Place attachment in the context of displacement and Rusunawa in Jakarta

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Abstract. This paper discusses an issue related to place attachment in the context of public housing and displacement. It takes the case studies of Rusunawa in Jakarta, a rent-based vertical public housing built by the government. The residents are predominantly low-income people who were evicted from urban slums and were relocated to Rusunawa. Although relocation was intended to improve the quality of the resident’s living environment, however, there are still less well explored on how displacement may complicate the residents’ attachment to Rusunawa. This study developed a survey to measure functional attachment and emotional attachment using 32 scale items. The survey was tested on a random sample of residents from Rusunawa Pulogebang (n=40) and Rusunawa Marunda (n=40). The preliminary results indicated that Rusunawa Marunda displayed a higher level of place attachment than Rusunawa Pulogebang. This study found that physical and environmental features of Rusunawa Marunda, such as gardens, cleanliness and upkeep environment, and social greetings ‘Salam MarHaMas’ are among the physical-environmental and social predictors that contribute to the higher level of place attachment. This study may have implications that the understanding of place attachments theory should be more reflective into the future planning and design of Rusunawa.

1. Introduction
Rusunawa is a rent-based vertical public housing built by the government to improve the quality of low-income people’s life. The residents of Rusunawa are predominantly low-income people who were evicted from urban slums and were forced to be relocated to Rusunawa [1]. Force relocation, or known as displacement, is a rupture of the geographic and social due to involuntary moves [2]. Displacement may cause the traumatic stress reaction to the loss of all or part of one’s emotional ecosystem [2]. Empirically, displacement had a negative impact on place attachment [3-5]. However, recent studies discovered that residents could repair and rebuilding place attachment by imagining the place-as-it-was and by developing place-restorative-behaviour [2, 6]. People may also attain attachment to a new place by forming place-dependent daily routines and habits [7]. Procedural memory may also help people to cope with a new environment with relative ease [7]. Displacement caused residents of Rusunawa experienced a series of sudden changes in their daily lives. They were not only losing their familiar surroundings but also lost their long-standing community and social relations from their previous home environments. In many cases, displacement caused economic challenges to many residents [8-10]. Although displacement was intended to improve the quality of the resident’s living environment, however, there are still less well explored on how displacement may complicate the residents’ attachment to Rusunawa.
Place attachment is an emotional bond that exists between individuals or groups with their environment [11] and is a multi-dimensional concept involved in person and place bonding [12]. Place attachment is an essential aspect in improving people's life and the environment itself. Having place attachments facilitates a sense of security and continuity, promote goal support and self-regulation, enhance identity and encourage self-esteem [13, 14]. Numerous studies had been placed to understand factors that reported sentiments with the positive relationships of people and place bonding. Socio-demographic, social and physical-environmental predictors, are factors which were found to have an impact on the strength of attachment [15]. Understanding predictors of place attachment may help unveil possible mechanisms of attachment [15]. Socio-demographic predictors that reportedly fostered attachment were the length of residence [16-18] and homeownership [15, 18]. Social predictors, such as community ties and community involvement in social activities in the neighbourhood, had been consistently found to have a positive relationship with the strength of place attachment [15]. Among the physical-environmental predictors that were found to affect attachment were neighbourhood scale, building quality, accessibility and close walking distance, building performance [19], neighbourhood parks or open space [20], accommodating activities and public space [18], safety and security [17], and service facilities [18].

Based on quantitative and qualitative studies, this paper describes two case studies of Rusunawa in Jakarta. The objectives of this study are to measure the residents' level of attachment to Rusunawa and to understand physical-environmental and social predictors that contribute to the development of the resident's attachment to Rusunawa.

2. Method

2.1. Case Study
This study chose two case studies of Rusunawa. The first one is Rusunawa Pulogebang built in the year of 2009-2015 and located in Pulo Gebang, Cakung, East Jakarta. The second is Rusunawa Marunda, built in the year 2008-2016, and located near the Northern coastline in Marunda, Cilincing, North Jakarta. This study selected cluster D built in the year of 2016 as the case study of Rusunawa Marunda. Both cases studies were selected because they are a rent-based public housing built by the government for low-income people. The residents were relocated from several urban slums in Jakarta, i.e. Pluit, Penjaringan, Cengkareng, Kalijodo, Rawa Jati, Muara Baru, Pasar Ikan and Sunter. The two case studies were also differed in building age that was predicted may affect the quality and physical condition of their building and environment.

The typical architectural design of both Rusunawa was a simplex form with a central corridor and comprised of two-bedroom units arranged vertically over six storeys (See Figure 1 and Figure 2). Social, education, health and commercial facilities were all located at ground level, and living units were located on the floors above. Rusunawa Pulogebang consisted of 8 building blocks. Meanwhile, Rusunawa Marunda consisted of four clusters, namely clusters A (11 blocks), B (10 blocks), C (5 blocks) and D (3 blocks). Each building blocks of the two Rusunawa consisted of about 80-100 units.
2.2. Instruments & participants
All data were collected from February to March 2020. Each Rusunawa was visited at least four times, and the duration of each visit was about 2-3 hours. During each visit, potential respondents were approached for consent to participate in this study. If they agreed, they were given questionnaires that had to be completed on-site. This study developed a survey to measure emotional attachment and functional attachment using 32 scale items. Each item was measured using a Likert scale, ranging from one (I strongly disagree) to five (I strongly agree). The emotional attachment was tested using eight scale items. The items were inspired by studies by Lewicka [17], Choi, Park and Lee [21] and Elabd [22]. The functional attachment was tested using seven scale items at the unit level & 17 scale items at the environmental level. The items were adapted from Lewicka [17], Choi, Park and Lee [21], Elabd [22], Kamalipour, Yeganeh and Alalhesabi [18], and Manzo [23]. The functional attachment was designed to examine the physical-environmental and social predictors that affect place attachment. The survey was tested on a random sample of residents from Rusunawa Pulogebang (n=40) and Rusunawa Marunda (n=40).

This study also conducted an in-depth interview with three randomly selected participants who were the residents from each Rusunawa. In-depth interviews were intended to gather a more profound understanding related to the quality of the unit (i.e. air circulation, lighting, unit material, unit size), the environment (i.e. environment comfort, security, upkeep and facilities), and the residents’ life after relocation. The qualitative approach was held as a tool for understanding the phenomenon more profoundly.

3. Results and Discussion
Table 1 shows that the residents of Rusunawa Marunda (mean 3.8) display stronger emotional attachment towards their living environment than the residents of Rusunawa Pulogebang (mean 2.7).
Table 1. Emotional attachment at Rusunawa Pulogebang and Rusunawa Marunda

| Items                                                                 | Pulogebang Score | Pulogebang Mean | Marunda Score | Marunda Mean |
|----------------------------------------------------------------------|------------------|-----------------|---------------|--------------|
| I am proud of living in this Rusunawa.                               | 3.0              | 4.0             |               |              |
| I feel happy living in this Rusunawa.                                | 3.0              | 4.1             |               |              |
| I would not like to move out from here.                              | 1.9              | 3.5             |               |              |
| I am rooted here.                                                    | 2.6              | 2.7             | 3.4           | 3.8          |
| I miss this Rusunawa when I am not here.                             | 3.3              | 3.4             |               |              |
| I believe the unit I currently live in belongs to me.                 | 2.5              | 4.0             |               |              |
| This Rusunawa is the best place to live in.                          | 3.1              | 4.0             |               |              |
| I plan to remain a resident of this Rusunawa for years to come.       | 1.9              | 3.8             |               |              |

The results shown in Table 1 were correspondence to the scores given to the predictors of functional attachments by respondents, as seen in Table 2 and Table 3. The functional attachment at unit and neighbourhood level showed that the scores given by the residents in Rusunawa Marunda, for almost all predictors of place attachment, were higher than the scores given by respondents in Rusunawa Pulogebang.

Table 2. Functional attachment at the unit level

| Dimension         | Predictors                                | Items                                           | Pulogebang | Pulogebang | Marunda | Marunda |
|-------------------|-------------------------------------------|-------------------------------------------------|------------|------------|---------|---------|
| Physical          | Unit quality                              | I like the design of this unit.                 | 3.5        | 3.9        |         |         |
|                   |                                           | Air circulates well inside the unit.             | 4.0        | 3.8        | 3.9     | 3.9     |
|                   |                                           | Light penetrates well inside the unit.           | 3.9        | 3.9        |         |         |
|                   | Personalization                           | I decorate this unit to my liking.               | 3.0        | 3.0        | 3.6     | 3.6     |
|                   | Comfort                                   | I feel comfortable living in this unit.         | 3.3        | 3.3        | 4.0     | 4.0     |
|                   | Amenities                                 | This unit is equipped with an adequate number of amenities. | 2.9 | 2.9 | 3.4 | 3.4 |
|                   | Unit size                                 | I am satisfied with the unit size.               | 3.7        | 3.7        | 3.8     | 3.8     |

Table 3. Functional attachment at the neighbourhood level

| Dimension         | Predictors                                | Items                                           | Pulogebang | Pulogebang | Marunda | Marunda |
|-------------------|-------------------------------------------|-------------------------------------------------|------------|------------|---------|---------|
| Physical          | Building quality                          | I like the building and environment conditions of this Rusunawa. | 2.0        | 2.0        | 3.2     | 3.2     |
|                   | Location                                  | The location of this Rusunawa is strategic.     | 3.2        | 3.2        |         |         |
|                   |                                           | The location of this Rusunawa is near the city centre. | 2.9        | 2.8        | 2.4     | 2.8     |
|                   |                                           | The location of this Rusunawa is near my school/ office. | 2.3        | 2.9        |         |         |
|                   | Public space                              | This Rusunawa provides an adequate number of public spaces. | 2.7        | 2.7        | 3.0     | 3.0     |
|                   | Green areas                               | This Rusunawa has an adequate number of gardens. | 2.7        | 2.8        | 4.0     | 3.6     |
|                   |                                           | This Rusunawa has an adequate number of trees.  | 2.9        | 3.3        |         |         |
|                   | Security                                  | I feel secure in this neighbourhood.            | 3.0        | 3.0        | 4.1     | 4.1     |
|                   | Comfort                                   | I feel comfortable in this neighbourhood.       | 3.5        | 3.5        | 4.2     | 4.2     |
|                   | Building size                             | I am satisfied with the building size.           | 3.1        | 3.1        | 3.0     | 3.0     |
Facilities

| Facilities                                                                 | Score |
|---------------------------------------------------------------------------|-------|
| This Rusunawa is equipped with an adequate number of facilities.          | 3.0   |
| The facilities in this Rusunawa make me happy living here.                | 3.1   |
| The facilities in this Rusunawa is better than in any other Rusunawa.     | 3.1   |

Social

| Social relationship                                                      | Score |
|--------------------------------------------------------------------------|-------|
| I have a good relationship with my neighbours.                           | 3.9   |
| I know my neighbours very well.                                          | 3.8   |
| I like to socialize with my neighbours.                                  | 3.5   |
| I feel safe living with my neighbours.                                   | 3.3   |

The reasons for the higher score of functional attachment at unit and neighbourhood level at Rusunawa Marunda because Rusunawa Maruna had a better quality of physical conditions and social relationships. For its residents, all physical predictors fulfilled the goals or needs of the residents. As predicted by many scholars [18-19, 21-24], when the physical-environmental predictors were appropriately fulfilled, they were found to affect a person's emotions attachment towards a place.

The results were verified through an in-depth interview. The verification process was conducted in order to gather more in-depth information from residents. Based on the interviews and questionnaires, all informants from each Rusunawa felt quite satisfied with the size of the units they had, which was 36m² for Rusunawa Pulogebang (mean 3.7) and 30m² for Rusunawa Marunda (mean 3.8). They found that the unit had adequate natural lighting during the day and had sufficient air circulation. These findings were aligned with the score given, to the unit quality predictor, by both respondents of Rusunawa Pulogebang (mean 3.8) and Rusunawa Marunda (mean 3.9).

Also, the amenities provided in each unit of the two Rusunawa were similar. Therefore, there was no significant difference in the given score (Rusunawa Marunda mean 2.9 and Rusunawa Pulogebang mean 3.4). The difference in score was due to the amenities provided at Rusunawa Marunda were relatively new and in the proper conditions compared to Rusunawa Pulogebang. Meanwhile, the predictor of personalization had a score that was not much different, i.e. Marunda Rusunawa had mean 3.6, and Pulogebang Rusunawa has mean 3.0. In both cases, some rules prohibited residents from personalizing their unit. Residents were not allowed to change the unit layout or repaint the outside unit's wall. Likewise, the residents were not given the freedom to personalize residential units for the purpose to maintain the environmental harmony and tidiness.

On the environmental scale, the score given for the environmental quality of Rusunawa Marunda was much higher (mean 3.2) than Rusunawa Pulogebang (2.0). The reason was that Rusunawa Marunda's Cluster D was a new building that was completed in 2016. Therefore, the quality of this building was better than Rusunawa Pulogebang. Besides, Rusunawa Marunda's Cluster D was meant to be an example cluster for future development. Thus, the environmental upkeep and quality were far better compared to the other Rusunawa clusters. However, both Rusunawa had a low location predictor score (mean 2.8). That was because the two Rusunawa locations were not strategic and far from the city centre. The non-strategic site selection had brought a series of problems such as difficulty in accessing the road to the loss of residents' livelihood. Even though both Rusunawa had provided commercial facilities, the informants said that commercial tenants had difficulty in commencing business. The reason was that the business location was too far from public crowds. This situation led to low businesses. They could only rely on the demand and purchases from residents of the Rusunawa itself. Economic challenges, which were also found at other Rusunawa [9-11], had caused difficulties to the residents to form place attachment.

The informants from Rusunawa Pulogebang (mean 2.7) denounced the lack of provision for active social spaces. Although the score was not much different for Rusunawa Marunda (mean 3.0), several aspects were provided by Rusunawa Marunda which was absent in Rusunawa Pulogebang. For example, public facilities such as flower gardens and an RPTRA (Ruang Publik Terpadu Ramah Anak or Child-friendly integrated public space) that were relatively larger in size and capacity. Furthermore, Rusunawa
Marunda had a higher green area predictor score (mean 3.6) than Rusunawa Pulogebang (mean 2.8). Although Rusunawa Pulogebang had provided a variety of vegetation, the intensity of vegetation and shade was less compared to Rusunawa Marunda. Consequently, it caused a reduction in the visual and thermal comfort at the Rusunawa Marunda environment. The same conditions were found at the security predictor. The score of security predictor found in Rusunawa Marunda (mean 4.1) was also higher than Rusunawa Pulogebang (mean 3.0). Although both Rusunawa had provided features for security prevention, such as 24-hour security and a fence surrounding the site, stolen motorbikes and goods have still happened in the area as informed by the informant of Rusunawa Pulogebang. As a result, most residents always felt alert. The mean predictor of comfort in Rusunawa Marunda had a significant difference in score, where Rusunawa Marunda (mean 4.2) had a higher score than Rusunawa Pulogebang (mean 3.5).

In term of noise, the two Rusunawa were quite because they were located far from the centre of the crowd. Thermally, Rusunawa Pulogebang still needed more shade due to lack of vegetation. However, on the inside of the building, it was well ventilated. Visually, the comfort in Rusunawa Pulogebang was not excellent because the building materials, roads and other facilities were aged and some were vandalized. The same goes, on the unit level, the score given for comfort at Rusunawa Marunda was higher (mean 4.0) than Rusunawa Pulogebang (mean 3.3). Furthermore, the predictor score of the physical size or the volume of the building in Rusunawa Pulogebang (mean 3.1) was similar to Marunda Rusunawa (mean 3.0). The two Rusunawa did not show significant differences in the score; this was because the size and typology of the building were similar.

The predictor score of environmental facilities or the infrastructure in Rusunawa Marunda (mean 3.6) had a higher value than Rusunawa Pulogebang (mean 3.1). It was because the existing facilities in Rusunawa Marunda were recently inaugurated in the last 2-4 years. Therefore, the physical condition of the existing facilities was better than Rusunawa Pulogebang. However, at the neighbourhood level, both Rusunawa provided several similar facilities, such as PAUD, Church, Mosque, shops, community empowerment centres, and clinics.

Although all informants mentioned that they had a good relationship with all residents in Rusunawa, nevertheless, the informant claimed that the intensity of socializing in Rusunawa was relatively low when compared to before displacement. One of the efforts made by Rusunawa Marunda to encourage social ties between residents was through a unique greeting for the community, "Salam MarHaMas" which abbreviated from Marunda with a heart of gold (Marunda Berhati Emas). This greeting was intended to establish a sense of kinship. Thus, the score on social relationship predictor, given by the respondents of Rusunawa Marunda (mean 4.0) was higher than the score given by the respondents of Rusunawa Pulogebang (mean 3.6).

Apart from the predictors tested, it was affirmed that the presence of environmental identities and characteristics also affected the residents' place attachment. For instance, in Rusunawa Marunda, the Rusunawa provided thematic flower gardens, with various exciting elements such as a hippopotamus statue and therapeutic fishponds that attracted people from various places. The character or identity of a place could sharpen someone's experience during their time at that place, thus allowed the formation of memory.

4. Conclusion

Displacement had caused the residents of Rusunawa of Pulogebang and Marunda a rupture of social and economic challenges. However, this study found that the physical-environmental and social predictors, such as gardens, cleanliness and upkeep environment, and social greetings ‘Salam MarHaMas’ found at Rusunawa Marunda were able to help people to repair and to rebuild their place attachment. This study concludes that there is a correlation between the value of attachment with the score given to physical and social predictors. Physical, as well as social attributes of a place, contributes to the place attachment process. In which better qualities were found in a place reinforced the increase in attachment to the Rusunawa occupants.
The study recommends several aspects, which may help people who experienced displacement the ability to strengthen their place attachment with a new environment with relative ease. Rusunawa should be located in a strategic location near an urban centre. Rusunawa should specify public spaces for active social interaction and also provide supporting facilities for its residents. The management of Rusunawa should have periodic maintenance of the buildings and their environment, including the character and identity establishment of the surrounding as a form of endeavour to improve the occupants’ attachment to Rusunawa. This study may imply the design of Rusunawa should take into account the understanding of the physical-environmental predictors and social predictors which contributes to the development of place attachment of its residents after displacement.

Acknowledgements
This study was funded by the Center of Research and Community Development Universitas Pelita Harapan contract No. 327/LPPM-UPH/III/2020.

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