

Analysis of Factors Affecting Property Value at Residence with Cluster Concept: Case Study - J City Residence

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Abstract: Most of the citizens choose to live in the residence. The need of residence based on trends lead to the development of many residential properties offering residence with cluster type. J City is one of the cluster residences with three types of clusters that have different property values. The purpose of this research is to know and analysis the impact of location, facility, design, neighbourhood and cluster character to property value. The population was taken with a sample of 87 respondents in the residence. The testing of hypothesis uses multiple linear regression test with the level of significance 5%. Statistical application program SPSS and STATCAL are used to analysis data. The results of this study indicate that simultaneously and partially where the location, facility, design, neighbourhood, and cluster characteristics have a positive and significant effect on the value of residence property on J City residence cluster.

1 INTRODUCTION

The real estate market is one of the most rapidly developing goods markets that attract massive investments (Renigier-Bilozor, 2015). Some people assume that live in the residence has many benefits in terms of security, comfort, and tranquillity. Real estate development is the continual reconfiguration of the built environment to meet society's needs (Baldi, 2013).

The property value is determined by several factors, namely: physical, location, and law. In physical factor, there are several components that are considered appropriate such as property area, building facility, quality construction, and land area (Fanning, 2005). Basically property prices affected by demand, usability, scarcity and transferability (Eldred, 1987). The factors that affect the value of a property are divided into 4 factors, namely demand and supply factor, physical property factor, location and placement factor, and national and political factors (Hidayati and Budi, 2001).

The needs of home based on trends cause many development of residence property offering cluster type residence. Along with the lifestyle of citizens that is dynamic modern society is more likely to

require a home with various facilities such as sports facilities, security, recreation in one area (Nugroho, 2015).

Currently in KaryaWisata region is growing with various residential properties that are constantly increasing. Various residences appear both conventional and cluster residence. J City is one of the cluster residence in Medan City with three different cluster types namely J Crown, J Elite, and J Metropolis. These three types of residence have different property prices with different land values.

Table 1: Differences house price on J City

Cluster Type	Property price	Market Value
J Crown	Rp1.680.160.000	Rp1.700.000.000
J Elite	Rp 1.072.000.000	Rp 900.000.000
J Metropolis		
• Monaco	Rp 954.700.000	Rp 850.000.000
• Milan	Rp 686.500.000	Rp 750.000.000
• Madrid	Rp 499.480.000	Rp 500.000.000

Table 1 showed that some market value is higher than property value given from the developer but the phenomenon in this research is where market value

of J Elite and J Metropolis Monaco are lower than new house's property price.

The problem formulation in this research is whether the location, facility, design, neighbourhood, and cluster characteristics affect the property value in J City residence. The purpose of this research is to know and analysis simultaneously and partially how big location, facility, design, neighbourhood, and cluster character have influence to value property at house J City.

2 LITERATURE REVIEW

2.1 Cluster Residence

Cluster residence is a cluster concept using one access (gate) to exit and enter, the application of one access allows all mobility within the cluster to be monitored by security personnel (Widodo, 2012). Residence with cluster type, which is residence that classifies an architectural style of the same residential building and is intended for upper middle class society who tend to have a modern lifestyle (Okterina, 2008). Cluster residence model is collection of buildings without guard rail in real estate with the main gate as security control, should not modification facade to beautify the house or put the guard rail to safety (Kustamar, 2013).

The advantages of cluster residence are (Widodo, 2012):

- Resident's privacy and safety are more safe with one gate system
- The safety of children is higher, because the traffic is not crowded
- Voice pollution can be suppressed
- Support the environmental program with the existence of environmental planting as a water catchment area
- There is a balance between integrated security with a good socialization life
- Integrated housing becomes one, there are workplaces, homes and recreation areas

The disadvantages of cluster residence are (Kustamar, 2013):

- There is an additional cost to pay for security guards or housing security, but on the other hand this is good because it can create new jobs
- The security of a secure housing environment in cluster residence may be misused by residents by parking vehicles carelessly on the road so that it can disturb neighbors or the other road users

- The absence of freedom in modifying the architectural appearance of facade so that the houses seems standard and uniform.
- Residents must really like the design of the house because to add trinkets in the future especially the fence design may not be possible unless the cluster residence rules are no longer used

2.2 Property Value

The real property represents most of the world's wealth, and its valuation is very important to the survival of global property and financial markets (IVSC, 2003). The value of a property such as land influenced by factors influencing the motivation of a human activity is differentiated into social, economic, governmental, and environmental factors (Walcott, 1987).

(Chin and Chau, 2002) classify attributes that determine values on residential property are locational, structural, and neighbourhood factors. According to (Wong, 2002), property attributes are classified into three classes, namely, location attributes (access to social and economic facilities), structural traits (floor area, floor height, etc.) and neighbourhood characteristics (neighbourhood quality). (Choy, 2007) mentioned that property value has been established to be a function of some attributes on the residence and supporting attributes such as, neighbourhood characteristics, accessibility and environmental quality.

Price of the real estate property in international housing market have differences because in terms of culture, economics, spatial and legal structures are also different (Jenkins, 2000). This is the reason why the value of real estate property is always associated with location, location and location (Hui, 2007).

Based on the theory and conceptual framework that has been described, the hypothesis that can be proposed in this research is the location, facilities, design, environment, and cluster characteristics have a significant effect on the value of residential property of J City.

3 METHOD

The population in this research is the resident of J city residence in three different types with 692 families. The sampling method uses proportional sampling method with number of respondents is 87. Data collection methods conducted in two ways, namely questionnaires and observations.

This research uses validity and reliability test to test the questionnaire. Furthermore, SPSS and STATCAL were used to perform classical assumption test and linear regression (Gio, 2015).

4 RESULT AND DISCUSSION

4.1 Brief Overview of J City Residence

J City residence has an area of 23 ha with three different clusters, namely J Crown, J Elite, and J Metropolis. The facilities provided by this residence include shopping centers, ATM centers, and banks. The construction of this residence not only provides complete facilities but also provides additional infrastructure that is access between Karya Wisata street and Pintu Air street.

Based on the interview results with management of J City residence, development of residence and unit house are still continuing. The management side plans to add additional cluster type and shop-house development in the prepared area but when the researcher conducts this research, the process of developing new cluster and shop has not been realized so that the research is only limited to the type of cluster that has been built.

4.2 Validity and Reliability Test

4.2.1 Validity Test

The questionnaire has 43 questions. Based on validity test, all questions are valid with correlation score > 0.361 (critical value). Table 2 is displayed validity test.

Table 2: Validity test

Variable	Question	Correlati on score	Desic ion
Location	Near the main access	0.836	Valid
	Near school	0.833	Valid
	Near office	0.836	Valid
	Posi sition	0.834	Valid
	Being on the main road	0.868	Valid
	ease of transportation	0.849	Valid
Facilities	Doctor / hospital	0.793	Valid
	Recreation place	0.757	Valid
	Sport facilities	0.804	Valid
	Shopping center	0.717	Valid

	ATM center	0.751	Valid
	House of worship	0.827	Valid
	Good road	0.810	Valid
	Street lights	0.788	Valid
Design	Facade	0.780	Valid
	Interiorarrangem ent	0.697	Valid
	Inner layout	0.717	Valid
	Window for natural lighting	0.628	Valid
	Openings for air circulation	0.649	Valid
	House structure	0.810	Valid
	Soil absorbs water	0.629	Valid
	Wall quality	0.745	Valid
	wall paint quality	0.775	Valid
	Ceramic / marble floor	0.732	Valid
	Roof quality	0.722	Valid
	Door quality	0.751	Valid
	Window quality	0.778	Valid
Installation of lights	0.804	Valid	
Neighbour hood	Low pollution	0.748	Valid
	Low noise level	0.766	Valid
	Safe from crime	0.735	Valid
	Safe from flooding	0.729	Valid
	Tribal diversity	0.786	Valid
	Close to family / colleagues	0.746	Valid
Cluster characteri stic	Side of the road for parking	0.793	Valid
	One gate system	0.772	Valid
	Special security	0.810	Valid
	Park	0.701	Valid
	Peddler	0.730	Valid
	Waste maintenance	0.807	Valid
	Electricitymainten ance	0.797	Valid
	Clean water maintenance	0.739	Valid
	Drainage maintenance	0.812	Valid

4.2.2 Reliability Test

The next test is reliability test using Cronbach Alpha. The expected Cronbach Alpha is greater than 0.6 (Gio, 2013). Table 3 is displayed reliability test.

Table 3: Reliability test

Variable	Cronbach Alpha	Result
Location	0.919	Reliable
Facility	0.909	Reliable
Design	0.933	Reliable
Neighbourhood	0.887	Reliable
Cluster characteristic	0.903	Reliable

4.3 Classical Assumption Test

4.3.1 Residual Normality Test

The assumption test of normality uses Kolmogorov-Smirnov test. Based on the result of normality test, the value of p-value (p) is 0.326 which is greater than significance level 0.05, then normality assumption of residuals is satisfied.

4.3.2 Heteroscedasticity Test

Heteroscedasticity test uses Glejser test. Based on Glejser test in Table 4, all values of Sig Glejser < 0,05.

Table 4: Heteroscedasticity Test with Glejser Test

Model	t	Sig.
1 (Constant)	-10.550	.000
Location	2.281	.025
Facility	2.344	.022
Design	3.215	.002
Neighbourhood	3.119	.003
Cluster characteristic	3.517	.001

4.3.3 Multicollinearity Test

Multicollinearity test uses variance inflation factor (VIF). The expected VIF is less than 10 indicating there is no multicollinearity symptom. Table 5 is displayed multicollinearity test uses VIF. Based on the multicollinearity test result in Table 5, VIF for each independent variable are less than 10 indicating there are no multicollinearity symptom.

Table 5: Multicollinearity Test with VIF

Variable	VIF	Conclusion
Location	2.072	There is no multicollinearity

Facility	2.301	There is no multicollinearity
Design	1.742	There is no multicollinearity
Neighbourhood	1.464	There is no multicollinearity
Cluster characteristic	1.669	There is no multicollinearity

4.4 Hypothesis Testing

4.4.1 Multiple Linear Regression

In this research, multiple linear regression is used to test the hypothesis. This method is used to analysis the magnitude of influence between independent variable of location (X₁), facility (X₂), design (X₃), environment (X₄), and cluster characteristic (X₅) to dependent variable (Y) that is property value. Table 6 is displayed the result.

Table 6: Multiple Linear Regression Result

Variabel	Sig.	Result
Constant	0.000	Significant
Location	0.025	Significant
Facility	0.022	Significant
Design	0.002	Significant
Neighbourhood	0.003	Significant
Cluster characteristic	0.001	Significant
R	= 0.860	
R Square	= 0.739	
Adjusted R square	= 0.723	
F hitung	=45.975	
Sign. F	=0.000	
a. Dependent Variable: Y	=0.05	

1) Simultaneously Test (F test)

Based on simultaneously test with F test (Table 6), the value of F statistic is 45,975, with p-value 0,000 < significance level 0,05. It means that location (X₁), facility (X₂), design (X₃), environment (X₄) and cluster characteristic (X₅) simultaneously have significant effect to property value. The following is multiple linear regression equation.

$$Y = -4049764189.88 + 34218078.92 X_1 + 38971600.93 X_2 + 23595663.95 X_3 + 40064597.73 X_4 + 37020304.41 X_5$$

2) Partial Test (t Test)

Based on partial test with t test in Table 6:

1. H₁: The location variable has significant effect to property value, with p-value $0,025 < 0,05$. The first hypothesis is received.
 2. H₂: The facility variable has significant effect to property value, with p-value $0,022 < 0,05$. The second hypothesis is received.
 3. H₃: The design variable has significant effect to property value, with p-value $0,002 < 0,05$. The third hypothesis is received.
 4. H₄: The neighbourhood variable has significant effect to property value, with p-value $0,003 < 0,05$. The fourth hypothesis is received.
 5. H₅: The cluster characteristic variable has significant effect to property value, with p-value $0,001 < 0,05$. The fifth hypothesis is received.
- 3) Coefficient of Determination
The value of coefficient determination is 0,739. It means that location, facility, design, environment and cluster characteristic can affect property value as 73,9%, with 26,1% for other factors.

5 CONCLUSIONS

Property value of J City Residence is affected by location, facilities, design, neighbourhood, and cluster characteristic based on the research result that simultaneously and partially, the five variables have a positive and significant effect on the property value. Thus, respondent take notice for every aspect of residential. The better the residential is managed will cause the property value increased.

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