Mapping of Regional Financial Capacity on Economic Growth in Central Java Indonesia

Dinar Wahyuningrum[1], Izza Mafruhah[2], Mulyanto[3]

[1]Faculty Economic and Business, Sebelas Maret University, Surakarta 57126, Indonesia

[2]Faculty Economic and Business, Sebelas Maret University, Surakarta 57126, Indonesia

[3]Faculty Economic and Business, Sebelas Maret University, Surakarta 57126, Indonesia

Abstract

This study aims to map regional financial capabilities between regions in eight strategic areas in Central Java Province. Regional financial capacity is measured using the degree of fiscal decentralization. This study uses secondary data obtained from the Central Statistics Agency and related agencies in each region. The analysis used in this study is the Klassen typology using time series data from 2013-2019. The results of the analysis show that of the 35 regencies/cities in Central Java Province, six regions are in quadrant I (developed areas). Regions that are in quadrant II (advanced but depressed) consist of four regions. Then the area included in quadrant III consists of eleven regions. Meanwhile, there are 14 regions in quadrant IV.

Keywords: Degree of Fiscal Decentralization, Economic Growth, Klassen Typology

1. Introduction

Increasing economic growth is very meaningful for Indonesia as a developing country. Economic growth as a measure of economic success, increased economic growth also indicates an increase in people's welfare and a decrease in regional inequality. Therefore, the phenomenon of the weakening of Indonesia's economic growth in recent years. This is a warning for the government that must be followed up immediately because the impact will be very broad. Regional autonomy is the result of reforms that expect an improvement in government performance, autonomy is expected to be able to improve the centralized pattern that is considered unfair in the process of equitable development.(Psycharis et al., 2015). Local governments can provide better public services, so that they can run more optimally. Decentralization as a transfer of responsibility for planning, management and improvement of resources and allocations from the central government and its institutions. To increase regional economic growth, regional governments must be given greater authority to regulate all regional affairs with fiscal decentralization. The issue of fiscal decentralization has always been a topic of discussion until now.

Economic growth in Central Java in 2019 was 5.36 percent of this value, Central Java Province was in the 3rd lowest position above West Java and Banten Provinces which each had a value of 5.02 percent and 5.26 percent. Central Java itself has eight strategic areas. Each strategic area seeks to increase economic growth as well as equiTable regional development. The following are strategic areas in Central Java

1. Kedungsepur covers Kendal, Demak, Grobogan, Semarang, Semarang City, and Salatiga City Regencies.
2. Wanarakuti which includes Juwana, Jepara Regency, Kudus Regency and Pati Regency.
3. Subosukawonosraten consists of Surakarta City, Boyolali Regency, Sukoharjo, Karanganyar, Wonogiri, Sragen, and Klaten.
4. Bregasmalang, covering Brebes Regency, Tegal City, Tegal Regency (Slawi), and Pemalang Regency.
5. Petanglong, consists of Pekalongan Regency, Batang Regency and Pekalongan City.
6. Barlingmascakeb, covering Banjarnegara Regency, Purbalingga Regency, Banyumas Regency, Cilacap Regency, and Kebumen Regency.
7. Purwomanggung, namely Purworejo Regency, Wonosobo Regency, Magelang City, Magelang Regency and Temanggung Regency.
8. Banglor, consists of Rembang Regency and Blora Regency.

Where each different district/city in the region has different financial capabilities and economic growth. Differences in economic growth in each region are caused by differences in the potential of natural resources and the ineffective use of natural resources. This can be seen from the average district/city GRDP growth rate at constant prices in 2010 in Table 1. Table 1 explains that the area that has the highest growth rate occurs in the Banglor Region which provides the highest GRDP growth rate for the Region, namely the City of Semarang which contributes a figure of 23.54 percent in 2016. Then the economic growth that tends to increase is the city of Semarang. The growth rate of GRDP in each year has increased in 2016 the GRDP growth rate of Semarang City is 5, 98 percent, in 2017 it increased to 6.70 percent, then in 2019 it rose to 6.81 percent. Meanwhile, the lowest growth rate occurred in the Wanarakuti Region which consists of Kudus Regency with an economic growth of 2.54 percent in 2016.

The growth rate of GRDP in the Kedungsepur area always increases every year, where the City of Semarang provides a high distribution of GRDP. If seen from Table 2, it is known that there is a high economic development in the city of Semarang. Where the center of economic activity and the center of government in an area will be more advanced and independent in the provision of public goods and more effective in the utilization of existing resources. Therefore, it is necessary to implement an effective fiscal decentralization for all regions in Central Java in order to reduce the fiscal gap between the central government and regional governments and between regional governments, improve the quality of public services in the regions and reduce the gap in public services between regions, as well as improve the quality of public services in the regions. efficiency of increasing national resources.

The inter-regional linkage is an important part in the development of a region. Between one region and another always interact with each other in economic, social and development relations. Economic analysis focuses on the independence of a region so that it does not consider the effects of space and other interactions.

Table 1. Average GRDP Growth Rate of Regencies/Cities in Central Java in 2013-2019

Areas	2013	2014	2015	2016	2017	2018	2019	Average
Banjarnegara	5.44	5.31	5.47	5.44	5.65	5.67	5.60	5.51
Banyumas	6.97	5.67	6.12	6.05	6.34	6.45	6.32	6.27
Cilacap	1.66	2.92	5.96	5.09	2.58	2.99	2.27	3.35
Kebumen	4.57	5.79	6.28	5.01	5.15	5.53	5.52	5.41
Purbalingga	5.27	4.85	5.47	4.85	5.37	5.42	5.65	5.27
Pemalang	5.88	5.31	5.42	5.03	5.55	5.72	5.39	5.47
Pekalongan	5.99	4.95	4.78	5.19	5.44	5.76	5.35	5.35
Pekalongan City	5.91	5.48	5.00	5.36	5.32	5.69	5.50	5.47
Blora	5.36	4.39	5.36	23.54	5.98	4.38	4.05	7.58
Rembang	5.43	5.15	5.50	5.28	6.98	5.89	5.20	5.63
Boyolali	5.83	5.42	5.96	5.33	5.80	5.72	5.96	5.72
Karanganyar	5.69	5.22	5.05	5.40	5.77	5.98	5.93	5.58
Klaten	5.96	5.84	5.30	5.17	5.34	5.47	5.50	5.51
Sragen	6.70	5.59	6.05	5.77	5.97	5.75	5.90	5.96
Sukoharjo	5.78	5.40	5.69	5.72	5.76	5.79	5.92	5.72
Wonogiri	4.78	5.26	5.40	5.25	5.32	5.41	5.14	5.22
Surakarta City	6.25	5.28	5.44	5.35	5.70	5.75	5.78	5.65
Brebes	5.91	5.30	5.98	5.11	5.65	5.26	5.72	5.56
Pemalang	5.57	5.52	5.58	5.43	5.61	5.69	5.80	5.60
Tegal	6.73	5.03	5.49	5.92	5.38	5.51	5.58	5.66
Tegal City	5.67	5.04	5.45	5.49	5.95	5.87	5.77	5.60
Demak	5.27	4.29	5.93	5.09	5.82	5.40	5.36	5.31
Grobogan	4.57	4.07	5.96	4.51	5.85	5.83	5.37	5.17
Kendal	6.22	5.14	5.21	5.56	5.78	5.77	5.71	5.63
Semarang	5.97	5.85	5.52	5.30	5.65	5.67	5.39	5.62
Salatiga City	6.30	5.57	5.17	5.27	5.58	5.84	5.90	5.66
Semarang City	6.25	6.31	5.82	5.89	6.70	6.48	6.81	6.32
Jepara	5.39	4.81	5.10	5.06	5.39	5.85	6.02	5.37
Kudus	4.36	4.43	3.88	2.54	3.21	3.24	3.10	3.54
Starch	5.97	4.64	6.01	5.49	5.67	5.71	5.86	5.62
Magelang	5.91	5.38	5.18	5.39	5.50	5.28	5.30	5.42
Purworejo	4.94	4.48	5.33	5.15	5.27	5.33	5.44	5.13
Temanggung	5.20	5.03	5.24	5.02	5.03	5.13	5.05	5.10
Wonosobo	4.00	4.78	4.67	5.36	4.14	5.06	5.61	4.81
Magelang City	6.04	4.98	5.11	5.23	5.42	5.46	5.44	5.38

Source: BPS, 2019

The fact that occurs is the interaction between regions that cannot be separated, because the spatial aspect is a factor that must be considered in determining the condition of an area. According to Anwar (2017) voluntarily in local and territorial restrictions are rooted in the interaction between institutions and the local economy in explaining the dynamics of regional growth (Anwar, 2017). One of the spatial aspects of economic development is using the geographical aspect to analyze the inequality of development (Mudrajad Kuncoro, 2015).

Research on the typology of klassen conducted by Yunitasari and Firmansyah (2019) the results of this study showed that most areas of East Java Province were dominated by underdeveloped areas (quadrant 4) (Yunitasari & Firmansayah, 2019). The results of previous studies still get different conclusions between researchers of fiscal decentralization, where each author has a

logical argument and proves it empirically. A similar study was also conducted by Martinez-Vazquez (2017) which states that the degree of fiscal decentralization shows the magnitude of central government intervention in the implementation of regional development and shows the readiness of local governments in implementing regional autonomy (Martinez-Vazquez et al., 2017). Canavire-Bacarreza (2020) found that fiscal decentralization measured as part of local government spending or revenues in total government expenditures or revenues in general had a significant positive impact on economic growth (Canavire-Bacarreza et al., 2020). Another study conducted by Boret (2021) result of this study supports the decentralization theorem of Oates' findings in the context in the Cambodian state. The uneven abundance of resources between regions in Cambodia has caused decisions on the provision of public goods not to produce good results. Therefore, people in Cambodia choose different projects, such as road or irrigation projects that suit their needs and location (Boret et al., 2021). Wei Tang (2021) is one of the researchers who supports fiscal decentralization to increase economic growth. Fiscal decentralization policy has a positive impact on increasing relatively high economic growth in central business areas and areas rich in natural resources than in areas that are not business centers (Tang, 2021).

The existence of a research gap means that fiscal decentralization does not always have a positive impact on efforts to increase regional economic growth. Although research related to fiscal decentralization and regional economic growth has been widely carried out by previous researchers, there are still few who use Klassen typology analysis to see the classification of regional financial capabilities in each region as measured by the degree of fiscal decentralization and use geographic information systems for mapping capabilities. regional finance.

2. Method

The type of research used is descriptive quantitative research which intends to describe the value of the variable itself without making comparisons with other variables, and obtaining data for strengthening research in the form of qualitative research conducted (Yunitasari & Firmansayah, 2019). The location of this research was conducted in regencies/cities in Central Java to analyze regional financial capabilities between strategic areas in Central Java Province. The data used in this study is secondary data in the form of an annual time series for a period of seven years (2013-2019), secondary data obtained from literature studies and related agencies such as the Central Statistics Agency. In addition to written report data, for the purposes of this research also dig from various data, information and reference data from various library and internet sources.

2.1 Analysis Steps

First, conducting characteric analysis and general description of economic growth in Central Java.

Second, calculating the degree of fiscal decentralization of each regency/city in Central Java.

And then, Analyze the mapping of the degree of decentralization with economic growth using the analysis of the klassen typology.

Then, map regions based on categories or quadrants obtained from the results of klassen typology analysis using ArcGIS software to make it clearer which regions fall into certain

categories.

Finally, draw conclusions based on the results of the analysis.

2.2 Klassen Typology Analysis

Klassen typology is one of the regional economic analysis tools to determine the classification of regional economic sectors in the Regency/City of Central Java Province. The purpose of the Klassen typology analysis is to map the economic sectors in an area. There are four groups in the Klassen typology, namely fast-developing areas, developed but depressed areas, developing areas and relatively underdeveloped areas. Klassen Typology Classification can be seen in Table 2.

2.3 Geographic Information System

Geographic information system (GIS) is basically a type of information system, which focuses on presenting and analyzing geographic reality (Mudrajad Kuncoro, 2012). The purpose of spatial analysis in this study is to use GIS as the basis of analysis to classify related variables in the form of a thematic picture. The analytical tool used in conducting spatial analysis is using a base map from Central Bureau of Statistics and processed with ArcGIS software. GIS in this study is used to identify the location and spatial pattern of the degree of fiscal decentralization. This study followed standard procedures in designing a GIS

Table 2. Classification of Regions According to Klassen Typology

Fiscal Decentralization (g) / GRDP growth rate (y)	yi > y	yi < y
gi > g	Quadrant I	Quadrant II
gi < g	Quadrant III	Quadrant IV

Source: (Sjafrizal, 2012)

Where:

gi: Degree of fiscal decentralization of districts/cities i.

yi: The growth rate of GRDP of the district/city i.

g: The degree of fiscal decentralization of the comparative region.

y: The growth rate of GRDP in the comparative area.

3. Results and Discussion

3.1 Klassen Typology

Economic development, especially in developing countries, aims to improve the standard of living and welfare of all people. One of the problems of economic development in developing countries is the problem of financial relations between the center and the regions. The financial

state of the region largely determines the direction of government of a region. Finance is one of the basic criteria to know in real terms the ability of the region to take care of its own household (MZ Faridi, 2011). In order to determine the financial capacity of the region, an analysis was carried out using the Klassen typology analysis. There are four Klassen typologies with two indicators, namely regional economic growth and the degree of fiscal decentralization. The average regional economic growth as the horizontal axis and the average degree of fiscal decentralization as the vertical axis. Klassen typology analysis is an analysis that groups regions into four quadrants, namely the developed and rapidly growing sector (Quadrant I), the developed but depressed sector (Quadrant II), the potential sector or still developing (Quadrant III), the relatively lagging sector (Quadrant IV). The following are the results of the classification of each region in a strategic area in Central Java Province.

3.1.1. Klassen Typology Analysis of the Degree of Fiscal Decentralization Against Economic Growth at Barlingmascakeb

The results of the klassen typology of the Barlingmascakeb region are divided into four classifications, which can be seen in Table 3. The klassen typology of the Barlingmascakeb region during the period 2013-2019. The area included in quadrant I (developed area) is Banyumas Regency which is a district that is growing and developing rapidly compared to the average economic growth and the degree of fiscal decentralization of Central Java Province. This is because Banyumas Regency is a node in the Barlingmascakeb area, a strategic location for shopping centers, tourism and infrastructure which encourages the degree of fiscal decentralization and its economic growth rate is higher than the economic growth rate of Central Java. Through the contribution of the processing industry sector in Banyumas Regency of 23, 01 percent and the contribution contributed by the wholesale and retail sector is 16.77 percent. While the contribution of the construction sector is 13.01 percent (Putri et al., 2019). Cilacap Regency is a developed but depressed region (quadrant II). This area is a relatively developed area but its growth is relatively small, due to the suppression of main activities caused by the lack of attention from the central government and the community to utilize and develop existing potential sectors. Economic growth in Cilacap Regency is driven by the Mining and Agriculture sectors which are less prominent even though these sectors contribute to contributing to Regional Original Income.

Table 3. Klassen Typology Barlingmascakeb 2013-2019

Region	Average DDF	PE	Quadrant
Banjarnegara	0.11	5.57	III
Banyumas	0.19	6.26	I
Cilacap	0.16	3.78	II
Kebumen	0.12	5.50	IV
Purbalingga	0.14	5.35	IV
Central Java	0.16	5.52	

Source: Central Statistics Agency (processed)

For example, the lack of human resource capacity, dependence on the central government is relatively high (Pratomo, 2014). Banjarnegara Regency is an area that is included in quadrant III (fast growing). Regencies/cities included in this category are areas that have great potential but have not been utilized properly, such as managing and utilizing potential development in agriculture. The agricultural sector contributed 29.19 percent. In addition, Banjarnegara Regency also has great potential but has not been managed properly, although its growth is rapid, its regional financial independence is still below the average provincial financial independence. This is from the tourism sector which can be developed in the future in order to increase the local revenue which is relatively low, even though Banjarnegara Regency has many natural tourist attractions such as Sikidang Dieng Crater, Candradimuka Crater, Kailasa Dieng Museum, and so forth. Meanwhile, Kebumen and Purbalingga regencies are included in quadrant IV (relatively underdeveloped areas). Regions that fall into this category are regions that are economically very underdeveloped, both economically which are very lagging, in terms of economic growth and regional financial independence due to the lack of fulfilment of infrastructure such as road access. Kebumen as part of the development of the Barlingmascakeb area which connects the southern development axis with Purwomanggung and Subosukowonosraten. In addition, the north-south development axis, which includes Bregasmalang, is expected to be able to take advantage of development in the region to increase economic growth and increase local revenue so as to reduce dependence on the central government. As in the case of Purbalingga Regency, there is considerable variation in infrastructure spending at the district level, hampering the development of industrialization and tourism. Especially road access and the quality of human resources are the challenges for the development of a number of tourist attractions in Purbalingga Regency. Road infrastructure to several tourist attractions can only be reached by small vehicles. On the other hand, human resources are also not fully educated in the development of regional tourism. Road infrastructure to several tourist attractions can only be reached by small vehicles. On the other hand, human resources are also not fully educated in the development of regional tourism. Road infrastructure to several tourist attractions can only be reached by small vehicles. On the other hand, human resources are also not fully educated in the development of regional tourism.

3.1.2. Klassen Typology Analysis of the Degree of Fiscal Decentralization Against Economic Growth at Petanglong

Table 4. Classification Typology of Petanglong Region 2013-2019

Region	DDF Average	PE	Quadrant
Batang	0.14	5.42	IV
Pekalongan	0.15	5.31	IV
Pekalongan City	0.25	5.38	II
Central Java	0.16	5.52	

Source: Central Bureau of Statistics (processed)

The results of the klassen typology of the Petanglong area are divided into four classifications. The classification typology in the Petanglong area during the research period from 2013-2019 can be seen in Table 4. There are no areas included in quadrant I (developed areas). However, there are areas that are in quadrant II (developed but depressed areas), namely Pekalongan City. Pekalongan City is a relatively developed area but its economic growth is relatively small. This happens in the trade and retail sectors to improve the quality of local product production, besides that Pekalongan City is supported by the water supply, waste management, waste and recycling sectors. In terms of regional financial capacity, Pekalongan City has a value of 0.25 which is greater than the average degree of fiscal decentralization. Pekalongan City is an administrative area in the Petanglong area, so the area is more advanced and can better utilize the potential of its resources to increase local revenue. Meanwhile, Batang Regency and Pekalongan Regency are included in quadrant IV (relatively underdeveloped areas). Regions included in this category are regions that are economically very backward, both in terms of economic growth and regional financial capacity. This is caused by the low quality of human resources and the declining quality of natural resources. The low quality of human resources in Batang Regency is supported by the results of a survey from the Central Statistics Agency which states that the average HDI value of Batang Regency in 2013-2019 is 66.16. This value is relatively low compared to other areas in Central Java. The low quality of human resources can lead to low education and productivity in managing the potential of the region so that economic growth and regional financial capacity are still very lagging. Pekalongan Regency, which has economic growth and regional financial capabilities that are below the provincial average. The leading sector in Pekalongan Regency is the processing industry, especially the textile processing industry. However, as in Batang Regency, the average HDI value of Pekalongan Regency is low in Central Java Province compared to other regions.

3.1.3. Klassen Typology Analysis of the Degree of Fiscal Decentralization Against Economic Growth at Banglor

Table 5. Typology of Klassen Banglor Region 2013-2019

Region	DDF Average	PE	Quadrant
Blora	0.10	8.66	III
Rembang	0.15	5.77	III
Central Java	0.16	5.52	

Source: Central Bureau of Statistics (processed)

Based on Table 5, there are no areas that fall into quadrant I (developed areas) and II (developed but depressed areas). This is due to the suppression of basic activities in the Banglor area. Blora Regency and Rembang Regency are included in quadrant III (fast growing). Regions that fall into this category are areas that have great potential but are not well managed, even though their economic growth is high but their regional financial capacity is low, in other words they are still very dependent on the central government. Blora Regency and Rembang Regency have almost the same regional characteristics and economic conditions. Rembang Regency and Blora

Regency are dominated by the agricultural sector, but Rembag Regency is more varied because Rembang Regency is located on the north coast of Java Island so that it is not only agriculture but also the fishery sector. Likewise, Blora Regency, apart from the agricultural sector, Blora also excels in the mining sector, especially petroleum in Cepu District, but is mostly dominated by the agricultural sector, especially rice and corn. Although the economic growth in both areas is high, this illustrates that there is potential in the agricultural sector that can be developed by changing cropping patterns,

3.1.4. Klassen Typology Analysis of the Degree of Fiscal Decentralization Against Economic Growth at Subosukowonosraten.

Table 6. Classification Typology of Subosukowonosraten Region 2013-2019

Region	DDF Average	PE	Quadrant
Boyolali	0.15	5.75	III
Karanganyar	0.15	5.63	III
Klaten	0.11	5.36	IV
Sragen	0.15	5.89	III
Sukoharjo	0.19	5.78	I
Wonogiri	0.11	5.30	IV
Surakarta City	0.20	5.60	I
Central Java	0.16	5.52	

Source: Central Bureau of Statistics (processed)

The results of the klassen typology of the subosukowonosraten area during the 2013-2019 period can be seen in Table 6. The subosukowonosraten areas included in quadrant I (developed areas) are Surakarta City and Sukoharjo Regency. Regions that are included in quadrant I are regions that have high economic growth and regional financial capacity compared to the average economic growth and regional financial capacity of Central Java Province. The city of Surakarta is supported by the construction sector and the wholesale trade sector. Surakarta City is an administrative area in the Subosukowonosraten area which has an average HDI value of 80.47, this figure is quite high for the scope of Central Java. This condition illustrates that the Surakarta City area has quality human resources who have high productivity and are educated in utilizing the potential of the existing area so that it can increase regional original income which can advance the region, especially regional financial capabilities and not depend on the central government. Likewise, Sukoharjo Regency which has high economic growth is driven by the large trade sector and manufacturing industry. The economic structure of Sukoharjo Regency based on Gross Regional Domestic Product at Constant Prices in 2019 is dominated by the large trade sector with a contribution of 18.20 percent and the manufacturing sector with a contribution value of 38. 52 percent which accelerates the rate of growth and the regional financial capacity exceeds the average of Central Java Province. There is no Subosukowonosraten area in quadrant II (developed areas are depressed). Karanganyar, Boyolali, and Sragen regencies are in quadrant III (fast growing). Regions that are included in this quadrant are areas that have great potential but have not been exploited properly, although

economic growth is fairly rapid, these areas are still low in regional financial management. The three regions have the same regional characteristics, which are superior in the agricultural and plantation sectors. However, Human resources in the area have not been maximized in utilizing the existing potential so that they are lacking in terms of efforts to increase regional original income which encourage the region to be more advanced in terms of regional financial capacity. Meanwhile, Klaten and Wonogiri regencies are included in quadrant IV (lagging areas). Regions that are included in this quadrant are economic growth and regional financial capabilities are still very lagging behind. There are differences in infrastructure between regencies and cities, because Klaten Regency does not have infrastructure problems, but has a high unemployment rate based on the 2015 BPS report, which is 175,480 people. Meanwhile, Wonogiri Regency has problems in the field of infrastructure and facilities.

3.1.5. Klassen Typology Analysis of the Degree of Fiscal Decentralization Against Economic Growth at Wanarakuti

Table 7. Klassen Typology of Wanarakuti Region 2013-2019

Region	DDF Average	PE	Quadrant
Jepara	0.14	5.48	IV
Kudus	0.15	3.19	IV
Pati	0.13	5.75	III
Central Java	0.16	5.52	

Source: Central Bureau of Statistics (processed)

The results of the klassen typology in the Wanarakuti region, Central Java Province, describe that in this area there are no areas that fall into quadrants I (developed areas) and II (developed but depressed). Pati Regency is in quadrant III (fast growing). Regions that fall into this category are areas that have great potential but have not been utilized properly, despite rapid economic growth but the regional financial capacity is still low. Pati Regency has rapid economic growth which is driven by the agricultural sector. This illustrates that there is potential in the agricultural sector that can be developed by changing the way it is managed with more modern knowledge and technology. This requires local government attention to develop regional potential, especially the agricultural sector, besides being able to increase economic growth but also to increase regional original income which is useful for increasing regional financial capacity so that they do not always rely on transfer funds from the central government. Meanwhile, Jepara Regency and Kudus Regency are included in quadrant IV. Regions that fall into this category are underdeveloped regions both in terms of economic growth and regional financial capacity. Jepara Regency and Kudus Regency have advantages in the processing industry sector, for Jepara Regency it is dominated by the furniture industry and Kudus Regency is dominated by the cigarette industry. In addition to the processing industry, Jepara and Kudus regencies have many tourist attractions. For example, in Jepara Regency, it is famous for natural beach tourism and Kudus Regency for religious pilgrimage tourism, Walisongo. However, road access in these two areas is very concerning. This can hinder the development of industrialization and tourism.

3.1.6. Klassen Typology Analysis of the Degree of Fiscal Decentralization Against Economic Growth at Bregasmalang

The results of the klassen typology of the Bregasmalang Region show that the area included in quadrant I (developed area) is Tegal City. Regions that fall into this category are regions that have rapid economic growth and high regional financial capacity compared to the average of Central Java Province. The city of Tegal is supported by the large trade and construction sectors

Table 8. Classification Typology of Bregasmalang Region 2013-2019

Region	DDF Average	PE	Quadrant
Brebes	0.13	5.54	III
Malang	0.13	5.62	III
Tegal	0.14	5.58	III
Tegal City	0.28	5.70	I
Central Java	0.16	5.52	

Source: Central Bureau of Statistics (processed)

The city of Tegal is an administrative area of the Bregasmalang area, so there are many infrastructure developments and shopping centers in the area. The contribution of big trade in 2019 in Tegal City was 27.82 percent and the construction sector was 17.23 percent. Meanwhile, the Regencies of Brebes, Pemalang, and Tegal are in quadrant III. Regions that fall into this category experience rapid economic growth but in terms of regional financial capacity, they are still very dependent on the central government. The three districts have great potential but have not been managed properly and optimally. Like Tegal Regency, which has an average HDI value of 65.78, this figure is relatively low compared to other regions in Central Java Province. A low value describes the condition of the quality of human resources in Tegal Regency which is very low. The low quality of human resources causes the regional potential to be poorly managed so that it has not been able to increase regional original income. Tegal Regency, which has an average HDI value of 65.78, this figure is relatively low compared to other regions in Central Java Province. A low value describes the condition of the quality of human resources in Tegal Regency which is very low. The low quality of human resources causes the regional potential to be poorly managed so that it has not been able to increase regional original income. Like Tegal Regency, which has an average HDI value of 65.78, this figure is relatively low compared to other regions in Central Java Province. A low value describes the condition of the quality of human resources in Tegal Regency is very low. The low quality of human resources causes the regional potential to be poorly managed so that it has not been able to increase regional original income.

3.1.7. Klassen Typology Analysis of the Degree of Fiscal Decentralization Against Economic Growth at Kedungsepur

The results of the classification typology of the Kedungsepur area are divided into four quadrants, which can be seen in Table 9. The Kedungsepur area is included in quadrant I (developed areas), namely Salatiga City and Semarang City. This is driven by the City of

Salatiga supported by information and communication. While the city of Semarang is the construction sector. The contribution of the information and communication sector in Salatiga City is 10.17 percent and the contribution of the construction sector in Semarang City is 26.88 percent.

Table 9. Classification Typology of Kedungsepur Area 2013-2019

Region	DDF Average	PE	Quadrant
Demak	0.14	5.52	IV
Grobogan	0.14	5.51	IV
Kendal	0.15	5.61	III
Semarang	0.17	5.50	II
Salatiga City	0.23	5.55	I
Semarang city	0.39	6.34	I
Central Java	0.16	5.52	

Source: Central Bureau of Statistics (processed)

Areas that have advantages in the information and construction sectors describe the condition of the region as relatively advanced because information and construction have technological advantages that can increase economic growth and local revenue. While the areas included in quadrant II (developed and depressed), namely Semarang Regency. Semarang Regency has high regional financial capacity but low economic growth compared to the average of Central Java Province. Based on Table 9 the degree of decentralization of Semarang City is 0.17 percent. These results illustrate the potential of the area has been managed to the maximum. In addition, Semarang Regency is included in quadrant II driven by the processing industry sector. The contribution of the Semarang Regency processing industry is 38.28 percent. however, the value of the contribution of the processing industry sector has not changed significantly every year so that it does not have much impact on the economic growth of the city of Semarang. The area that is included in quadrant III is Kendal Regency. Kendal has great potential for natural resources but has not been fully explored. The processing industry sector is the leading sector in Kendal Regency. The contribution of the processing industry sector in 2019 was 41.80 percent. The processing industry, especially furniture and fish product processing. Demak Regency and Grobogan Regency are included in quadrant IV. The areas included in this region are relatively underdeveloped areas. Grobogan Regency is dominated by the agricultural sector, especially rice and corn. The contribution of the agricultural sector in Grobogan Regency in 2019 was 27.56 percent. The high value of the contribution of the agricultural sector in Grobogan Regency is not too influential because the agricultural sector in Grobogan Regency has not used sophisticated technology and sells raw goods so that although the contribution of the agricultural sector is high it does not cause a significant increase in terms of economic growth. The same thing happened in Demak Regency, which was dominated by the processing industry sector. The contribution of the processing industry in 2019 in Demak Regency was 30.84 percent. However, the lack of basic infrastructure and road access at the district level has hampered economic development in Demak Regency.

3.1.8. Klassen Typology Analysis of the Degree of Fiscal Decentralization Against Economic Growth at Purwomanggung

The results of the klassen typology in the Purwomanggung area are not included in quadrant I (developed areas). Magelang city is included in quadrant II (developed but depressed area). The city of Magelang has a high regional financial capacity but the average economic growth is low compared to the average for Central Java Province.

Table 10. Classification Typology of Purwomanggung Area 2013-2019

Region	DDF Average	PE	Quadrant
Magelang	0.15	5.33	IV
Purworejo	0.13	5.30	IV
Temanggung	0.14	5.09	IV
Wonosobo	0.12	4.97	IV
Magelang City	0.24	5.33	II
Central Java	0.16	5.52	

Source: Central Bureau of Statistics (processed)

The city of Magelang is supported by the construction sector. Magelang City is an administrative area of the Purwomanggung area so that there are many infrastructure developments, shopping centers, and government in Magelang City. The contribution of the construction sector in Magelang City is 18.26 percent. However, the Magelang City government has not optimally explored the potential of natural resources so that the value of local revenue has not been maximized and still tends to depend on the central government. While the District of Temanggung, Wonosobo, Purworejo, and Magelang are included in quadrant IV. Quadrant IV is an underdeveloped area, both in terms of economic growth and regional financial capacity. Lack of basic infrastructure and road access are the obstacles. When viewed from the geographical location, Temanggung, Magelang, and Wonosobo Regencies are located on the slopes of the mountains where these areas have the potential to experience difficulties in accessing infrastructure and roads. Even though there are many natural tourist attractions in the area, if access to roads and transportation is not supported, it will become an obstacle to the process of economic growth. and Wonosobo is located on the slopes of a mountain where the area has the potential to experience difficulties in accessing infrastructure and roads. Even though there are many natural tourist attractions in the area, if access to roads and transportation is not supported, it will become an obstacle to the process of economic growth. and Wonosobo is located on the slopes of a mountain where the area has the potential to experience difficulties in accessing infrastructure and roads. Even though there are many natural tourist attractions in the area, if access to roads and transportation is not supported, it will become an obstacle to the process of economic growth.

3.2 Mapping with Geographic Information Systems

Mapping the region's financial capability in Central Java requires a quadrant value from the results of the Klassen typology analysis by comparing the average degree of regional fiscal

decentralization and regional economic growth to the average degree of decentralization and regional economic growth of the entire region in Central Java Province from 2013 to 2019 In addition, a map of Central Java is also needed in the processing using the ArcGIS computer software analysis tool. The quadrant value of each region in Central Java can be seen in Table 11.

Table 11. Values of the Klassen Typology Quadrants in Regencies/Cities in Central Java Province 2013-2019

| Region	Quadrant	Region	Quadrant
Banjarnegara	III	Malang	III
Banyumas	I	Purbalingga	IV
Batang	IV	Purworejo	IV
Blora	III	Rembang	III
Boyolali	III	Semarang	II
Brebes	III	Sragen	III
Cilacap	II	Sukoharjo	I
Demak	IV	Tegal	III
Grobogan	IV	Temanggung	IV
Japan	IV	Wonogiri	IV
Karanganyar	III	Wonosobo	IV
Kebumen	IV	Magelang City	II
Kendal	III	Surakarta City	I
Klaten	IV	Salatiga City	I
Kudus	IV	Semarang city	I
Magelang	IV	Pekalongan City	II
Pati	III	Tegal City	I
Pekalongan	IV		

Source: Central Bureau of Statistics (processed)

The results of the study based on Table 11 above at the same time divide the region based on four categories, namely:

a. Regions that are included in the developed area (quadrant I) include: Banyumas Regency, Sukoharjo Regency, Semarang City, Salatiga City, Tegal City, Surakarta City.

b. Areas that are included in the developed but depressed regions (quadrant II) include: Cilacap Regency, Semarang Regency, Pekalongan City, and Magelang City.

c. Areas that are included in the rapidly developing areas (quadrant III) include: Banjarnegara Regency, Blora Regency, Brebes Regency, Boyolali Regency, Karanganyar Regency, Kendal Regency, Pati Regency, Pemalang Regency, Rembang Regency, Sragen Regency, Tegal Regency.

d. The areas included in the disadvantaged areas (quadrant IV) include: Batang Regency, Demak Regency, Grobogan Regency, Jepara Regency, Kebumen Regency, Klaten Regency, Kudus Regency, Magelang Regency, Pekalongan Regency, Purbalingga Regency, Purworejo Regency, Temanggung Regency, Wonogiri Regency, Wonosobo Regency.

Based on the results of the research, areas that are categorized as developed regions in Central Java Province in 2013-2019 tend to be in urban areas or the administrative center of each strategic area. Meanwhile, the areas that fall into underdeveloped areas are more concentrated in mountainous areas or areas with a topography of highlands. This is due to the lack of infrastructure and good road access in the area, which hampers the process of regional economic activities. Mapping of areas based on regional financial capability categories from the results of klassen typology analysis can be seen in Figure 1.

Figure 1. Regional Financial Capability Map in Central Java Province 2013-2019
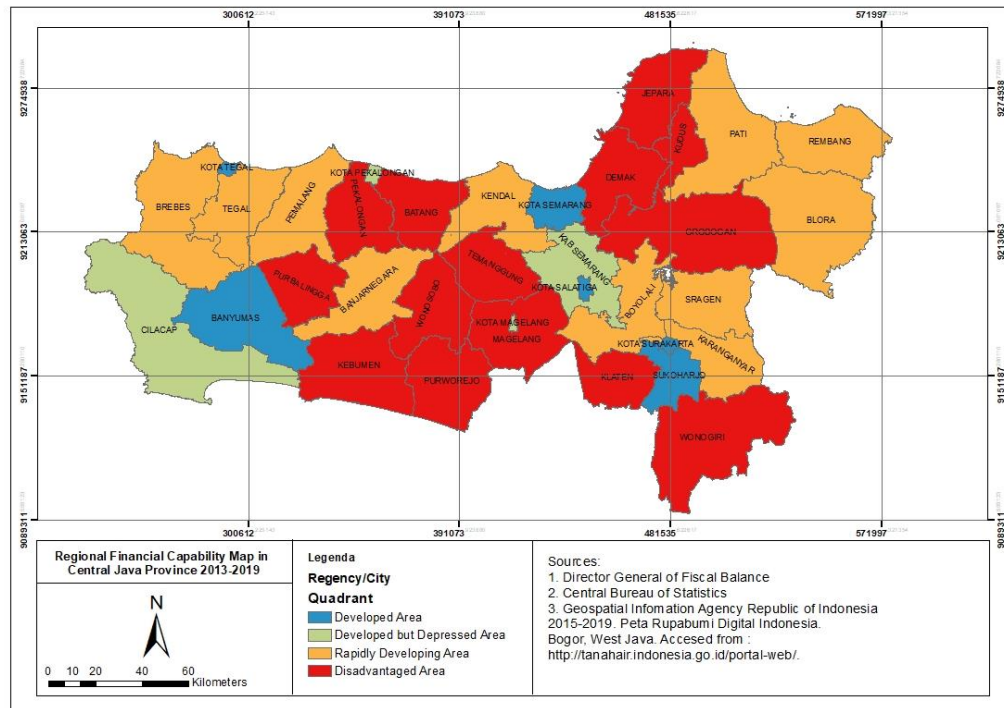
Source: ArcGIS (processed)

Acknowledgments

Based on the results of calculations and discussions, the following conclusions are obtained:

a. Barlingmascakeb area during the period 2013-2019, the areas included in quadrant I are Banyumas Regency; quadrant II is Cilacap Regency; quadrant III is Banjarnegara Regency; while quadrant IV is Kebumen Regency and Purbalingga Regency.

b. Petanglong area during the period 2013-2019, the area included in quadrant I does not exist; the area included in quadrant II is Pekalongan City; quadrant III is absent; Regions that are included in quadrant IV are Batang Regency and Pekalongan Regency.

c. The Banglor area during the 2013-2019 period, which consisted of Blora Regency and Rembang Regency, both were included in quadrant III (fast growing);

d. Subosukowonosraten area for the period 2013-2019, the areas included in quadrant I are

Surakarta City and Sukoharjo Regency; none of these areas are included in quadrant II; the areas included in quadrant III are Sragen, Boyolali, and Karaganyar Regencies; while the areas included in quadrant IV are Klaten and Wonogiri regencies.

e. Bregasmalang area for the period 2013-2019, the areas included in quadrant I are Tegal City; There are no areas in this area that fall into quadrants II and IV; while quadrant III is occupied by the Regencies of Brebes, Pemalang and Tegal.

f. Kedungsepur area, the areas included in quadrant I are Semarang City and Salatiga City; the areas included in quadrant II are Semarang Regency; the area included in quadrant III is Kendal Regency; Regions included in quadrant IV are Demak Regency and Grobogan Regency.

g. Purwomanggung area, the area included in quadrants I and III does not exist; the area in quadrant II is Magelang City; while quadrant IV is Temanggung, Wonosobo, Magelang, and Purworejo Regencies.

Many regions in Central Java Province are still experiencing dependence on the central government. This is shown by the results of a low klassen typology analysis on fiscal decentralization. Therefore, each local government is expected to be able to make optimal use of the potential resources it has, so as to encourage the acquisition of the value of local income. In addition, local governments also encourage the acceleration of existing infrastructure improvements in order to facilitate the process of economic activities in order to increase regional economic growth.

References

Anwar, A. (2017). Ketimpangan Spasial Pembangunan Ekonomi dan Modal Manusia di Pulau Jawa: Pendekatan Explanatory Spatial Data Analysis. *Asian Jurnal of Innovation and Entrepreneurship*, *02*(02), 90–109.

Boret, N., Gawande, K., & Kobb, D. P. (2021). Can decentralization lower poverty? Cambodia's Commune and Sangkat Fund. *World Development*, *146*. https://doi.org/10.1016/J.WORLDDEV.2021.105548

Canavire-Bacarreza, G., Martinez-Vazquez, J., & Yedgenov, B. (2020). Identifying and disentangling the impact of fiscal decentralization on economic growth. *World Development*, *127*, 104742. https://doi.org/10.1016/J.WORLDDEV.2019.104742

Martinez-Vazquez, J., Lago-Peñas, S., & Sacchi, A. (2017). THE IMPACT OF FISCAL DECENTRALIZATION: A SURVEY. *Journal of Economic Surveys*, *31*(4), 1095–1129. https://doi.org/10.1111/JOES.12182

Mudrajad Kuncoro. (2012). *Ekonomika Aglomerasi : Dinamika & Dimensi Spasial Kluster Industri Indonesia*. UPP STIM YKPN.

Mudrajad Kuncoro. (2015). ECONOMIC GEOGRAPHY OF INDONESIA'S MANUFACTURING INDUSTRY: Dynamics and Changing Spatial Patterns. *Gadjah Mada International Journal of Business*, *3*.

MZ Faridi. (2011). Contribution of Fiscal Decentralization to Economic Growth: Evidence from Pakistan. *Pakistan Journal of Social Sciences*, *31*(1), 1–13. https://media.teckiz.com/pakistan-journal-of-social-sciences/pjss-bzu/2020/04/14/5e9596792d851.pdf

Pratomo, A. (2014). Analisis Potensi Pengembangan Pusat Pertumbuhan Ekonomi di Kabupaten Cilacap. *Economics Development Analysis Journal*, *3*(1). https://journal.unnes.ac.id/sju/index.php/edaj/article/view/3511

Psycharis, Y., Zoi, M., & Iliopoulou, S. (2015). Decentralization and local government fiscal autonomy: evidence from the Greek municipalities: *Environment and Planning C: Politics and Space*, *34*(2), 262–280. https://doi.org/10.1177/0263774X15614153

Putri, S. I., Yuliardi, P. M., Al Gezon, Q., Febriani, M., & Putri, R. R. (2019). Peran Banyumas Kreatif dalam Pengembangan Potensi Ekonomi Kreatif Berbasis Komunitas di Kabupaten Banyumas. *Jurnal Administrasi Dan Kebijakan Publik*, *3*(1), 80–90. https://doi.org/10.25077/JAKP.3.1.80-90.2017

Sjafrizal. (2012). *Ekonomi Wilayah dan Perkotaan*. PT. Raja Grafindo Persada.

Tang, W. (2021). Decentralization and development of small cites: Evidence from county-to-city upgrading in China. *China Economic Quarterly International*, *1*(3), 191–207. https://doi.org/10.1016/J.CEQI.2021.05.002

Yunitasari, D., & Firmansayah, J. Z. (2019). Mapping Of Regional Inequality In East Java Province. *International Journal of Scientific & Technology Research*, *8*(3), 20–27. www.ijstr.org