Determining rent price of Kasnariansyah flat using ability to pay analysis

F H Putri*, M M Iqbal, I Juliantina

1 Civil Engineering Department, Sriwijaya University, Palembang, Indonesia

Corresponding author’s: faradiahhildy@gmail.com

Abstract. Kasnariansyah rental flat is one of the government programs to providing affordable housing for low income people. They have economic limitations so that the rental price must be set in accordance with their ability to pay. Late rent payment to be an indication of non-conformity of ability to pay and the rental price. The purpose of this research is to determine the ability to pay of rent to residents of kasnariansyah rental flat based on ability to pay. This research is a quantitative analytic research. The results of the analysis show that ATP value owned by resident is 7.84% - 16.29% from monthly income. Groups with incomes under IDR 2,000,000 have an ATP of IDR 143,125. Groups with income of IDR 2,000,000 - Rp 2,500,000 have an ATP of IDR 217,170. Group income greater than the UMR (IDR 2,500,000) has an ATP of IDR 515,833.

Keyword: flats, rent, ATP

1. Introduction

The increase in the number of urban population leads to the problem of the inability of cities to provide affordable housing for each class (Catanese, 1992). Low-Income People are vulnerable to affordability of housing, requiring government support (UU No. 1/2011). The government has a role to ensure their access of housing through housing programs. One of the program of provide housing for low income people is rental flat. Rental price of flat facing problem to matched the operational costs that required large costs and the purpose of provided affordable rental price rates for low income. High rental price rates will complicate their access but the low rental price rates will cause non-fulfillment of operational costs. Kasnarianyah rental flat is a program of Palembang Government to providing affordable house for the low income people. Determination of rental price kasnariansyah rental flat has been regulated in the regulations does not exceed 1/3 of income and consider the amount of operational costs. The applicable rental price of flat should still be in the Ability to Pay (ATP) of low income people which is the target group of the program. However, in November - December 2017 founded late payment made by residents. In November there was a 17.01% late payment in October, 26.53% in October, and 26.87% in December, where there was an increase in the number of late payment made by resident. This shows indication of incompatibility of ATP, so it is necessary to do research about ATP residents of Kasnariansyah rental flat.
2. Literature Review

2.1. Housing

According to UN Habitat (2009), the cost of housing will be related to household income and expenditure. The majority of households will spend 25%-30% of their income to pay for housing. Von Thunen (1826) in Yunus (2012) states that the price of land approaching the Central Business District (CBD) will be higher, thus affecting house prices. In choosing a residence in consideration is the proximity of the residence with the place of activity to save on transportation costs and adjust the economic capability with the price of the house offered.

2.2. Flat

Flat is a multi-storey building built in an environment that is divided into sections that are structured functionally in the horizontal and vertical direction and the units can be used in separate (Permenpera No 14/2007). The government will appointed governance or legal entity that will have authority in the management of flat. flat is devoted to providing affordable housing for the low income people. The provision of rental flat is only temporary until they are able to buy house. The placement of the rental flat is limited to 3 until 5 years and extension beyond the time limit is allowed after the evaluation. Evaluation of feasibility of residents of rental flat done periodically. Resident who are considered to have been able to provide a house with better economic conditions, will be released their rights as residents.

2.3. Low Income People

Low income people is the target group of rental flat which is a household with fixed or temporary income, has never owned a house, and has never receive housing subsidized. In relation to the ability to pay for housing, they have economic limitations and requiring government support. McClure (2005) in Hendaryono (2010) states that the household’s ability depends on the level of income and how much its allocated to pay the house. Turner (1976) states the economic capability is blocking the low income people to acquire a house. It can be concluded that the amount of income received each month can be used as an indicator in determining the ability to pay for housing. The amount of income each month is set based on the minimum cost of living known as the minimum wage (Surat Edaran Kementrian Perumahan Rakyat No. 03/ SE/ DM/ 2004). Minimum wage in Palembang in 2017 is IDR 2,484,000 or rounded to IDR 2,500,000 (BPS Palembang, 2017). In this study, the low income people is a household with income not exceeding IDR 2,500,000 per month.

2.4. Consumption Patterns

The pattern of consumption is the composition of a household’s need for goods and services to be consumed within a certain time. The consumption pattern of each household is different. Differences in consumption patterns is not only influenced by high income low, but also influenced by the following factors (Husaini, 1997):

- level of education / knowledge;
- climate residence conditions;
- type of work;
d. the degree of civilization of the nation;
e. socio-cultural habits and conditions;
f. high low prices of goods and services;
g. growing tastes in the community

Household consumption patterns are vary, but in general in household consumption will prioritize basic needs needs. Consumption patterns are generally grouped into expenditures for food and not food. In performing analysis of ability to pay rent price of Kasnariansyah rental flat, household consumption patterns are grouping to see the trend of consumption patterns such as (BPS, 2017):

- Food expenditure is the cost incurred for food needs
- Non-food expenditure used are:
  - Transportation, namely the cost incurred to get to the place of activity
  - Study fees, which is the cost incurred for school needs. In this study because of the resident send their children to public school so that the calculated school fees is an allowance every month for children.
  - Monthly dues, ie the cost of clean water, electricity, and security
  - Communication, which is the cost to pay communication bills
  - Other, ie costs incurred for monthly needs other than those mentioned in the above points

2.5 ATP and WTP

Ability to Pay (ATP) is defined as the costs incurred by households to obtain and use facilities. The magnitude of the capability will be different for each household depending on the amount of household income, the rental price, the amenities, and the landowner’s assets (Turner, 1976). The rental price is determined by considering the quality of service of rental flat. Willingness to Pay (WTP) is the determination of the amount of rent paid by residents to provide rental flat. According to Altaf, et al (1992), the willingness to pay can estimate the magnitude of the price to be charged. Willingness to pay also can measure the benefits and satisfaction in the use of a facility. Rental rates may not exceed the value of ATP, increasing rental price rates require government intervention in the form of subsidies. The lower value of WTP than ATP will allow increased rental price rates with facility improvements. The correlation of ATP and WTP can be explained as follows:

- a. The rental price is less than the value of ATP and WTP. The economic ability of the household in paying rent is good because the applicable rent price is below the public purchasing. Household will choose to live in without choosing other alternative residences.
- b. The rental price is equal to the value of ATP and WTP. Rental rates apply almost the same as the economic capacity of the household so not all can afford the rental price. Household who can not afford the rent price will consider alternatives to other dwellings. It takes subsidy from the government so that the rental price can be in accordance with the household’s willingness.
- c. The rental price is greater than the value of ATP and WTP. The rental price is in excess of the economic capacity of the household then they will not be able to pay the rent and will choose alternative places stay. It takes subsidies to adjust the rental price to the household’s ability.

2.6 Previous Research

This research is based on preliminary research that has been done by Dafrimon (2014) who do research on the level of satisfaction in Kasnaraiaansyah rental flat on 5 dimensions of tangibles,
reability, responsiveness, empathy, and assuranse. The results showed residents were satisfied with the facilities offered by rental flat. In the next research is suggested to do further research for controlling utilization Kasnariansyah rental flat. Previous research on the ability to pay and willingness to pay that has been done previously as follows:

a. Ibem (2011) evaluates housing by assessing the satisfaction of the residents. This study uses variables such as house attributes, residents character, and management management. The analysis was done by using regression method. The results of the study found that the satisfaction of residents to live in housing is influenced by ownership, housing procurement strategy, house area, income and age.

b. Hidayati (2007) conducted research on rental prices of flat in Tambak Village. Identification of rental price is done with asset valuation and operational costs and management. WTP was analyzed by using regression analysis and found that operational costs, maintenance costs, land values and socio-economic conditions affect the WTP.

c. Long, et al (2009) estimated the willingness to pay on housing in the middle of the city. Variables such as income, natural attributes, social environment, public facilities, environmental quality, consumption patterns, and security were analyzed using regression. WTP is expressed as revenue relationship and Quality of Life (QoL). From the research result, it is found that influencing the WTP model in the middle of the city are income, green space, population, and education cost.

d. Mostafa (2008) uses economic character, market character, household preference, consumption pattern to identify relationship between rent cost with consumption pattern and preferences of choosing residence. In this study between economic character and preference is not linked. The affordability of housing provided by the government will be influenced by economic factors (rent and house costs), location (proximity of public facilities, market, workplace, access to public transport), room size (house size, number of rooms), and quality of building.

e. Ayoola and Amole (2014) identify house prices for the poor will be influenced by socio-economic characteristics, preferences. It is recommended to conduct a study of preference values.

f. Latumahina and Anastasia (2014) examine WTP on the concept of green house (green house) by using green home features variables, green home visual appearance, and environment relationshi. The analysis was done by using Structural Equation Modeling (SEM) method.

g. Setiadi (2015) conduct research satisfaction residents of Kemayoran flat by doing the correlation between the tower attributes and the variables that make it. From the research result, it is found that tariff variable, transportation access, proximity to the market, and the closeness of the health center have a strong correlation to its attributes.

3. Research Methodology

The research will be a descriptive research with a quantitative-qualitative approach. It explains the causal relationship between independent variables and explicit bound variable by describing a phenomenon or state

3.1 Sample

Sampling of respondents was done by using purposive sampling technique. The object of the research population is the household of Kasnariansyah rental flat stated. The population number
of households of Kasnariansyah flat is 294 household. To get the number of respondents, the population will be calculated by the slovin equation with a degree of error is 10%. Election 10% of degree of error because the character of household are homogenous. The calculation showed below (Sugiyono, 2017):

\[ n = \frac{N}{1 + Ne^2} \]  

\[ n = \frac{294}{1 + 294 \times 0.1^2} \]

\[ n = 73 \]

Based on the calculation, the number of respondents is 73 respondents. The number of respondents obtained will be proportionally divided by 36 respondents who have made late payment and 37 respondents who are always on time in paying. Respondents were distributed based on blocks and floors of occupied towers.

3.2 Analysis Method

Ability to pay analysis of rental price is done by calculating the income per month received by each household respond to the pattern of consumption. The remaining value is the amount of ability to pay rent (ability to pay). The amount of ability to pay value is calculated as follows (BPS, 2017):

\[ \text{ATP} = \text{income} - \text{consumption} \]  

In which,

Consumption = food + transport + study fees + monthly dues + communication + others
4. Research Result

4.1 Consumption Pattern of Kasnariansyah Rental Flat Household

The consumption pattern illustrates the spending trends of needs that are influenced by social and economic factors. The higher the socio-economic status of a person, the greater the expenditure and vice versa. Consumption patterns can be seen by calculating the amount of income per month on consumption expenditure. If income increases then consumption spending will increase and vice versa. Consumption pattern of Kasnariansyah rental flat household can be seen in table 1.

| Variables       | < IDR 2,000.000 | IDR 2,000.000 – IDR 2,500.000 | > IDR 2,500.000 |
|-----------------|-----------------|-------------------------------|-----------------|
| Consumption (IDR) | %               | Consumption (IDR) | %                      | Consumption (IDR) | %                      |
| Food            | 1,037,500       | 1,152,830             | 1,483,333         | 46.84               |
| Transport       | 156,250         | 184,906               | 291,666           | 9.21                |
| Study fees      | 31,250          | 90,377               | 139,167           | 4.39                |
| Monthly dues    | 169,375         | 189,623               | 265,833           | 8.39                |
| Communication   | 100,000         | 149,057               | 195,833           | 6.18                |
| Others          | 187,500         | 233,962               | 275,000           | 8.68                |
| Housing         | 143,125         | 217,170               | 515,833           | 16.29               |
| Total           | 1,825,000       | 2,215,094             | 3,166,667         | 100                 |

If the higher expenditure is for food, the household will be categorized as poor. Husaini (1997) stated that low-income people will spend more than 50% of income for food consumption. The allocation of income for food consumption is getting smaller with higher income so that the allocation of income can be allocated for non-food needs. Table 1 shows that the higher the income received by the respondent’s household, the higher the allocation for housing means the higher the value of ATP.

4.2 Ability to Pay Analysis

In this study is used Kasnariansyah rental flat occupancy rules. To be able to lived in Kasnariansyah rental flat, household has been limited by 4 members. The household who lived in Kasnariansyah rental flat is a young family who have children under 18 years old. The value of ability to pay (ATP) is determined by monthly income and expenditure. ATP values are calculated using the formula in sub section 3.2. the grouping of respondents by monthly income as described in sub section 2.3. ATP value can be seen in table 2.
Tabel 2. Ability to Pay Value

| ATP (IDR)          | < IDR 2,000,000 | IDR 2,000,000 – IDR 2,500,000 | > IDR 2,500,000 |
|--------------------|----------------|-------------------------------|----------------|
|                    | frequency | %   | frequency | %   | frequency | %   |
| < 160,000         | 8        | 100 | 53       | 100 | 12        | 100 |
| 160,000           | 3        | 37.50 | 43      | 79.25 | 12      | 100 |
| 215,000           | 0        | 0   | 26       | 49.05 | 12      | 100 |
| 220,000           | 0        | 0   | 25       | 47.17 | 12      | 100 |
| 250,000           | 0        | 0   | 20       | 37.74 | 12      | 100 |
| 280,000           | 0        | 0   | 14       | 26.14 | 12      | 100 |
| 315,000           | 0        | 0   | 7        | 13.21 | 12      | 100 |
| 355,000           | 0        | 0   | 2        | 3.77  | 9       | 75  |
| 400,000           | 0        | 0   | 0        | 0    | 6       | 50  |
| Average           | 143,125  |     | 217,170  |     | 515,833  |   |
| Minimum           | 140,000  |     | 60,000   |     | 325,000  |   |
| Maximum           | 200,000  |     | 390,000  |     | 910,000  |   |

1. Income below IDR 2,000,000
The income group below IDR 2,000,000 has an average ATP for IDR 143,125. The average value of this ATP is lower than the current rental price, where the lowest rental price is IDR 160,000. The highest value of ATP that can be paid by the respondent is IDR 200,000.

2. Income IDR 2,000,000 - IDR 2,500,000
The average value of ATP in the income group IDR 2,000,000 - Rp 2,500,000 for IDR 214,340. There are 20.75% of respondent household in this group who do not have the ability to pay where the value of ATP, average IDR 145,000, is below the lowest rental price.

Problems founded in the income group IDR 2,000,000 - IDR 2,500,000 is a mismatch between the value of ATP owned by the respondent and rental price. This group is the main target of rental flat which is designated for low income people. The respondent has the average highest paying ability at a rental price of IDR 220,000. This means that there are respondents who choose a unit whose rental price exceeds ATP value. The late payment is caused by respondents who can not afford to pay rent.

3. Income more than IDR 2,500,000
Group income exceeding IDR 2,500,000 has an average ATP value of IDR 515,000. This shows that in this income group, respondents have the ability to pay rent. ATP value is above the current highest rental price of IDR 400,000.

From the above explanation founded the ability to pay scheme of Kasnariansyah rental flat. This scheme applies to households with 4 members and has 2 children not more than 18 years old. Grouping the ability to pay rent based on income can be seen in the table 3:
### Table 3. Ability to Pay Scheme of Kasnariansyah Rental Flat

| Block Floor | Price Rent (IDR) | Income (IDR) | < 2,000,000 | 2,000,000-2,500,000 | > 2,500,000 |
|-------------|-----------------|--------------|-------------|---------------------|-------------|
| AB          |                 |              |             |                     |             |
| 1           | 280,000         | x            | x           | √                   |             |
| 2           | 250,000         | x            | x           | √                   |             |
| 3           | 220,000         | x            | x           | √                   |             |
| 4           | 160,000         | x            | √           | √                   |             |
| GF          | 400,000         | x            | x           | √                   |             |
| CD          |                 |              |             |                     |             |
| 1           | 355,000         | x            | x           | √                   |             |
| 2           | 315,000         | x            | x           | √                   |             |
| 3           | 280,000         | x            | x           | √                   |             |
| 4           | 215,000         | x            | √           | √                   |             |

x = not occupied
√ = occupied

### 4.3 Correlation of ATP and WTP

Correlation of ATP and WTP can be matched between ATP and rental price. Correlation of ATP and WTP can be seen in Table 4.

### Table 4. Correlation of ATP and WTP

| Income | < IDR 2,000,000 | IDR 2,000,000-2,500,000 | > IDR 2,500,000 |
|--------|-----------------|------------------------|-----------------|
|        | freq | %    | freq | %    | freq | %    |
| On time payment ATP<WTP | 0    | 0.00 | 9    | 12.33 | 0    | 0.00 |
| ATP=WTP | 0    | 0.00 | 5    | 6.85  | 0    | 0.00 |
| ATP>WTP | 2    | 2.74 | 11   | 15.07 | 10   | 13.70 |
| Late payment ATP<WTP | 6    | 8.22 | 26   | 35.62 | 0    | 0.00 |
| ATP=WTP | 0    | 0.00 | 2    | 2.74  | 0    | 0.00 |
| ATP>WTP | 0    | 0.00 | 0    | 0.00  | 2    | 2.74 |
| Total   | 8    | 10.96 | 53   | 72.60 | 12   | 16.44 |

Based on Table 4 it is found that the late payment in paying rent is caused by the value of ATP which is lower than the value of WTP. In the income group less than IDR 2,000,000, the late payment due to the lower ATP value of the WTP is very likely to occur because this income group does not have ATP to pay rent of Kasnariansyah rental flat. The income group of IDR 2,000,000 - IDR 2,500,000 is the most populated group of flat and is the main target of the residents. 47.95% of the respondents have ATP values lower than the WTP where 35.62% of the respondents in the residents had paid lately and 12.33% tried to pay the rent on time. The lately payment in paying rent in this group due to the inability to pay the rent. This indicates a mismatch between the ability to pay and the rent price of flat units. Although not all residents have the ability to pay...
rent, but residents flat still choose to stay. Most respondents stated that the condition of Kasnariansyah flat are satisfied. Respondents did not demand a lot of improvement of flat facilities but only requires damage repair.

5. Conclusion

a. ATP value owned by resident is 7.84% -16.29% from monthly income. Groups with incomes under IDR 2,000,000 have an ATP of IDR 143,125. Groups with income of IDR 2,000,000 – IDR 2,500,000 have an ATP of IDR 217,170. Group income greater than the minimum wage of Palembang city (IDR 2,500,000) has an ATP of Rp 515,833.

b. The result of ATP and WTP relationship shows that 56.17% of occupants have ATP < WTP, ATP = WTP of 9.59% and ATP> WTP of 34.25%.

6. Reference List

[1] Altaf et al. 1992. Willingness to Pay for Water in Rural Punjab, Pakistan. Washington D.C: UNDP-World Bank Water and Sanitation Program.

[2] Ayoola dan Amole. 2014. “The Value of Housing among the Poor in Ilesa, Osun State Nigeria”. Architecture Research, Vol. 4 No. 1A, 2014, pp. 45-54. doi: 10.5923/s.arch.201401.06.

[3] BPS. 2017. Palembang dalam Angka 2017. Downloaded in December 2017.

[4] Catanease. 1992. Perencanaan Kota. Jakarta: Erlangga

[5] Dafrimon. 2014. Tingkat Kepuasan Berdasarkan Respon Penghuni Rumah Susun Sewa Kasnariansyah Palembang. PILAR Jurnal Teknik Sipil, Volume 10, No. 1, Maret 2014 ISSN: 1907-6975

[6] Hendraryono. 2010. Evaluasi Pengelolaan Rusun Pekunden Dan Bandarharjo Semarang. Semarang: Dipongoro University

[7] Hidayati, Indar. 2007. Analisa Penetapan Harga Sewa Rumah Susun Sederhana Sewa (Studi Kasus Rusunawa di Desa Tambaksawah Kec. Waru Kab. Sidoarjo). Surabaya: Institut Teknologi Sepuluh Nopember.

[8] Husaini.1997. Metode Pengukuran Konsumsi Makanan. Jakarta

[9] Ibem, Eziyi Offia. 2011. Evaluation of Public Housing in Ogun State, Nigeria. Nigeria: Architecture, Covenant University.

[10] Latumahina dan Anastasia. 2014. Kesediaan untuk Membayar pada Green Residential. FINESTA Vol. 2, No. 1, (2014) 82-86.

[11] Long, et al. 2009. Estimating the Willingness to Pay for Urban Housing in Chinese Cities. Tsinghua Science and Technology. ISSN11007-0214/ll218llpp360-366 Volume 14.

[12] Mostafa, Anirban. 2008. Rental Housing Provision Based on Affordability of the Lower End Populace: The Case of Hongkong. PhD. Thesis. Departement of Building and Real Estate The Hongkong Politechnic University.

[13] Peraturan Menteri Negara Perumahan Rakyat Nomor : 14 /Permen/M/2007 Tentang Pengelolaan Rumah Susun Sederhana Sewa.

[14] Setiadi, Hadi. 2015. Analisis Faktor Berpengaruh terhadap Kepuasan Penghuni Rumah Susun Sewa Studi Kasus Rumah Susun Sewa Kemayoran. Jurnal Permukiman Vol 10. N0.1. Mei 2015. Hal 19-35.

[15] Sugiyono. 2012. Metode Penelitian Kualitatif Kuantitatif Bandung: Alfabeta.

[16] Surat Edaran Kementrian Perumahan Rakyat No. 03/ SE/ DM/ 2004
[17] Turner. 1976. *Housing by People*. London: Marion Boyars
[18] UN-HABITAT. 2008. *Perumahan Bagi Kaum Miskin di Kota-Kota Asia*.
[19] Undang-Undang Republik Indonesia Nomor 1 Tahun 2011 Tentang Perumahan dan Kawasan Permukiman
[20] Yunus.S. 2012. *Struktur Ruang Kota*. Yogyakarta: Pustaka Pelajar