Place Attachment of Sub-Komunal RISHA Semanggi as Temporary Housing for Kampung METAL RW 01 Mojo, Pasar Kliwon Residents

Dinan Nafindro Nugroho[1,2], Kusumaningdyah Nurul Handayani[3], Aya Hagishima[4], Agung Tri Wijayanta[5], Solli Murtyas[4], Hardiyati Hardiyati[3]

[1]Department of Architecture, Universitas Sebelas Maret Surakarta, Indonesia
[2]Arsitektur Komunitas (Arkom) Solo, Indonesia
[3]Department of Architecture, Faculty of Engineering, Universitas Sebelas Maret Surakarta, Indonesia
[4]Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, Japan
[5]Department of Mechanical Engineering, Faculty of Engineering, Universitas Sebelas Maret Surakarta, Indonesia

E-mail: nafindronugroho@student.uns.ac.id

Abstract

The case of slum settlements is a problem that has not been resolved which causes the urban vulnerability phenomenon. Kampung Improvement Programs in Surakarta was held in Kampung METAL RW 01 Mojo, Pasar Kliwon. From 2019 until 2022, residents affected by the arrangement of the Kampung METAL RW 01 Mojo have been temporarily moved to the Sub-Komunal RISHA Semanggi housing, a vertical communal housing built using the RISHA prefabricated structure module. This study aims to identify the significance and relevance of the adaptation process conducted by residents towards place attachments in the temporary house. The research data collection method used the Post-Occupancy Evaluation (POE) method through a questionnaire distributed to 45 of 56 households. The respondents were asked to choose their answers from a two-point Guttman scale and a five-point Likert scale. The POE results were then analysed using Analysis of Variance to determine the significance and relevance between fulfilled preferences and place attachment. The survey results show that the adaptation process mediates the relationship between preferences that have been fulfilled and place attachment. This simply shows that the more the residents' preferences are fulfilled, the more satisfied they are with their temporary housing, so they feel attached to it.

Keywords: temporary house; Sub-Komunal RISHA Semanggi; adaptation; fulfilled preferences; place attachment

1. Introduction

The case of slum settlements in urban areas is a problem in various developing countries in the Global South or countries in the Southern Hemisphere which has not been resolved until now [1]. The top-down development orientation makes some marginalized urban residents contribute to unresolved settlement problems [2]. The city's inability to absorb the flow of urbanization has also resulted in the emergence of spontaneous settlements. Thus, informal settlements that grow in big cities in Indonesia arise due to the increasing urbanization of the population which is not directly proportional to the provision of residential land in the city [3].

Indonesia is one of the Global South countries on the Asian continent that has experienced rapid urbanization in the last few decades. According to the 2019 report, the percentage of urban population is 56%. This percentage is estimated to increase to 68% in 2025. In line with urbanization, there is an unplanned expansion of densely populated residential areas. Based on government reports in 2019, around 9.86 million

people live in low-quality housing with limited infrastructure and public services [4]. To solve this problem, the NSUP (National Slum Upgrading Program) or KOTAKU (Kota Tanpa Kumuh/City Without Slums) program was launched in 2015. Based on the publication of the study document and direction for handling slums in Surakarta City or RP2KPKP in 2016, it is stated that the Semanggi District has the number one largest slum area (76.03 Ha), so it is included in the priority list for handling slums. The area of Kampung METAL RW 01 Mojo (included in the Semanggi district) stands on the banks of the Premulung River (a tributary of the Bengawan Solo River) and most of the land belongs to BBWS (Balai Besar Wilayah Sungai) Bengawan Solo.

To support the NSUP/KOTAKU Program in Kampung METAL RW 01 Mojo, an improvement program was initiated by the Surakarta City government. The Sub-Komunal RISHA Semanggi is a residential complex within the Rusunawa Semanggi complex provided by the government as temporary housing to support their kampung improvement program. 56 households or Warga Terdampak Penataan/WTP (residents affected by the rearrangement) were given temporary shelter before being moved back to Kampung METAL RW 01 Mojo (after being reorganized and rebuilt) [5]. The Sub-Komunal RISHA Semanggi consists of 56 houses divided into 3 residential blocks with a communal concept accompanied by communal supporting facilities.

When the wishes of the occupants match the housing situation they want and need, then this is considered a "fulfilled preference" [7]. Accommodation preferences that are fulfilled can predict the quality of life of the occupants, when there is a mismatch between individual preferences and their actual situation, the probability of individual dissatisfaction increases [8]. Other studies have supported the idea that if preferences are met, it will affect people's satisfaction. However, several studies confirm that the fact that respondents or residents generally state that they are satisfied does not mean that their housing preferences are met [9].

There are 2 categories of occupancy preference factors, namely social and physical. Physical factors are those related to the physical characteristics of a place to live and the surrounding environment, while social factors are related to the personal characteristics of people living in the place of residence as well as their feelings and perceptions of the environment [10]. There is a significant relationship between occupant satisfaction and several variables, for example, housing satisfaction which is associated with the mobility of residents and their desire to move from their current residence, perceived quality of life, and satisfaction with their environment.

Figure 1.   (a) The environment of Sub-Komunal RISHA Semanggi; (b) Residents of the Sub-Komunal RISHA Semanggi gather in the courtyard.

The Sub-Komunal RISHA Semanggi is a settlement pilot project for Low-Income Communities (Masyarakat Berpenghasilan Rendah/MBR). Occupying Kampung METAL RW 01 Mojo for decades (the average occupancy was since the 1990s), then being temporarily relocated to the Sub-Komunal RISHA Semanggi for approximately 4 years, the WTP have gone through various adaptation processes. As long as this process is carried out, processes of adaptation to space and their habitual behaviour occur [6]. This adaptation occurs as a process to meet housing preferences. One of the objectives of the housing preference study is to understand the priority of occupants to have a certain residence with certain attributes.

2. Methodology

2.1 Methods

This research dominantly uses an interpretive or naturalistic paradigm, which views social reality as dynamic, processable, and full of subjective meaning [11]. An interpretive approach is an attempt to seek explanations about social or cultural events from the perspective and experiences of the people being studied [12]. This research is a step to answer the hypothesis by combining two approaches, namely the qualitative approach and the quantitative approach. A Mixed Method is an approach that combines quantitative methods or calculations on a numerical basis and qualitative

methods or assumptions and assessments of the object studied [13].

The sampling technique used was purposive sampling. Sampling was based on secondary data obtained from the Post-Occupancy Evaluation (POE) survey form for 45 of the 56 families who lived in the Sub-Komunal RISHA Semanggi. The questions in the questionnaire include physical, functional, technical, behavioural, social, economic, and environmental aspects. The respondents were asked to choose their answers from a two-point Guttman scale and a five-point Likert scale. The POE results were then analysed using Analysis of Variance (ANOVA) to determine the significance, correlation, and clustering between fulfilled preferences (after the adaptation process) and place attachment based on seven aspects in the POE which were then analysed into 4 variables, namely Facilities, Social Relations, Visuals and Amenities.

2.2 Discussion

2.2.1 Significance

TABLE I.   REGRESSION MODEL FOR SIGNIFICANCE

Variable	Variable Label	*Beta*	*Sig.*	Decision
Constant		-1.017	0.110	
X_1	Facilities	0.107	0.023	Positive impact
X_2	Social Relations	0.024	0.670	Positive impact
X_3	Visuals	0.097	0.766	Positive impact
X_4	Amenities	0.089	0.027	Positive impact

Conditions
a. H_0: there is no significant influence.
b. H_1: there is a significant influence.
c. Alpha 5%: level of trust 95%.
d. H_0 rejected if there is value *sig.* < 0.05.

Based on the table above, the Sig. from variable X1 (Facilities) of 0.023 and variable X4 (Amenities) of 0.027, so it is smaller than 0.05. The level of Place Attachment without being influenced by the various variables mentioned is -1.017 (constant). So H0 is rejected, which means that facilities and amenities have a significant effect on place attachment. When Beta is interpreted, if residents are very dissatisfied with variable Facilities, then the resident's Place Attachment will have an effect of 0.107 units, and if residents are very dissatisfied with variable Amenities, then the resident's Place Attachment will have an effect of 0.089 units.

Based on the Adjusted R Square value, the contribution percentage of the independent variable is 58.4% to the dependent variable. So based on Likert Scale data, the variables of facilities, social relations, visuals, and amenities used in this research have a significant influence on Place Attachment. Apart from that, the remaining 41.6% of the contribution came from variables outside the research conducted.

TABLE II.   SIGNIFICANCE MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.789ᵃ	.622	.584	.488

Notes
ᵃ) Predictors: (Constant), Amenities, Social Relations, Visuals, Facilities

2.2.2 Correlation

Correlation between variables and Place Attachment is calculated and analysed based on the POE form with a Likert Scale. Based on the significance values and calculated R-values (with the condition that the significance value is <0.05 and the calculated R-values is > 0.294) using ANOVA, all variables have a relationship or correlation with Place Attachment. The following are the relationship values between Place Attachment and the variables if ordered from the largest: a) Facilities (0.687); b) Visual (0.687); c) Social Relations (0.585); and d) Facilities (0.503).
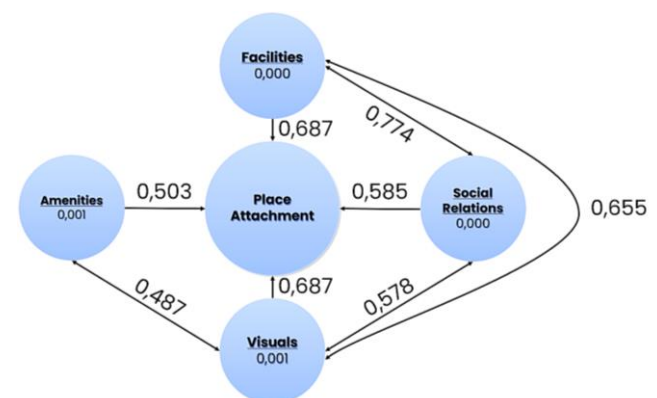

Figure 2.   The structure of the correlation relationship between variables of Place Attachment (Likert Scale).

As illustrated in the diagram above, all variables correlate with Place Attachment. In addition, the Facilities variable is correlated with the Social Relations variable (0.774) and the Visual variable (0.655). The Social Relations variable correlates with the Visual variable (0.578). The Visual variable correlates with the Amenity variable (0.487).

The correlation between variables and Fulfilled Preferences was calculated and analysed based on the POE form with the Guttman Scale. Based on the significance value and R-value (with the condition that the significance value is <0.05 and the calculated R-value is >0.294) using ANOVA. The following are the relationship values between Fulfilled Preferences and the variables if ordered from the largest: a) Availability of working space (0.390); b) Availability of

children's playroom (0.381); c) Availability of kitchen utensil storage space (0.296); and d) Hearing neighbours chat (-0.324). Negative correlations, such as hearing neighbours chat, mean that the relationship is inversely related, or can be interpreted as unfulfilled preferences or preferences that interfere.
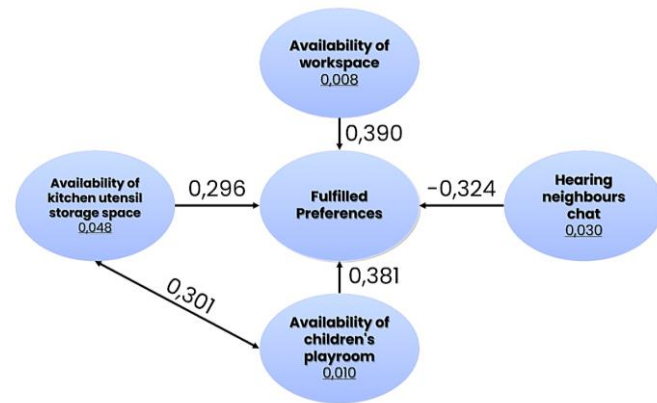

Figure 3.   The structure of the correlation relationship between variables of Fulfilled Preferences (Guttman Scale)

The diagram above shows the correlation structure between variables and Fulfilled Preferences. Based on the diagram above, 4 (four) variables have a direct correlation to Fulfilled Preferences. Apart from that, the variable Availability of Storage Space for Kitchen Utensils correlates with the variable Availability of Children's Playroom (0.301).

2.2.3 Clustering

TABLE III.   RESIDENT CLUSTERING BASED ON PLACE ATTACHMENT

Average is indifferent when living in Sub-Komunal RISHA	Average is satisfied when living in Sub-Komunal RISHA
1. The average is not satisfied with the kitchen space	1. The average is indifferent for the kitchen
2. The average is not satisfied with the living room	2. The average satisfaction with the living room
3. The average is dissatisfied with the ease of function (accessibility) of stairs between floors	3. The average is indifferent to the ease of function (accessibility) of stairs between floors
4. The average is indifferent to common space/corridor/terrace	4. The average satisfaction with the common room/corridor/terrace

Residents clustering based on Place Attachment is divided into 2 (two) clusters, the first cluster is "Average is indifferent when living in Sub-Komunal RISHA", and the second cluster is "Average is satisfied when living in Sub-Komunal RISHA". The factors that form the first cluster are because these residents feel less satisfied with the factors in the Amenity and Facilities variables. Examples include residents' dissatisfaction with the size of the kitchen and living room,

and dissatisfaction with the ease of accessibility or function of the stairs between floors due to their small size and lack of slopes.

The factors that form the second cluster are because these residents feel satisfied with the factors in the Facilities and Social Relations variables and feel adequate or normal with the factors in the Amenities variable. Examples of the factors that make residents feel satisfied are the functionality of the living room and common spaces (corridors, terraces, and courtyards) which are inclusive and integrated so that residents can easily gather and chat with other residents. Then, examples of determining factors that make residents feel adequate or normal are a kitchen space with sufficient size and facilities for household cooking, and the accessibility of stairs between floors that are still easy to use.

TABLE IV.   RESIDENT CLUSTERING BASED ON FULFILLED PREFERENCES

The Average said the Conventional Houses are better than RISHA Module Houses	The Average said the RISHA Module House is better than the Conventional House
1. On average there is no space for children to play	1. On average there is space for children to play
2. On average there is no space to store kitchen utensils	2. On average there is space to store kitchen utensils
3. On average there is no space for Bath Wash Latrine/Toilet	3. On average there is space for a Bath Wash Latrine/Toilet
4. On average assumes the size of the room is not enough	4. On average assumes the size of the room is sufficient

Residents clustering based on Fulfilled Preferences is also divided into 2 (two) clusters, the first cluster is "The Average said the Conventional Houses are better than RISHA Module Houses", and the second cluster is "The Average said the RISHA Module House is better than the Conventional House". The factors that form the first cluster are that the average resident feels that they do not have a children's playroom in the house, do not have adequate storage space for kitchen equipment, and the size of the toilet room is not large enough. In general, this cluster considers that the size of the space in the Sub-Komunal RISHA housing is not as large as their previous conventional house in Kampung METAL RW 01 Mojo.

The factor that forms the second cluster is that on average residents feel that they have enough space for children to play in the house, feel that they have space to store adequate kitchen equipment, and feel that they have sufficient and sufficient toilet space. In general, this second cluster felt that the Sub-Komunal RISHA housing was more adequate or larger than their previous conventional residence in Kampung METAL RW 01 Mojo. The residents' experiences with their previous housing influence their interpretation of the adequacy of their living space. The residents' experiences with their previous residence influence their interpretation of the adequacy of their living space. For example, some residents

previously had houses that were bigger and had more room in Kampung METAL RW 01 Mojo compared to the Sub-Komunal RISHA housing, so they felt that the Sub-Komunal RISHA housing was insufficient for their space needs, and vice versa.

3. Conclusion

The results of this study highlight the significant interrelationships between physical, functional, behavioral, social, and environmental factors that have a major influence on place attachment. This study is an attempt to determine the importance of the main ideas and to provide a better understanding of their relationship. The results show that the adaptation process partially mediates the relationship between fulfilled preferences and place attachment. This shows that the more residents' preferences are met, the more satisfied they are with their temporary residence so that they feel attached to that residence.

References

[1] Simone, A. 2020. Cities of the Global South. Annual Review of Sociology, 46, 603–622. https://doi.org/10.1146/annurev-soc-121919-054602

[2] Silas, J. 2016. New Urban Agenda and The Island-Based Settlements Development. Journal of Architecture & ENVIRONMENT, 15(2), 101. https://doi.org/10.12962/j2355262x.v15i2.a2148

[3] Sinaga, M. 2017. Belajar bersama Arkomjogja: pengorganisasian rakyat & hal-hal yang belum selesai. Insist Press.

[4] Murtyas, S., Hagishima, A., & Kusumaningdyah, N. H. 2020. On-site measurement and evaluations of indoor thermal environment in low-cost dwellings of urban Kampung district. Building and Environment, 184, 107239.

[5] Kusumaningdyah, N. H., & Purwandaru, P. 2022, February. Social design as a strengthening strategy of the revitalization of the sub-communal RISHA Mojo Kampung Kota–Surakarta during the COVID-19 Pandemic. In IOP Conference Series: Earth and Environmental Science (Vol. 986, No. 1, p. 012005). IOP Publishing.

[6] Ikhsan, F. A., Dianingrum, A., Handayani, K. N., Sari, P. A., Muqoffa, M., & Pitana, T. S. 2021. Adaptasi Ruang Berdasarkan Perilaku Penghuni Sub Komunal Rumah Instan Sederhana Sehat (RISHA), Semanggi, Surakarta. ARSITEKTURA, 19(2), 317-326.

[7] Sekiguchi, T., Hayashi, N., Sugino, H., & Terada, Y. 2019. The effects of differences in individual characteristics and regional living environments on the motivation to immigrate to hometowns: A decision tree analysis. Applied Sciences, 9(13), 2748

[8] Wang, F., & Wang, D. 2020. Changes in residential satisfaction after home relocation: A longitudinal study in Beijing, China. Urban Studies, 57(3), 583-601.

[9] Emami, A., & Sadeghlou, S. 2021. Residential satisfaction: A narrative literature review towards identification of core determinants and indicators. Housing, Theory and Society, 38(4), 512-540.

[10] Khozaei, F., Ramayah, T., Hassan, A. S., & Surienty, L. 2012. Sense of attachment to place and fulfilled preferences, the mediating role of housing satisfaction. Property Management, 30(3), 292-310.

[11] Rahardjo, M. 2018. Paradigma Interpretif. Jurnal Penelitian Sejarah Dan Budaya, 4(1), 1032–1047.

[12] Muslim, M. 2018. Varian-Varian Paradigma, Pendekatan, Metode, dan Jenis Penelitian dalam Ilmu Komunikasi. Media Bahasa, Sastra, dan Budaya Wahana, 1(10).

[13] John W. Creswell, J. D. C. 2018. Research Design Qualitative, Quantitative, And Mixed Methods Approaches. In Research Design: Qualitative Quantitative, And Mixed Methods Approaches: Qualitative Quantitative, And Mixed Methods Approaches (Vol. 5).