Socioeconomic and environmental factors affecting the preference of residents to stay at the simple rental housing

S Saraswati* and S Rohman
Department of Master Program in Regional and City Planning, Faculty of Post-graduate, Universitas Islam Bandung, Bandung, Indonesia

*sarashasta@gmail.com

Abstract. Goal No. 11 in the Sustainable Development Goals (SDGs) is to make cities and human settlements inclusive, safe, resilient and sustainable, with targets by 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums. Affordability of housing will depend on the following factors Sastra and Marlina: (1) Per capita income; (2) education level; (3) socio-economic; and (4) political and security situation. According to Turner there is a link between a person's socioeconomic conditions with the priority scale of living needs and priority housing needs, and for low-income people, the shape and quality of the house occupies the last fulfillment priority. Are socio-economic factors can influence the preference for living in low-cost housing? This research aims to determine the magnitude of the influence of socioeconomic factors on the preferences of residents of simple rental flats and what socioeconomic factors most influence the preferences of residents and their correlation with other factors. The method uses mixed methods, these are between qualitative and quantitative methods. Collecting data through direct observation activities on the object of research, and distributing questionnaires to 146 samples of respondents of all rusunawa in Bandung City, Indonesia. The results of this study, the correlation analysis concluded that a strong factor in the relationship between the preferences of respondents who occupy low-cost housing is the rental price and income.

1. Introduction
To fulfill of the SDGs, especially for goal no 11, several countries have built housing for low-income communities through the construction of flats. So with Indonesia, has built a simple rental flats called rusunawa. At the beginning, this program did not get a positive response from the low-income people, but now are fully booking and the waiting list has been very large. This has become an anomaly and is the background for formulating the problem in this research. The Inclusive, safe, resilient and sustainable settlements are target that must be achieved by all cities in the world. This is stated in the Sustainable Development Goals 2016-2030 [1]. Sustainable urban settlements need to be provided quickly to alleviate the problem of illegal settlements, slums and backlogs of settlement. The backlog phenomenon has caused landed house prices are become very expensive and not affordable by low-income people. One solution is to procure simple flats, with the concept of vertical residential houses. Society, especially in Indonesia in general, still prefers landed houses over apartments for several reasons such as cultural, psychological, social, and ownership factors [2-4]. Therefore, until 2013, Rusunawa was less interested and many were neglected. One of the most interesting phenomena is the interest of the community towards flats in 2019 starting increased very significantly, with the number...
of waiting lists reaching 3,300 households (the case of Bandung City-Indonesia) [5]. This becomes very necessary to research, what factors caused the shift in preferences. This study revealed the socioeconomic factors that most influence changes in preferences.

2. The objectives of this study

- Identify the socio-economic characteristics
- Identifying the socioeconomic factors that most influence people's preferences to live in rusunawa (flat for the lowest income).

3. Methodology

3.1. Data collection

Data collection techniques are: (a) direct observation; (b) Interviews with residents and stakeholders; (c) distribution of questionnaires and recording to respondents in all rusunawa in Bandung City, Indonesia.

3.2. Analysis

3.2.1. Mix method. Mixed Method is research that uses qualitative and quantitative fit the needs of the cases studied [6].

3.2.2. Path analysis. This analysis is to test the magnitude of the contribution indicated by the path coefficient on each diagram of the causal relationship between variables X1, X2, X3, X4, X5 and X6 with respect to Y [7].

Path Structure Equations:

\[ Y = YX1X1 + YX2X2 + YX3X3 + YX4X4 + YX5X5 + YX6X6 + \varepsilon \]

3.2.3. Correlation analysis method. The Correlation analysis illustrates the closeness of the relationship between the independent variable (free) income (X1), rent (X2), lifestyle (X3), life cycle (X4), family structure (X5) and environmental characteristics (X6) with the dependent variable in the form community preference (Y).

3.2.4. Measurement scale. Measurement scale in this study is the ordinal scale, sorting the answers from the lowest level to the highest level according to certain attributes. Whereas the determination of scores using the ordinal scale is classified into 5 categories:

- The answer category strongly agrees with a score of 5.
- Answer categories agree with a score of 4.
- Hesitating given a score of 3
- The response category disagrees with a score of 2.
- The category of answer strongly disagrees with a score of 1.

Figures of interpretation [8]: as follows:

\[ M = \frac{\sum (f \times x)}{n} \]

Information :
\[ M = \text{acquisition of interpretation figures} \]
\[ f = \text{answer frequency} \]
\[ x = \text{weighting (value scale)} \]
\[ n = \text{the total number of answers.} \]
For decision making, the following interpretation interval criteria are used:

| No | Interval       | Interpretasi |
|----|----------------|--------------|
| 1  | 4.21 - 5.00    | Very good    |
| 2  | 3.41 - 4.20    | Well         |
| 3  | 2.61 - 3.40    | Enough       |
| 4  | 1.81 - 2.60    | Less         |
| 5  | 1.00 - 1.80    | Very less    |

4. Results and discussion

4.1. Socio-economic characteristics
Residents of Rusunawa between 34 to 44 years (39%), 45-53 years (25%), >53 years (25%), 27-35 years (14%) and 18-26 years (4%). Education level, the majority of respondents graduated from high school (60%), elementary school (18%), junior high school (14%) and bachelor (9%). Residents with income between 1 to 3 million rupiah (64%), 3 to 4 million rupiah (32%) and <1 million rupiah (3%). This result is in accordance with the goal of building houses for the socioeconomic low income community.

4.2. Discussion of research variables

4.2.1. Income. The current income can be sufficient for daily living in Rusunawa, respondents answered strongly agree (6%), agree (74%), disagree (19%) and disagree (1%). The majority of residents feel that their current income is still sufficient to meet the cost of living in a flat. Spending on electricity, clean water, garbage and other fees, they answered strongly agree (29%), agree (64%), less agree (7%). Ability to save, they answered strongly agree (37%), agree (37%), disagree (23%) and strongly disagree (3%). Those who cannot save due to meet children’s education costs and daily expenses.

4.2.2. Rental price. Residents are ready to pay rent (50%), strongly agree or very ready (41%), and under-prepared (9%). The main reason for the community is that they cannot afford to buy a house outside of a flat, so they choose to pay rent.

4.2.3. Lifestyle. Rusunawa has complete infrastructure which is quite good, such as education, cooperatives, mini markets, and children's playground. Respondents were satisfied (68%) and very satisfied (32%). The best thing is a safe children's playground. The community also moved to this Rusunawa because of other environmental prestige (64%), close to the place of work (46%), easy in daily shopping (35%).

4.2.4. Life cycle level. Rusunawa is suitable for young and newly married couples (57%), cost of living is relatively cheap so it has the opportunity to save compared to contracting a house in public housing. Rusunawa is also suitable for couples who have small children (40%) and only have children (33%). This relates to lifestyle, economic ability, and environment to maintain the safety of children compared to living in public housing.

4.2.5. Family structure. Rusunawa residential units are suitable for living in the small family of 3 to 4 people (64%), it was inhabited by families with family members >4 people (extended family). The main reason is that the Rusunawa residential unit will be very crowded and uncomfortable if more than 4 people live, moreover inhabited by 2 families in 1 residential unit.
4.3. Occupant preference
Respondents socio-economic conditions while living in Rusunawa were getting better (57%). This is because the cost of living is cheaper; condition of the building is suitable (56%). Strategic location (57%). Completeness of infrastructure is considered adequate in accordance with the value of the existing rent (69%). The safety and comfort of living in a flat feels warm surrounded by neighbors who are close to each other (57%).

4.4. Path analysis
To find out the influence between income variables (X1), rental prices (X2), lifestyle (X3), life cycle (X4), family structure (X5) and community social environment characteristics (X6) and their effects on preferences, tabulated data applied with Path Analysis.

The hypothesis proposed: income (X1), rental price (X2), lifestyle (X3), life cycle (X4), family structure (X5) and social environmental characteristics (X6) influence community preferences (Y), both simultaneously or partially. If the research hypothesis is stated in the statistical hypothesis is:

- Reject Ho if F arithmetic F table (0.05) (nk-1) There is no influence of income (X1), rent (X2), lifestyle (X3), life cycle (X4), family structure (X5) and characteristics the social environment of the community (X6) towards community preferences.
- Accept Ho if Fcalculate Ftable (0.05) (nk-1) There is an influence of income (X1), rent (X2), lifestyle (X3), life cycle (X4), family structure (X5) and environmental characteristics social society (X6) towards community preferences.

Based on the table above with the value of sig. of 0,000 < 0.05, it can be said to bring together all variables, namely: income (X1), rental price (X2), lifestyle (X3), life cycle (X4), family structure (X5) and characteristics the social environment of the community (X6) has an influence on people's preferences (Y).

Table 2. Regression coefficients.

| Model          | Unstandardized Coefficients | Standardized Coefficients | t    | Sig. |
|----------------|----------------------------|---------------------------|------|------|
|                | B    | Std. error | Beta |      |      |
| (Constant)     | 15,427 |   3,992   |      | 3,865 | 0,006 |
| Income         | 1,077 |         0,154 | 0,231 | 4,613 | 0,001 |
| Rental Price   | 0,311 |         0,246 | 0,255 | 5,736 | 0,000 |
| Lifestyle      | 0,281 |         0,121 | 0,070 | 0,836 | 0,425 |
| Live level cycle | 0,521 |     0,131 | 0,003 | 0,029 | 0,698 |
| Family structure | 0,366 |     0,259 | 0,225 | 2,825 | 0,005 |
| Social environmental characteristic | 2,543 |     0,012 | 0,211 | 2,543 | 0,012 |

a. Dependent variable: preference
Partially, the proposed hypothesis is as follows: income (X1), rental price (X2), lifestyle (X3), life cycle (X4), family structure (X5) and social environmental characteristics (X6) influence preferences community (Y). If the research hypothesis is stated in the statistical hypothesis is:

- Reject Ho if the arithmetic table (0.05) (nk-1) influence of income (X1), rent (X2), lifestyle (X3), life cycle (X4), family structure (X5) and characteristics the social environment of the community (X6) towards community preferences is partially significant.
- Accept Ho if the arithmetic table (0.05) (nk-1) influence of income (X1), rent (X2), lifestyle (X3), life cycle (X4), family structure (X5) and characteristics the social environment of the community (X6) towards community preferences is partially insignificant. The value of significant for each variable as follows:

Table 3. Significance of path analysis coefficients.

| Model                        | T count | Sig. | Significance value | Significance |
|------------------------------|---------|------|--------------------|--------------|
| Income                       | 4,613   | 0,001| 0,05               | Significant  |
| Rental Price                 | 5,736   | 0,000| 0,05               | Significant  |
| Lifestyle                    | 0,836   | 0,425| 0,05               | Not Significant |
| Life level cycle             | 0,029   | 0,698| 0,05               | Not Significant |
| Family structure             | 2,825   | 0,005| 0,05               | Significant  |
| Social environmental charact| 2,543   | 0,012| 0,05               | Significant  |

Four factors provide a significant influence, namely income, rent, family structure and social environmental characteristics of the community, while the other two factors are not significant influence, namely lifestyle and life-cycle cycles.

Table 4. Path coefficient value.

| Variabel straight not straight through | coefficient influence (%) |
|---------------------------------------|----------------------------|
| x1 | x2 | x3 | x4 | x5 | x6 |                             |
| (x1) | 0.054 | 0.020 | 0.004 | 0.000 | 0.012 | 0.011 | 0.100 | 10.040 |
| (x2) | 0.134 | 0.031 | 0.009 | 0.000 | 0.030 | 0.028 | 0.233 | 23.314 |
| (x3) | 0.005 | 0.001 | 0.002 | 0.000 | 0.001 | 0.001 | 0.010 | 0.998 |
| (x4) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.002 |
| (x5) | 0.051 | 0.012 | 0.019 | 0.004 | 0.000 | 0.011 | 0.095 | 9.525 |
| (x6) | 0.045 | 0.010 | 0.016 | 0.003 | 0.000 | 0.010 | 0.084 | 8.439 |

The effect of simultaneous or overall variables is 0.523 or 52.32%, where the remaining community preferences are influenced by other variables, and the biggest influence is partially given by the rental price variable, then followed by the income variable.

4.5. Correlation analysis

Correlation analysis illustrates the closeness of the relationship between variables X and Y or the relationship between independent income variables (X1), rental prices (X2), lifestyle (X3), life cycle (X4), family structure (X5) and characteristics of the social environment of society (X6) the dependent variable is community preference (Y). In the multiple correlation coefficient test if the value of the calculation results close to one (1) means there is a close relationship between all independent variables with the dependent variable. Conversely, if the calculation value is far from the number one (1) it means that the relationship is not close between the independent variables to the dependent variable.
Table 5. Pearson correlation.

| Model                              | X1  | X2   | X3   | X4   | X5   | X6   | Y    |
|------------------------------------|-----|------|------|------|------|------|------|
| Income (X1)                        | 1   |      | .434 | .031 | .249 | .187 | .362 |
| Rental Price (X2)                  |     | 1    |      | .206 | .370 | .262 | .067 |
| Lifestyle (X3)                     | .031| 1    |      |      | .243 | .138 | .259 |
| Live level cycle (X4)              | .249| .370 |      |      | 1    | .425 | .093 |
| Family structure (X5)              | .154| .262 | .138 |      |      | 1    | .231 |
| Social environmental characteristic (X6) | .187| .067 | .259 |      |      |      | 1    |
| Preference (Y)                     | .362| .439 | .073 | .149 | .334 |      | 1    |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The strongest correlation values between the dependent variable and the independent variables are sorted by rent, income, family structure, social characteristics, life cycle and lifestyle.

5. Conclusion

- Significant value of 0.000 < 0.05, it can be concluded that together all variables, namely: income (X1), rent (X2), lifestyle (X3), life cycle (X4), family structure (X5) and the characteristics of the social environment of society (X6) have an influence on the preferences of society (Y).
- Simultaneous influence of 0.523 or 52.30%, where the community preferences are influenced by other variables. This shows that socio-economic factors have a significant influence on the preferences of the residents in determining living in low-rise apartment (rusunawa) that is equal to 52.3%. The remaining 47.7% is influenced by other factors such as accessibility, completeness of facilities and infrastructure, condition of buildings, security, comfort, management systems, maintenance, as well as cleanliness, regularity and beauty.
- Partially, the level of significance of the influence of each income variable (X1), rent (X2), lifestyle (X3), life cycle (X4), family structure (X5) and social environmental characteristics (X6) on community preferences (Y), namely:
  a. Its influence income is significant
  b. Rental prices have a significant effect
  c. Lifestyle influence is not significant
  d. The life cycle level has no significant effect
  e. Family structure is significant
  f. Characteristics of a significant impact on the social environment
- Partially, the biggest influence is given by the rental price variable followed by income, namely:
  a. Revenue (x1) = 10.04%
  b. Rental price (x2) = 23.31%
  c. Lifestyle (x3) = 0.99%
  d. Life cycle rate (x4) = 0.002%
  e. Family structure (x5) = 9.53%
  f. Characteristics of lingsos masy. (x6) = 8.44%
- The most influential socioeconomic factor on people’s preference for living in flats is the rental price with the magnitude of influence 23.31%.
- Overall, each variable has a correlational level of:
  a. Rental price (X2) = 0.439
  b. Revenue (X1) = 0.362
  c. Family structure (X5) = 0.334
d. Characteristics of lingsos masy. (X6) = 0.312  
e. Life cycle level (X4) = 0.149  
f. Lifestyle (X3) = 0.073

- The correlation between rental prices and income to occupant preferences yields a value of 0.439 and 0.362, indicating the correlation possessed by the two variables is very strong to the occupants preferences.

Acknowledgment
The last but not least, I would like to thank to Bandung Islamic University for providing support to the author to be able to complete this research up to reporting.

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