Analysis of Rental Value of Shop Houses in Kecamatan Medan Petisah

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ARTICLE INFO

ABSTRACT

This research aims to analyze the factors that influence the rental value of shophouses in Medan Petisah District, Medan City. The difference in shophouse rental prices is caused by increasingly expensive land prices, which are influenced by busy locations and the presence of new buildings. The Petisah area has experienced rapid development in recent years, causing a significant increase in land prices. This land issue is very important considering the increasing need for regional development. This research uses a market approach to determine the rental value of shophouses by analyzing the factors of building area, rights (certificates), building age, location, road width and parking area simultaneously and partially on the rental value of shophouses. This type of research is quantitative/associative/correlational with inferential statistical data analysis. The population of this study was all shophouses in Medan Petisah District, totaling 456 shophouses, with a sample of 82 shophouses. Data is processed using multiple regression analysis. The research results show that simultaneously, all independent variables have a significant effect on the rental value of shophouses. Partially, the variables of building area, rights (certificate), building age and parking area have a significant effect, while the variables of location and road width have no significant effect. Based on the regression coefficient value, the variables building area, rights (certificate), building age, and parking area have a positive and significant influence on shophouse rental values in Medan Petisah District, Medan City.

Keyword: Building area, rights (certificate), building age, location, road width, parking area and shophouse rental value.

1. Introduction

Given the continued promise for shophouse market growth, this study looks at the examination of rental values in the Medan Petisah Kecamatan. Ruko's adaptable qualities allow it to grow in response to market demands, serving as a coworking space, dentistry clinic, architect's office, accountant's office, and even a place to sell[1], [2]. Shophouses are typically two to five-story multi-story development projects with an upper floor used for residential living and a lower floor utilised for business or offices. Shophouses are often constructed in complexes with related architectural styles[3], [4]. Shophouses, which have been a feature of Indonesian architecture since the colonial era, mix residential and business roles. This is particularly true for the Chinese population, where a small plot of ground may support both living and commercial activity. Nowadays, it's common to find shophouses in Indonesia connected to residential or commercial districts[5], [6]. A shophouse is a fixed asset that depreciates over time and has usable value. Experts with the training, expertise, and experience necessary to determine a property's economic value provide property appraisals, including those of shophouses[7], [8]. The profession of property evaluation has grown quickly in Indonesia since it has long been necessary to have preliminary information on a property's value prior to a sale or acquisition. Determining the economic value of assets and potential wealth is a major function of the appraisal or appraisal service business. For market value estimations to be recognised by different parties, they need to be grounded in actual market data and realistic[9], [10]. The process of estimating and expressing a view regarding the economic value of a property through the application of certain appraisal techniques and an analysis of objective facts in

compliance with relevant appraisal principles is known as appraisal. Using a market, income, and cost method, appraisal objectives include a variety of demands such as figuring out market value, sales, purchases, rentals, insurance, and loan guarantees[11]–[13].

Renting a shophouse has several benefits, such as less initial capital requirements, fewer maintenance expenses because building owners are responsible for them, and flexibility without the fear of losing money if business operations are not successful. Nonetheless, escalating rental costs and a lack of space for expanding firms are issues with shophouse rentals[14], [15]. Possessing your own shophouse has benefits such as higher sales value, long-term investment possibilities, and flexibility in use. The rental value of shophouses in Medan Petisah Kecamatan is ascertained by means of a market approach in this study, taking into account several variables like building space, certificate rights, building age, location, road width, and parking area. The current phenomenon reveals variations in shophouse leasing costs that are impacted by the shophouse's condition and strategic placement[16], [17]. Variations in rental pricing are also influenced by the notable increase in land prices in the Petisah area. This study is different from others since it takes a more thorough approach and includes more variables. Nur Alam Syah, Layyinaturrobaniyah, and Mokhamad Anwar (2018) used geographical variables, building area, building age, parking area, and road width in their prior market-based research on property rental assessment[4], [18]–[21]. In the meantime, Utama's (2016) research employed a market and cost method while utilising location, accessibility, area, and amenities elements. These variables are combined in this study to provide a more thorough analysis. In order to help shophouse owners, tenants, and connected parties make better decisions, this research aims to paint a clear picture of the elements that affect shophouse rental values in Medan Petisah District. The research study is titled "Analysis of Shophouse Rental Values in Medan Petisah Kecamatan," as indicated by the preceding description.

2. Method

According to the type of data and analysis, this research can be grouped into quantitative data. Quantitative data is data in the form of numbers or qualitative data that is scored (scoring). The type of research according to the level of explanation is quantitative/associative/correlational, namely data analysis using inferential statistics, with the aim of knowing the degree of relationship and form of influence between the independent variable and the dependent variable. This research examines the analysis of factors that influence the rental value of shophouses in Petisah District, therefore the population in this study is all shophouses in Petisah District. The research population in this study was 456 shophouses in Medan Petisah District which are owned by the community[22]–[25].

The research sample was determined following the Slovin formula which obtained a sample size of 82.01 people and rounded up to 82 sample respondents. The details are as follows:

$$n\ \frac{N}{1+Nd^2} = \frac{456}{1+(456\ x\ 0,01)} = \frac{456}{5,56} = 82,01$$

Information:
n = Sample
N = Populations
d = Precession (10%) = 0,1

The following data gathering methods were employed in order to get the information needed for this study:

1. Primary data gathering using the quizzer method. The questionnaire is put together, developed, and examined with the help of as many respondents as possible before being sent straight to the owner of the ruko located at Petisah Field.
2. Secondary data collection was done by gathering information and documentation on previous research findings and literature supporting this study from the library and a number of pertinent organisations, including the Field District Office and the Central Statistical Agency (BPS) of the City of Medan (Sugiyono, 2013).

2.1 Data Analysis Techniques

To test the hypothesis using double regression analysis with the formula:

$$Y = \beta_0(\beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \mu)$$

Information:
Y = ruko rental value
X_1 = Building width

X_2 = certificate
X_3 = Building age
X_4 = location
X_5 = width of the road
X_6 = large parking lot
β_0 = Constant
μ = error term
$\beta_1 ... \beta_6$ = Coefficient Regression

2.2 Model Evaluation

Determination coefficient (R2) measures how well an independent variable explains variability in a dependent variable. R2 values range from 0 to 1.

$$R^2 = 1 - \frac{\sum_{i=1}^{n}(Y_i - \hat{Y}_i)^2}{\sum_{i=1}^{n}(Y_i - \bar{Y})^2}$$

Information:

Y_i is the actual value
$\hat{Y}_i$ is the prediction value of the model
$\bar{Y}$ is the average of the actual value

The Simultaneous Test (F Test) is used to test whether all the regression coefficients (β1, β2..., β6) are simultaneously significant in influencing the rental value of the ruko.
Hipotesis:
H₀   : All regression coefficients (β1 = β2 =...= β6 = 0) are not significant.
H₁   : There's at least one significant regression coefficient.
F test statistics are calculated using the formula:

$$F = \frac{R^2 / (k-1)}{(1 - R^2)/(n - k)}$$

Information:

k is the number of independent variables plus one (karena ada intercept)
n is the number of observations

3. Result and Discussion

The community of Medan has various religions, tribes, ethnicities, and customs. This multicultural life can run quite well and harmoniously if embedded in a strong sense of fellowship, tolerance, and family. It shows that people in the City of Medan are open and willing to accept good changes to improve public health.

Table 1. Number and Percentage of Kota Medan Population for 2022 Based on Kecamatan

No	Subdistrict	Population	Persentase (%)
1.	Medan Tuntungan	85.613	3.87
2.	Medan Johor	132.012	5.93
3.	Medan Amplas	123.850	5.48
4.	Medan Denai	146.061	6.69
5.	Medan Area	98.992	4.56
6.	Medan Kota	74.439	3.43
7.	Medan Maimun	40.663	1.87
8.	Medan Polonia	55.949	2.52
9.	Medan Baru	40.540	1.87
10.	Medan Selayang	106.150	4.73
11.	Medan Sunggal	115.785	5.32
12.	Medan Helvetia	150.721	6.81
13.	Medan Petisah	63.374	2.92

14.	Medan Barat	72.683	3.34
15.	Medan Timur	114.720	5.13
16.	Medan Perjuangan	95.882	4.41
17.	Medan Tembung	137.178	6.31
18.	Medan Deli	181.460	8.06
19.	Medan Labuhan	117.472	5.31
20.	Medan Marelan	162.267	6.94
21.	Medan Belawan	98.113	4.51
Sum		2.210.624	**100**

Source: BPS Kota Medan, 2023

Table 1 provides a detailed breakdown of the population of Kota Medan by subdistricts (kecamatan) for the year 2022, totaling 2,210,624 residents. The subdistrict with the largest population is Medan Deli, housing 181,460 people, which accounts for 8.06% of the total population, while Medan Maimun has the smallest share, with 40,663 residents (1.87%). Several other populous areas include Medan Helvetia (150,721 residents, 6.81%) and Medan Marelan (162,267 residents, 6.94%). This table highlights the varying population densities across Medan's 21 subdistricts, with each contributing differently to the city's demographic composition. The data was sourced from BPS Kota Medan in 2023.

Table 2. Number and Rate of Population Growth in Kota Medan 2018-2022

Indikator	Years				
	2018	2019	2020	2021	2022
Population (people)	2.117.224	2.122.804	2.135.516	2.191.140	2.210.624
Population growth rate (%)	-	0.26	0.60	2.60	0.89

Source: BPS Kota Medan, 2023

Based on statistics from the BPS of Kota Medan, it can be inferred that the number of residents of Kota Medan has increased between 2018 and 2022. The number of residents in Kota Medan increased from 2.117.224 in 2018 to 2.212.804 in 2019 with a 0.26 percent decline. The population of Kota Medan in 2020 was 2.135.516 people, with the final population growth being almost 0.69% of the total population in 2019. The population of Medan in 2021 increased to 2.191.140 people, with a late decline of 2.60 percent. In the year 2022, the population of Medan Kota was 2.210.624, or roughly 0.89 percent of that of the previous year. Based on the last recession, residents of Kota Medan experienced volatile inflation. Natural factors like birth rates, deaths, and urban currents are the cause.

Due to the constant size of the area, the ratio of population density continues to increase as the population grows every year.

Table 3. Area and Population Density of Field Kota Medan 2018-2022

Indikator	Years				
	2018	2019	2020	2021	2022
Population (people)	2.117.224	2.122.804	2.135.516	2.191.140	2.210.624
Area (km^2)	265.1	265.1	265.1	265.1	265.1
Population density	7987	8008	8056	8265	8339

Source : BPS Kota Medan, 2023

In 2019, the population density of Medan City increased from 7,987 people/km2 in 2018 to 8,008 people/ km2 in 2020. By 2021, the density will again rise to 8,056 people / km2 by 2020, and again to 8,265 people /km2 by 2022. With this ratio of population density, the density of inhabitants is relatively high so that to build an environmentally friendly city, the people who live there will have a good chance to Therefore, as the area of land narrows, there is a possibility of an imbalance between the supporting power and the suitability of the existing environment.

Economic Conditions of the City of Medan: Economic growth is a description of the economic activity of a community in a region and can be used as a measure of the success of development itself. According to the PDRB indicator based on the 2010 constant price, the economic growth of the city of Medan indicates a

significant slowdown from 2020 to 2022. The city's economy grew by 5.36% in 2020. Then increased to 6.08% in 2021, but fell to 5.74% in 2022.

Table 4. Sectoral Economic Growth of the Field City in 2020-2022

No	Business field	Growth (%)		
		2020	2021	2022
1.	Agriculture, Forestry and Fisheries	1.09	6.39	5.01
2.	Mining and excavation	-3.00	-5.01	-4.40
3.	Processing Industry	1.93	2.72	1.37
4.	Electricity and gas supply	-16.73	-0.42	-7.13
5.	Water supply, waste management, waste disposal and recycling	3.86	6.67	8.01
6.	Construction	8.43	8.95	8.09
7.	Wholesale & Retail, Car & Motorcycle Repair	8.64	9.14	5.53
8.	Transportation and Construction	-11.76	-11.99	2.68
9.	Provision Accommodation and meals Drinks	6.55	9.63	8.36
10.	Information and Communication	9.93	9.55	9.51
11.	Financial and Insurance Services	6.98	4.78	5.57
12.	Real Estate	8.04	8.70	7.51
13.	Company Services	6.78	6.66	4.94
14.	Administration of Government, Defence and Compulsory Social Security	7.29	7.60	2.83
15.	Education Services	8.30	8.16	8.54
16.	Health Services	9.87	11.81	9.95
17.	Other Services	8.25	8.05	6.97
	PDRB	5.36	6.08	5.74

Source: BPS Kota Medan, 2023

Significantly growing business areas from 2020 include mining and excavation, processing industries, construction, wholesale and retail trade, car and motorcycle repair, information and communications, financial and insurance services, real estate, corporate, government administration, defence and compulsory social security, and other business areas. By 2022, the declining business fields occurred in the mine and excavators, the processing industry, the construction industry, and the services industry. The role or contribution of the sector indicates the extent to which each sector has the capacity to create added value and describes how dependent the region is on the production capacity of goods and services of each sector.

Table 5. Economic Structure of Medan City in 2020 – 2022

No	Business field	Contribution (%)		
		2020	2021	2022
	Primer	**1.2**	**1.19**	**1,19**
1.	Agriculture, Forestry and Fisheries	1.2	1.19	1.19
2.	Mining and Excavation	0	0	0
	Seconds	**34.42**	**34.66**	**34.40**
3.	Processing Industry	16.47	16.17	15.54
4.	Electricity and Gas Procurement	0.13	0.11	0.09
5.	Water Procurement, Waste Management, Waste and Recycling	0.17	0.18	0.18
6.	Construction	17.65	18.2	18.59
	Tersier	**64.38**	**64.15**	**64.41**
7.	Wholesale & Retail, Auto & Motorcycle Repair	23.83	24.67	24.77
8.	Transportation and Warehousing	7.99	6.56	6.38
9.	Provision of Accommodation and Meals	2.75	2.95	3.07
10.	Information and Communication	5.15	4.94	4.88
11.	Financial Services and Insurance	7.47	7.35	7.27
12.	Real Estate	7.83	8.06	8.29

13. Corporate Services	2.41	2.45	2.46
14. Government, Defense and Compulsory Social Security Administration	1.89	1.91	1.93
15. Educational Services	2.71	2.76	2.73
16. Healthcare Services	1.31	1.42	1.53
17. Other Services	1.04	1.08	1.1
PDRB	100	100	100

Source : BPS Kota Medan, 2023

During 2020-2022, the economic structure of the City of Medan was relatively unchanged, as shown in Table 5. On the other hand, the mining and excavation sector, as well as the procurement of electricity and gas, and the management of garbage, waste, and recycling, are low-contributing economic sectors.

The contribution of the primary and secondary sectors of the City of Medan decreased during the period 2020-2022, decreasing by 0.01% from 1.2% in 2020 to 1.19% in 2022. The contributions of the secundary sector also decreases by 0.02% from 34.42% in 2020, to 34.40% by 2022. However, the contribution to the tertiary sector has increased during that period. This condition indicates that the pattern or structure of the city's economy has changed from the agricultural sector to the secondary sector or services sector, which is characteristic of urbanity. This is consistent with the phenomenon in other cities where the eyes of the population's livelihoods are shifted to non-agricultural sectors.

One of the districts of Medan is Campo Petisah, which has an area of 16.96 km2 and has a wide ratio to the City of Medan of 11.57%. Located between 03o 53' North latitude and 98o 67' East latitude. This place is at an altitude of 3 meters above sea level, and sea winds increase humidity and rainfall. The temperature ranges between 21 and 32 degrees Celsius.

3.1 Normality Test

To determine the normality of the research data, note the data distribution (point) on the PPlot Normal Regression Standardized Residual of the bound variable.
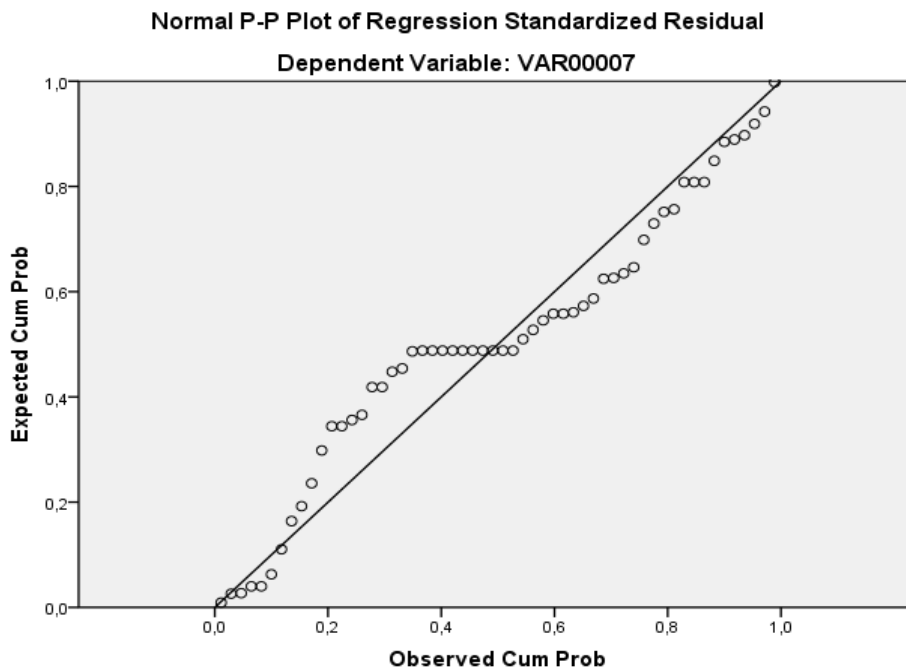

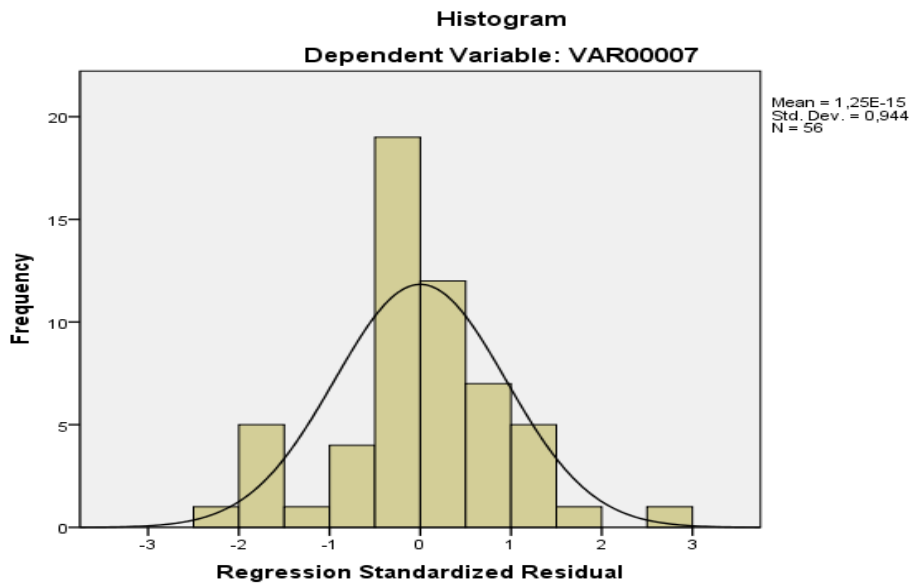Figure 1. Normal P-Plot of Regression Standardized Residual

Figure 2. Histogram Nilai Sewa Ruko

Figure 4.2 shows the normal plot result, which shows that the data is scattered around the diagonal line and follows the direction of the diagonally line. Figure4.3 shows the histogram display result, indicating that the residual data is distributed normally, as seen from the almost symmetrical bell image.

3.2 Multicollinearity

A multicolinearity test is performed to see if there is a correlation between independent variables in the regression model. If there is, it's called a problem of multicolinearity. There should be no correlation between independent variables in a good regression model. The correlation matrix value created during data processing is used to test for the absence of symptoms of multicolinearity. VIF values less than 10 and tolerance more than 0.10 indicate that there are no symptoms of multicolinearity. So it can be concluded that there is no problem of multicolinerity in the regression model.

Tabel 6. Results of Multicollinearity Assumption Test Analysis

Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Building area	,312	3,201
	Rights/Certificates	,525	1,905
	Building life	,417	2,396
	Location	,661	1,512
	Road width	,278	3,600
	Parking Area	,432	2,314

a. Dependent Variable: Shophouse Rental Value

The results of the analysis were obtained that the VIF and *tolerance* values were as follows:

1. The variable building area (X_1) has a VIF value of 3.201 and *a tolerance* of 0.312
2. The right/certificate variable (X_2) has a VIF value of 1.905 and *a tolerance* of 0.525.
3. The variable of building age (X_3) has a VIF value of 2.396 and *a tolerance* of 0.417.

4. The location variable (X_4) has a VIF value of 1.512 and *a tolerance* of 0.661.

5. The road width variable (X_5) has a VIF value of 3.600 and *a tolerance* of 0.278

6. The variable parking area (X_6) has a VIF value of 2.314 and *a tolerance* of 0.432

From the current assumption that there are no symptoms of multicolinearity if the VIF value is less than 10 and the tolerance is more than 0,10, and the values obtained from the calculation are in accordance with the set values i. VIF and tolerance.
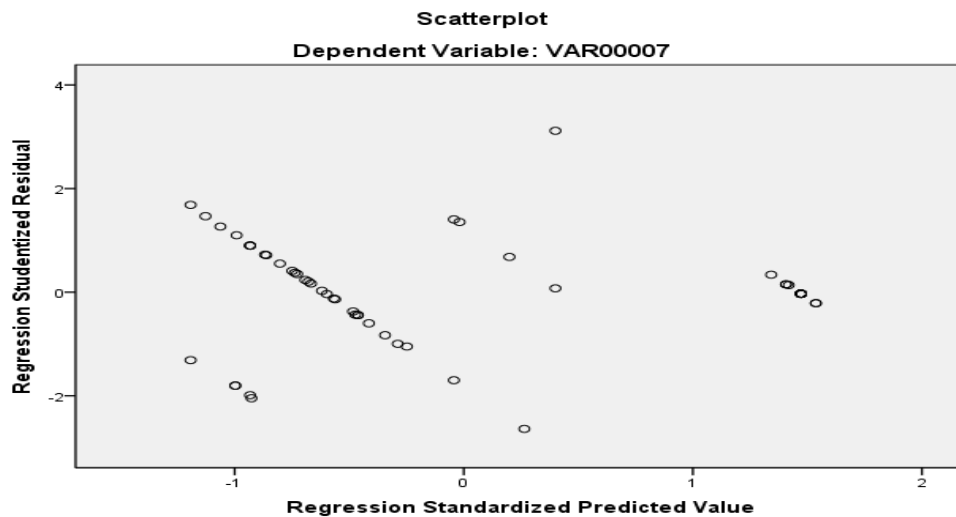
3.3 Heteroscedasticity Test

Figure 3. Shophouse Rental Value scatterplots chart

The results of the analysis using the above SPSS programme showed that the dots were randomly scattered both above and below zero on the Y axis and did not show any particular pattern or tendency on the plot diagram. Thus, heteroskedastisity does not exist, and this regression model can be used to predict the value of ruko rental in Petisah Fields.

3.4 Determination Coefficient Test Results (R2)
Determination coefficients can be used to determine the value of ruko rental in Petisah Field District based on various factors, such as building size, right (certificate), building age, location, road width, and parking space.

Tabel 7. Coefficient of Determination
Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,944^a	,891	,878	1,78702

a. Predictors: (Constant), Parking area, Road width, Fornal education, Building area, Building age, Rights/certificates

b. Dependent Variable: Shophouse Rental Value

Source: Primary Data Processed, 2023

The Adjust R Square value is 0.878. This means that the independent variables mentioned above (building size, right (certificate), building age, location, road width, and parking space) account for 87.8 percent of Ruko's rental value in the Petisah Field district, and other variables not included in this study account for 12.2 percent.

3.5 Simultaneous Test Results (Test F)

Simultaneous influence tests determine whether independent variables affect dependent variables simultaneously or concurrently. Table 4.8 provides additional information.

Table. 8. Simultaneous Test Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1282,361	6	213,727	66,927	,000a
	Residual	156,478	49	3,193		
	Total	1438,839	55			

a. Predictors: (Constant), Parking area, Road width, Fornal education, Building area, Building age, Rights/certificates

b. Dependent Variable: Shophouse Rental Value

Source: Primary Data Processed, 2023

The statistical test was conducted simultaneously with the probability level of 0,000, so it could be concluded that P = 0,000 < α = 0,05, which indicates that Ha was accepted. It shows that a number of different factors, such as building size, rights/certificates, building age, location, road width, and parking space, influence the value of ruko rental in Petisah Field District.

3.6 Partial Test Results (t-Test)

A partial statistical test with a critical t value (critical value) at df = (n-k), where n is the sum of samples and k is the number of independent variables, including constants. Table 4.9 shows how to test partial regression coefficients individually for each free variable.

Table 9. T-Test

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	11,731	2,726		4,304	,000
	Building area	,207	,031	,568	6,738	,000
	Rights/certificates	1,513	,661	,149	2,290	,026
	Building life	,314	,147	,156	2,133	,038
	Location	,342	,606	,033	,564	,575
	Road width	,129	,468	,025	,275	,785
	Luas parker	1,617	,728	,159	2,220	,031

a. Dependent Variable: Shophouse Rental Value

The statistical t test is shown in Table 4.9 as follows:

1. The variable extends the building with a probability rate of 0,000, so it can be concluded that P = 0,000 < α = 0,05, rejecting the Ho hypothesis and accepting the Ha hypotheses, which indicates that the size of the building has a positive and significant impact on the rental value of the ruko in the Petisah Field district.
2. The right/certificate variable has a probability level of 0.026. Therefore, it can be concluded that P = 0.026 < α = 0.05, reject Ho's hypothesis, and accept Ha. The Ha hypotheses show that the right/certificate has a positive and significant impact on the rental value of ruko in the Petisah Field district.
3. The building's age variable has a probability rate of 0.038. Therefore, it can be concluded that P = 0.038 < α = 0.05, accept the Ha hypothesis and reject the Ho hypotheses.
4. The location variable has a probability rate of 0.575, so it can be concluded that P = 0.575 is greater than α = 0.05, accepting the Ho hypothesis and rejecting the Ha hypotheses.
5. The path width variable has a probability rate of 0.785. Therefore, it can be concluded that P = 0,785 > α = 0,05, accept Ho's hypothesis and reject Ha's. The Hypothesis suggests that the width of the road has a positive but non-significant impact on the rental value of ruko in the Petisah Field district.

6. Large variable parking has a probability level of 0.031. Therefore, it can be concluded that P = 0.031, α = 0.05, and the Ho hypothesis is rejected and the Ha hypotheses accepted. This hypothesis suggests that the size of the parking lot has a positive and significant impact on the value of ruko rental in the Petisah field district.

According to Table 4.9 and previous descriptions, this double regression equation can be arranged as follows:

$$Y = 11,371 + 0,207X_1 + 1,513\,X_2 + 0,314X_3 + 0,342X_4 + 0,129X_5 + 1,617X_6$$

1. Based on a constant of 11,371, the rental value of ruko in the Petisah Field District is 11,371 million if the independent variables considered to be constant include the size of the building, rights/certificates, building age, location, width of the road, and parking space.
2. With a coefficient of 0.297, the variable width of the building affects the value of ruko rental in the Petisah Fields district of 0.207 million, so that each addition of a variable of building width will raise the ruko value in the petisah field district by 0.207 million.
3. The variable right/certificate affects the value of ruko rental in the Petisah field district of 1,513 milion, so each addition of the variable rights/certifikat will increase ruko rent value in Petisahan field districts of
4. With a coefficient of 0.314, the building age variable has a positive impact on the rental value of ruko in the Petisah Field District. In other words, adding the building life variable will result in an increase in the ruko value of the petisah field District by 0.314 million.
5. With a coefficient of 0.342, the location variable has a positive impact on the rental value of ruko in the Petisah Fields. In other words, each addition of the locations variable will increase the ruko value in the petisah fields to 0.342 million.
6. With a coefficient of 0.129, the road width variable has a positive impact on the rental value of ruko in the Petisah Field. In other words, each addition of this variable will increase the ruko value in the petisah field by 0.129 million.
7. With a coefficient of 1,617, the large variable of parking has a positive impact on the rental value of ruko in Petisah Fields. In other words, each addition of this variable will increase the ruko value in petisah fields by 1,617 million.

4. Conclusions

The findings indicate that the size of a building has a significant influence on the rental value of a ruko in the Petisah Field district; in other words, a roko with a larger building will receive a higher rent than a riko with a smaller building. The discovery suggests that the right, or certificate, has power over the store owner, so it can raise the price of ruko rental in the Petisah Field district. The findings indicate that the age of the building has a significant influence on the rental value of the ruko in the Petisah Field district, as the new ruko will receive a higher rental than the old ruko. The location does not affect the rental price of the ruko in the Petisah field district. The results showed that the location of the ruko did not affect this study. This may be due to the fact that the ruko-ruko studied in this study are in the same region, which allows the public to visit them.
The results of this study show that the width of the road does not have a significant influence on the rental value of the ruko in the Petisah Field District. This is probably because of the wide road in the area of the sample study is very different. The results show that the size of the parking lot has a significant influence on the rental value of ruko in the Petisah Field district, because larger parking space will have a higher rental than smaller parking space.

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