

# Urbanization and the Resulting Peripheralization in Solo Raya, Indonesia

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## Urbanization and the Resulting Peripheralization in Solo Raya, Indonesia

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**Abstract.** Dynamic urbanization in *Solo Raya*, a local term for Surakarta Metropolitan, amongst rapid regional based-urbanization in Indonesia, shows the unbalance pattern of growth. A number of Surakarta City's peripherals become the newly growing area which is characterized by a well-facilitated region, while the former urbanized areas next to the city center present the declining process. Different socioeconomic development triggers a unique mosaic of socio-spatial pattern, on which the phenomena of peripheralization could be investigated. Urban investment that boosted by the political will of both the national and local government has led to a shift in demographic condition. A relatively massive in-migration has been attracted to the peripheral and creates the new landscape of urban-rural society. Complex dynamic of metropolitan growth and the resulting peripheralization reminds that socio-spatial pattern calls the challenges for managing the rapid change of land use and space use. The pattern of urbanization that differs upon the surrounding areas of Surakarta City would be interesting to be explored. This paper will discuss the conceptual framework of peripheral urbanization and the methodological approach. It is actually the part of ongoing research on peripheralisation in Solo Raya.

**Keywords:** Urbanization, Metropolitan Growth, Peripheralization, Unbalance Development

### 1. Introduction

Economic growth and investment have fueled the rapid development of small towns and surrounding rural areas. Changes in social structure and spatial patterns in the suburbs signal the emergence of new service centers [1]. The growth of urban areas has penetrated the agricultural area and changed the social and economic characteristics of rural areas [2–4]. In some parts looks very fast development, while the other part grows slowly. Meanwhile, the old city area that has evolved earlier shows the dynamics of the decline. The decline is characterized by a decrease in the population. On the other hand, marginal areas show symptoms of population growth. Improving the quality of infrastructure and completeness of facilities is another fact that marks developments in the periphery. In certain areas even show symptoms of increasing service scale very rapidly. The region grew into a new growth center and created a multi-core pattern on a regional scale. Urbanization on a regional scale is becoming a contemporary phenomenon that flourished in Asia. Fisher [5] and Ainsaar [6] studied the pattern of suburban development and built typology to illustrate the differences in social and spatial dynamics.



Differences in the dynamics of development that lead to differences in space growth and the level of investment lead to the emergence of differences in the level of progress of a region. The gap between center and periphery begins to change shape. New areas of development on the periphery tend to be better, while some parts of the central region are reversed. The term periperalization is used to explain the phenomenon of regional inequality or inequality. The focus of the study is more on social and spatial aspects [7]. Research on peripheralization, as Lang [8] has done in some countries in Eastern Europe, is often associated with advanced region dichotomies that are considered to win competition and backward loses. The political change from socialism to capitalism has triggered a major change not only in the social aspect but also in the space aspect. Physically, progress is more often associated with the rate of development of physical construction and socioeconomic facilities. While socially associated with changes in the economic structure of the communist to liberalism. In subsequent developments, referring to Tahir and Naumann [9], the dependence of the periphery to the center gradually declines, and even the population tends to move from the central to the periphery. In this context, the central dominance of the periphery has shifted the European countries

In the context of urbanization and metropolitan development in Indonesia, periperalization occurs due to the rapid growth of rural areas. The availability of land becomes one of the considerations of the development of newly built areas on the outskirts of major cities. In some areas there is still the dominance of big cities on their new growth areas, but some dynamics show that the periphery is growing faster. Despite the decline in agricultural sector contribution, as explained by Hudalah [10], the rapid development driven largely by private investment has led to an increase in the role of small towns in the periphery. The urban service center began to shift from the big city to the periphery. Among the new growth areas, there are even more developed beyond the center of the city, as happened in Sukoharjo, one of the neighboring districts of Surakarta. The dynamics of urbanization and the emergence of symptoms of periperalization becomes an interesting issue to study. The symptoms illustrate how the role of small towns grow and vice versa the dominance of big cities is declining. The marginalization initially experienced by the periphery gradually shifted to the central region. The displacement of the central population has had an impact on the declining quality of service in the central region. Parts of the central region began to lag.

Observations on socio-economic changes and spatial areas can be linked to assess the adaptation and resilience of local communities in responding to urban development. What are the factors that influence people to stay in areas that have changed due to the influence of urban growth and merge into the urban socio-economic culture. And what makes the local people to shift into the interior and maintain their socio-economic culture.

## **2. The Impact of Urbanization on The Development of The Periphery**

The development of investment spur the growth of urban space. The best-developed periphery areas are growing first. Economic and demographic changes encourage social shifts and spatial patterns. The entry of middle economic groups in rural areas has triggered social polarization. The dominant peasant communities are marginalized and occupy deeper areas. Some of them remain among the new settlers and create social hybrids that are not fully blended. Fragmentation of space according to economy class becomes a new character in the peri-urban and sub-urban areas. Changes in social, economic and spatial dimensions vary depending on the socioeconomic and cultural characteristics of the community and the politics of local government development. Agglomeration of metropolitan areas presents variations in structural change. The visible differences reflect the socio-economic and spatial attractiveness of the region (see Norgard [11] and Ravetz et al. [12] ).

The phenomenon of peri-urbanization and sub-urbanization has been the focus of several studies. The shift in development to the periphery marks the contemporary urbanization that is spreading in third world countries. The suburbs are the main target of middle-class migration in the city. This phenomenon by Ainsaar [6] is called deconcentration, namely the process of migration of population

to areas of lower density. Social and economic factors behind the migration of the population to the suburbs [13]. In the context of investment, the availability of sufficient quantity of land at an economical price is a consideration for investors to penetrate the area. Some researchers focus on the classification of urbanization types (see Ainsaar [6] and Fisher [5]), and others focus on the migration process. Champion [14] observed the migration process and the concentration of the population that occurred in the periphery. He named the process as concentration diffusion. In his research in some peri-urban areas in several states in Australia, Fisher [5] divides urbanization typology into four types, namely Sub-Urbanization; Counter Urbanization; Population Retention; and Centripetal Migration.

### *2.1. Sub-Urbanisation Dynamics*

The term sub-urbanisation is used to name a new region whose proximity and dependence on the central area is still high. This region generally has a high commuting level. Sub-urban areas are generally new settlements for the city's established groups. The group moved to the outskirts to get a better, more natural and better residential neighborhood and still have a high degree of affordability from the city. This area is generally developed by utilizing existing road access. In the Indonesian context, the tollgate entrance is a potential area for sub-urban development due to the ease of achievement. In a short time this area is packed with high-rise settlements. Groups living in the region are generally young professional groups and young families looking to find land that is still relatively cheaper than in the city, but has a high level of ease of achievement. The tendency of suburbanization at the same time trigger land issues is speculation. Areas along the main corridor are subjected to speculators to control large amounts of land.

### *2.2. Counter Urbanization Dynamics*

This dynamic is associated with a phenomenon in which the migration to the periphery occurs in an area relatively far from the city. The linkage or dependence on the city is also relatively low. Target areas are generally rural areas that are still dominated by green land with a moderate level of ease of achievement. Access is no longer a major factor, but rather a complete facility and rural atmosphere that offers a natural environment. The migrant groups that make this choice are generally established families or retired retirees. The economic establishment encourages them to live in relatively beautiful places and opens the opportunity to have large enough land. The countryside atmosphere is the main attraction because they are looking for a relatively quiet location and quite far from the noise of the city. Some of the migrants in this area have deliberately started a new life by opening a business in an area far from the city. Generally are those who have been at relatively high career levels in some corporations. The existence of this upper middle class makes the region grow and open up new job opportunities for local communities.

### *2.3. Population Retention Dynamics*

This term is used to characterize areas that are still physically dominated by rural culture. The area is clearly located at a relatively far distance from the city. In the aspect of population, this area is characterized by the presence of local people with a relatively equal proportion or greater than the group of immigrants. Local people choose to survive in this region due to adequate economic development. These economic developments were triggered by the presence of established urban migrants who opened businesses and offered opportunities for local people to work in the administrative, factory, maid, security, hotel servants, plantation workers as well as other informal sectors such as informal transporter, tailor clothes, construction workers, and others. In this region, the completeness of facilities is not the main requirement. It is precisely the nature of the rural atmosphere to be the main attraction. In this region, it usually develops tourism and agribusiness sectors. The existence of businesses that generally rely on rural potentials opens employment opportunities for local communities to increase incomes. In addition, vocational education is also evolving, especially relevant to emerging sectors. This indirectly encourages the awareness of rural communities to



improve skills and education. This region is generally within a certain range of counter-urbanisation areas, as some areas prove that the presence of counter-urbanisation areas pushes the surrounding area into a population retention.

#### *2.4. Centripetal Migration Dynamics*

This term is used to describe the dynamics of the region where people around the area are interested in migrating to the region due to certain attractions. Community interest dominated by the village community is generally driven by the condition of less fertile villages, limited economic potential, and inadequate social facilities. While they are interested in migrating is the development of medium or large scale industries, the construction of trade facilities and services, the development of tourism objects and others that offer employment opportunities. This phenomenon is generally also a further process that is preceded by population retention. The development of a rural area due to the migration of established economic groups and investors in turn will open up new economic opportunities. The area is the target of migration for people living around it. Therefore, population retention in subsequent developments push the region into a new growth center that will evolve into economic independence. This possibility is particularly the case in areas experiencing rapid growth due to large-scale investments, such as the development of industrial zones or special economic zones fueled by relatively cheap land prices [10]. In time, the region will develop into a new, self-contained city that will become the forerunner to subsequent sub-urbanization and countermeasure of urbanization. Thus it can be observed that the process of urbanization is a continuous cycle that evolves from one place to another continuously, where agricultural activity is increasingly shifted and replaced by the urban economic sector, ie industry and services [15].

### **3. Peripheralization as a form of imbalance development**

Peripheralization is not always associated with peri-urban. This terminology is used to describe the condition in which an area is inequality compared to other areas in the vicinity. Peripheralization is not determined by distance or accessibility, but to indicate the difference in the degree of development of a region and the degree of backwardness of one region to another [16]. Other experts review from a socio-political point of view. Peripheralization is associated with discrimination of certain groups or communities in a region [7,17]. The factors behind the peripheralization are quite varied, each expert has a different point of view.

Weck and Beisswenger [1] examine how migration triggers socio-economic changes that result in peripheralization. The economic dynamics of migration is generally the beginning of how a region develops. Economic opportunities will attract migration. In subsequent developments, migration to a region will affect the development of the region. Migration by the upper middle class will be followed by significant developments due to investment. Construction of new facilities and infrastructure will occur in the region. While the abandoned areas, although located in the downtown area actually decreased quality. In this case, migration has a central role that determines the development of a region as well as the decline of a region. The conditions under which the dynamics of development and decline occur in an area called peripheralization. The peripheral region in this case is characterized by declining population, especially productive groups and the stagnation of the construction of facilities or infrastructure. This phenomenon is one of the dimensions that characterize urbanization and urban growth. Michelini and Pintos [18] examine the dynamics of peripheralization occurring in some regions of Latin America. Their research proves that peripheralization occurs due to seizure of land access and facilities. Disadvantaged communities will suffer from lack of access and completeness of facilities.

Based on his research on several countries in Eastern Europe, Lang [8] concluded that peripheralization is caused by several things, namely: concentration of facilities in certain areas that result in interest in populations from other regions that ultimately lead to setbacks in the abandoned

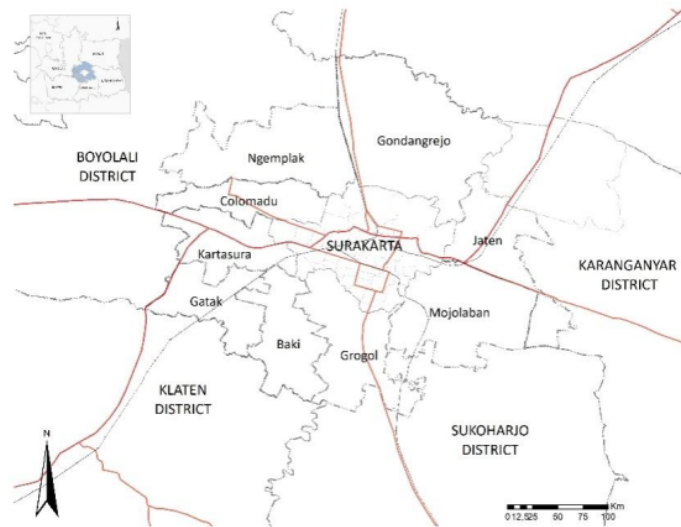
areas; a decline in the rate of economic growth resulting in increased dependence of a declining region to a more developed region; development policies that prioritize metropolitan areas; development of infrastructure that is only concentrated in certain areas that trigger the gap. Broadly speaking, the results of Lang's study were confirmed by Kuhn [16] which explains that peripheralization is a form of regional disparity due to economic polarization, different strata of social development and weak political power and the bargaining position of government or community that result in the decline of a region.

#### 4. Research Methods

The study methodology study will cover three things: research approach; data retrieval methods; and data analysis methods. In general, the approach applied in this research is phenomenology approach. This approach is chosen because it is considered the most appropriate approach to understanding the phenomenon of urbanization and observes the process of peripheralization. With phenomenology approach, it is expected to get a detailed and deep understanding of the patterns of urbanization that occur and the dynamics that make up the peripheralization. The objective of the research is to observe the urbanization pattern in Metropolitan Surakarta and the peripheralization due to the development of urban area. Survey method will be conducted to dig secondary and primary data. Some speakers will be selected by snow balling to complete the primary data. The collected secondary and primary data were analyzed both quantitatively and qualitatively. Population data will be observed for the period 1980 to 2016. This is intended to see the dynamics that occur, from the beginning of development to the present.

The research area covers Solo Raya area, namely urban agglomeration area of Surakarta city. Geographically, the city of Surakarta as a metropolitan center is surrounded by six districts of Sukoharjo, Boyolali, Karanganyar, Wonogiri, Sragen, and Klaten. Among the six districts, agglomeration of urban areas due to the development of Metropolitan Surakarta occurs only in Sukoharjo, Karanganyar and Boyolali districts. Thus, observation of urbanization pattern will be done in all three districts. Fisher typology described above will be a reference to see the patterns of urbanization that occur. From these three districts, will be selected kecamatan that shows the impact of urbanization development. Each sub-district will be examined from several aspects, namely social, economic and spatial changes. The socio-economic transformation will be tested for the impact on changes in its space structure. More specifically, the changes to be observed are the level of urban intensity that occurs. Rural socioeconomic changes leading to urban areas will be observed to the extent that they alter their spatial order. The socioeconomic characteristics of the community, both local communities and migrants in each new urban area are analyzed to assess whether there is a relationship between socio-economic characteristics and the characteristics of space. To understand the contrast, regions with high degrees of change from village to city will be compared with low degree of change.

Based on research conducted Nuriasari [19], the influence of Surakarta urban can be observed up to a radius of 8 km from the city of Surakarta. In this study the distance will be re-tested to ascertain whether the influence of the urban is still the same or widened in the area further away from the city of Surakarta. Observed urban influences, as described earlier, include aspects of population, land use change, and socio-economic structure change. In the three selected districts will be seen which represents the highest and lowest intensity of the urban. This is done to test whether the effect of urbanization occurs evenly or not. If uneven, it is possible that a kabupaten will show a high intensity of change while the other districts do not show the same thing. This dynamic will certainly provide a more detailed explanation of how the distribution of the effects of urbanization and what factors lie behind the different levels of urbanization intensity. Sub-districts to be observed in this study include (see Figure 1) Baki, Gatak, Kartasura, Grogol, Mojolaban (Sukoharjo) District; District Colomadu, Gondangrejo, Jaten (Karanganyar District); and District Ngemplak (Boyolali District).



**Figure 1.** Map of Scope of Research Area

Data analysis in this research will use descriptive analysis method. The assessment results of each aspect derived from the literature review will be assessed and measured. Data to be analyzed include (i) land use data, (ii) population migration, (iii) demographic data, (iv) economic data, and (v) availability of basic facilities data. Spatial analysis to see the dynamics of land use will use data from satellite imagery. The data is then analyzed by overlay method with the help of Geographic Information System. Spatial analysis will use the series data in the form of land use map from 1980 to 2016. It is expected to observe the spatial development stage.

Meanwhile, the analysis of peripherals will also use data relating to economic, social and infrastructure aspects and public facilities. Scoring method will be used for data processing. The size of the score shows the high low inequality that occurs. In the scoring analysis, the value to be given for each indicator is as follow.

**Table 1 : Score of Peripheralisation's Indicators**

Scores of Indicators	Scores of Migration Rate and Number of Agricultural Household
5 : Very Good, percentage >81% of the average	5 : Very Good, percentage <20% of the average
4 : Good, percentage 61%-80% of the average	4 : Good, percentage 21%-40% of the average
3 : Moderate, percentage 41%-60% of the average	3 : Moderate, percentage 41%-60% of the average
2 : Bad, percentage 21%-40% of the average	2 : Bad, percentage 61%-80% of the average
1 : Very Bad, percentage <20% of the average	1 : Very Bad, percentage >81% of the average

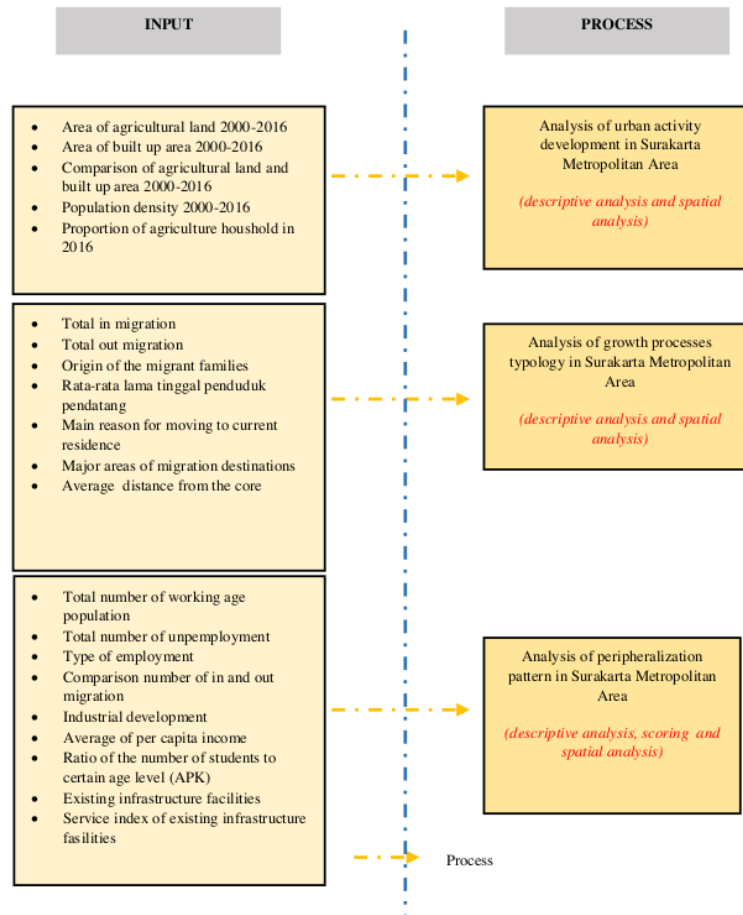
After obtained the value of each indicator, then done index score. The index value of each indicator has a range of values 0-1. With the calculation formula is as follows.

$$\frac{\sum \text{counted score}}{\sum \text{highest score}}$$

For each indicator, the result of calculating the index value will be divided into three criteria, i.e.:

0 – 0,33 : Bad; 0,34 – 0,66 : Moderate ; 0,67 – 1 : Good





**Figure 2.** Stages of Research Analysis

## 5. Conclusion

According to the former researches, peripheral development becomes the contemporary form of urbanization. The different pattern of development in the peripheral regions of the city expresses the particular characteristic in which the rural-urban transformation could be investigated. The distinguish pattern of spatial change shows how the economic forces has driven and how the interplaying role of development stakeholders have been bargaining. The trade-off between public and private interest implies the different impact on physical dimension. A number of studies realize that social and cultural aspects still play as the determinant driver. In additional, the characteristic of urban society that moving into the peripheral regions will create the different kind of social integration. In this matter, we can see that in some extent the change bring the betterment of living condition, but in other situation the change brings the unbalance growth. The expansion of urban infrastructure triggers the peripheralization, in which the former neighborhoods are sometimes decline while the new neighborhood tends to be predominated.

The dynamics of rural-urban integration in the surrounding area of a primate city shows the four different pattern of change that represents the different level of urbanization. The phenomenon of suburbanization performs how the regions nearby the city have been strongly transformed into the new urban areas. Meanwhile, the counter urbanization explains how the emerging of new rural-urban

region represents a kind of less dependent area to the city centre. These areas become the new destination of migration in which the inhabitant, especially the former urban society has decided to engage with the new livelihood. In the respective period, these regions are continuously developing its urban characteristic.

The gap between urban and rural that so called peripheralization which is strongly expressed in suburban becomes less intensive in these regions. The other is called population retention, that characterized by the resilient rural area that experience the new opportunity of economy due to the influx of urban middle class into this sites. It can still be seen the existence of farmer household cultivating their land while the family member has engaged with the new urban jobs. This kind of additional income has increased their living standard. Last but not least is the centripetal migration. This type of urbanization happens when the new growing urban areas attracts the surrounding rural people to come, mostly in search of employment. In this region, we can also see how the gap between affluent people who live in a better environment comparing to those who are just came in that mostly living in the relatively substandard area. It is common that those area are located in the periphery that less facilitated. In this matter, the phenomenon of peripheralization is also could be examined.

## 6. References

- [1] Weck S and Beißwenger S 2013 Coping with Peripheralization: Governance Response in Two German Small Cities *Eur. Plan. Stud.* **22** 2156–2171
- [2] Winarso H, Hudalah D and Firman T 2015 Peri-urban transformation in the Jakarta metropolitan area *Habitat Int.* **49** 221–229
- [3] Winarso H and Hudalah D 2006 Metropolitan di Indonesia: Kenyataan dan Tantangan dalam Penataan Ruang *Direktorat Jenderal Penataan Ruang, Dep. Pekerj. Umum*
- [4] Pradoto W 2012 Development patterns and socioeconomic transformation in peri-urban area *Univerlagtuberlin*
- [5] Fisher T 2003 Differentiation of Growth Processes in the Peri-urban Region: An Australian Case Study *Urban Stud.* **40** 551–565
- [6] Ainsaar M 2002 Reasons for move: A study on trends and reasons of internal migration with particular interest in Estonia, 1989--2000.
- [7] Bernt M and Colini L 2013 *Exclusion, marginalization and peripheralization*
- [8] Lang T 2012 Shrinkage, Metropolization and Peripheralization in East Germany *Eur. Plan. Stud.* **20** 1747–1754
- [9] Fischer-Tahir A and Naumann M 2013 Introduction:Peripheralization as the Social Production of Spatial Dependencies and Injustice *Peripheralization* (Springer Fachmedien Wiesbaden) pp 9–26
- [10] Hudalah D, Winarso H and Woltjer J 2007 Peri-urbanisation in East Asia:A new challenge for planning? *Int. Dev. Plan. Rev.* **29** 503–519
- [11] Nørgaard H 2011 Futures of rural and peripheral areas-challenges, strategies and policies
- [12] Ravetz J, Fertner C and Nielsen T S 2012 The Dynamics of Peri-Urbanization *Peri-urban futures: Scenarios and models for land use change in Europe* (Springer Berlin Heidelberg) pp 13–44
- [13] Hosszú S 2009 *Counterurbanization: A literature study* (Danish Institute of Rural Research and Development (IFUL))
- [14] Champion T, Hugo G and others 2004 *New forms of urbanization: beyond the urban-rural dichotomy.* (Ashgate Publishing Ltd.)
- [15] Webster D, Cai J and Muller L 2014 The New Face of Peri-Urbanization in East Asia: Modern Production Zones, Middle-Class Lifesyles, and Rising Expectations *J. Urban Aff.* **36** 315–333
- [16] Kühn M 2014 Peripheralization: Theoretical Concepts Explaining Socio-Spatial Inequalities *Eur. Plan. Stud.* **23** 367–378
- [17] Bernt M 2013 Exclusion, marginalization and peripheralization: Conceptual concerns in the

- study of urban inequalities
- [18] Michelini J J and Pintos P 2016 Metropolitan expansion and new socio-spatial segregation scenarios in contemporary Argentina. The case of Nordelta-Las Tunas (Buenos Aires) *Habitat Int.* **54** 40–49
  - [19] Nuriasari A 2012 Dinamika Perkembangan Wilayah Peri Urban Surakarta: Kajian Dalam Aspek Kesejahteraan Masyarakat dan Ketimpangan *Undergraduate Thesis, Diponegoro University*

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