

IMPLEMENTATION EVALUATION OF MINIMUM STANDARD OF URBAN SETTLEMENT USING MANN WHITNEY TEST

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Abstract

The development of tourism and education activities has become one of the factors triggering the rapid urban physical development in Yogyakarta. Construction of hotels, apartments, and middle to upper class housings has triggered increases in land price in the surrounding area. The purpose of this study was to identify the characteristic of land transacted in urban areas in Ngaglik sub-district from 2008 to 2016. Based on Governor Regulation Number 11 of 2007, there is a minimum lot size regulation imposed for housing development in Sleman. The data of land transaction during the period of 2008- 2016 was analyzed using crosstab and Mann Whitney Test. The results of this study showed that 129 urban lands were transacted. The area of land transacted in urban areas which meets the requirements of the governor regulation reaches 114 or about 88.4%. The test showed that there is a significant difference between the area of land transacted in urban areas and in rural areas.

Keywords : Mann whitney test, Urban areas, Governor Regulation, Transaction

1. Introduction

Yogyakarta is one of the areas in Indonesia that has uniqueness in terms of history and culture. Such uniqueness leads Yogyakarta to be called Special Region (Law Number 22 Year of 1948). This makes Yogyakarta has its own charm as settlements, investments, and public facilities developments. These tractions result in the rapid physical development in Yogyakarta. Many farms in the suburbs of Yogyakarta are transformed into settlements, shops, or other buildings. The process of physical development is continuous and if it is not supervised, it will disturb the comfort of the region. In addition, the physical development of uncontrolled land will also impact the loss of lands that have ecological functions.

The development of rural areas into urban areas is influenced by several factors (Ilhami, 1988, Jayadinata, 1999). Sleman Regency in Yogyakarta is one of the districts experiencing rapid urban physical development. The regency, located in the north of Yogyakarta City, gets bigger impact from urban physical development compared to other regencies in in Yogyakarta. The development of tourism and education activities has become one of the factors triggering the rapid urban physical development in Yogyakarta. The phenomenon of this urban area is called invasion while the physical

appearance of urban physical outwardness is called urban sprawl (Northam in Yunus, 1994).

Rapid physical growth in rural areas is marked by a significant increase in the value of land, especially in the southern part of Sleman Regency, which is directly adjacent to Yogyakarta City, or which is included as the Urban Area of Yogyakarta (KPY) based on the delineation of the area listed in the Sleman District RTRW document 2011-2031. Physical development of a city refers to the theory of diffusion (dispersion/propagation) which has two models. Each of them has a different purpose (Hagget, 1970). The main factors determining the pattern of development and growth of the city are human, human activities, and pattern of movement. (Sujarto, 1989)

The lands surrounding the campus, as well as around the construction site of the hotel or apartment, are considered to have high commercial value so that the value of the lands experiences significant value spikes. Although the existence of the campus is not statistically significant in influencing the high value of land (Pramana, 2016), data obtained from the Land Office of Sleman District indicates that the construction of upper middle class hotels, apartments and housings has triggered land price increases in the surrounding area. Classification of land use interventions by government is done by establishing policies to keep certain areas having low density while

others are permitted to grow at high densities (Brueckner, 2006). The first policy is Urban Growth Boundary, a policy that allows cities to experience physical development in areas within the Urban Growth Boundary (UGB). The second policy is applying policies which require extra spending to build the building. The third policy is related to the height limitation of the building and the determination of the minimum land size.

Sleman regency also issued Regent Regulation Number 11 of 2007 on Housing Development. Based on the regent's regulation, every piece of housings built must have 30 percent of the land area outside the water catchment area and 40 percent of the land area of the water catchment area for open space. In addition, the size of housing area is at least 125 m² for urban area and 300 m² for rural area. Considering the above background, the authors are interested to identify the characteristics of lands transacted in urban areas in Ngaglik Sleman from 2008 to 2016 based on Governor Regulation Number 11 of 2007.

2. Research Methods

This study used a case study approach (Verschuren and Doorewaard, 2010), (Blatter and Blume, 2008). Data collection was conducted through primary surveys and secondary surveys. The primary survey consisted of direct observation to the research area and through semi structured interviews to obtain the required data. The secondary survey consisted of an institutional survey and a literature survey. An institutional survey was conducted to meet the necessary data such as secondary data or complementary data. The data used to perform this statistical modeling is the data of transactions of land transacted within the range of 2008 to 2016. This data was obtained through field surveys, involving 14 land brokers involved in the process of land transactions during the time span. This data retrieval method was chosen because the data on land transaction value is not available and inaccessible for public. From the field survey conducted, there are 180 data of land transactions in the case study area.

This study used statistical modeling of land values in case study sites within the timeframe from 2008 to 2015 as an analytical method to identify characteristics

of land area transacted in urban areas using crosstab.

Crosstab analysis was used to find out whether there is a relationship between a land area with its location, a land that complies with governor's regulations with its location, a land area with its status, a land area with year of transaction, and a land that complies with governor's regulations with year of transaction

The data analysis phase also tested the difference of land area transacted in urban and rural areas using Mann Whitney test.

3. Discussion

The number of land samples transacted in Ngaglik Sleman sub-district was 242 with details of 129 in urban and 113 in rural areas. Urban areas include Minomartani Village, Sariharjo Village, and Sinduharjo Village, while rural areas include Donoharjo Village, Sardonoarjo Village, and Sukoharjo Village. Minimum area of land traded in urban areas is 84 m² while the minimum land area in rural area is 137 m². This clearly does not meet the Regulation Number 11 of 2007 on the settlement area.

The average land area traded in Ngaglik village reaches 1002.96 m² with minimum land area of 137 m² and maximum land area of 7000 m² and the standard deviation is 1224,014. The average land area transacted in Ngaglik City reaches 709.11 m² with a minimum land area of 84 m² and maximum land area of 5000 m² and the standard deviation is quite high at 947,533.

Identification of the characteristics of land area transacted in urban areas

Lands transacted in Ngaglik Sleman urban area include lands in Minomartani, Sariharjo, and Sinduharjo. They are distributed using frequency distribution with 600 class interval width with minimum land area of 84 m² and maximum land area of 5000 m². Figure 1 shows the histogram of land that is transacted in urban areas.

The width of land traded which is mostly in the range of 84m² - 684m², reaches 71% while the land area above 684m² reaches 29%. Table 1 shows in detail the amount of land traded under Governor Regulation Number 11 of 2007.

Table 1. The amount of land traded under governor regulation

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15	11,6	11,6	11,6
	114	88,4	88,4	100,0
Total	129	100,0	100,0	

Table 1 shows that the land area that meets the Regulation Number 11 of 2007 is 114 lands from 129 transacted lands or 88.4%. This is quite encouraging which means that Governor Regulation Number 11 of 2007 has begun to be noticed and obeyed.

The number of lands traded in the urban area is 129 with details: 72 in Sariharjo 49 in

Sinduharjo, and 8 in Minomartani. Table 2 shows in detail the location of urban administration based on Governor Regulation Number 11 of 2007.

Table 2. The location of urban administration based on governor regulation

				Adm_Loc			Total
				Minomartani	Sariharjo	Sinduharjo	
lebih_125	kurang dari 125 m2	Count		0	12	3	15
		% within lebih_125		,0%	80,0%	20,0%	100,0%
	lebih dari 125 m2	% of Total		,0%	9,3%	2,3%	11,6%
		Count		8	60	46	114
		% within lebih_125		7,0%	52,6%	40,4%	100,0%
		% of Total		6,2%	46,5%	35,7%	88,4%
Total		Count		8	72	49	129
		% within lebih_125		6,2%	55,8%	38,0%	100,0%
		% of Total		6,2%	55,8%	38,0%	100,0%

The area of transacted land that meets the requirements reaches 114 from 129 or about 88.4% with details: 60 in Sariharjo village and 46 in Sinduharjo village. Meanwhile, there are 15 lands that do not meet the regulation: 12 in Sariharjo and 3 in Sinduharjo.

The 129 lands transacted are 1 letter c, 107 yards, and 21 paddy fields. There are 92 lands of 84-684 m2 wide with details: 88 yard area and 4 paddy fields. Yard is the most transacted land. There are 37 lands transacted with category of 684 m2 and above with details of 1 letter c, 19 yards and 16 rice fields.

From the sample data, there are 114 or 88.4% of the land that meets the governor's regulation: settlement area of more than 125 m2 which is divided into 1 letter c, 92 yard and 21 paddy fields. The other 15 or 11.6% do not meet

the governor's regulations and are in the form of yard land.

The number of transacted and eligible land was 114 (%) transacted more in 2008, 2013, 2015 and the highest transactions (41) occurred in 2015.

Testing the difference of land area transacted in urban area and rural area

The normality of the data was tested first and then the homogeneity test followed. When the data was not normal but homogenous, it was tested using Mann Whitney

Data was not normally distributed but homogeneity test results using Levene's test method show that the data fulfills the homogeneity.

Table 3 The Mean Rank of each group

Urban Boundary	N	Mean Rank	Sum of Ranks
Lot size ,00	113	141,31	15968,50
1,00	129	104,14	13434,50
Total	242		

Table 3 shows the mean rank of each group. In the rural group the average rank is 141.3, higher than the average rank of urban groups, that is 104.14 Is the average difference of the rank of the two groups above is meaningful statistically or so-called Significant?

114 or about 88.4% with details of 60 in the village of Sariharjo and 46 in the village of Sinduharjo. According to Mann Whitney's test, there is a significant difference between the area of land transacted in urban areas and in rural areas.

Table 4. Mann Whitney test

	Lot size
Mann-Whitney U	5049,500
Wilcoxon W	13434,50
Z	-4,122
Asymp. Sig. (2-tailed)	,000

a Grouping Variable: Urban Boundary

Table 4 shows a U value of 5049 and a W value of 13434. When converted to a value of Z, the magnitude is -4.122. The value of Sig or P Value is 0.000 <0,05. If the p value <0,05 critical limit then there is a significant difference between the two groups or H1 is accepted. This means that there is a significant difference between the area of land transacted in urban and rural areas.

4. Conclusions

The sample data of settlement land that was transacted in Ngaglik Sleman sub-district was 242 with details of 129 in urban and 113 in rural area. Urban areas include Minomartani Village, Sariharjo Village, and Sinduharjo Village, while rural areas include Donoharjo Village, Sardonoarjo Village, and Sukoharjo Village. The Regulation of the Governor of Yogyakarta Number 11 of 2007 states that the minimum area of urban settlement in the urban area is 125 m² while the minimum area of residential area in rural area is 300 m².

The results of this study indicate that 129 urban lands transacted based on administrative location: 8 locations in Minomartani, 72 locations in Sariharjo, 49 locations in Sinduharjo. The area of land traded in urban areas that meet the requirements of the governor regulation reaches

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