

## The leading potential development in the Metropolitan Area of Gerbangkertosusila

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**Abstrak** Penelitian ini bertujuan untuk mengetahui perkembangan tingkat ketimpangan pendapatan, menganalisis interaksi ekonomi, struktur perekonomian serta identifikasi potensi sektor unggulan pada Kabupaten/kota yang tergabung dalam Kawasan Metropolitan Gerbangkertosusila. Data yang digunakan meliputi data sekunder dengan metode analisis Indeks Williamson, Tipologi Klassen, Analisis Gravitasi, Analisis LQ, dan Shift Share pada periode tahun 2016-2019. Hasil penelitian menunjukkan bahwa Kawasan Metropolitan Gerbangkertosusila memiliki tingkat ketimpangan pendapatan yang tergolong tinggi. Sedangkan dari struktur perekonomiannya, hanya Kabupaten Bangkalan yang dikategorikan masuk dalam daerah relatif tertinggal, untuk keenam Kabupaten/Kota lainnya tergolong daerah potensial dan dapat berkembang pesat. Dari sisi interaksinya, hanya Kabupaten Gresik dan Kabupaten Sidoarjo yang memiliki interaksi kuat dengan Kota Surabaya sebagai pusat pertumbuhan di Kawasan Metropolitan Gerbangkertosusila. Selain itu, setiap wilayah memiliki sektor unggulan dengan daya saing baik dan tumbuh cepat seperti, Industri Pengolahan, Kontruksi, serta Transportasi & Pergudangan.

**Kata kunci:** interaksi ekonomi; Kawasan Metropolitan Gerbangkertosusila; ketimpangan pendapatan; sektor unggulan

**Abstract** This study aimed to determine the developments of income inequity level, analyze economic interactions and economic structure. Moreover, it was to find out the superior potential of the Regency/City in the Gerbangkertosusila Metropolitan Area. The data used was secondary data with the Williamson Index, Klassen Typology, Gravity Analysis, LQ Analysis, and Shift Share analysis methods in 2016-2019. The results showed that the Gerbangkertosusila Metropolitan Area had a relatively high income inequity level. Meanwhile, from its economic structure, only Bangkalan Regency is categorized as a relatively underdeveloped area, while the other six Regencies/Cities are classified as potential areas and can develop rapidly. In terms of interaction, Gresik and Sidoarjo had strong interactions with Surabaya City as a growth center in the Gerbangkertosusila Metropolitan Area. In addition, each region has leading sectors with good competitiveness and fast growth, such as the Manufacturing, Construction, and Transportation & Warehousing industries.

**Keywords:** economic interaction; Gerbangkertosusila Metropolitan Area; income inequality; leading sector

**JEL Classification:** O1; O2; O4

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## INTRODUCTION

Economic growth and income distribution are two of the five macroeconomic development goals each country wants to achieve (Niyimbanira, 2017). However, economic growth is not supported by the creation of welfare and justice for the community, so it impacts inequality (Sukwika, 2018). The higher the income inequality rate, the more significant the gap between regions with low economic and good economic levels (Khoirudin & Musta'in, 2020). So that in developing countries, these two topics are exciting because of their impact on the stability in rotation of economic activity (Yuliani, 2015).

The Gerbangkertosusila Metropolitan Area is the second-largest area after Jabodetabek, developed by East Java Province as a form of equitable development between the regions (Yasin, 2016). Gerbangkertosusila should be an acronym for the seven regencies/cities in East Java, namely Gresik Regency, Bangkalan Regency, Mojokerto Regency, Mojokerto City, Sidoarjo Regency, Lamongan Regency and Surabaya City serve as the central economic growth (Fitriyah & Rachmawati, 2013). Surabaya, as the central area of growth in the Gerbangkertosusila Metropolitan Area, can not be separated from the level of economic growth. It is seen through the Gross Regional Domestic Product, regional competitiveness, and income per capita (Santoso, 2010).

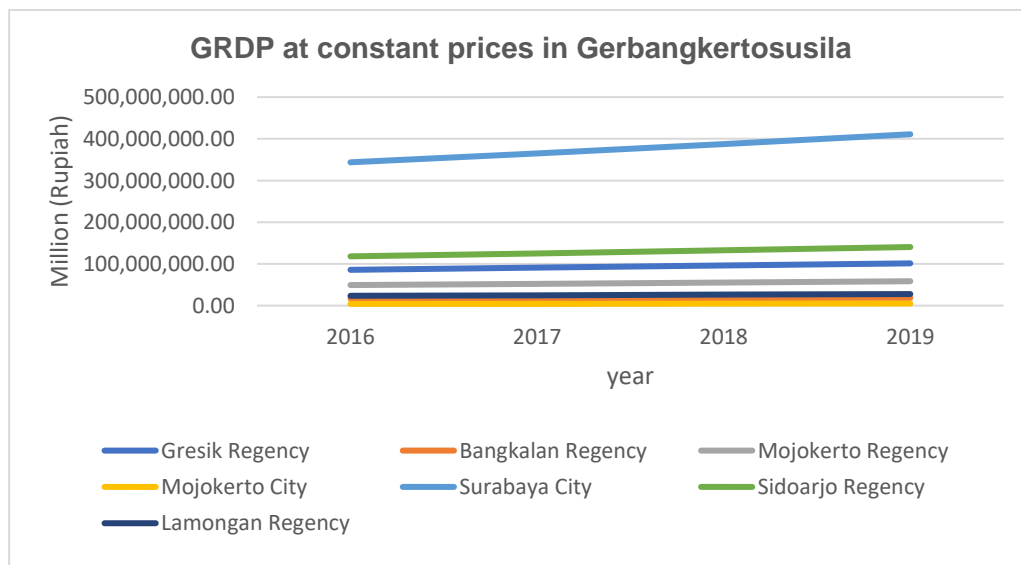


Figure 1. GRDP (constant prices) of 7 Regencies/Cities in Gerbangkertosusila Metropolitan Area

Figure 1 shows that economic development in each region of the Gerbangkertosusila Metropolitan Area in 2016-2019 has increased in the value of GRDP (Gross Regional Domestic Product) every year. This increase certainly has a different value in each region incorporated in one area due to the background of the economic structure, resource potential, and geographical location (Panjiputri, 2013). As a growth pole, the city of Surabaya has the highest GRDP value from 2016 to 2019, with an average of 376,637,665.68 million rupiahs. Meanwhile, Mojokerto City

experienced the opposite situation with an average low GDP value of around 4,596,722.60 million rupiahs. From the results of empirical research, it is stated that economic growth can reflect the level of community welfare. If economic growth in an area is high, community welfare will also be better (Yuliani, 2021).

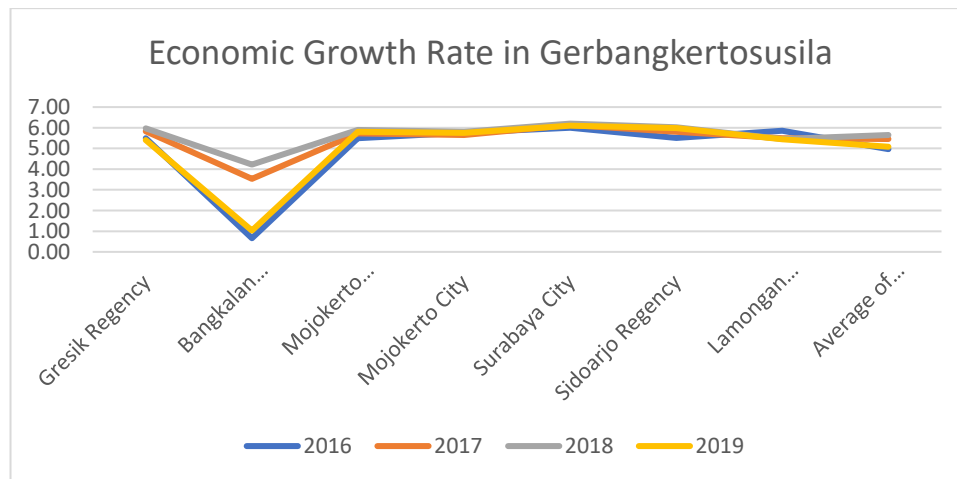


Figure 2. Economic Growth Rate in the Gerbangkertosusila Metropolitan Area

In terms of the economic growth rate in Figure 2, Bangkalan Regency has the lowest growth rate of 0.66 percent in 2016 and an average of only 2.36 percent over four years. Meanwhile, the Gerbangkertosusila Metropolitan Area has a pretty good average growth rate starting in 2016 at 4.97 percent and increasing to 5.08 percent in 2019.

Based on the two graphs above, it can be seen that the Gerbangkertosusila Metropolitan Area has a vast difference in the value of GRDP between the Regency/City. It is based on the center of growth and the area behind it, although the GDP value always increases every year. According to the theory of growth centers, it is stated that an area has inhomogeneities both in terms of geographical location, weather, population, climate, which have an impact on the division of the region into spatial and nodal. An area is nodal if it grows faster than the back area because it has a population distribution and centralized economic activity (Lahuddin, 2020). In addition, Nurhadi (2015) stated that a nodal area consists of several activity centers where activities are interconnected through road networks.

This research focuses on the inequality of prosperity. It is between the areas of the center of growth and the supporting areas in the Gerbangkertosusila Metropolitan Area. So, there are some research questions formed: (1) How is the development of the level of income inequality in the Gerbangkertosusila Metropolitan Area?; (2) How strong is the economic interaction of the Regency/City which is the center of growth with the regions behind it?; (3) What is the economic structure of the Gerbangkertosusila Metropolitan Area?; and (4) What are the leading sectors in the Gerbangkertosusila Metropolitan Area?

In their research, Timumu *et al.* (2021) explained that the leading sector in an area is essential to identify, because can provide a stimulus to economic growth and development progress. In another study, it was also explained that by identifying a

leading sector, a region could develop its competitiveness so that later it could reduce the inequality that had occurred (Yuliani, 2021). According to economics base theory, the basis of a sector can reflect the dynamics of the development of a region. The large number of base sectors produced has an impact on the multiplier effect that can support the economy in the region behind it (Wicaksana *et al.*, 2020). The approach needs to be developed to achieve equitable development and spread in the Gerbangkertosusila Metropolitan Area. It is essential to use a growth center development strategy by analyzing the strengths of comparative and competitive leading sectors (Yasin, 2016). Accordingly, it is expected to drive economic development and increase people's income throughout the Gerbangkertosusila area (Ardila, 2012).

## METHOD

This research was a quantitative descriptive form. Moreover, secondary data was obtained from publications or websites of the Central Statistics Agency for East Java Province and regencies/cities that are members of the Gerbangkertosusila Metropolitan Area from 2016 to 2019. The secondary data included Gross Regional Domestic Product at constant prices data based on East Java Province business fields and Regency/City business fields of the Gerbangkertosusila Metropolitan Area, economic growth rate, and the development of the population. Data processing techniques were carried out using five analytical techniques: Williamson Index, Gravity, Klassen Typology, Location Quotient, and shift-share.

### 1. Williamson Index

This analysis determined the development of income inequality that occurred in the Gerbangkertosusila Metropolitan Area. The data needed was in the form of population growth and per capita GRDP. The formula used (Yuliani, 2021) is:

$$IW = \frac{\sqrt{\sum (Y_i - Y)^2 \left(\frac{F_i}{n}\right)}}{Y}$$

Note:

Y = Value of GRDP (per capita) in East Java Province

Y<sub>i</sub> = Value of GRDP (per capita) for each Regency/City of the Gerbangkertosusila area

F<sub>i</sub> = Total population of each Regency/City that is part of the Gerbangkertosusila area

N = Total population in East Java Province

If the resulting index coefficient is close to zero, the income inequality rate in the Gerbangkertosusila Metropolitan Area is getting smaller. In other words, there has been an even distribution of the economy. If the index coefficient is close to one, the level of inequality in the area is widening.

## 2. Gravity Analysis

This analysis was to determine how strong the economic interaction is in each Regency/City of the Gerbangkertosusila Metropolitan Area with the city which was the center of growth. The formula used (Panjiputri, 2013) is:

$$I_{12} = a (W_1 P_1) (W_2 P_2) / J_{12}^b$$

Note:

W1 = Regional GRDP (per capita) value 1, in rupiah

W2 = Regional GRDP (per capita) value 2, in rupiah

P1 = Total population in area 1

P2 = Total Population in area 2

J12 = Location distance between regions (1 & 2)

a and b= constants worth 1 and 2

## 3. Klassen Typology

This analysis technique identifies the economic typology by sector and region. This technique usually uses GRDP data along with its growth rate. Below is a sectoral typology classification, in which the results are identified into four sectors: fast-growing, potential, advanced but depressed, and relatively lagging (Nur Hidayah & Tallo, 2020).

Table 1. Classification of Sectoral Typology

Sectoral contribution	Sectoral growth	
	Value $g_i > g$ , or $g_i = g$	Value $g_i < g$
Value $s_i > S$ , Value $s_i = S$	Fast-growing	Advanced but depressed
Value $s_i < S$	Potential	Relatively lagging

Note :

$g_i$  = contribution of a sector to n

$g$  = average of GRDP

$s_i$  = sector growth rate to n

$S$  = growth rate of GRDP

Meanwhile, to find out the typology by region, Andriyani & Utama (2011) use the following classification:

Table 2. Classification of Regional Typology

R (Growth rate)	Y (GRDP per capita)	
	Value $Y_i > Y$	Value $Y_i < Y$
Value $R_i > R$	Type I region, fast-growing (advanced)	Type II region, can develop fast (potential)
Value $R_i < R$	Type III region, depressed	Type IV region, Relatively lagging

Note :

$Y_i$  = GRDP of the reference area (East Java)

$Y$  = total GRDP of the study area (Gerbangkertosusila)

$R_i$  = growth rate of the reference area (East Java)

$R$  = growth rate of study area (Gerbangkertosusila)

#### 4. Location Quotient (LQ) analysis

This analysis determines the identification of sectors that are classified as essential and non-basic. It was done by comparing the dominant role of a regional sector (Regency/City within the Gerbangkertosusila Metropolitan Area) with the upper-level region (East Java Province). The LQ formula used (Panjiputri, 2013) is:

$$LQ = (si/S)/(ni/N)$$

Note:

si = GRDP value of sector i in the Regency/City of the Gerbangkertosusila Metropolitan Area

S = Total GRDP value of the Gerbangkertosusila Metropolitan Area

ni = GRDP value in sector i (Province)

N = Total GRDP in (Province)

If the results of the LQ analysis show that the LQ coefficient is <1, then it is categorized as a non-basic sector. It means that the area cannot meet its own needs and requires imports outside the region. If the result of the LQ coefficient is 1, it is categorized as a sector that meets the needs of its region without exporting to other regions. Nevertheless, if the coefficient is produced by LQ>1, then it is categorized as the base sector so that that sector's production can be exported to other regions.

#### 5. Shift share analysis

This analysis compares the growth rate of the economic sector in the study area and the reference area. The difference between this analysis and LQ is that shift-share is usually more detailed in explaining the cause of a change in a variable. This analysis consists of three components (Christin, Barbara & Feronika, 2018) national growth, balanced growth, and regional share growth.

PN (National Growth) formula:

$$PN_{ij} = (Ra) Y_{ij}$$

Note :

Ra = Level of employment/production ratio (province)

Yij = level of employment/production in the base year of analysis (sector i region j)

PP (Balanced growth formula) formula:

$$PP_{ij} = (Ri - Ra)Y_{ij}$$

Note :

Ri = Employment/production (province) ratio of sector i

Ra = Level of employment/production ratio (province)

Yij = Level of employment/production in the base year of analysis (sector i region j)

If the  $PP_{ij}$  coefficient is less than 0, the growth rate in sector  $i$  in region  $j$  is sluggish. On the other hand, if the  $PP_{ij}$  coefficient is more than 0, it indicates that the growth rate of sector  $i$  in region  $j$  is relatively fast.

PPW (regional share growth) formula:

$$PPW_{ij} = (r_i - R_i)Y_{ij}$$

Note :

$r_i$  = Level of employment/production ratio in area  $j$

$R_i$  = Employment/production ratio (province) in sector  $i$

$Y_{ij}$  = Level of employment/production in the base year of analysis (sector  $i$  region  $j$ )

If the result of  $PPW_{ij}$  is more than 0, it shows if sector  $i$  in region  $j$  is well competitive. On the other hand, if  $PPW_{ij}$  is less than 0, it shows if sector  $i$  in region  $j$  is relatively uncompetitive. So that it can be stated mathematically, the formula to determine the shift-share analysis is:

$$\Delta Y_{ij} = PN_{ij} + PP_{ij} + PPW_{ij}$$

## RESULT AND DISCUSSIONS

### Income Inequality in the Gerbangkertosusila Metropolitan Area

It has been explained in many studies about a region's income inequality level. Because by nature, in realizing a society's welfare, one of them is by reducing the level of inequality that exists. In this study, the results and discussions related to inequality in the Gerbangkertosusila Metropolitan Area were described by analysis of the Williamson Index.

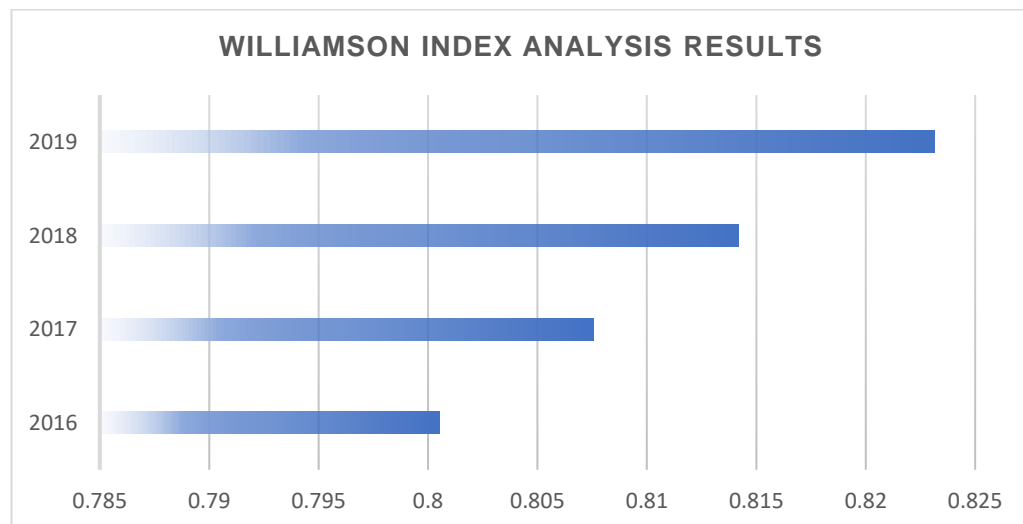


Figure 3. Income Inequality in the Gerbangkertosusila Metropolitan Area

In its development, it is known that the average income inequality level of the Gerbangkertosusila Metropolitan Area for four years is 0.811. This inequality tends to increase every year. In 2016, the index results were 0.800 and increased by 0.807 in 2017. Furthermore, in 2018 it increased again by 0.814 and peaked in 2019



at 0.823. These results illustrate that inequality in the Gerbangkertosusila Metropolitan Area is relatively high. It is because the resulting index range is close to 1. In line with Nur Hidayah & Tallo (2020) research, the Williamson Index value ranges from 0 to 1. If in analysis, an index close to 1 means the level of inequality in an area it is said to be high, or indirectly there has been inequality in economic income.

The trigger for the high rate of income inequality in the Gerbangkertosusila Metropolitan Area is in line with Fitriyah & Rachmawati (2013) research. There are three regions (Surabaya City, Sidoarjo Regency, Gresik Regency) that have a per capita GRDP value exceeding the per capita GRDP value in the Gerbangkertosusila Metropolitan Area. Moreover, it will later have an impact on the weak distribution of the economy in areas that are categorized as underdeveloped.

### **Economic Interaction with Gravity Analysis**

Using the Gravity analysis technique for four years (2016-2019) shows that the total economic interaction of Gresik Regency is 27,814,000,442,597,500 and has the most vital interaction with the City of Surabaya as the center of economic growth in the Gerbangkertosusila Metropolitan Area. Furthermore, Sidoarjo Regency has the second most robust total economic interaction of 23,499,283,562,020,600. Next, Bangkalan Regency has the third most robust total economic interaction of 2,198,770,541,481,090. Mojokerto Regency has the fourth-strongest total economic interaction of 2,159,553,565,183,130. Lamongan Regency has the fifth most substantial total economic interaction of 1,220,156,881,546,860. The City of Mojokerto as a city that has low power with a growth center in the Gerbangkertosusila Metropolitan Area has a total economic interaction of 184,467,581,580,173. So that there are two regencies/cities that are ranked the strongest in terms of economic interaction with the growth center (Surabaya City), including Gresik and Sidoarjo Regencies.

In line with research conducted by Yasin (2016), three areas are the orientation of the development of the strongest industrial estates in East Java as determined by the KSN of the Gerbangkertosusila region, namely the City of Surabaya, Sidoarjo Regency, and Gresik. It is based on the fact that the three regencies/cities if viewed from a spatial perspective, have physical and non-physical spatial proximity so that the city of Surabaya has a significant influence on the competitiveness of Gresik Regency and Sidoarjo Regency (Santoso, 2010).



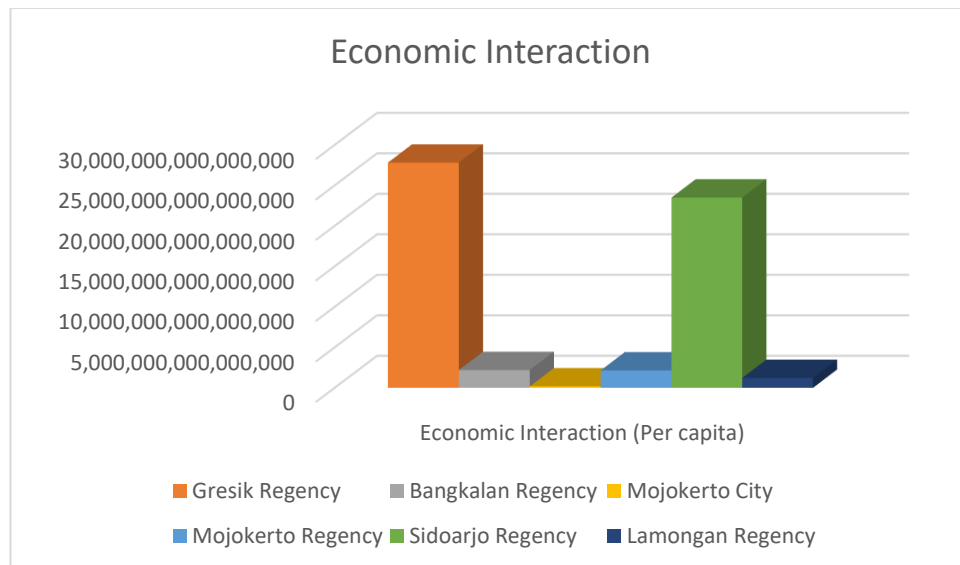


Figure 4. Economic Interaction of the City of Surabaya with its supporting areas in the Gerbangkertosusila area

### The Economic Structure of Regencies/Cities that are part of the Gerbangkertosusila Metropolitan Area

Based on the results of the Klassen Typology analysis for a period of four years (2016-2019), the position of the economic structure in each Regency/City of the Gerbangkertosusila Metropolitan Area is as follows:

Gresik Regency, based on the results of typology by region, produces an average GRDP (per capita) of 93,545,967,983 million rupiahs and an average growth rate of 0.06%. Meanwhile, the reference area, namely East Java Province, produced a higher average GRDP (per capita) of 1,525,443,000.58 billion rupiahs and a lower growth rate of 0.05%. It shows that Gresik Regency is included in quadrant II with an area that can develop quickly. Meanwhile, from a sectoral perspective, it has two rapidly growing sectors (electricity procurement; construction), two depressed sectors (mining; processing), and thirteen potential sectors (health services; agriculture; accommodation; water supply; government administration; wholesale trade; company services; transportation; educational services; real estate; communications; other services; financial services).

Bangkalan Regency, based on typology results, produces an average GRDP (per capita) of 17,887,371.63 million rupiahs and an average growth rate of 0.03%. Meanwhile, East Java produces a higher average GRDP (per capita), which is 1,525,443,000.58 billion rupiahs, and the average growth rate is 0.05% higher. Bangkalan Regency is included in quadrant IV, which is an underdeveloped area. Meanwhile, from a sectoral perspective, Bangkalan Regency has four sectors classified as advanced and snowballing (agriculture; construction; government administration; education services). Moreover, it has nine sectors classified as potential (electricity procurement; wholesale trade; communication; transportation; health services; accommodation; financial services; real estate; other services).

Bangkalan also has one sector that is advanced but depressed (mining), and three sectors that are relatively lagging (processing; water supply; company services).

Mojokerto Regency produces an average GRDP (per capita) of 53.818.042.67 million rupiahs and an average growth rate of 0.06%. Meanwhile, East Java has a higher average GRDP level of 1,525,443,000.58 billion rupiahs and an average growth rate of 0.05%. It shows that Mojokerto Regency is included in the quadrant II category, which is an area that can develop quickly. Mojokerto Regency has three rapidly growing sectors (processing, communication information, government administration); nine potential sectors (agriculture, water supply, company services, wholesale trade, health services, transportation, electricity procurement, financial services, financial services, other services). Moreover, it has five relatively lagging sectors (mining, construction, accommodation, real estate, education services).

Mojokerto City produces an average GRDP (per capita) of 4,596,722.60 million rupiahs and an average growth rate of 0.06%. Meanwhile, East Java Province as a reference produced a higher average GRDP of 1,525,443,000.58 billion rupiahs and an average growth rate of 0.05%. It shows that Mojokerto City belongs to quadrant II, an area that can develop quickly. From a sectoral perspective, Mojokerto City has eight developed and fast-growing sectors (water supply; financial services; accommodation; construction; wholesale trade; government administration; information and communication; other services), three potential sectors (agriculture; electricity procurement; transportation). There are three developed but depressed sectors (health services; real estate; education services) and three lagging sectors (mining, processing, company services).

The city of Surabaya, as the growth center of the Gerbangkertosusila, produces an average GRDP (per capita) of 376,637,665.68 million rupiahs and an average growth rate of 0.06%. Meanwhile, East Java as the reference area produced a much higher average GRDP of 1,525,443,000.58 billion rupiahs and an average growth rate of 0.05%. It shows that the city of Surabaya is included in quadrant II with areas that have the potential to be able to develop quickly. From a sectoral perspective, the City of Surabaya has twelve fast-growing sectors (health services; electricity procurement; transportation; water supply; company services; construction; real estate; accommodation; wholesale trade; communications; financial services; other services), three potential sectors. (agriculture; government administration; education services), as well as two disadvantaged sectors (mining; processing).

Sidoarjo Regency, based on the results of regional typology, produces an average GRDP (per capita) of 129,066,031.78 68 million rupiahs and an average growth rate of 0.06%. Meanwhile, the reference area, namely East Java Province, produced a much higher average GRDP of 1,525,443,000.58 billion rupiahs and a growth rate of 0.05%. Moreover, it shows that Sidoarjo Regency belongs to Quadrant II, which is an area that can develop quickly. Meanwhile, from a sectoral perspective, Sidoarjo Regency has one leading sector (processing), ten potential sectors (government administration; other services; communications; company services; water supply; financial services; construction; real estate; wholesale trade;

accommodation;), two sectors depressed (electricity procurement; transportation) and four lagging sectors (agriculture; mining; education services; health services).

Lamongan Regency, based on the results of regional typology, produces an average GRDP (per capita) of 25,633,167.40 million and an average growth rate of 0.05%. Meanwhile, East Java as the reference area produced a higher average GRDP of 1,525,443,000.58 billion rupiahs and the same average growth rate of 0.05%. It shows that Lamongan Regency belongs to Quadrant II with an area that can develop quickly. Meanwhile, from a sectoral perspective, Lamongan Regency has ten developed and fast-growing sectors (wholesale trade; agriculture; government administration; water supply; health services; construction; other services; communication; real estate; education services), as well as seven potential sectors (company services; mining; processing; electricity procurement; transportation; accommodation; financial services).

Of the seven regencies/cities members of the Gerbangkertosusila Metropolitan Area, only Bangkalan Regency is included in the relatively underdeveloped economic structure. It is because the growth rate of the Bangkalan Regency is below the average growth rate of the Gerbangkertosusila area. In line with the results of research by Santoso (2010), it has a low economic capacity, both from regional competitiveness, per capita income, and from the contribution of GRDP. In addition, another factor that is the leading cause, according to Puspitawati (2013), is the high rate of poverty and unemployment in the economy of the Bangkalan Regency.

### **Leading sectors in Regencies/Cities of the Gerbangkertosusila Metropolitan Area**

The Gerbangkertosusila Metropolitan Area is classified as having high-income inequality. For this reason, one way to reduce inequality is to identify leading sectors so that in the future, these sectors have the potential to be exported outside the region.

Based on the Location Quotient (LQ) analysis for four years (2016-2019), the results obtained sectors that are classified as primary and have a comparative advantage in Gerbangkertosusila Metropolitan Area. First, Gresik Regency has four essential sectors (mining, construction; processing; electricity procurement). Second, Bangkalan Regency has five essential sectors (agriculture, forestry & fisheries; mining & quarrying sector; construction; government administration; education services). Third, Mojokerto Regency has three primary sectors (processing industry; information & communication; government administration). Fourth, Mojokerto City has eleven essential sectors (communication; health services; water supply; government administration; construction; wholesale trade; education services; accommodation; financial services; other services; real estate). Sixth, Surabaya has twelve primary sectors (transportation, electricity procurement; financial services; water supply; company services; construction; health services; wholesale trade; communications; real estate; other services; accommodation). Seventh, Sidoarjo Regency only has four essential sectors (processing industry;

electricity & gas procurement; construction; transportation). Lamongan Regency has ten primary sectors (communication; education services; agriculture; real estate; water supply; other services; government administration; wholesale trade; health services; construction). From this overall analysis, the Regency/City, which has many important sectors, is the City of Surabaya as the growth pole.

Based on the results by calculating the shift-share technique, it is found that the competitive and non-competitive sectors in each Regency/City that are part of the Gerbangkertosusila Metropolitan Area are as follows: Gresik Regency has eight well-competitive sectors with fast growth (construction; wholesale trade; transportation; accommodation; information & communication; company services; education services; health services), one sector is not well competitive with fast growth (processing), seven sectors are well competitive with slow growth (agriculture; electricity procurement; water supply; financial services; real estate; government administration; other services) as well as a sector that is not well competitive with slow growth (mining).

Bangkalan Regency has seven well-competitive sectors with fast growth (construction, transportation, accommodation, communications, education services, wholesale trade, health services), Moreover, it has six well-competitive sectors with sluggish growth (agriculture; electricity procurement; financial services; real estate; government administration; other services), two sectors with poor competitiveness with fast growth (processing; company services), as well as two sectors that fall into the category of slow growth and not well competitive (mining; water supply).

Mojokerto Regency has two competitive sectors with fast growth (processing; transportation), seven sectors with poor competitiveness with fast growth (construction; wholesale trade; accommodation; information & communication; company services; education services; health services), six sectors not well competitive with sluggish growth (agriculture; mining; water supply; real estate; government administration; other services), as well as two well-competitive sectors with sluggish growth (electricity procurement; financial services).

Mojokerto City has two competitive sectors with fast growth (mining; transportation), eight sectors with poor competitiveness with fast growth (processing; construction; wholesale trade; accommodation; information & communication; company services; education services; health services), three poorly competitive sectors with sluggish growth (water supply; real estate; other services), and four well competitive sectors with sluggish growth (agriculture; electricity procurement; financial services; government administration).

The city of Surabaya has six well-competitive sectors with fast growth (transportation, accommodation, communication information, company services, education services, health services). Furthermore, it has three sectors that are not well competitive with slow growth (mining, water supply, other services). Surabaya has five competitive sectors with slow growth (agriculture, electricity procurement, financial services, real estate, government administration). It also has three sectors that are not well competitive with fast growth (processing; construction; wholesale & retail trade).

Sidoarjo Regency has one category of the fast-growing and well-competitive sector (processing industry), eight sectors of fast growth and poor competitiveness (construction; education services; transportation; health services; accommodation; wholesale trade; communication; company services;), four sectors with slow growth and poor competitiveness (power supply; water procurement; real estate; other services), as well as four sectors with slow growth and good competitiveness (agriculture; mining; financial services; government administration).

Lamongan Regency has nine sectors classified as fast-growing and have good competitiveness (processing; accommodation; construction; education services; wholesale trade; communication; transportation; health services; company services;). Also, it has seven sectors with slow growth and good competitiveness (mining; electricity procurement; water supply; financial services; real estate; government administration; other services) and a sector with slow growth and poor competitiveness (agriculture).

Regencies/cities that are incorporated in the Gerbangkertosusila Metropolitan Area have a base sector that, of course, differs between regions. However, of the many sectors with fast growth and good competitiveness, Surabaya still dominates the many sectors categorized as essential and have good competitiveness. It is used as a growth pole in the Gerbangkertosusila Metropolitan Area. In addition, based on research conducted by Nuraini (2017), the city of Surabaya has a nodal pattern, which means an area consists of a core area and the surrounding area, which is usually controlled by several economic activities. So if it is a growth pole, then the City of Mojokerto, Gresik, Bangkalan, Mojokerto, Sidoarjo, and Lamongan districts will be the supporting areas for the growth pole area. Each region that is part of the Gerbangkertosusila Metropolitan Area has the opportunity to maintain each of its leading sectors. Moreover, it is hoped that the city of Surabaya as a growth center can attract the surrounding areas to be even more aggressive in increasing economic growth and developing sectors that are otherwise relatively lagging.

## CONCLUSION

It can be concluded from this study that the Williamson Index in the Gerbangkertosusila Metropolitan Area in 2016-2019 shows that income inequality is still high, with an index approaching number 1. Its economic structure shows that only the Bangkalan Regency is categorized as a relatively underdeveloped area. Meanwhile, other regencies/cities that are part of the Gerbangkertosusila Metropolitan Area are categorized as areas with potential and can develop rapidly. As a growth pole area, Surabaya has a strong interaction with Sidoarjo and Gresik Regencies. It is because the two districts have spatial proximity to the growth center. In terms of the leading sector, based on LQ analysis and shift-share, the construction sector, manufacturing industry, and transportation and warehousing are still dominated by the sector.

In supporting income distribution, local governments should pay more attention to regencies/cities of the Gerbangkertosusila Metropolitan Area. Developing investment cooperation so that later investment is not only concentrated in nodal areas. In addition, local governments should also be able to prioritize sectors that are categorized as relatively underdeveloped without ignoring leading sectors. The aim is to raise the sector into a better classification. Because the basis or not of a sector also affects the economic growth.

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