HOUSING SATISFACTION INDICATORS IN INDONESIA, ANALYSIS OF SPTK 2017

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ABSTRACT

The issue of housing regarding livable homes is one indicator in the 11th Sustainable Development Goals (SDGs). At present, the limitations of the unliveable houses database and the lack of information regarding the housing satisfaction determinants cause housing problem in Indonesia. The studies of housing satisfaction determinant are still rarely found in Indonesia. Therefore, this study aims to obtain individual satisfaction indicators of the house's quality. This study uses the latest housing satisfaction microdata of Survei Pengukuran Tingkat Kebahagiaan (SPTK) 2017. The data is analysed with a logit model to obtain determinants of housing satisfaction. Estimation results show that women tend to feel more satisfied than men. Likewise, someone who lives in an urban tends to be more confident than someone who lives in a rural. Risen satisfaction of housing conditions is directly proportional to growing age, increased education and income. Homeownership status, livable homes, area of the house, as well as mastery of life support facilities such as vehicles, computer electronics, audio or visual electronics, and electronic communication devices increase the chances of housing satisfaction. Besides, we found different results related to marriage. Supplementing life support tools in analysis build marriage shifts insignificant.

Keywords*: housing satisfaction, subjective well-being, logit*

A. INTRODUCTION

People must satisfy their basic needs, such as a house. Fulfilling housing need provides more extensive satisfaction experience compared to achieving food and clothing. Sastra and Marlina (2013) said that the house protects its inhabitants from natural and animal disturbance. The house's function is as a survival guarantee resting place. Also, the house is a safe place to protect wealth and provide safety for whatever is in it. As said by Maslow (1943) in human need theory, the most basic needs must be met or fulfilled first before meeting the requirements that are one level above it.

The basic need for housing is not only in the building's mastery/ownership but also in the building's quality that is livable. According to Law Number 1 of 2011, housing needs of Indonesia society are sufficient for building's property and building's physical quality. The house physical condition is the quality of major components such as roofs, walls and floors. The quality of livable buildings must be able to guarantee the safety, health, and sustainability of the lives of its inhabitants.

The issue of housing regarding livable homes is a severe concern for Indonesia. The government must address it immediately. The household proportions that have access to decent and affordable housing is one indicator in the 11th Sustainable Development Goals (SDGs). The percentage of households occupying unliveable homes in 2017 was 4.93 per cent and 4.30 per cent in 2018 (BPS, 2018). There is a decrease in rate, but the value is not too significant. The limitations of the unlivable homes database cause an insignificant decrease in proportion. The limited database generates the implementation of government programs that are not on target, budget, and time (BPSDM-PUPR, 2016).

In addition to the limited housing databases problem, factors information that affect housing satisfaction is also critical for successful government programs. Housing satisfaction determinant data also increases individual life satisfaction (Clapham, 2010). Research in Korea found that homeownership status and house's area influence housing satisfaction (Rudolf and Potter, 2015). Then, Zhang et al. (2018) found that individual characteristics and homeownership status significantly influence Chinese housing satisfaction in urban areas. Housing satisfaction determinant studies are still rarely seen in Indonesia. So far, house satisfaction studies in Indonesia have only been carried out in specific environments, such as housing complexes. Rahman and Rahdriawan (2017) found that housing services (the garbage disposal and environmental cleanliness) significantly influence housing satisfaction in Grand Tembalang Regency Semarang. Because of the importance of housing satisfaction determinants and the lack of housing satisfaction research in Indonesia, the housing satisfaction study is fascinating to study.

Similar to previous research, this study aims to obtain individual satisfaction indicators of the house quality. The difference lies in the research's object, which is individuals as Indonesian society. The novelty in this study includes new independent variables in the form of livable houses characteristic, which is the 11th SDGs indicator, and life support facilities. The added values of this study are the use of the latest data and the first individual satisfaction determinant study of housing quality in Indonesia.

B. LITERATURE REVIEW

Now, happiness studies steal world attention, especially in economic. Economists are aware that Gross Domestic Product (GDP) have various weaknesses. Some of GDP weaknesses are (1) it focuses only on market prices, (2) it does not count non-legal transactions, i.e. gambling and prostitution, and (3) it disregards environmental conditions (Piekałkiewicz, 2017). The weaknesses of GDP make the world think that there is another measure of well-being besides matter, specifically happiness or subjective well-being.

Easterlin's research (1974) pioneered the background of the happiness study. Easterlin researches the relationship of income and happiness in three different conditions, i.e. a country at a time, several countries at a time, and a country in different periods. His research shows that the influences of income on happiness in these conditions are different. He concluded that the relationship was so diminutive. It could even be said non-existent. The results of these studies became known as Easterlin Paradox (Easterlin, McVey, Switek, Sawangfa, and Zweig, 2010).

Subjective well-being is a way for people to evaluate their life cognitively and affectively (Diener and Tay, 2015). Cognitive evaluation relates to the way assesses satisfaction with their life as a whole or specific life aspect. In contrast, affective evaluation places more emphasis on pleasant and unpleasant emotions as a reaction to events in their life.

Related to housing satisfaction studies, the concept of measuring housing satisfaction can refer to the idea of measuring happiness (Zhang et al., 2018). Even though the definition of housing satisfaction and happiness in psychology is different, the way of measuring both has the same concept. Housing satisfaction only covers the housing aspect. It is also part of happiness or subjective well-being. However, the idea of measuring housing satisfaction and happiness is the same. Namely, the response given by each individual varies depending on their perceptions. Accordingly, housing satisfaction measurement can refer to subjective well-being measures. Housing satisfaction is satisfaction or dissatisfaction feeling as a reaction to the housing need achievement (Mohit and Azim, 2012). The definition is the same as fulfilling the housing need. Housing corporations usually use it as a measure of successful projects.

In general, many studies use personal attributes as independent variables that influence home satisfaction. This study uses individual characteristics such as gender, age, marital status, urban or rural areas, education, and income. Huang, Du, and Yu (2015) proved that women opportunity in China to provide a satisfying house condition assessment is more leading than men. A study in Malaysia found that age has a negative correlation with the house satisfaction level (Mohit, Ibrahim, and Rashid, 2010). In contrast, another study found that it positively correlates with housing satisfaction (Lu, 2002; Varady, Walker, and Wang, 2001).

Marriage provides an opportunity for Chinese house satisfaction higher than else (Lu, 2002). Research in Korea shown that living in urban areas has a higher chance of feeling satisfied than living in rural areas (Hwang, Choi, and Park, 2014). Education provides positive satisfaction in urban China (Ren and Folmer, 2017) but not in Ghana (Baiden, Arku, Luginaah, and Asiedu, 2011). Another study conducted by Hu (2013) found that income has a positive effect on housing satisfaction. In addition to individual characteristics, this study also included house characteristic variables in the form of homeownership status, house areas, livable house, and life support facilities. In term of homeownership status, a respondent is said to have a house if one of the household members is the owner of the house occupied (BPS, 2017). For this study, we use floor areas to predict house areas. Research conducted by Huang et al. (2015), Rudolf and Potter (2015) and Zhang et al. (2018) proved that homeownership and house areas have a strong positive impact on housing satisfaction. Meanwhile, both variables livable houses and life support facilities are discussed in the next section. It is caused by they are new variables that differentiate them from previous studies.

Law Number 1 of 2011 states a house has functioned as a habitable residence. Besides, one of the 11th Sustainable Development Goals (SDGs) indicators are the household proportions that have access to decent and affordable housing (BPS, 2018). Awareness of livable house quality is essential to make a better community life quality and the success of Indonesia's development program. Both are the

reason for the inclusion of habitable housing conditions as independent variables in the housing satisfaction model. The definition of a livable house in this study refers to national and global definitions (BPS, 2018). It is a house with a per capita house area at least 7.2 m^2. Its floor quality is better than soil/bamboo. Its wall quality is better than bamboo. Its roof quality is better than palm fibre/sago palm. Its toilet facilities are own, shared, or the public.

In addition to adding the variable livable homes, this study also includes ownership or control of the life support assets variables such as vehicles, electronic devices, and communication tools. These assets facilitate a person in carrying out daily activities. The convenience makes comfort and happiness. Therefore, control of these assets will impact housing satisfaction.

Previous housing satisfaction research was almost entirely carried out in the Asian region. So, previous research becomes a reference for the predictions. Based on its results, we propose the hypotheses for this study. The first hypothesis is that most of the individual characteristics positively associated with housing satisfaction except gender. These characteristics are age, marital status, classification of residential areas, last completed education group, and personal income group. The second hypothesis is that all of the housing characteristics are positively associated with housing satisfaction. Those characteristics are the status of homeownership, the livable house, the house area, the mastery of life support facilities such as the vehicle, the electronic computer equipment, the audio/visual electronic device, and the electronic communication device.

C. METHOD

The data used in this study are the latest housing satisfaction microdata. It is from the results of "Survei Pengukuran Tingkat Kebahagiaan" or SPTK in 2017. The Central Statistics Agency or BPS collected the data through face-to-face interviews. It is an official institution owned by the Indonesian government. The happiness survey or SPTK is a subjective well-being study. Respondents were asked to evaluate every happiness aspect/indicator over the objective situation of the house occupied (BPS, 2017).

The study object was households. The survey's respondents were head of household or their partner. The SPTK 2017 data includes 75,000 household samples in 487 districts/cities in 34 provinces throughout Indonesia. Total of survey objects that were successfully enumerated is 72,317 households. It shows a high survey response rate, 96.42 per cent.

The housing satisfaction value in SPTK 2017 takes the form 0-10 scale. The score given by the respondent is a subjective assessment of the actual condition (BPS, 2017). Based on catalogue guidelines, scores 0-5 represent disappointment feelings and score 5-10 express satisfaction feelings. A zero-rating represents the most considerable dissatisfaction, while a ten-rating represents the highest satisfaction. For ease of analysis, we convert the housing satisfaction value into two values: satisfied feeling and dissatisfied feeling. The satisfaction value is one, while the dissatisfaction value is zero. We exclude the data of respondent that gave a five score from the analysis. It happens because a five score represents satisfaction and dissatisfaction. Likewise, respondents who gave the answers "others", we also

exclude the respondent's data in the analysis. The answer "other" has many perceptions. Finally, the number of respondents used in this study was 64,874.

This study is quantitative research. The descriptive and inferential analysis is used to describe the situation and summarise the results of the housing data analysed. We analyse data using a logit model. It obtains housing satisfaction determinants. Logit analysis is more chosen than the Ordinary Least Square (OLS) regression because the value of the dependent variable is on a nominal scale. The limitation of this research is that the information generated is only limited to the individual's general description of Indonesian society. The information does not describe the analysis for each particular region/environment formed based on geographic and cultural similarities.

The model presented in this study is the logit regression model, as seen in equation (1). The model uses housing satisfaction as the dependent variable. While the individual characteristic vector, the house characteristic vector, and the media vector as independent variables.

$$L_i = ln\left(\frac{P_i}{1-P_i}\right) = \alpha_{0i} + \beta Indiv\_Char_i + \gamma House\_Char_i + \delta Media_i + \varepsilon_i \qquad (1)$$

The L_i variable is the log odds ratio of the satisfaction feeling probability upon the dissatisfaction feeling probability of i respondent to the house occupied's condition. It is worth one when the respondent feels satisfied and vice versa, it is worth zero. The $Indiv\_Char_i$ is the individual characteristic vector of the i respondent, i.e. age, gender, marital status, location, education level, and income level. Age is a ratio variable, while gender, marital status, and location are nominal variables. The other variables, both education level and income level, are ordinal. The $House\_Char_i$ is the vector of house characteristic of the i respondent, i.e. homeownership, house area, and livable house. While both variables, homeownership and livable house, are nominal, house area is ratio variable. The $Media_i$ is the vector of ownership/control life-supporting facilities of the i respondent, i.e. vehicle, computer, TV/radio, and communication device. All of the variables in $Media$ are nominal. The error term of the i respondent's data is denoted by ε_i, which i is an index stating the order of the respondents.

D. RESULTS AND DISCUSSION

This section will review and discuss the estimation results from equation (1). The description of the respondent's data begins this discussion. They are the satisfaction level, individual characteristics, and house occupied's characteristics. A report of the respondent's data is presented simply as in table 1. The next discussion is the estimation results of the data that are shown in Table 2. All tables are in the appendix.

The initial information presented in table 1 is that the number of respondents used in this study was 64,874 individuals. Based on the 2017 SPTK response rate, almost 90 per cent of the data used in this study. The dependent variable used in the model is the house occupied's satisfaction. This variable is an ordinal scale. The data summary shows that the average respondent's housing satisfaction is 0.865,

with a standard deviation of 0.34. This information indicates the data is homogenous, and Eighty-six per cent of respondents said they were satisfied with their house conditions.

Almost all the independent variables are not a ratio, except age. The education level and income level are ordinal, and its code refers to the BPS standard. The summary shows that the average value of education completed by respondents is 4.047, with a standard deviation of 2.072. This information illustrates that the average length education of respondents is nine years (middle school). The data also tells us that the average group income of the respondent per month is 2,175, with a standard deviation of 1.39. This information indicates that the average respondent's revenue is still low, namely 1,000,000 to 2,000,000. Therefore, the respondent's need for a home is more focused on fulfilling a place to live, security, or social need.

The model estimation in this study was carried out in three models. The difference between models lies in the number of independent variables used. The first model only involves individual characteristics as independent variables. The second model uses independent variable such as personal characteristics, homeownership status, floor area, and livable house. The last model is like the second model, but it is added free variables such as a vehicle, computer, TV/radio, and communication device. The estimation results of the three models are presented in Table 2 at columns two, three, and four.

The estimation result of the three models shows that almost all individual characteristics are positively associated with house satisfaction except gender. In marital status, this study has different conclusions that are not following the research of Lu (2002). When life support facilities have not been in the model, marital status has a significant positive effect on housing satisfaction. However, it becomes insignificant after the facilities are in the model. The estimation results show that marriage is no longer a reason for reimbursement of the house when the supporting life facilities have been meeting.

Regarding gender to housing satisfaction, women tend to feel more satisfied than men. Someone who lives in the city tends to be more confident than someone who lives in the village. The reason is the facilities in urban are more be complete than those in rural. This conclusion is as same as the result of Hwang et al. (2014). Both variables, education level and income level, have an intoxicating effect. Higher education will increase the log odds satisfaction ratio by 0.0494 points or the odds ratio for satisfaction increases by 1.05 times. These results follow the result of Ren and Folmer (2017). Likewise, an increase in the income group will increase the log odd satisfaction ratio by 0.1815 points or the odds ratio for satisfaction increases by 1.19 times. This conclusion fits the results of Hu's (2013) research.

Housing characteristics are also an essential factor in shaping housing satisfaction. Homeownership status, livable house, house area, vehicles, computer, TV/radio, and communication devices are positively associated with housing satisfaction. Opportunities for someone's pleasure will increase when someone owns a house and controls a large house. Homeownership and house area will add to the log odd satisfaction ratio of 0.3551 and 0.0028 points or the odds ratio of

satisfaction increases by 1,426 times and 1,003 times. Increased satisfaction also occurs when a person controls a livable home or life support facilities.

E. CONCLUSION

This study was conducted to find the determinants of individual satisfaction with the houses occupied's quality. Estimation results show that women tend to feel more satisfied than men, and someone who lives in an urban tends to be more confident than someone who lives in a rural. Besides, increased home conditions satisfaction is directly proportional to increasing age, increased education and income. The variables such as homeownership, livable homes, house area, vehicle, computer, TV/radio, and communication devices increase the chances of housing satisfaction. Also, we found different results related to marriage. Marriage becomes insignificant after the means of life support are added.

All information obtained is still far from expectations. The information generated is general information that describes Indonesia. Because the individual and environmental characteristics of each province are different, so these study results cannot be used as a reference for housing policies in each area. However, further research can use this study as a reference to analyse the housing satisfaction's determinants in each province or region. We suggest adding the social security condition and the facilities of health, education, and economy to the next research.

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