

## THE ROLE OF YOGYAKARTA AND SURAKARTA CITIES IN THE INTENSITY OF THE REGIONAL TRANSFORMATION OF TWO VILLAGES LOCATED IN THE YOGYAKARTA-SURAKARTA CORRIDOR

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**ABSTRACT** – This research was conducted in two villages in the Yogyakarta-Surakarta Corridor, namely Maguwoharjo, Sleman Regency, and Jatirejo, Boyolali Regency. The purpose of this study was: (1) to compare the intensity of the regional transformation in both villages located in the Yogyakarta-Surakarta Corridor during the period of 1990-2011, and (2) to determine the role of both Yogyakarta and Surakarta as the mother cities in the Yogyakarta-Surakarta Corridor in determining the regional transformation in both villages. This research used a survey method based on both secondary (Podes, 1990-2011) and primary data. In order to assess the role of Yogyakarta and Surakarta in affecting the intensity of the regional transformation in both research areas, qualitative-descriptive analysis was conducted based on field observations and in-depth interviews. The results showed that the intensity of the regional transformation of Maguwoharjo, as measured by four variables: population density, population growth, the percentage of non-agricultural household, and the percentage of built-up area, is higher than that of Jatirejo. This research also found that the role of Yogyakarta City in intensifying the regional transformation of Maguwoharjo is greater than the role of Surakarta City in intensifying the regional transformation of Jatirejo.

**Keywords:** role of cities, intensity of the regional transformation, Yogyakarta-Surakarta Corridor

### INTRODUCTION

In the last two decades of the 20th century and in the beginning of the third millennium, the discourse of regional transformation in Indonesia has been marked by the growing of metropolitan phenomena. There had been eight metropolitan cities growing until 1990, as well as metropolitan districts, namely Jabotabek, Medan Raya, Bandung Raya, Surabaya Gerbangkertasusila, and Semarang Raya (Dharmapatni, 1993; Tjahjati and Bulkin, 1994). The number of metropolitan cities in Indonesia reached 13 cities in 2006 (Bappenas, 2007). These are the regions experiencing rapid economic growth, of 9.21% per year (1986-1990). In addition, their prominent activity has been transforming from agricultural to non-agricultural especially the industrial one. This transformation process is extracted from the record of the contribution of the industrial sectors until 1990, which was 26.4% of the total value of GDP (Gross Regional Domestic Product), while the contribution of the agricultural sectors was only 11% of it (Dharmapatni, 1993).

The problem following the emergence of this phenomenon is the tendency of the growing metropolis to lack the urban function as the catalyser of regional development (Tjiptoherijanto, 1990). The further impact is the disadvantaged small and middle-sized cities (Tjahjati, 1993), in other words, the inequalities between regions are growing. In Java, the development of these cities encourages especially the growth of intercity corridors linking Bandung to Jakarta, Surabaya to Malang, and Semarang to Yogyakarta (Firman, 1994). It is an empirical fact that the Yogyakarta-Surakarta Corridor

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has been experiencing rapid growth in the context of regional transformation as well. The formation of these corridors is characterized by the blurring of rural nature and the growing of urban nature.

Based on this background, the research problems are formulated as follows: (a) Which are the similarities and differences between the intensity of the regional transformation in Maguwoharjo and Jatirejo?, and (b) How are Yogyakarta and Surakarta City influencing the intensity of the regional transformation in both areas under research?

This research was conducted to: (1) compare the intensity of the regional transformation in Maguwoharjo and Jatirejo during the period between 1990 and 2011, and (2) determine the role of Yogyakarta and Surakarta City as the mother cities of the Yogyakarta-Surakarta Corridor in determining the intensity of the regional transformation in both villages.

There are two benefits expected from this research. First, this study is expected to be useful for the development of knowledge, especially in the field of Urban Geography, i.e. to provide a deeper understanding of the role played by the degree of physical accessibility of an area and the role of city in influencing the intensity of the regional transformation. Second, it is expected to provide the stakeholders a practical-empirical benefit in their contribution to formulating a framework for regional transformation along the intercity corridors.

## RESEARCH METHOD

This research was conducted in two villages: Maguwoharjo (Depok Subdistrict, Sleman Regency) and Jatirejo (Sawit Subdistrict, Boyolali Regency). Maguwoharjo was chosen as the research area in order to represent villages close to the mother city, Yogyakarta, and Jatirejo to the other mother city, Surakarta, in the regional constellation of the Yogyakarta-Surakarta Corridor.

The survey method was used, based on both secondary and primary data collected from field observations and in-depth interviews. The secondary data was provided by the Village Potency (*Potensi Desa – Podes*) for the period 1990-2011, managed by the Central Bureau of Statistics (*Biro Pusat Statistik – BPS*). In order to determine the intensity of regional transformation, four variables were used: population density, population growth, the percentage of non-agricultural household, and the percentage of built-up area. A quantitative-descriptive analysis on the resultant cross table was used in determining the intensity of the regional transformation in both areas of research. Meanwhile, a qualitative-descriptive analysis was used in assessing the role of Yogyakarta and Surakarta City in influencing the intensity of the regional transformation in both areas of research.

## RESULTS AND DISCUSSION

### The intensity of regional transformation in Maguwoharjo and Jatirejo

In this research, regional transformation was determined based on four variables: population density, population growth, the percentage of non-agricultural household, and the percentage of built-up area. The basic assumption is positive, which means that the higher the value of these variables, the higher the intensity of the regional transformation in the research area.

On the one hand, the development of urban characters is basically caused by the increasing number of population. Population is an important aspect, a decisive indicator of the level of regional transformation. From the population point of view, urban character is observed by the indicators of both population density and growth. On the other hand, the increase in population number has also led to an increase in urban functions to support the life of the population.

The increasing number of population will be followed by an increase in the use of space which will eventually cause an increase in the built-up area. Built-up area is also the result of annexing agricultural land in the outskirts which will lead to a decline in farmer population due to the loss of agricultural land.

The first variable, postulated as one of the factors that influence regional transformation, is population density. This indicator is calculated by comparing the population number registered in Maguwoharjo and Jatirejo in 1990, 2000, 2003, 2008, and 2011 with their total area, respectively (Table 1). The calculation of population density showed that Maguwoharjo had a similar population density to Jatirejo in 1990. But for the next period, in 1990-2011, Maguwoharjo kept experiencing an

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increase in its population density; it even reached 1,904 people/ km<sup>2</sup> in 2011. Meanwhile, the increase in population density in Jatirejo was relatively low in 1990-2011. It indicates that the Yogyakarta-Surakarta Corridor (the primary arterial road), passing through Maguwoharjo, significantly affects its population density. It is shown by the relatively low population density in Jatirejo, which is located behind (not along) the corridor.

**Table 1.** *The population density in Maguwoharjo and Jatirejo between 1990 and 2011 (people/ km<sup>2</sup>)*

Years	Maguwoharjo	Jatirejo
1990	1,432	1,403
2000	1,527	1,437
2003	1,625	1,449
2006	1,702	1,476
2008	1,785	1,500
2011	1,940	1,512

Source: Podes, 1990-2011

**Table 2.** *The population growth in Maguwoharjo and Jatirejo between 1990 and 2011 (%)*

Periods	Maguwoharjo	Jatirejo
1990-2000	0.64	0.24
2000-2003	2.09	0.25
2003-2006	1.53	0.55
2006-2008	1.58	0.54
2008-2011	2.79	0.34

Source: Podes, 1990-2011

Population growth is also one of the factors influencing regional transformation. The use of this variable is supported by the argument proposed by Sargent (1976, in Yunus 2007), that population growth is one of many variables that indicate urban sprawl. His calculation was based on population growth per year during the period 1990-2000, 2000-2003, 2003-2006, 2006-2008, and 2008-2011 (Table 2).

Maguwoharjo initially had a low population growth, which was 0.64% (1990-2000). However, this village experienced an increase in the year-by-year population growth, and in 2008-2011 it reached 2.79%. On the contrary, during the period 1990-2011, Jatirejo experienced a fluctuated population growth. In 1990-2006, this village experienced a relatively small increase in population growth. However, during the next period (2006-2011), the population growth declined due to the declining role of natality and mortality in determining the urban population growth; they were replaced by rural-to-urban migration instead. It can be observed as well that during the period 1990-2011 the population growth in Maguwoharjo was higher than in Jatirejo. Thus, by referring the theory stated by Sargent (1976, in Yunus 2007), it can be synthesized that the intensity of the regional transformation from the dimension of population growth in Maguwoharjo is higher than in Jatirejo.

Literature discussing the progress of labour provides that the transformation of the livelihood is characterized by the shift from Sector A (agriculture) to M (manufacturing) and S (service). Therefore, the percentage of non-agricultural household is analyzed in this research. The argument emphasizes on the higher the percentage, the higher the intensity of the related regional transformation (Table 3).

**Table 3.** *The percentage of non-agricultural households in Maguwoharjo and Jatirejo between 1990 and 2011*

Years	Maguwoharjo	Jatirejo
1990	40	54
2000	50	36
2003	61	38
2006	71	20
2008	79	30
2011	80	54

Source: Podes, 1990-2011

Maguwoharjo kept experiencing an increasing percentage of the non-agricultural household during the period 1990-2011, while Jatirejo had a fluctuated year-by-year percentage. This finding is consistent with the previous research conducted by Giyarsih et al. (2003), Prakosa and Kurniawan (2007). They found that the structure of livelihood is one of the many indicators of the emergence of regional transformation. Furthermore, Wilonoyudo (2011) also stated that urbanization is indicated by the livelihood shift from being a worker in the agricultural sector to one in the industrial and service sectors.

It indicates that the percentage of non-agricultural households in villages located along the Yogyakarta-Surakarta Corridor (primary arterial road) is higher than in the one located behind (or not along) it. It also indicates that from this dimension, the intensity of regional transformation in villages located along the corridors is higher than in the one located behind them.

The development of built-up area is one characteristic in observing the level of urban development. It represents the physical development of buildings so that the physical appearance of urban characteristics becomes more visible. The development of built-up area is one of the influencing factors of the urbanity level in an area. The percentage of built-up area in Maguwoharjo during the entire period is always higher than in Jatirejo. Besides, it also experiences higher increase in this percentage than Jatirejo (Table 4). Figure 1 also shows that land use in Mahguwoharjo is dominated by built-up area. On the other hand, Figure 2 shows that land use in Jatirejo is dominated by non built-up area.

In accordance with the theory proposed by Smiles (1981), there are three indicators that can be used in assessing the urban appearance physically. They are (1) the characteristics of land use, (2) the characteristics of building, and (3) the characteristics of transportation circulation/network.

**Table 4.** *The percentage of built-up area in Maguwoharjo and Jatirejo between 1990 and 2011*

Years	Maguwoharjo	Jatirejo
1990	34	14
2000	32	14
2003	33	14
2006	66	14
2008	69	15
2011	76	15

Source: Podes, 1990-2011

Smiles further mentioned that the urban land use is characterized by the domination of built-up area or wider building coverage than vegetation. Based on the findings in this research, it can be postulated that as regards land use, Maguwoharjo has a higher intensity of regional transformation than Jatirejo.

Field observations also prove that there are more buildings functioning as both dwelling and business in Maguwoharjo than in Jatirejo. The road network in Maguwoharjo is also denser than in Jatirejo. Therefore, in accordance with the theory proposed by Smiles on the physical indicators of urban, Maguwoharjo has a more urban nature than Jatirejo. It is associated with regional transformation, thus, it can be synthesized that the intensity of the regional transformation in Maguwoharjo is higher than in Jatirejo. This means that the percentage of built-up area in villages located along the Yogyakarta-Surakarta Corridor (primary arterial road) is higher than in the ones located behind or not along it. This also indicates that from this dimension, villages located far from the road networks have a relatively lower intensity of regional transformation than the ones located along the road networks.

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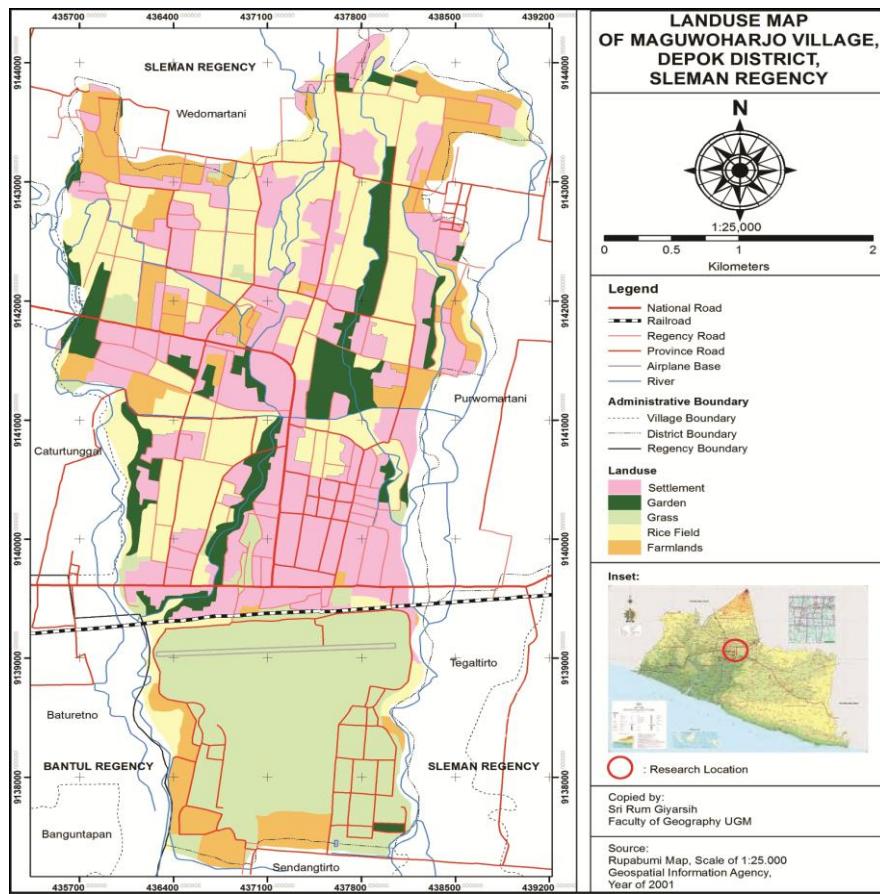


Figure 1. The land use map of Maguwoharjo

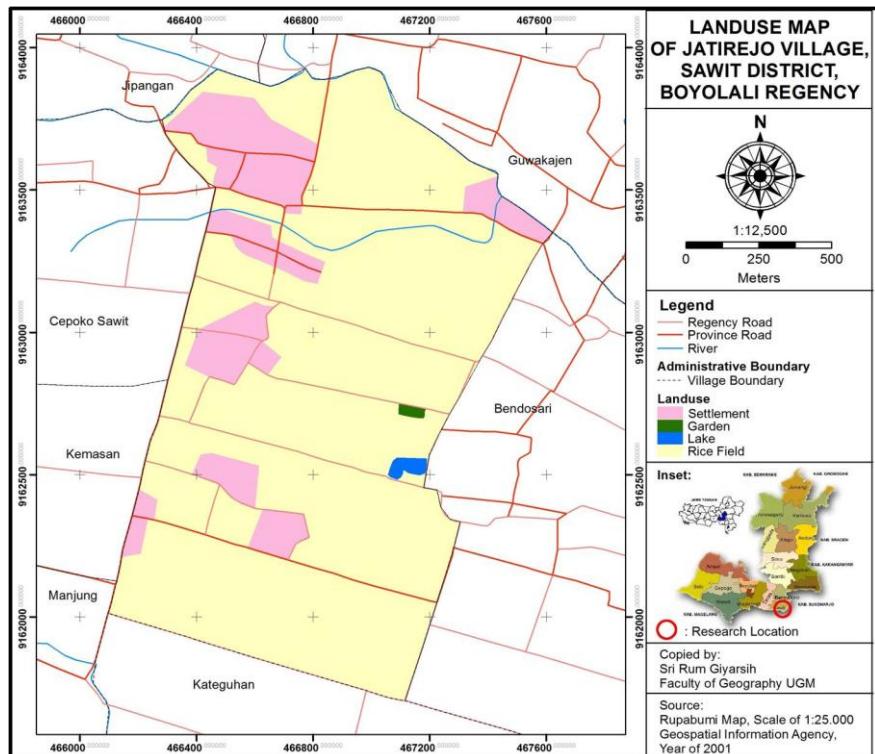


Figure 2. The land use map of Jatirejo

### **The role of Yogyakarta and Surakarta City in influencing the intensity of regional transformation in two villages in the Yogyakarta-Surakarta Corridor**

The intensity of the regional transformation occurring in the villages near Yogyakarta differs from the one occurring in the villages near Surakarta. This is due to the different role of these two cities as mother cities in the corridor in influencing the intensity of the emerging regional transformation.

This research found that Yogyakarta has a greater influence in the intensity of the regional transformation in the Yogyakarta-Surakarta Corridor than Surakarta. This is due to its surrounding villages functioning as the outskirts of Yogyakarta. This function causes them to keep receiving the overflow of population and urban functions that are not accommodated in Yogyakarta due to its limited space. Previous research also found the same phenomenon where the unaccommodated urban functions within the administrative boundary in Yogyakarta are finally overflowing to the adjacent villages including Sleman and Bantul Regency (Yunus, 2011; Giyarsih et al., 2003; Rachmawati, 2004; Giyarsih, 2009).

The function of Yogyakarta as the City of Students seems very obvious in influencing the population and urban functions of the surrounding villages which are parts of the Yogyakarta-Surakarta Corridor. The urban functions in the educational sector which are not accommodated in Yogyakarta also spread towards the surrounding villages. Some renowned state and private universities located in these villages are Universitas Gadjah Mada, Universitas Negeri Yogyakarta, Universitas Sanata Dharma, Universitas Atmajaya, and Universitas Pembangunan Nasional. The research conducted by Yudistira (2013) also supports the findings in this research.

It was also found that Yogyakarta, as the City of Students, also spreads to Maguwoharjo, located adjacent to Yogyakarta. Micro research proved that Maguwoharjo, one of the many villages along the Yogyakarta-Surakarta Corridor, located close to some of these universities, is highly influenced by their existence. Student dormitories/boarding houses are concentrated in some villages in Sleman Regency including Maguwoharjo.

The great number of student dormitories/boarding houses in this location leads to an increasing number of residents who seek for productive economy in order to support the students' needs. Among them are food stalls, copy shops, computer rent shops, and internet cafes. Micro research also found that the computer/internet introduction/usage becomes more intense since the students' needs increase. This also indicates that the role of Yogyakarta as the City of Students is also felt strongly in the educational sector of its surrounding villages which are also located along the Yogyakarta-Surakarta Corridor.

The second argument emphasizing that Yogyakarta has a greater role than Surakarta in influencing the regional transformation in this corridor is that the supporting empirical facts about the trading sector are found in the forms of shopping centres and supermarkets located in the surrounding villages, namely Makro, Lotte, and Ambarukmo Plaza. The existence of some modern trading facilities greatly affects the intensity of regional transformation occurring in the Yogyakarta-Surakarta Corridor.

In addition, the findings of this research are also consistent with the findings of the research conducted by Sundaram and Rao (1984). According to their research, the urban development in the outskirts is caused by (1) the existence of adequate transportation pathways, (2) the proximity to the centre of activities, (3) the preference of population and urban functions to choose location in the outskirts, and (4) the abundant land availability in the outskirts.

Field observations showed that the availability of road networks and transportation facilities is highly adequate in Maguwoharjo. In the terms of proximity to the centre of activities, Maguwoharjo has a very short distance to Yogyakarta.

The adequate support of transportation infrastructure and facilities in Maguwoharjo makes it possible to reach Yogyakarta as the centre of activities in less than 15 minutes. This village also has more flexible availability of open space than Yogyakarta. This condition leads to an increase in population and urban functions choosing Maguwoharjo as a location for their activities.

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The findings in this research are also consistent with the ones of Lee (1979) who suggests that the number of public utilities and the role of developers significantly influence the development of a region. Field observations found that there are more socio-economic facilities in Maguwoharjo than in Jatirejo. Empirical facts obtained from these field observations also revealed the emergence of new settlements. Meanwhile, there is no similar development found in Jatirejo.

Empirical facts show that villages located close to Yogyakarta have more socio-economic facilities, such as education (universities) and trading facilities, than the ones located close to Surakarta. The villages located close to Surakarta have limited number of such facilities: one university (Universitas Muhammadiyah Surakarta) and one shopping centre (Goro Assalam). The existence of this university around the Yogyakarta-Surakarta Corridor gives less significant impact on the productive economic activities that support the related needs such as student dormitories, food stalls, copy shops, computer rent shops, and internet cafes in the surrounding villages, which are different from the villages located close to Yogyakarta.

This phenomenon is very different from the higher education facilities in the villages located near to Yogyakarta City, able to generate productive economic activities so that the wider impacts become possible. This finding is consistent with Rachmawati (2004).

Field observations showed that the population and urban functions in Surakarta do not spread widely to the villages located in the Yogyakarta-Surakarta Corridor. Theoretically, in accordance with the Law of Gravitation stated by Newton (Whynne-Hammond, 1985), Surakarta, which has more population than Yogyakarta, should have a higher significance in influencing the intensity of regional transformation along the Yogyakarta-Surakarta Corridor. According to the data recorded in Semarang in Figures, Surakarta had a population of 505,650 inhabitants and a density of 13,354 inhabitants/km<sup>2</sup> in 2011. At the same time, according to the data recorded in Podes, Yogyakarta had a population of 393,080 inhabitants and a density of 12,095 inhabitants/km<sup>2</sup>.

The results of in-depth interview with Prof. Dr. Hadi Sabari Yunus, MA, an expert of Urban Geography, on 9 September 2013 support the findings of this research. The quote is as follows: "*Yogyakarta, although it has more population and higher population density than Surakarta, is highly possibly influencing the intensity of the regional transformation along the Yogyakarta-Surakarta Corridor more than Surakarta. There are still many other variables that also influence the intensity of the regional transformation in this area.*" However, the empirical facts have shown the inconsistency of conflict with the Law of Gravitation based on the afore-mentioned arguments.

## CONCLUSION

The assessment of the intensity of the regional transformation by using four variables: population density, population growth, the percentage of non-agricultural households, and the percentage of built-up area indicates that the intensity of the regional transformation in Maguwoharjo is higher than in Jatirejo because the level of physical accessibility of Maguwoharjo is also higher than in Jatirejo. Maguwoharjo is traversed by the primary arterial road which has a higher physical accessibility than Jatirejo which is located behind this road. This research also found that the role of Yogyakarta in influencing the intensity of regional transformation in the Yogyakarta-Surakarta Corridor (in this case: Maguwoharjo) is higher than the role of Surakarta (Jatirejo).

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