AN ANALYSIS OF THE FACTORS THAT INFLUENCE THE SELLING PRICE OF THE HOUSES USE HEDONIC PRICE METHOD

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ABSTRACT: *Sentul City Coorporation has long been producing various types of houses at different prices. The hedonic price method can generally be applied to evaluate the costs of the environment, where data from environmental prices cannot be seen directly on the market (Turner et al. 2007). The purpose of this study is to analyze the factors that affect the selling price of the house at Sentul City Coorporation and to analyze the model to determine the selling price of the house at Sentul City Coorporation. This research was conducted at Sentul City Coorporation. This research start from February 2018 to March 2018. This study uses a quantitative approach. The first step is to choose the independent variable that will be analyzed. It influence in determining the selling price model of the house. Analysis of the factors that influence the selling price of the house at Sentul City Coorporation applies the Hedonic Price Method. This study find a conclution that the factors which is significantly affect the selling price of the house are the building area of the land area, the distance to educational facilities, and the distance to the shopping center. From the price model is obtained if the building area increases by 1 meter square, the selling price of the house will increase by 0.009 billion or Rp. 9,000,000.00, if the land area increases by 1 square meter, the selling price of the house will increase by 0.010 billion or Rp. 10,000,000.00.*

KEYWORDS: Selling Price Housing, Hedonic Price, Sentul City, Housing Market

INTRODUCTION

The number of Indonesian people from year to year is increasing. As the population increases, the requirement for the shelter is increases. The house is a place of residence for humans. Houses are always used as a place for all activities. Therefore, a house is not enough just to take shelter but is also required to accommodate the needs and desires of the owner. Like a strategic location, a good, sturdy building and a comfortable environment. This means that it is not enough just to take shelter but also to be able to become a decent place to live (Yudohusodo 1991).

The purpose of this research is:

1. Analyzing the factors that affected the selling price of houses at Sentul City Coorporation.

2. Analyzing the model to determine the selling price of the house at Sentul City Coorporation.

LITERATURE

Characteristic of House

The house is a building that is inseparable from human life because the house is a primary need for humans as a place of human protection from various disturbances from the outside, other than that if we see from some understanding the house also functions as a place to live or live, where humans live their lives, place of human household and so on. There are several definitions of houses, as follows:

A house is a building that functions as a place to live or live and a means of fostering a family. (Law No. 4 of 1992 concerning Housing and Settlements). In a general sense, a house is a building that is used as a residence for a certain period of time. The house can be a place for humans or animals to live, but a special place of residence for animals is usually called a cage, nest, or cage. In a special sense, the house refers to social concepts that are interwoven in a residential building, such as family, place to grow, eat, sleep, move, and so on. The most important element of forming a housing is the house itself. Home can be interpreted as a place to live, place of residence / address, location of residence, part of the existence of individual / family (related to status, place of residence, identity), part of the functional area of the city, investment (family or company), source of generation movement (trip production), space for recreation, space used to establish family life, as well as containers as privacy limits.

According to Frick (2006). The house is not just a building (structural), but also a place of residence that fulfills the conditions of a decent life, viewed from various aspects of community life. The house can be understood as a refuge, to enjoy life, rest and rejoice with family. In the house, the occupant gets the first impression of his life in this world. The house must guarantee the interests of the family, namely to grow, give the possibility to live with their neighbors, and more than that, the house must provide peace, pleasure, happiness, and comfort in all life events.

According to the Indonesian Language Dictionary (2008), a house is a building for living. According to Juhana (2000). The house is a means of security for the human being, giving peace of life, and as a center of cultural life. Inside the house and its environment, it is formed and develops into a person with personality.

METHODOLOGY

This research was conducted at Sentul City Coorporation, located at JL. MH. Thamrin Kav.8, Sentul City. This study uses a quantitative approach. Quantitative research approach is an approach that primarily uses the postpositivist paradigm in developing science (such as thinking about cause and effect, reduction to variables, hypotheses, and specific questions using measurement and observation, and theoretical testing), using research strategies such as experiments and surveys. requires statistical data (Emzir 2010).

The sampling method was carried out by purposive sampling method. The sample is taken based on the criteria that have been determined among which the respondent must be a consumer of Sentul City Coorporation. The number of samples taken was around 30 respondents. The number of 30 respondents was considered effective to conduct statistical tests and had approached normal distribution.

Analysis of the factors that influence the selling price of the house at Sentul City Coorporation applies the Hedonic Price Method which is then analyzed by multiple linear regression analysis with OLS (Ordinary Least Square) technique and with cross section data that can be facilitated by using Microsoft Excel and SPSS program software. These results can be used as a basis for identifying what factors affect the selling price of the house at Sentul City Coorporation significantly or not.

RESULTS

Descriptive Statistics Test

Descriptive statistics show minimum values, maximum values, mean values, and standard deviations of each variable shown in Table 1.

Table 1 Descriptive Statistics Test

Variable	N	Minimum	Maximum	Mean	Std. Deviation
House Price	30	1.40	3.22	2.0560	0.49878
Building Area	30	47.00	105.00	86.2333	20.64926
Land Area	30	84.00	207.00	112.0000	34.31296
Number of Rooms	30	3.00	4.00	3.8000	0.40684
Width of the Road	30	6.00	6.00	6.0000	0.00000
Security	30	1.00	3.00	2.0333	0.41384
Distance to the City Center	30	14.20	14.90	14.8133	0.20297
Distance to the Education Facilities	30	6.60	7.30	7.2133	0.20297
Distance to the Shopping Center	30	5.10	5.80	5.7133	0.20297
Distance to the Toll Gate	30	6.10	6.80	6.7133	0.20297
Valid N (listwise)	30				

In Table 1 there are several variables including house prices, building area, land area, number of rooms, road width, security, distance to the city center, distance to educational facilities, distance to shopping centers, and distance to toll booths. The description of these variables is as follows:

1. House Price

House price variables on the data obtained, have a minimum value of the selling price of the house of 1.4 billion rupiahs and the maximum value of the house selling price of 3.2 billion

rupiah, the average obtained from the data for the selling price of the house is 2.056 billion rupiah, variable house prices have a standard deviation of the average of 0.499 billion rupiah.

2. Building Area

Building area variables in the data obtained, have a minimum value of building area of 47 m2 and a maximum value of building area of 105 m2, the average obtained from the data for building area of 86.23 m2, building area variables have a standard deviation to the average the rate is 20.64 m2.

3. Land Area

Variable land area in the data obtained, has a minimum value of land area of 84 m2 and a maximum value of land area of 207 m2, the average obtained from the data for a land area of 112 m2, the variable area of land has a standard deviation of the average of 34.31 m2.

4. Number of Rooms

Variable number of rooms in the data obtained, has a minimum value of 3 rooms and a maximum value of 4 rooms.

5. Width of the Road

The width of the road variable in the data obtained has a minimum road width of 6 m and a maximum value of the road width of 6 m.

6. Security

From the data obtained, for the security variable has a minimum value of 1, which means that it has no security and a maximum value of 3, which means having 24-hour security facilities and CCTV.

7. Distance to the City Center

From the data obtained, the variable distance to the city center has a minimum value of 14.2 km and a maximum value of 14.9 km. The average obtained from the data for the distance to the city center is 14.8 km. Variable distance to city center has a standard deviation of an average of 0.2 km.

8. Distance to the Education Facilities

From the data obtained, the distance to education facilities has a minimum value of 6.6 km and a maximum value of 7.3 km. The average obtained from the data for distance to education facilities is 7.2 km. Variable distance to educational facilities has a standard deviation of an average of 0.2 km.

9. Distance to the Shopping Center

From the data obtained, the variable distance to the shopping center has a minimum value of 5.1 km and a maximum value of 5.8 km. The average obtained from the data for the distance to the shopping center is 5.7 km. The variable distance to the shopping center has a standard deviation of the average of 0.2 km.

10.   Distance to the Toll Gate

From the data obtained, the variable distance to the toll gate has a minimum value of 6.1 km and a maximum value of 6.8 km. The average obtained from the data for the distance to the toll gate is 6.7 km. The variable distance to the toll gate has a standard deviation of the average of 0.2 km.

Multicollinearity Test

Based on the results of the multicollinearity test by calculating the VIF value that the production function in this study there were no symptoms of multicollinearity. This can be seen from the VIF value of not more than 10.

**Table 2 Multicollinearity Test Results**

	Coefficients[a]		
	Model	Collinearity Tolerance	Statistics VIF
	Building Area	0.537	1.861
	Land Area	0.285	3.505
1	Security	0.521	1.919
	Distance to the Toll Gate	0.303	3.296

[a]Dependent Variable: House Price

In Table 2 shows the VIF value of all variables no greater than 10, it can be said that there is no multicollinearity in the independent variables.

Heteroscedasticity Test

The heteroscedasticity test in this study uses a Scatter plot (distribution flow) between the residuals and the predictive value of the standardized dependent variable. The heteroscedasticity test results are shown in Figure 1.
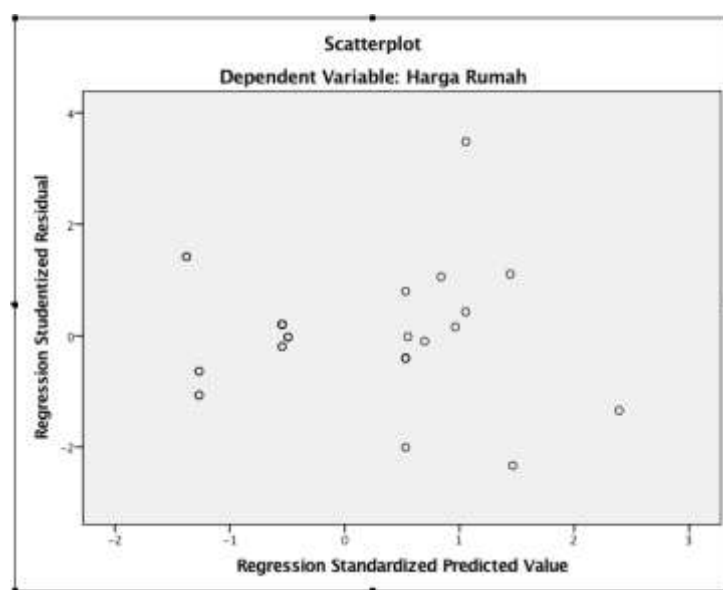
Figure 1 Scatter plot Heteroscedasticity Test

Based on Figure 1 it can be seen that the distribution of points does not form a particular pattern / plot, so it can be said that there is no problem with heteroscedasticity in the regression model.

Normality Test

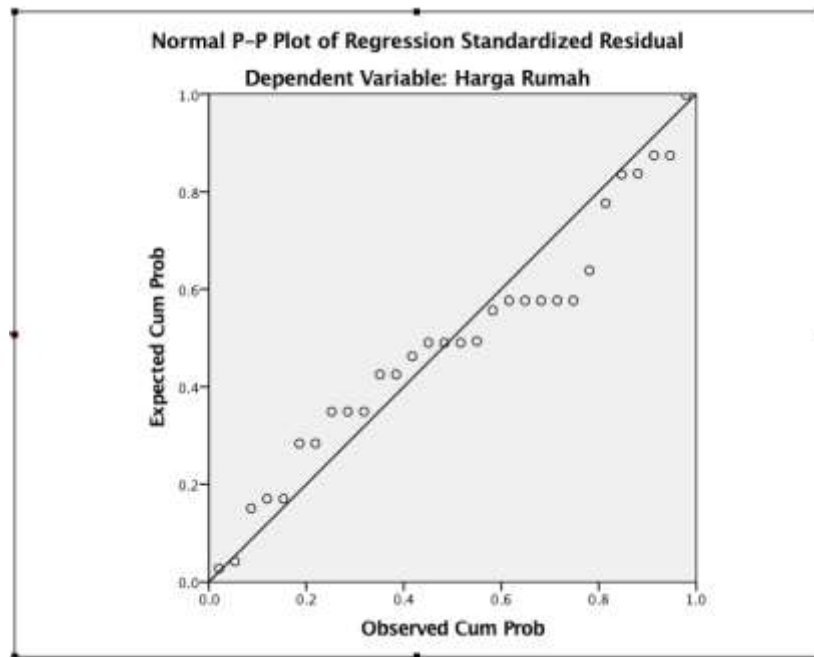The results of the normality test can be seen from the Normal P-P Plot image shown in Figure 2.

Figure 2 Normality Test Results

Based on Figure 2 it can be seen that the distribution of data approaches a straight line so that it can be concluded that residual data is normally distributed.

R^2 Test

The selling price model for houses at Sentul City Coorporation was processed by multiple linear regression analysis. The results of the linear regression performed show that the value of R^2 is shown in Table 3.

Table 3 R Square Test

Model Summary[b]				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.999[a]	0.998	0.997	0.02617

[a]Predictors: (Constant), Distance to the Toll Gate, Building Area, Security, Land Area;
[b]Dependent Variable: House Price.

In Table 3 it is known that there is a R2 of 99.8%, this indicates that the house price variable can be explained by the variable Distance to Toll Door, Road Width, Distance to City Center, Distance to Shopping Center, Number of Rooms, Security, Building Area, Distance The

Education Facility, Land Area, and other independent variables are 99.8% while the rest is explained by other variables outside the model.

R^2 test results show a standard error of 0.02 which has a value smaller than the standard deviation of the house price on the results of the descriptive statistics shown in Table 3 that is equal to 0.49. Because the standard error is smaller than the standard deviation, the linear regression model can be used as a predictor for determining the selling price of a house.

F Test

F test is used to test the effect of independent variables, namely land area, type of house, number of rooms, distance to shopping center, ease of transportation, and other independent variables on the dependent variable, namely the selling price of the house. The results of the F test are shown in Table 6.

Table 4 F Test

	Model	Sum of Squares	df	Mean Square	F	Sig.
			ANOVA[a]			
1	Regression	7.198	4	1.799	2627.984	0.000[b]
	Residual	0.017	25	0.001		
	Total	7.215	29			

[a]Dependent Variable: House Price; [b]Predictors: (Constant), Distance to the Toll Gate, Building Area, Security, Land Area.

The F Test results in Table 6 show that the calculated F is 2627,984 with a significance level of 0,000. Because probability 0,000 is less than 0,050, the independent variables together have a relationship and significantly influence the selling price of the house at Sentul City Coorporation.

T Test

T test is a regression coefficient test that is used to test individually and to determine the ability of each independent variable in influencing the dependent variable with the assumption that the other variables are fixed or constant. The results of the t test are shown in Table 7.

In Table 7 shows the variables of building area, land area, and security have a calculated probability value smaller than the level of significance (0.05) then these variables have a significant influence on the model of the selling price of the house. While other variables that have a calculated probability value is greater than the significance level (0.05) it does not have a significant effect on the selling price model of the house.

Table 5 T Test

	Model	Unstandardized Coefficients B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
			Coefficients[a]			
1	(Contstant)	0.418	0.319		1.312	0.201

Building Area	0.009	0.000	0.355	26.704	0.000
Land Area	0.010	0.000	0.708	38.826	0.000
Security	0.055	0.016	0.046	3.377	0.002
Distance to the Toll Gate	- 0.055	0.043	- 0.022	- 1.255	0.221

[a]Dependent Variable: House Price

Interpretasi Model

Based on the data processing carried out, the results show that with 6 independent variables, the price model for determining the selling price is as follows:

$$Y = (0,009 \text{ x building\_area}) + (0,010 \text{ x land\_area}) + (0,055 \text{ x security}) - (0,055 \text{ x distance\_to\_the\_toll\_gate})$$

Explanation of each independent variable based on the price model that is formed is as follows:

1. Building Area

The building area variable coefficient is 0.009 with a positive sign indicating the direction effect on the variable selling price of the house. If the building area increases, the selling price of the house also increases.

2. Land Area

The land area variable coefficient is 0.10 with a positive sign indicating the direction effect on the variable selling price of the house. If the land area increases, the selling price of the house also increases.

3. Security

The coefficient of the security variable is 0.055 with a positive sign indicating the direction effect on the variable selling price of the house. The more complete the security facilities, the selling price of the house will also increase.

4. Distance to the Toll Gate

The variable toll road distance variable coefficient is 0.055 with a negative sign indicating the direction effect on the variable selling price of the house. The farther the distance to the toll gate, the selling price decreases.

DISCUSSION

Consumers Description

Consumers from Sentul City Coorporation, the majority are business owners and companies. Then there are also some from government officials such as the police and prosecutors. Then

some others also work as doctors, lecturers, lawyers, and executives in state-owned enterprises (BUMN) and private companies.
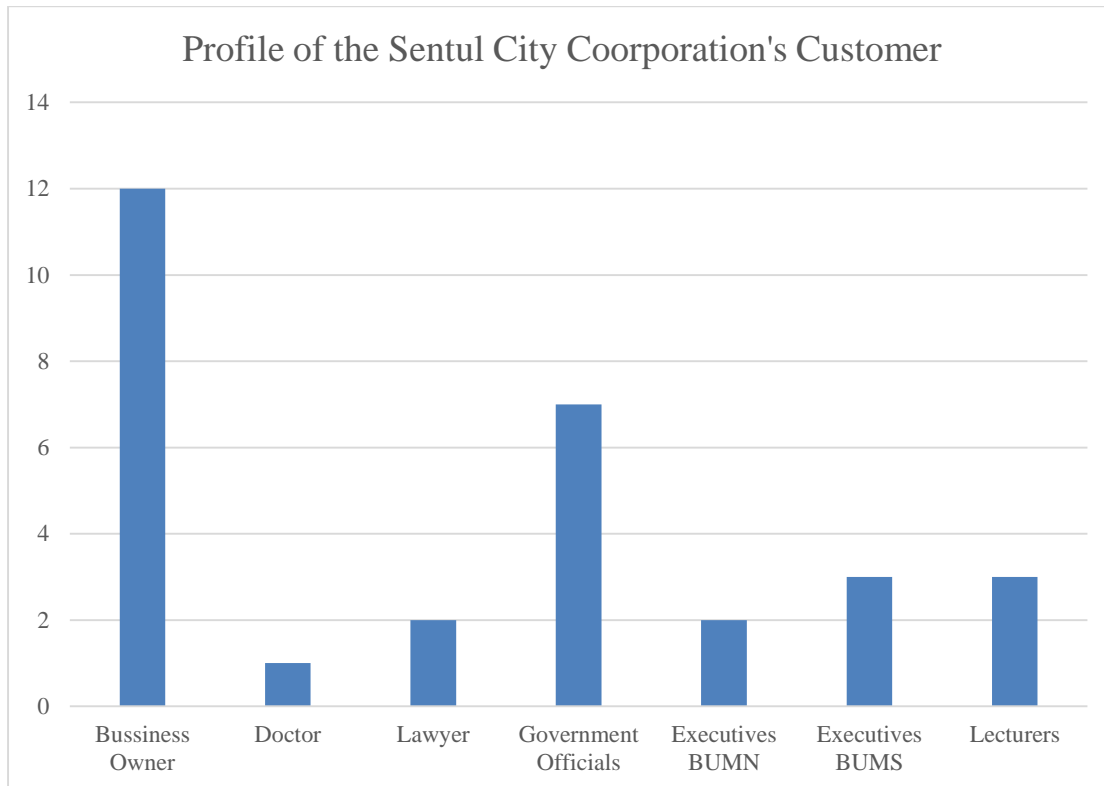

Figure 3 Profile of the Sentul City Coorporation's Customer

IMPLICATION TO RESEARCH AND PRACTICE

Managerial implications that can be applied in a decision making is by knowing the factors that influence the selling price of the house, the company can make a decision to focus more on the most significant factors so that the company can increase the production and sale of its products.

For investors, can plan a long-term investment that is profitable, because it is already knows the factors that influence significantly and the factors that are less influential.

CONCLUTION

The conclusions that obtained in this study are: (1) Factors that significantly affect the selling price of a house are the building area of land area, distance to educational facilities, and distance to shopping centre. (2) From the price model is obtained if the building area increased by 1 meter square, the selling price of the house will increase by 0.009 billion or Rp. 9,000,000.00, if the land area increases by 1 square meter, the selling price of the house will increase by 0.010 billion or Rp. 10,000,000.00.

Future Research

Suggestions that given for further research are conducting the research on determining the selling price of houses in other market segments and adding more complex variables to obtain a price model that can represent the actual situation and the results are close to the actual price. Then the sample of the house taken should not be too close to the distance.

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