

The Effect of Land Suitability and Land Release (Transfer) on Determination of Real-Estate Location and the Impact on Decision of Real-Estate Developers

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ABSTRACT

This research aims to discover the influence of land suitability and release on determination of real-estate (housing) location and the impact on decision of real-estate developer, particularly in Kabupaten Sidoarjo. This research uses explanatory method, with a sample as many as 80 real-estate developers in Kabupaten Sidoarjo. Method of data collection is by distributing the questionnaire. Data analytical tool uses path analysis with software SPSS, version 22.0. Results which can be referred from the research are: (a) land suitability (the appropriateness) and land release have significant effect on determination of real-estate location; (b) land suitability and release have effect insignificantly on developer's decision, (c) determination of the land location has significant effect on decision of real-estate developers, (d) land suitability and land release indirectly through determination of real-estate location have significant effect on developer's decision in Kabupaten Sidoarjo.

Keywords: land suitability, real-estate, Land Release

INTRODUCTION

The increasing need for housing these days certainly opens great opportunity of business in the industry of construction and housing (real-estate). There are hundreds of real-estate developers in Indonesia, both big and small developers, registered in the organization of REI (Real Estate Indonesia). Therefore people can choose the houses, location, prices according to their capabilities or their own purchase power. In Kabupaten Sidoarjo, there are hundreds of developers who open complexes of new housing, spreading almost all of areas in Kabupaten Sidoarjo, except in the southern area of Sidoarjo because of slime disaster Lapindo.

There are many things to be considered by the developers in their plans to open the location of the housing complexes. Land suitability and land release are important factors to be considered in deciding the housing location. With other words, the suitability and the release influence housing location and developer's decision for opening complexes of new housing.

Land suitability is very important because it determines whether a land to be suited for housing, farming, or other. Land has a different basic physical condition from one another. It results from geological difference of the land in question. Hartadi (2009) in his research showed that physical condition of the land: slope, type of the land and stones, condition of climate, water supply, area with disaster vulnerability and infrastructure support greatly influence land suitability for the housing.

Land release (the assignment) influences decisions made by developers. The appropriate price is one of considerations for deciding competitive resale price, because the land is the prominent component. Equally, potential site location to be accumulated as a landscape, appropriate purpose that conforms spatial order, and legal status of the land are important factors in the assignment.

Determination of the strategic housing location will facilitate the developer in the housing (real-estate) marketing, adequate access of the road, it can be reached easily from the centre of business activity, comfortable and safe environment and relatively uncontaminated, availability of transportation, development prospect, and free flood location are important factors in determining/deciding the housing site and important consideration both by developer and by the housing consumer. The location is geographical site from potential resources, and the effect on other various activities, economy and social (Tarigan, 2006).

Luhst (1977) said that quality of life which is convenience, security from a house is greatly determined by the location, with other words, the prominent factor of the location is determined by environment and accessibility. There are also developers, however, who open housing complexes with inadequate accessibility and environment but sell their houses with a low price and there are developers who open housing land near industrial area but sold well, consumers bought their houses because the houses near workplace, although the housing is polluted from factory's smoke. Therefore research is necessary to discover whether location is one of the factors which influence developer in deciding to open the housing complexes. Based on the aforementioned explanation, it can be seen that in deciding to open a complex of new housing, a developer needs to consider aspects of land suitability and land release and also determination or selection of the right location. However, those considerations need to be tested or proved. This research is carried out by combining variables of land suitability and land release on determination of the housing location and the effect on developer's decision to open real-estate location in Kabupaten Sidoarjo.

THEORETICAL FRAMEWORK

Land Suitability

According to Khadiyanto (2005), land capability and land suitability determine reliability of land usage which becomes consideration in the developer's decision in acquiring the land to open or build new housing. Land capability emphasizes land capacity generally that can be made in an area. Land suitability relates to land usage or utilization by considering suitability of land supporting power (resources) will find effective land usage. Khadiyanto (2005:30) said there are 4 criteria of land suitability based on land characteristic: slope, stone and land characteristic, climate and water resources, and disaster vulnerability.

- a. Slope is the angle formed by difference in high of surface (relief), that is flat area and horizontal area and it is counted generally in percentage (%) or degree ($^{\circ}$). Development of the real-estate or other structures in the sloping land is relatively more difficult than real-estate (housing) located in the flat area. The sloping land requires more grading and congeries, so that it requires higher cost.
- b. Characteristic of land and stone; land is the aggregate of solid parts which are not bound from each other. It results from stone weathering or decay chemically or mechanically. Rock or stone is mixture of minerals so that chemical and physical characteristics of the minerals in the stone are various.
- c. Climate and water resources; water is one of sources of life, on the whole, water quantity in the earth is relative constant, because water in the earth undergoes a cycle of continual phenomena. Climate is also an indicator for land suitability. The climate meant here covers temperature, humidity, air pressure, wind and sunshine.
- d. Disaster vulnerability, natural disaster can be defined as change of natural condition resulting in danger for human or other living creatures. Therefore, men should know and understand the change of nature.

Land Release (Assignment)

The assignment as is in article 1 number (1) of Peraturan Menteri Dalam Negeri Nomor 15 Tahun 1975 means that to release legal relations existing formerly between the owners of the land by granting compensation.

Lubis (2011) said that legal status frequently becomes problematic in the land release since negotiation only prerequisite agreement between members of land release committee and land owner. The compensation only includes the land; it should clearly be stated that the compensation covers the land and the objects on it. Wardana (2007) explained that the most influential factor in the developer's decision is the land release comprising of land price and width.

- a. Land price. Developer chooses the land with low or cheap price, but consequently far for city centre and low accessibility and availability of infrastructure. The low land release/transfer enables the developer to make environmental infrastructure and increase the accessibility.
- b. Land width. Availability of appropriate land width also becomes a factor of land transfer by developer, because the developer is more flexible in deciding measure and number of houses to be built.

HOUSING LOCATION

Foundation of location theory is space. Without space there is no location. In the study of area, space is surface of the earth existing above or below it as long as human can reach it. Location represents the spatial position (longitude and latitude can be measured). Study of location is to see nearness or far distance of one activity from the other and the effect on each activity because of far or near location. Wanusuprojo et al, (1993) discussed housing supply for various levels of income and determination of location should consider aspects of operational technique, land efficiency, health, and economic politics.

- a. Aspect of operational technique, it relates to operational simplicity, it means no much work to do, for instance in digging and heaping, area with free of flood, earthquake, easily accessible, fine condition of land, so that structural or building construction can be made with the lowest price, clean water, electricity, ditch are available, and building material and labor is easily reached.
- b. Aspect of land efficiency, it relates to land condition which is economically more difficult to be developed more productively, it does not threaten the existing environment, even it can possibly fix it, maintain the function as water reservoir.
- c. Aspect of health, the chosen location should far from location of factories which can produce pollution, with low noise, and people easily find water, electricity, school, and so forth. The location should easily accessible from workplace.
- d. Aspect of economic politics, it relates to possibility to open job and business opportunities for people, to become model to build houses and healthy environment, and it is easy to sell the houses because the location is preferred by future buyers and get fair profit.

Developer's Decision

Peter and Olson (2000) said that the purchasing decision is an integrating process combining knowledge to evaluate two or more alternative behavior and choose one of them. Kotler

(2005) explained that characteristic of buyer and process of decision making will result in the decision to purchase.

Decision making is an activity done by individual who is directly involved in finding and using the offered product. The steps include: knowing the problem, searching for information, assessing alternatives, purchasing decision, and post-purchasing behavior.

- a. Knowing the problem. The process begins with knowing the problem or the need. Buyer knows a difference between real condition and a condition he or she wants, the need can be driven by internal or external stimulation.
- b. Searching for information. A stimulated consumer may or may not search for more information, if encouragement is strong, and the object that can fulfill the need is available, the consumer will buy the object.
- c. Assessing the alternatives. After searching for information, the consumer now has to assess, or calculate some existing alternatives and consider next step. This calculation cannot be separated from influence of consumer's sources (time, money and information) or risk of miscalculation.
- d. Purchasing decision. Decision making to buy or not, relates to sort of product, product design, brand, producer, quality and so forth.
- e. Post-purchasing behavior. After buying a product, consumer will experience some levels of satisfaction or there is no satisfaction, there is possibility that a buyer feels unsatisfactory after purchasing the product because the price is too expensive and so forth.

HYPOTHESES OF RESEARCH

Hypothesis 1: It is expected that land suitability and land transfer significantly influence determination of the housing location.

Hypothesis 2: It is expected that land suitability and land release have significant effect on developer's decision.

Hypothesis 3: It is expected that housing (real-estate) location has significant effect on developer's decision.

METHOD OF RESEARCH

Population and Sample

Population in this research is all real-estate developers in Kabupaten Sidoarjo, as many as 179 developers. Sample of the research is taken as many as 50% of population, that is, 80 developers in Kabupaten Sidoarjo. This research uses sampling purposive, that is technique of sampling with certain consideration (Sugiyono, 2013).

Operational Definition

Operational definition for each variable can be described as follows:

Land suitability (X_1) is land utilization or usage by considering suitability of land resources will find efficient land usage. Indicators for measuring the variable of land suitability in this research are adapted from Khadiyanto (2005): slope (X_{11}), characteristics of land and stone (X_{12}), water resources and climate (X_{13}), and disaster vulnerability (X_{14})

Land release (X2) is release legal connection existing formerly between the owners of the land by compensating by developer. Indicators to measure variables of land release in this research cover legal status (X21), fair price of land (X22), and availability of wide land (X23)

Real-estate location (Y1) relates to (near and far) distance between existing activities in the process of building houses. The indicators are aspect of operational technique (Y11), aspect of land efficiency (Y12), aspect of health (Y13), and aspect of economic politics (Y14)

Developer's decision is decision made by real-estate developer to build a complex of real-estate (housing), in this research is real-estate developer in Kabupaten Sidoarjo. Indicators are adapted from Kotler (2005) about process of decision making, those are: knowing the problem (Y21), searching for information (Y22), assessing alternatives (Y23), purchasing decision (Y24), and post-purchasing behavior (Y25).

Method of Collecting Data

Method of collecting data in this research is carried out by way of using questionnaire as basic tool of data collection. It is done by way of personally administered questionnaires, so that it enables the researcher make directly connection with, and provide explanation as necessary with respondents as a source of primary data.

Technique of data analysis

Technique of data analysis uses path analysis with program SPSS Version 22.0. Model of path analysis is used to analyze pattern of relationship between variables with the objective is to discover the direct and indirect effect from a set of independent variables (exogen) on dependent variables (endogen). In this research, the independent variables (exogen) consist of land suitability (X1) and land release (X2); the dependent variables (endogen) are real-estate location (Y1) and developer's decision (Y2).

RESULT AND DISCUSSION

Result of Validity and Reliability Test

Test of validity and reliability on each variable is shown in Table 1 and table 2.

Table 1(Part-I). Result of validity test

<i>Variables</i>	<i>Indicators</i>	<i>Pearson Correlation</i>	<i>Sig.</i>	<i>Statement</i>
Land Suitability (X1)	slope (X11)	0.472	0.000	valid
	Characteristics of			
	Land and stone (X12)	0.531	0.000	valid
	Climate and water resources (X13)	0.516	0.000	valid
	Disaster vulnerability (X14)	0.536	0.000	valid
Land Release (X2)	legal status (X21)	0.428	0.000	valid
	Fair price of land (X22)	0.642	0.000	valid
	Availability of wide land (X23)	0.633	0.000	valid

Table 1 (Part-II). Result of validity test

<i>Variables</i>	<i>Indicators</i>	<i>Pearson Correlation</i>	<i>Sig.</i>	<i>Statement</i>
Real-estate Location (Y1)	aspect of operational technique (Y11)	0.591	0.000	valid
	Aspect of land efficiency (Y12)	0.595	0.000	valid
	Aspect of health (Y13)	0.392	0.000	valid
	Aspect of politic and economic (Y14)	0.263	0.019	valid
Developer's Decision (Y2)	knowing the problem (Y21)	0.286	0.010	valid
	Searching for information (Y22)	0.696	0.000	valid
	Assessing alternatives (Y23)	0.684	0.000	valid
	Purchasing decision (Y24)	0.376	0.001	valid
	Post-purchasing behavior (Y25)	0.574	0.000	valid

Table 1 indicates that all indicators or items for measuring variable of land suitability, land release, housing location and developer's decision are valid because value of validity significance below 0.05.

Table 2. Test of reliability

<i>Variables</i>	<i>Cronbach's Alpha</i>	<i>Statement</i>
Land suitability (X1)	0.637	Reliable
Land release (X2)	0.650	Reliable
Housing location (Y1)	0.670	Reliable
Developer's decision (Y2)	0.690	Reliable

Scores of Cronbach's Alpha on variables of land suitability, land release, housing location, and developer's decision are more than 0.6, so that it can be concluded that all variables are reliable and they can be used for analysis further.

Result of Path Analysis

Based on the result of path analysis with program SPSS version 22.0 can be shown in the Table 3.

Table 3. Result of path analysis X1 and X2 → Y1

<i>Variables</i>	<i>Beta</i>	<i>t</i>	<i>Sig.</i>	<i>r</i>	<i>r²</i>
Land Suitability (X1)	0.289	3.565	0.001	0.376	0.141
Land Release (X2)	0.507	8.573	0.000	0.599	0.359

Constant: 1.103; R: 0.921; R square: 0.848;
F change: 215.360; Sig.: 0.000

X1, X2 and Y1 → Y2

<i>Variables</i>	<i>Beta</i>	<i>t</i>	<i>Sig.</i>	<i>r</i>	<i>r²</i>
Land suitability (X1)	-0.111	-0.841	0.403	-0.096	0.009
Land release (X2)	0.055	0.377	0.707	0.043	0.002
Housing location (Y1)	0.880	5.109	0.000	0.506	0.256

Constant: 0.969; R: 0.818; R square: 0.668;
F change: 51.064; Sig.: 0.000

Based on Table 3 it can be explained that land suitability (X1) and land release (X2) have significant effect on determination of real-estate location (Y1). It can be shown from the result of path analysis that score or value of significance (Sig.) for land suitability and land release below 0.05. Moreover, score of sig. for F_{count} is 0.000 below 0.05 ($\alpha = 0.05$). It means that land suitability and land release simultaneously have significant effect on determination of real-estate location. Based on scores of t , sig., and r^2 indicated in Table 4 that land release/transfer has higher effect on determination of real-estate location than on land suitability.

Contribution value of the effect of land suitability and land release in deciding real-estate location simultaneously is 84.8%. Value of correlation between land suitability and land release on determination of real estate location is 0.921, it means that correlation between independent variables, those are land suitability and land release on determination of real estate location is close correlation. Value of coefficient of path regression on both independent variables also indicates positive value (score), it means that that higher or better the calculation from developer is on variables of land suitability and land release, so it directly will have better effect on determination of real estate location.

This indicates that first hypothesis is true. This result empirically supports Hartadi (2009) and Wardana (2007). Hartadi (2009) concluded that physical condition of the land; slope, sort of land and stone, climatic condition, water resources, disaster vulnerable area and availability of infrastructure will have significant effect on land suitability for real estate location in Fakfak. It means that land suitability influences determination of real estate location.

Wardana (2007) explained that most influential factor in deciding real-estate location is land release/transfer consisting of land price and land width. Developers prefer land with low price. Width of land correlates with availability of wide land that fulfills developer's expectation becomes factor of land release as well, because developer is more flexible in deciding the size and number of houses to be built if availability of wide land meets his/her expectation.

Table 3 indicates that land suitability (X1) and land release (X2) have insignificant effect on developer's decision. It can be seen from the scores of significance (Sig.) for land suitability and land release above 0.05. It means that land suitability and land release directly have insignificant effect on decision made by developers in Kabupaten Sidoarjo. So the better or the higher calculation made by respondents (developers) is on land suitability and land release does not automatically or directly encourage developer's decision to open the real estate complex. This indicates that second hypothesis is not true.

This research also indicates that determination of real estate location has significant effect on developer's decision. It can be seen from the score of significance (Sig.) for variable of real estate location below 0.05. It means that determination of the location directly has significant

effect on decision made by developers in Kabupaten Sidoarjo. The better the calculation of real estate location is directly will have an effect on developer's decision to open housing complex. This indicates that third hypothesis is true.

This research indicating that determination of real estate location has significant effect on decision made by developers in Kabupaten Sidoarjo empirically supports the research made by Ismail (2003) and by Rahman (2010). Ismail (2003) concluded that factors that influence developer's perception in deciding real estate location are location with low price of land, free –flood location, location with wide road, location with prospect of future development, availability of access for public transportation passing through the location, and network of complete facility and infrastructure.

Rahman (2010) said that housing development carried out by private and public developers only concentrate on areas which fulfill criteria as housing location: high accessibility, availability of wide land so that it gives discretion for developers to determine size of houses, and developers can provide supporting facilities such as environmental infrastructures, price of NJOP is relative low, basic facilities such as electricity, telephone and fresh water, and minimal risk of disaster.

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