The Factors Which are Influencing the Development of Apartment in Surabaya (Based on Consumer and Developer Preference)

Angsar Nur Himawan
Departement of Architecture – Real Estate Planning
Institut Teknologi Sepuluh Nopember (ITS)
Surabaya, Indonesia

Purwanita Setijanti
Departement of Architecture
Institut Teknologi Sepuluh Nopember (ITS)
Surabaya, Indonesia

Eko Budi Santoso
Departement of Architecture
Institut Teknologi Sepuluh Nopember (ITS)
Surabaya, Indonesia

Abstract— **Surabaya continues to grow rapidly, so the demand for housing will be increasing, too. Meanwhile, the lands are extremely limited and more expensive. The solution from those problems are by building apartment. The number of apartment units in Surabaya are 20.938 units, West Surabaya dominates with 9.791 units, then East Surabaya 7.955 units, North Surabaya 1.836 units, and Center Surabaya 816 units. The growth of apartments in Surabaya for a few years ago will increase 24.992 new unit from 27 new project, and this increase 138% at this time. Growth apartment next 4 years will still be dominated by the East and West Surabaya Surabaya, There will be a limited number of new apartment units in Central Surabaya and South Surabaya. This research aims to the factors which are influencing the development of apartement in surabaya based on consumer and developer preference. To analyze, the researchers used Factor Analysis. Factor Analysis is used to look for what factors according to consumer and developer in selecting apartment in Surabaya, The result of this research are based on consumer preference that consumers want an apartment that accessibility is easy to reach, consumers also want convenience while on the location of the apartment , consumers also want an apartment which he bought has a clarity of the status of the land, consumers want apartment building that takes into account all ethnicities that inhabit the apartment.**

Keywords— Apartment, Consumer preference, Developer preference.

I. INTRODUCTION

Population growth in every year always grows, one of example was happening in Surabaya which has population growth rate 0,42% in 2011-2015 [1]. Population growth will influence the needs of board, that will trigger the opening of new lands which made as new settlements. Thus, it can be said that Surabaya needed high supply of board if we looked at growth population rate [2]. By looking at the limited land and needs of home land's issues in Surabaya then the government of Surabaya had attempt in fulfilling houses' needs through housing construction by using vertical housing system, and one of them is apartment housing. Although in the planning of Surabaya there was no specific planning about apartment land allocation, government of Surabaya is still opening big opportunities in construction and development of apartment, it can be seen in alternative settlement planning which is written in RTRW Surabaya in 2013. It can be seen from the number of apartment units in Surabaya which were 20.398 units, West Surabaya dominated with 9.791 units. Then, East Surabaya 7.955 units, South and Central Surabaya 1.836 and 816 units. The growth of apartments in Surabaya for a few years ago will increase 24.992 new unit from 27 new project, and this increase 138% at this time. Growth apartment next 4 years will still be dominated by the East and West Surabaya Surabaya, There will be a limited number of new apartment units in Central Surabaya and South Surabaya. This uneven construction of apartment in Surabaya surely had some influencing factors, one of factors which is supporting the development of apartment, especially in East Surabaya is the numbers of universities around those locations. This affected the parents of students, whom were from other cities, bought apartments as their children's place to live in Surabaya [3]. If the construction of apartments was not controlled then there were differences between multi-storey building with non multi-storey building and the skyline of Surabaya would be irregular and unaesthetic, because one of aesthetic forming factor from skyline is the location from multi-storey building [4].

II. LITERATURE REVIEW

A. The Needs of Apartment Reviewed From Psychology Aspects

There were some researches and theories which formulated about the needs of apartment, although they did not clearly mention about the needs of apartment specifically. However, to acomodate that, those needs are referenced from some consideration related to the needs of house which were literally from forms of one apartment with characteristics which are subsidized by government in leasing or purchasing units. There were housing constructions because there were some demand or needs of living place. As in the hierarchy of needs, that people were motivated to fulfill their living needs gradually [5].

Figure 1 : Hierarchy of Human Needs

According to Asteriani (2011), she explained that there many factors which influenced the residents in deciding housing location, that related to the needs of house, which was a form of one apartment with characteristics that were subsidized by government in leasing or purchasing units. The influencing factors are Accesibility (distance, physical condition of the road, transportation), Infrastructure Completeness (the availability of the road network, electricity, and clean water), Environment Condition (safety and comfort), Sociol Economy Condition (topography), Housing Quality (housing specification), Demography (the number of population), Housing Facility Completeness (general facility completeness), Housing Legality (housing ownership validity), Implementation Technical (Not flood areas, reach other location easily, land condition), Environment Health (it would be better if the location was far from factories area which can produce pollution and noise) [6].

Beside that, according to Rahma, there are six factors which influence the resident in deciding the housing location which are housing price, housing facilities, location, environment around housing, income, and substitution price [7].

B. Theory of Determining The Location of Place

The pattern of the location itself is a form or model Location pattern itself is a form or model which indicate the location where the activity happens or the location of object. It can be seen from the scope of study, location patterns are limited on apartment location as object of the study. While the location theory is a science which observes spatial order of economic activities, or a science which observes geographical location from potential sources and the impacts toward the existence of any kind of other activitiesboth economic and social [8]. Theory of determining location of place is initiated by many experts, such as economic, planning, and other expertss. The popular model of determining location of place is a model which was introduced by William Alonso, Richard Muth, and Von Thunen.

Theory of Van Thunen was a base theory or classic theory in theory of location. This theory started the development of the next theory of location. Base concept of Von Thunen model itself is making curves of land leasing to the distance to trade. If there are more than one commodity, then there will be the most optimum land leasing for each commodity [9].

Richard Muth explained that for maximizig the utilities, urban resident have to choose the location where the costs to purchase or lease land is equal to commuting costs. When high income of urban resident has the same commuting

marginal costs, then he/she will choose the location which is quite far from the location of activity [10].

Alonso discussed about the theory of bid-rent analysis, which the spatial spread of housing generally located in suburb area or after retail and industry. The closer to the central of the city (trade center), the higher price of the land leasing, vice versa. This is caused by land leasing or cheap land prices with the higher accessibility compensation wlthough it is far from the city.
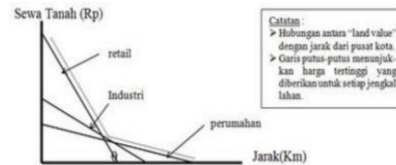

Figure 2 : Bid Rent Curve

On bid rent curve, consumer would feel satisfied on each location along the curve. Along that curve, prices which were offered by consumer would be decreasing along with the increasing of the location distance from the center where the consumer would balance the income, commuting costs, and travel distance [11].

C. Factor of Apartment Development Location Determinant

There are many factors which are used to formulate apartment location, although there is no specific explanation about factors of apartment location determinant. However, to accomodate that, those factors are referenced from some consideration related settlement and housing and flats selection are forms of one apartment with characteristics which are subsidized by government in leasing or purchasing units. According to Bourne, factors which are influencing toward determining housing location is accessibility to central city, physical characteristics from settlement's environment, facilities and services, social environment, ethnical and demography, characteristics of locations and houses [12].

Structuring of housing and settlement was conducted through stages of location and land selection. In selecting and preparing housing and settlement's location, there are some things which had to concern such as condition and direction of cultivation and protection area, physical and environment supporting capacity, urban infrastructure system, central system of economic activities, social development of the population, economic growth prospect, regional network system (related to districts and other cities) [13].

Determining the location in preparing flats have to have location criteria as follows: proven accessibility from and to work place, close to social and public facilities, avoid vulnerability to disasters such as flood, landslide, earthquake, pollution, fire, which endanger the safety of residents, proven legally because in accordance with the direction of the use of land [14].

III.   METHODOLOGY

This research might know the factors which influenced the development of apartments in Surabaya, so the approaches which could be used in this research were quantitative and qualitative approach. Based on the objectives of the research, this type of research was explorative research which aimed to find factors that influenced the development of apartments in Surabaya. Variable in this research came from literature study and preliminary survey which were conducted by experts and

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practitioners which experienced in research that would be addressed.

Population of apartments' consumer in Surabaya could be seen from the number of apartment units in Surabaya were 20.398 units, while for the apartment developer in Surabaya such as PT. Adhi Persada Properti, Gunawangsa Grup, Pakuwon Grup, Puncak Grup, PT. MNC LAND, PT. PP Property, PT. WIKA, PT Intiland Development, PT. Ciputra Surya. For sampling technique was using Probability Sampling approach by using random sampling method. The first analysis stage was factor analysis which influenced the developers in building the apartments in Surabaya. Factor analysis is a method to analyze some observation, seen from the intercorrelation side to get whether the variations that appear in observation may be based on some base categories which have fewer amount than the apparent [15]. Factor analysis was conducted by reducing data dimension by declaring variable origin as linear combination from some factors, so that some factors could explain diversity of the data which was explained by variable origin.
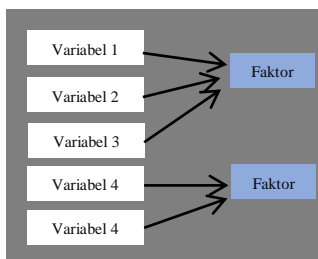

Figure 3 : Illustration of analysis factors

After conducting factor analysis, the next stage is descriptive analysis. This analysis technique is an analysis tool which explains the data of the observation results without conducting statistic test. This analysis was used to represent the characteristics of observed samples or population.

IV. ANALYSIS AND RESULT

A. Location Overview

The numbers of apartments in Surabaya from the early 2016 was 20.398 units and scattered throughout Surabaya. The numbers of apartments in West Surabaya were 9.791 units, East Surabaya had the second most numbers with 7.955 units, South Surabaya had 1.836 units, Central Surabaya had the least with 816 units, if all of these apartment units were counted as percent then it would be West Surabaya 48%, East Surabaya 39%, South Surabaya 9%, and Central Surabaya 4%.

In 2014-2016, there were some developers which were active in conducting the apartment building in Surabaya. Those developers were Puncak Grup, Pakuwon, Gunawangsa, Ciputra Grup, PT PP, PT Tlatah Gemah Anugrah.
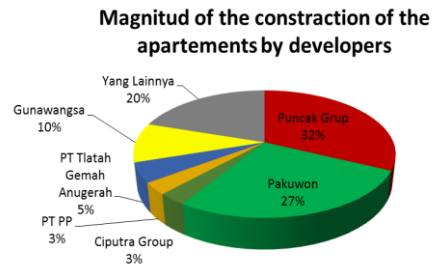

Figure 4 : Magnitud of the constraction of apartemenst by developers.

B. Discussion

First stage to do in factor analysis was by conducting test of the adequacy of the data, the existence of significance correlation, and which factors that proper to conduct next stage in factor analysis. For clearer explanation, it can be seen from table below.:

Table 1. Distribution Factor against new factors according to Consumer

Assumption in Factor Analysis	Results of Data Analysis	Conclusion
The data which were used were enough for conducting factor analysis if KMO score > 0,5	KMO score : 0,703	The data which had already used were enough for conducting factor analysis
Among the variables have a correlation if the significance score of Bartlett's Test of Sphericity <1.00	Significance score : 0,000	Factor which was used, had already fulfilled assumption, correlated each other.
The data which could be used to Factor Analysis in correlation matrix form if the MSA score < 0,50	There were 6 variables which had MSA score < 0,50	Based on the result of analysis, there were 6 factors which cannot be used in factor analysis, yet the remaining 28 factors had already fulfilled to be used as factor analysis

Source: Analysis Results, 2016

Based on table above, there are 28 factors which can be used to the next stage in factor analysis. After conducting factor analysis then form new 7 factors, and in each factor has 28 factors. For more details, it can be seen from the table below:

Table 2. Distribution of Factors to New Factor Group Based on Consumer

Factor Grup	Factor
1	Electricity Network
	Clean Water Network
	Garbage Network
	Apartment Security
	Worship Facility
	Eenvironment Security around the location apartment development
	Location of apartment is free from disasters
	Service charge to developer for consumer which is used as apartment service.
	Comfort
	Stage of land price in Surabaya
	Apartment prices that have to paid to purchase apartment units
	Benefits from selling apartment units
	Cost in selling apartment
	Skill of developer in purchasing the land that will be developed as apartment in Surabaya
2	Conformity designed lands in Surabaya which assign in government regulations
	The existence of development planning in Surabaya which is written in RTRW documents of Surabaya
	Consideration of legal aspects toward land in Surabaya which will be developed as apartment
	Long-term planning which owns by developer
3	Shopping center
	Entertainment area
	Ethnicity in apartment
4	Drainase network
	Parking lot
5	Collector road network
	Stores
6	Tenure in the location of apartment development
7	Local road network
	Location of industry

Source: Analysis Results, 2016

After factor analysis based on consumer, then the next stage was conducting factor analysis based on developer. In this research, the researcher used 34 variables so the respondents which were used would be > 34 respondents, more precisely the numbers of respondents were 70 respondents consisted of 11 big developers in Surabaya.

Table 3. The Data of Apartments Developer

No	Company	Number Of Respondents
1	PT. MNC LAND	7
2	PT. Intiland Development Tbk.	7
3	Pakuwon Grup	7
4	Gunawangsa Grup	7
5	PT. Ciputra Surya	6
6	Puncak Grup	6
7	PT. Adhi Persada Properti	6
8	PT. PP Property	6
9	PT WIKA	6
10	PT Mahkota Berlian Cemerlang	6
11	PT. Kertabakti Raharja	6
	Total	70

Source: Survey Results, 2016

First stage to do on factor analysis was conducting the test of adequacy of the data, the existence of significance correlation, and which factors that proper to the next stage in factor analysis. For more setails, it can be seen from table below:

Table 4. The Data of Apartments Developer

Assumption in Factor Analysis	Results of Data Analysis	Conclusion
The data which were used were enough for conducting factor analysis if KMO score > 0,5	KMO score : 0,575	The data which had already used were enough for conducting factor analysis
Among the variables have a correlation if the significance score of Bartlett's Test of Sphericity <1.00	Significance score : 0,000	Factor which was used, had already fulfilled assumption, correlated each other.
The data which could be used to Factor Analysis in correlation matrix form if the MSA score < 0,50	There were 19 variables which had MSA score < 0,50	Based on the result of analysis, there were 19 factors which cannot be used in factor analysis, yet the remaining 15 factors had already fulfilled to be used as factor analysis

Source: Analysis Results, 2016

Based on table above, there are 15 factors which can be continued to the next stage in factor analysis. After conducting factor analysis then form 7 new factors, and in each factor has distribution of 15 factors. For more setails, it can be seen from table below :

Table 5. Distribution Factor against new factors according to Developer

Factor Grup	Factor
1	Existence of Public Transportation
	Garbage Network
	Drainase Network
	The density of the apartments' residents
2	Electricity Network
	Location of Industry
3	Skill of developer in purchasing the land that will be developed as apartment in Surabaya
4	Parking Lot
	Benefits from selling apartment units
5	Shopping Center
6	Location of apartment is free from disasters
	Costs which are spent in selling apartment
7	Local Road Network
	Stage of land price in Surabaya
	Conformity designed lands in Surabaya which assign in government regulations

Source: Analysis Results, 2016

V. CONCLUSION

Phenomenon rate of population increase each year in Indonesia will lead to developments in some aspects. See the rate of population growth is increasing, especially in the 2nd largest city in Indonesia, Surabaya lead to the development progress of the city of Surabaya. Rate of population increase in Surabaya is a dilemma of obstruction, which in addition has a positive side to make the development of Surabaya city, but also has a negative side, namely the increasing demand for housing / home while the area of land available in Surabaya is very limited. Therefore Surabaya City Government made a policy of housing construction vertically or can be called an apartment. But this policy is not followed by zoning location to do the construction of the apartment so that the location of the apartment in Surabaya is uneven. Construction of the

highest apartment in Surabaya is located in Surabaya West and East. Growth apartment next 4 years will still be dominated by the East and West Surabaya Surabaya, There will be a limited number of new apartment units in Central Surabaya and South Surabaya.

The Results of the research obtained a difference between consumers and developers about accessibility viewed from the perspective of availability of public transportation. According to consumers availability of public transportation is not a thing to consider in choosing the apartment because the majority consumers already have private vehicles, while according to developers the availability of public transportation is one of the things considered in choose the site of apartment development because it can facilitate consumers who do not have a private vehicle to move.

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