 is a normative standard as a material for determining the leading sector category. When more and more sector categories have produced Location Quotient (LQ) values of more than (>) 1, the degree of comparative advantage will be assessed based on the comparison of LQ results with other regions, because the higher the value indicates the high potential superiority of the sector (Hakim & Suhendi, 2021).

Cluster Typology

The Cluster Typology analysis is used to determine the classification of the economic sectors of the Batang Regency region into four main parts, each of which has its own meaning. The equation is as follows (Pratama 2020):

GRDP (y)	**yi > y**	**yi < y**
Growth Rate (r)		
ri > r	Advanced and fast-growing	Potential and fast growing
ri < r	Forward depressed	Relatively underdeveloped

Meaning:
yi = Average GRDP contribution of related sectors in Batang Regency
y = Average GRDP contribution of Central Java
ri = Growth of GRDP of related sector Batang
r = Central Java GRDP growth

With a classification of four (4) types of Klassen Typology quadrants as:
• yi is more than (>) y and ri is more than (>) r fast forward to growth
• yi less than (<) y then ri more than (>) r potentially fast growing
• yi more than (>) y then ri less than (<) r forward depressed
• yi is less than (<) y and ri is less than (<) r relatively disadvantaged

RESULTS

Location Quotient

Aspects of Location Quotient analysis as an indicator to classify various leading sectors (Basuki, Muijiharjo 2017). Location Quotient (LQ) analysis is calculated based on the contribution of each economic area to the GRDP of the Batang Regency reference area in a period of 7 years, from 2011 to 2018 both at the Regency level and the Central Java Province level with the results of the calculation of the LQ value as shown in the table below:

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Table 2

Business Field (GRDP)	LQ RESULT OF BATANG DISTRICT (CENTRAL JAVA)															
	2011	Ket	2012	Ket	2013	Ket	2014	Ket	2015	Ket	2016	Ket	2017	Ket	2018	Ket
A. Agriculture, Forestry and Fishing	0,626	Non Basis	0,649	Non Basis	0,653	Non Basis	0,633	Non Basis	0,649	Non Basis	0,654	Non Basis	0,673	Non Basis	0,679	Non Basis
B. Mining and Quarrying	0,835	Non Basis	0,849	Non Basis	0,867	Non Basis	0,910	Non Basis	0,915	Non Basis	0,922	Non Basis	0,825	Non Basis	0,812	Non Basis
C. Manufacturing	0,003	Non Basis	0,003	Non Basis	0,003	Non Basis	0,003	Non Basis	0,003	Non Basis	0,003	Non Basis	0,003	Non Basis	0,003	Non Basis
D. Electricity and Gas	1,308	Base	1,182	Base	1,175	Base	1,148	Base	1,100	Base	0,987	Non Basis	0,933	Non Basis	0,910	Non Basis
E. Sewerage, Waste Management, Remediation Activities, Water Supply,	0,642	Non Basis	0,650	Non Basis	0,669	Non Basis	0,682	Non Basis	0,675	Non Basis	0,625	Non Basis	0,602	Non Basis	0,560	Non Basis
F. Construction	2,071	Base	2,094	Base	2,130	Base	2,143	Base	2,111	Base	2,107	Base	1,972	Base	1,885	Base
G. Wholesale and Retail Trade; Repair of Motor Vehicle	1,032	Base	1,032	Base	1,029	Base	1,039	Base	1,042	Base	1,043	Base	1,044	Base	1,051	Base

s and Motorcycles																
H. Transportation and Storage	1,234	Base	1,256	Base	1,262	Base	1,275	Base	1,328	Base	1,346	Base	1,355	Base	1,393	Base
I. Accommodation and Food Service Activities	0,781	Non Basis	0,801	Non Basis	0,819	Non Basis	0,833	Non Basis	0,825	Non Basis	0,807	Non Basis	0,820	Non Basis	0,837	Non Basis
J. Information and Communication	1,402	Base	1,390	Base	1,409	Base	1,359	Base	1,300	Base	1,307	Base	1,329	Base	1,348	Base
K. Financial and Insurance Activities	1,506	Base	1,525	Base	1,546	Base	1,607	Base	1,630	Base	1,663	Base	1,683	Base	1,694	Base
L. Real Estate Activities	1,569	Base	1,565	Base	1,563	Base	1,560	Base	1,591	Base	1,604	Base	1,615	Base	1,623	Base
M,N. Business Activities	0,957	Non Basis	0,959	Non Basis	0,951	Non Basis	0,945	Non Basis	0,952	Non Basis	0,991	Non Basis	0,995	Non Basis	1,013	Base
O. Compulsory Social Security, Public Administration and Defence	1,099	Base	1,100	Base	1,082	Base	1,089	Base	1,080	Base	1,120	Base	1,138	Base	1,143	Base

P. Education	0,724	Non Basis	0,721	Non Basis	0,718	Non Basis	0,721	Non Basis	0,729	Non Basis	0,734	Non Basis	0,734	Non Basis	0,740	Non Basis
Q. Social Work Activities and Human Healt	1,165	Base	1,170	Base	1,157	Base	1,147	Base	1,174	Base	1,193	Base	1,207	Base	1,217	Base
R,S,T, U Othe Activities	0,802	Non Basis	0,804	Non Basis	0,809	Non Basis	0,810	Non Basis	0,819	Non Basis	0,841	Non Basis	0,839	Non Basis	0,837	Non Basis

Source: BPS data processed.

The results of the Location Quotient calculation in the table can be seen that there are various categories of bases and non-bases in the economy of Batang Regency, Central Java. Each category of Gross Regional Domestic Product shows unequal results every year, such as in the Electricity and Gas sector, in 2011-2015 being a basic sector will remain slightly different from 2016-2018 turning into a non-basic sector due to changes in the results of Location Quotient (LQ) calculations with a value of less than 1. The other 8 (eight) sectors consistently from 2011 to 2018 have final results of less than 1 every year among the eight sectors is: a). Forestry, Fisheries, Agriculture. b). Quarrying, Mining. c). Industrial Processing. d). Gas and Electricity 2016-2018. e). Waste Management, Water Supply, Waste, Recycling. f). Accommodation Drinks, meals. g). Corporate. h). Education Services. f). Other Services.

Location Quotient results less than (<) 1 indicate that the sector is not a mainstay so that it has not been able to export to other regions, for that reason its production is only utilized in the region. So that the sector still needs further planning and improvement so that the sector is able to develop better in the future or turn into a basic sector (Basuki & Mujiharjo, 2017). Referring to the Location Quotient results, there is an increase in district infrastructure to prioritize the non-base sector first (Rusli, Roza, & Rusli, 2021). The other 9 sectors are consistently always the basis because the Location Quotient results are more than (>) 1. These results have explained that the related sectors have been able to meet the needs of the economy and contribute to economic growth which is quite biased, among the sectors are as follows: a). Gas and electricity in 2011-2015. b). Construction. c). Retail and wholesale trade: motorbike and car repairs. d). Warehousing and Transport. e). Communication and Information. f). Insurance and Financial Services. g). Real Estate. h). Compulsory Social Security, Defense and Government Administration. i). Social activities and health services. The base sector has strength and good prospects for the regional economy by being able to contribute to an increase in economic growth in the current year or base year. This economic growth will certainly encourage various advances. While the category of the regional economy that is classified as a non-basic sector must still be a concern and periodic evaluation so that it remains a sector that provides economic benefits.

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Cluster Typology

Cluster typology to calculate the various forms of patterns and arrangements of economic growth in Batang Regency based on the average rate of economic growth and growth contribution to GRDP compared to the economic growth rate and growth contribution of Central Java during the period 2011 to 2018. The results of the class typology calculation are as follows:

Table 3. Class Typology Calculation

Category	BUSINESS FIELD		District	Province			
		Economic Growth	Growth Contribution	Economic Growth	Growth Contribution	Description	Quadran
A	Agriculture, Forestry and Fishing	0,077	23,42%	0,076	15,25%	developed and fast-growing sectors	
B	Mining and Quarrying	0,117	2,60%	0,119	2,25%	advanced but depressed sectors	
C	Manufacturing	0,12	33,28%	0,09	34,93%	potential sectors to grow faster	
D	Gas and Electricity	0,093	0,06%	0,086	0,094%	relatively lagging sectors	
E	Supply, Sewerage, Waste Management, Remediation Activities and Water	0,06	0,10%	0,04	0,07%	developed and fast-growing sectors	
F	Construction	0,11	4,98%	0,10	10,24%	potential fast-growing sectors	
G	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	0,084	13,32%	0,083	13,83%	potential sectors to grow faster	
H	Transportation and Storage	0,08	2,29%	0,10	3,00%	relatively lagging sectors	
I	Accommodation and Food Service Activities	0,09	3,72%	0,10	3,03%	advanced but depressed sector	
J	Communication and Information	0,100	2,36%	0,099	3,20%	potential sectors to grow faster	

K	Insurance and Financial Activities	0,08	1,78%	0,10	2,86%	relatively lagging sectors	
L	Real Estate Activities	0,090	1,04%	0,091	1,65%	Relatively lagging sector	
M, N	Business Activities	0,13	0,35%	0,14	0,34%	advanced but depressed sectors	
O	Public Administration and Defence; Compulsory Social Security	0,070	2,62%	0,073	2,89%	relatively lagging sectors	
P	Education	0,171	5,57%	0,172	4,06%	advanced but depressed sector	
Q	Human Health and Social Work Activities	0,13	0,69%	0,14	0,81%	relatively lagging sectors	
R, S, T, U	Other Services Activities	0,09	1,81%	0,10	1,49%	advanced but depressed sector	
Sbs	GROSS REGIONAL DOMESTIC PRODUCTS	1,71	100,00%	1,70	100,00%		

Source BPS Central Java: Data processed.

Based on the results of calculations using Excel in order to determine the type of quadrant in the classification typology, it has explained that there are only 2 sectors that are included in the developed and fast-growing sectors and the 2 sectors are. a). Forestry, Fishing and Agriculture. b). Sewerage, Water Supply, Waste Management and Remediation. This means that these two sectors are included in quadrant 1 because they have higher average growth and higher contributions than the Central Java GRDP. Reflected because the Agriculture, Forestry and Fisheries sector has a large contribution in Batang Regency with an average contribution of 23.42% during 2011-2018 with an average growth rate of 0.077% higher when compared to the province of 15.25% for contribution to growth and growth rate average value of 0.076%, However, the phenomenon of development makes the contribution of the Agricultural Industry to the economy, decreasing every year. In order to prevent the conversion of paddy fields as a consequence of successful economic development, it is necessary to control the conversion of paddy fields and its policies (Hidayati & Faiz, 2021). For the category of waste management, water supply, waste and recycling the contribution value of 0.10% is higher than the province of 0.07. kaudran II includes, a). Manufacturing. b). Construction. c). Wholesale and Retail Trade; Repair of Motor Vehicles, Motorcycles. d). Communication, Information. These 4 sectors mean that the economic growth of Batang district is greater than the growth of Central Java GRDP but the value of its contribution to GRDP is smaller. Quadrant III is part of the

depressed developed sector because the growth rate of the Batang economic sector is lower than the Central Java Province level but the value of its contribution to GRDP is higher. The sectors included in quadrant III include, a). Mining and Quarrying. b). Accommodation and Food Service. c). Business. d). Education. e). Other Services Activities. The five sectors are superior in fulfilling the needs of the Batang district economy because they are able to fulfil their own needs. However, the sector has not been able to excel in its contribution to the GRDP of Batang Regency compared to Central Java Province. Quadrant IV includes the following, a). Gas and Electricity. b). Transportation and Storage. c). insurance and Financial Activities. d). Real Estate Activities. e). Compulsory Social Security; public Administration and Defence. f). Social Work, Human Health. Becoming quadrant IV is due to the sum of the results of the calculation of average growth and contribution to economic growth in Batang Regency is lower when compared to the total average growth and contribution of the Central Java Province economy, with the lowest value obtained by the Social Activities and Health Services sector of 0.13% for the growth rate and 0.69% for its contribution as shown in the table above.

DISCUSSION

A leading sector is a sector that plays a role in driving the economic growth of a region. In addition, measuring the level of contribution to the economy of each region, through comparison with other regions as evidence of the importance of the sector. Methods such as Location Quotient (LQ), classification typology analysis, can be utilized in the identification of leading sectors of a particular region with unlimited years (Amri, Maski, & Pangestuty, 2023).

The results obtained from the LQ show that certain sectors have a significant influence and a large influence on the economic growth of the Batang Regency in Central Java Province. In addition, these sectors have been able to fulfil their own needs and even have the potential to export. Among the basic sectors is the construction sector with the highest calculation results in 2014 with an average index value of 2.143, followed by the finance and insurance sector with an average index value of 1.607 in the same year. In the third rank is followed by the real estate sector through the total index value of 1.560. In addition, the communication and information sector were 1.409 at the highest result in 2013, the transport sector in 2017 provided an average of 1.355 compared to previous years. And other basic sectors as in the table presented above. In the electricity and gas sector there is a change in value that results in a change from base to non-base because the average index value drops to below 1.

In addition, the results of the calculation of the classification typology analysis, there are I sectors that fall into the advanced and fast-growing categories. First, Forestry, Agriculture, Fisheries. Second, Waste Management and Recycling, Water Supply. The results of the advanced and fast-growing values indicate that both are growing faster when compared to the average contribution and growth rate of the provincial economy. The implementation of decentralisation of regional autonomy policy provides regions with greater opportunities to manage government affairs, resources, and regional finances (Jamil, Ananda, & Prasetyia, 2022). Furthermore, the sectors that include potential and can encourage the economy in quadrant II are Manufacturing, Construction, Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles, Communication and Information, then the rest of the existing sectors fall into quadrant III and quadrant IV respectively.

Then to advance its sectors requires an efficient effective form of management, it is very important to establish policies and development plans that can be enforced as well as become guidelines by all related agencies. In general, the strengths of Batang Regency can be categorised through two resources. Firstly, the geographical natural resources that have a combination of coastal, lowland and mountainous areas that support the development of the agricultural, forestry and fisheries sectors, through the division of soil construction, alluvial 11.47% andosol 13.23%; podzolic 5.64%. and latosol 69.66%. The construction of the soils will affect the utilisation of the land, most of which becomes a place for cultivation of both forests, plantations and any agriculture. The majority of forest and plantation tenure is under government authority. Agriculture both dry and wet (technical irrigation and simple irrigation) is done independently (Pemkab Batang, 2018).

Second, the strength of human resources through financial strength which shows that the finance and insurance sector has a basic role in the economy for 7 consecutive years, the construction sector, government administration, defence, compulsory social security, information and communication sector, wholesale trade, retail, repair of cars and motorbikes. The Batang district sustainable development strategy will always need to be implemented to encourage all aspects of economic growth, especially focusing on all existing sectors to direct policies on strengthening human resources, capital and regional investment in order to achieve stability and achieve economic improvement. In order to more easily achieve sustainable development and economic growth, there are several plans that can be implemented. Firstly, an emphasis on developing and improving basic sectors. This can be achieved by investing in infrastructure, technology and human resources in these sectors to increase their productivity and competitiveness (Amri, Maski, & Pangestuty, 2023).

As for human resources as research has been conducted by (Balog & Demidova, 2021) human resources in this sector to increase productivity and competitiveness. The second is in line with research (Hidalgo et al., 2007 in Amri, Maski, & Pangestuty, 2020) explaining that diversifying the economy and exploring new sectors that have growth potential can increase regional competitiveness. Then the Batang district can utilise its natural wealth and advantages in its geographical location to produce renewable energy identification, agro-tourism, agribusiness and encourage manufacturing production while maintaining environmental sustainability, producing various forms of innovation, research, because developing these sectors will not only provide a boost to economic growth but also be able to contribute to conservation efforts.

Finally, Batang Regency needs to implement inclusive development, this will ensure that the benefits of growth can be distributed evenly to all levels of society (Amri, Maski, & Pangestuty, 2023). In addition, various efforts to reduce income inequality need to improve the quality of access to education and through qualified health services, in line with research conducted (Aan Zulyanto 2020) which states that an important aspect of education and health development, because it is a basic human need that needs to be owned and fulfilled in order to survive and increase regional growth. Through the 2018-2023 Regional Medium-Term Development Plan (RPJMD) of Central Java province, a *grand design of* development planning was prepared which aims to improve the quality of the population in improving the quality of human resources through efforts to increase access to health services in general and education and employment or business opportunities (Pemkab Batang, 2018).

The implementation of planning in the Batang district can encourage sustainable economic growth and improve welfare for the community. According to Tambunan (2018), in macroeconomics, economic growth is the increase in the value of Gross Domestic Product, meaning that the amount of national income (PN) has increased. Then the meaning of National Income (PN), has two meanings narrowly and broadly. In a narrow sense, national income is the national income itself. In a broad sense, national income refers to Gross Domestic Product (GDP) or refers to the annual result of gross national product or to net national product. Its realisation will require various government collaborations with the private sector and the community will be crucial in ensuring a dynamic economy in the years to come.

CONCLUSION

Location Quotione found that the calculation of the base and non-base areas of the Batang district economy did not always produce the same results over a period of 7 years, such as electricity and gas supply in 2011-2015 became a base sector but 2016-2018 became non-base because the results of the LQ calculation showed changes with a value of less than 1. And other sectors remained with consistent results. The classification typology explains that there are only two sectors included in the fast-growing and advanced sectors, namely a). Fisheries, forestry, agriculture, b). Water Supply, Waste Management, Waste, and Recycling means that the growth rate and growth contribution are higher when compared to the Central Java provincial level, but it also indicates that these two sectors can be the impetus for other sectors to always advance and plan better in order to remain at least consistent. The Quadrant II Cluster Typology consists of the Manufacturing, Construction, Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles, Communication and Information sectors. Quadrant III case typology includes Mining and Quarrying, Accommodation and Food Service Activities, Business Activities, Education, Other Services Activities. Quadrant IV classification typology is a relatively underdeveloped sector, namely Gas and Electricity, Transportation and Storage, Insurance and Financial Activities, Real Estate Activities, Public Administration and Defence; Compulsory Social Security, Social Work, Human Health Activities, so this sector needs improvement so that in the future there will be good changes. There is still a need to explore the strength of each other's resources to achieve synergy and drive overall economic growth. Economic growth is the process of increasing the production capacity of an economy in the form of an increase in national income. Economic development encourages economic growth and vice versa. Economic growth indicates the success of economic development. It is one of the benchmarks for the success of economic development in a region. The economy is considered to be experiencing growth if all real service response to the use of production factors in a given year is greater than the real income of the people in the previous year. One of the indicators used to measure the economic growth is the growth rate of real Gross Domestic Regional Product (GDP) (Runtunuwu & Kotib, 2021).

REFERENCES

Amri, M. A., Maski, G., & Pangestuty, F. W. (2023). Analysis of leading sectors and components of the expenditure side that affect economic growth in the province of South Sulawesi. *Journal of International Conference Proceedings, 6*(1), 395-406. doi:10.32535/jicp.v6i1.2302

Arsyad, L. (2015). Development Economics and Economic Development. The Economics of Sustainable Development.

Basuki, M., & Mujiraharjo, F. N. (2017). Analisis Sektor Unggulan Kabupaten Sleman dengan Metode Shift Share dan Location Quotient. *Jurnal Sains, Teknologi dan Industri*, *15*(1), 52-60.

Balog, M. M., & Demidova, S. (2021). Human capital development in the context of the fourth industrial revolotion. The electrochemical society. IOP Conference Series Earth and Environmental science. doi:10.1088/1755-1315/666/6/062120

Hakim, L. N., & Suhendi, A. (2021). Analisis location quotion versus sumbangan terhadap pendapatan domestik regional bruto dalam penentuan kawasan ekonomi basis di provinsi Lampung. *GEMA: Journal of Gentiaras Management and Accounting*, *13*(2), 120-134. doi:10.47768/gema.v13i2.239

Hasanah, H. (2021). Mapping of Leading Sectors in Pontianak City Using the Klassen Typology and Location Quotient Methods. *Prosiding Seminar Nasional SATIESP.*

Hidayati, W., & Faiz, I. A. (2021). The influence of economic development on the wetland conversion in Java-Bali. *Eko-Regional: Jurnal Pembangunan Ekonomi Wilayah*, *16*(1).

Hutapea, A., Koleangan, R. A., & Rorong, I. P. (2020). Analisis sektor basis dan non basis serta daya saing ekonomi dalam peningkatan pertumbuhan ekonomi kota Medan. *Jurnal Berkala Ilmiah Efisiensi*, *20*(03).

Kesuma, N. L. A., & Utama, I. M. S. (2015). Analisis sektor unggulan dan pergeseran pangsa sektor-sektor ekonomi kabupaten Klungkung.. *Journal of Applied Quantitative Economics.*

Maslowan, I. (2017). Analisis Sektor Basis Dan Non Basis Ekonomi Kota Tomohon Tahun 2011-2015. *Jurnal Berkala Ilmiah Efisiensi*, *16*(3).

Morrissey, K. (2016). A location quotient approach to producing regional production multipliers for the Irish economy. *Papers in Regional Science*, *95*(3), 491-506.

Prabowo, T. A., Ananda, C. F., & Bintoro, N. S. (2023). Analysis of regional economic problems (Case study: Mapping regency/city leading sectors in Papua province in 2020). *Journal of International Conference Proceedings, 6*(1), 324-335. doi:10.32535/jicp.v6i1.2309

Pratama, M. P. (2020). Analisis dan kontribusi sektor basis non-basis: penentu potensi produk unggulan kabupaten Kebumen. *Jurnal Ilmiah Akuntansi Dan Keuangan*, *9*(1), 75-82. doi:10.32639/jiak.v9i1.313

Pemkab Batang. (2018). *Rencana Pembangunan Jangka Menengah Daerah 2017-2022 Kabupaten Batang.* Retrieved from https://jdih.batangkab.go.id/file/abstrak-peraturan-daerah-no-1-tahun-2018-tentang-rencana-pembanguan-jangka-menengah-daerah-kabupaten-batang-tahun-2017-2022.pdf

Rusli, A. N., Roza, A., & Rusli, A. M. (2021). Analisis sektor basis dan sektor non basis dalam upaya peningkatan sarana dan prasarana perkotaan di Kota Padang. *Jurnal Saintis*, *21*(01), 45-52. doi:10.25299/saintis.2021.vol21(01).6537

Runtunuwu, P. C. H., & Kotib, M. (2021). Analysis of the effect construction costs, human development index and investment: does it have an impact on economic development?. *International Journal of Accounting & Finance in Asia Pasific*, *4*(3), 100-113. doi:10.32535/ijafap.v4i3.1210

Siyoto, S., & Sodik, A. (2015). *Dasar Metodologi Penelitian*. Sleman: literacy media publisching.

Tambunan, T. (2018). *Perekonomian Indonesia 1965-2018*. Bogor: Ghalia Indonesia Paper.

Zulyanto, A. (2016). Pengeluaran pemerintah dan Indeks Pembangunan Manusia (IPM) di Provinsi Bengkulu. *Jurnal Ekonomi-Qu*, *6*(2). doi:10.35448/jequ.v6i2.4340