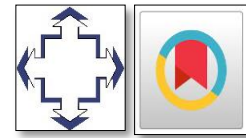# The Influence of Sleman City Hall on Housing Price: A Case Study using OLX data

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ABSTRACT

The Special Region of Yogyakarta (DIY) is one of the provinces in Indonesia with rapid development. This is indicated by the increasing number of shopping centers and the development of tourism and educational activities. Sleman Regency is a business center in DIY Province because it has the largest number of shopping centers in DIY Province compared to other districts. This study aims to determine whether the house adjacent to Sleman City Hall, the largest shopping center in Sleman Regency, has a higher selling price. While similar studies use primary data collected in the field through questionnaires, this study contributes to the property economics literature by utilizing secondary data from the OLX dataset to estimate the selling price of the house. A total of 229 data obtained through the OLX website related to selling prices, proximity to Sleman City Hall, and property characteristics were processed using multiple regression analysis with the ordinary least squares (OLS) technique. The finding of this study is that the distance from Sleman City Hall has a negative and significant effect on the selling price of the house. Another finding from this study is that the building area and land area have a positive and significant effect on the selling price of the house. On the other hand, the distance to the asphalt road has nothing to do with the selling price of the house.

1. Introduction

Economic development is defined as a systematic and continuous effort to achieve community aspirations by involving aspects such as sustainable growth and equity (Digdowiseiso et al., 2020). It is a continuous process based on directed plans for various aspects of life where the real form of economic development can be physical, such as buildings and shopping centers, highways, toll roads, ports, and airports, and non-physical, such as technology and electricity (Kato et al., 2021). However, capital aid is needed to finance investments to build infrastructure with the hope of increasing economic growth (Abdillah, 2023)

The Special Region of Yogyakarta (DIY) is one of the provinces in Indonesia with rapid development. This is indicated by the increasing number of shopping centers and the development of tourism and education activities. This sector is predicted to be able to become a supporting pillar for the development of other sectors in the economy given the limited natural resources owned by DIY. One of the regencies in the DIY Province that is experiencing rapid economic growth, namely 6.4% in 2019 is the Sleman Regency. Meanwhile, the main contributor to the economy in Sleman Regency is the trade sector with a contribution of 23.3% to the real gross domestic regional product (GDRP) of the DIY Province and this figure is still the highest compared to the contributions of the other four regencies.

Sleman Regency is a business center in DIY Province because it has the largest number of shopping centers in DIY Province compared to other districts with six shopping centers. In addition, there are many tourist attractions in the Province of DIY that turn the wheels of the economy in shopping centers (Dyah et al., 2022). Besides that, (Wahyuningsih & Harmadi, 2015) mention that population density and the quality of road infrastructure have a significant effect on the number of modern markets in the Sleman Regency. This is considering that Sleman Regency is a Regency in DIY with the highest population compared to the other four districts, which is 1,232,598 people. This population increase is seen as a factor that can encourage economic development (Rochaida, 2016). The existence of shopping centers such as supermarkets will make it easier for people to meet their various needs. The existence of this shopping center then has an economic impact on the value of land and buildings (Fahirah, 2010).

The value of land and buildings around shopping centers will increase due to several reasons (Farchan, 2016). Consumers or visitors can easily choose and buy the desired goods so that they can drive the economy of the local community. The construction of shopping centers can absorb labor which will reduce the unemployment rate, so that it will increase the inflation rate (Nuraini et al., 2021). Furthermore, the existence of this shopping center can affect changes in land and building values in addition to topographical, demographic, facilities, accessibility, and social-environmental factors (Putra, 2019).

Sleman Regency has several shopping centers. The newest modern shopping center is Sleman City Hall. It is a shopping center that offers a unique concept and is different from other shopping centers in Yogyakarta. The mall, which has the slogan of "Sleman City Hall, Pavilion of Jogja", raises the word pavilion which means a place where people gather to carry out various activities.

Sleman City Hall was established in 2019 and is located at Jalan Magelang KM 9.6 which is right on the provincial road that connects DIY Province with Central Java. This is what makes Sleman City Hall strategic in connecting people in the Sleman and Magelang Regencies. Sleman City Hall itself has two ballrooms which make Sleman City Hall the only mall in Yogyakarta that has these facilities.

This study aims to find out whether there is a location premium, namely whether houses adjacent to Sleman City Hall have a higher selling price than other areas in Sleman Regency. This research is expected to contribute to the literature in the area of spatial economics because it uses secondary data sourced from a house purchasing and selling site, namely OLX, to estimate the selling price of a house by typing the keyword "Sleman City Hall" at the location "Yogyakarta DI" in the search field on the site.

Besides, to estimate the effect of the existence of Sleman City Hall on house prices, the researchers added a control variable, namely the characteristics of the house which included building area, house area, and access to asphalt roads. To the best of the researcher's knowledge, there has been no similar study that has utilized data from home purchasing and selling sites for research in the realm of spatial economics. Similar studies usually use primary data by collecting data directly from the field (Harris & Ernawati, 2015; Mepriyanto & Saptutyningsih, 2019; Mubarak & Sulastri, 2021).

2. Literature Review

In estimating the effect of the existence of Sleman City Hall on housing prices, there are previous studies related to this topic. First, research conducted by (Safitri, 2016) in the city of Surabaya focuses on the influence of the location of the Central Business District (CBD) on land prices. Through observing nine samples around the CBD, her research reveals that the land around CBD Mall Galaxy tends to have higher prices. Her study uses spatial analysis using the Von Thunen land price appraisal method (Location Theory) which quantifies the effect of the distance to the CBD and the distribution of the highest to the lowest Mean Indicated Value.

A similar study was conducted by (Deviantari & Noviyanti, 2018) regarding the effect of the Lippo Plaza development on land prices. This study was conducted in Jember City with the result that commercial areas located within a radius of 1 km from Lippo Plaza have the highest land price. Meanwhile, areas with the lowest land price are agricultural land, housing, and settlements within a 3 km radius of Lippo Plaza. Data collection uses direct surveys from landowners with a minimum number of samples taken from three layers of information on land prices in each zone. The land prices are estimated using multiple linear regression methods.

Furthermore, (Pratama, 2016) examined the effect of the distance from the CBD location on land prices in the Solo Baru area. Data collection techniques in his research were obtained through observation, interviews, and documentation studies with a total sample of 83 which were then analyzed using multiple linear regression. His study reveals that the distance from CBD has a significant effect on changes in land prices in the Solo Baru area. The presence of The Park Mall in the CBD caused land prices to increase by 230.74%. The land prices in that location will continuously soar and become out of control.

(Ashar et al., 2017) also conducted similar research in Sumedang and the results were consistent with previous studies. Their research discusses the effect of the construction of Plaza Asia Sumedang on land prices. Methods of data collection were through interviews using the SPT form 112A from the National Land Agency. There were 430 samples based on the document of 2014 Sales Value of Taxable Object. Multiple linear regression was used to calculate the effect of accessibility and location factors on land price samples. Their study exposes that there is an increase in land prices ranging from 10% to 87% from the previous prices in the North Sumedang District after the construction of Plaza Asia Sumedang.

Meanwhile, (Farchan, 2016) discusses the socio-economic effects of the construction of the Lotte Mall in Pondok Aren District, Tangerang. Primary data in his research were obtained from respondents through in-depth interviews with several MSME actors, the South

Tangerang City Industry and Trade Service, and traditional market traders around the Lotte Mall development area, Bintaro, South Tangerang. Meanwhile, the sampling technique was carried out through the purposive method. The construction of Lotte Mall has an impact on the development of residential areas or surrounding settlements. The need for residential areas will continue to increase thereby driving increased demand in the property sector. This is due to increased employment and environmental conditions that are increasingly strategic with the construction of Lotte Mall.

This research is expected to contribute to the literature in the area of property economics because it utilizes secondary data sourced from a house purchasing and selling website to estimate the selling price of a house. To the best of the authors' knowledge, there has been no similar study that has utilized data from home buying and selling sites for research in the realm of property economics. Similar studies as above usually use primary data by collecting data directly from the field through questionnaires.

3. Research Method

This study uses secondary cross-sectional data sourced from home purchasing and selling sites, namely OLX. OLX is an online marketplace that allows individuals and businesses to buy and sell used or new products and services, including housing. This online marketplace not only contains information about the price but also the specification of the product. This study used a purposive sampling technique to collect the data. Basically, it is a sampling technique with certain considerations according to the researchers, in this case, the houses around Sleman City Hall that are registered on the OLX site. There were 229 samples of houses for sale. This number is obtained after typing "Sleman City Hall" in "Yogyakarta DI" on the search column of the OLX site, and we sorted them out based on the maximum mileage of 15 minutes from Sleman City Hall to avoid distortion with other prominent landmarks.

This study uses the Ordinary Least Square (OLS) method, which minimizes the sum of squared errors between the actual value of the dependent variable and its predicted value for each value of the independent variables (Sugiyono, 2015). This method is used to describe a linear relationship between the dependent variable and the independent variables (Gujarati, 2004). The regression equation model in this study is as follows:

$$lnY = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 D_1 + \varepsilon \dots\dots\dots\dots\dots\dots\dots(1)$$

Information:
- Y : Price (IDR)
- α : Intercept
- X_1 : Distance (minutes)
- X_2 : Surface area (m^2)
- X_3 : Building area (m^2)
- D_1 : Asphalt access (1=less than 500 meters, 0=more than 500 meters)
- ε : Error term

The dependent variable in this study is the selling price of the house, specifically the price charged by the seller to the buyer on the OLX site in Rupiah units. Meanwhile, the variable of interest is the distance between the house and Sleman City Hall, which is measured using the mileage in minutes. In estimating the effect of the existence of Sleman City Hall on house prices, we use some control variables; one of them is the area of land measured at the house standing on the land. According to (Muth & Wolf, 2010), land prices are determined by intrinsic factors such as land area and ownership status. The larger the size of the land, the

higher the value, including the buildings that stand on the land (Febriastuti, 2011). Similarly, in terms of the building size, it is estimated that the larger a house, the higher the price is.

Another control variable, which is the asphalt road access, is the distance from the house to the main road. Land closer to the main road is relatively more expensive than land far from the main road. Asphalt road access in this study is a dummy variable with a value of 1 if the distance is less than 500 m and 0 if it is more than 500 m. The road conditions also determine the comfort level of road users in housing (Swasta & Hani Handoko, 2007). Access to proper roads changes the value of land and buildings in the area (Putra, 2019).

4. Results and Discussion

Table 1 shows the descriptive statistics of each variable used in the regression model. The price variable as the dependent variable shows that the average selling price of houses in the sample is IDR 1,410,364,636. It can be seen that this price is relatively high for the value of the house. The lowest price obtained from the OLX site is IDR 275,000,000, while the highest price is IDR 18,000,000,000. Meanwhile, the average distance of houses for sale from Sleman City Hall is 6.7 minutes of travel time. The closest distance is 1 minute, while the farthest one is around 14 minutes. The land area variable in this sample has an average of 155.94 m². The smallest land area is 60 m², while the widest area is 1059 m². For the building size, the average area is 122.14 m², with the smallest one being 36 m² and the largest one being 400 m². The variable of access to the asphalt road from the houses for sale shows that around 211 houses or 92.14% of the total sample have access to the asphalt road which is less than 500 m from the house. Meanwhile, the remaining 18 houses, or 7.86% of the total sample, had asphalt road access more than 500 m from the house.

Table 1. Descriptive statistics

Variable	Mean	Min	Max
Price (IDR)	1.410.364.636	275.000.000	18.000.000.000
Distance (minutes)	6,73	1	14
Surface area (m^2)	155,94	60	1059
Building area (m^2)	122,14	36	400
Asphalt access (dummy)	0.921	0	1

Source: Data processed

Table 2 shows the results of the multiple regression model using the OLS method. The results of this study show that the distance from Sleman City Hall has a negative relationship with the selling price of the house. Every 1-minute increase in distance travel from Sleman City Hall is associated with a 2.4% decrease in the selling price of the house. That is, the farther the house is from Sleman City Hall, the lower the selling price. The existence of a mall as a shopping center will make it easier for people to reach their needs and find entertainment. It also increases employment opportunities and places of business for the surrounding community. It is estimated that more residents will choose to live closer to Sleman City Hall for reasons of accessibility. This reason is a predictor for land and building owners in seeing the opportunity for the existence of Sleman City Hall as a reason for the increase in land and building prices. This is in line with (Safitri, 2016) who conducted research in Surabaya that property prices around malls are higher than anywhere else.

Tabel 2. Ordinary least square estimation

Variable	coefisien	t-statistic	p-value
Distance (m^2)	-0,024**	-2,00	0,046
Surface area (m^2)	0,004***	7,03	0,000
Building area (m^2)	0,002***	3,27	0,001

Asphalt access (dummy)	0,012	0,12	0,901
Constanta	20,02	152,92	
F-statistic		47,75	
Prob. F		0,000	
Adjusted R-square		0,626	
Observasi		229	

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Data processed

The building area variable is positively related to the selling price of the house. The larger the building area of the house being sold, the higher the selling price of the house is. This is because the wider a building, the more expensive the costs incurred to construct the building. This is in line with the findings of (Swasta & Hani Handoko, 2007) in Jakarta that the bigger a house, the higher the price is. Research by (Fahirah, 2010) in Palu adds to this finding that building area is the most important factor that influences the selling price of buildings.

The land area variable is positively related to the selling price of houses around Sleman City Hall. This shows that the larger the land area of the house being sold, the higher the selling price of the house is. This finding is in line with the research of (Nugraditama et al., 2020) in Makassar which showed that the larger the size of the land, the higher the value is, including the buildings that stand on the land. There is no statistical association between asphalt road access and house prices around Sleman City Hall. This is probably due to the increasing number of paved roads around Sleman City Hall considering that the maximum distance radius from Sleman City Hall in this study is 14 minutes. Therefore, asphalt road access is not an important factor in determining the selling price of houses in the Sleman City Hall area.

5. Conclusion

This study provides empirical evidence through secondary data obtained from OLX that the distance from Sleman City Hall has a negative and significant association with the selling price of the house. The shopping center has facilitated the public to reach their needs and fulfil their entertainment purpose. It also increases employment opportunities and places of business for the surrounding community. The presence of Sleman City Hall has provided the opportunity to invest in the long term for the public in choosing to live nearby for accessibility reasons. This study also shows that the building area and land area are also a consideration for developers in setting the selling price of houses, while access to asphalt roads is not a primary determinant of the selling price of the house.

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