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## THE ADAPTATION PATTERN IN LANDED RENTAL HOUSES: A CASE STUDY OF GRESIK INDUSTRIAL AREA

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### ABSTRACT

*Contracted houses, or landed rental houses, were developed spontaneously by homeowners as the cheapest alternative for renting houses with flexible contracts. Therefore, landed rental houses are not designed to suit the needs of tenants, and several variations will occur in landed rental homes as a form of adjustment for the owner. Adaptation is significant in the process of building a house. However, given the limited time context in rental housing, the adaptation process is enjoyable to study more deeply. Gresik is a developing district, and the large number of industries in Gresik has triggered many migrants, most of whom are industrial workers and rent houses on site. This research aims to identify the transformation of semi-fixed features and analyze the adaptation pattern in three types of landed rental houses—40, 50, and 60 m<sup>2</sup>—using the descriptive-qualitative method. The techniques used here are in-depth interviews, on-the-spot sketches, and observations. From the research that has been done, it was found that each landed rental house has its adaptation pattern. The generality pattern was found in all three types, while the flexibility pattern was found in the second and third types.*

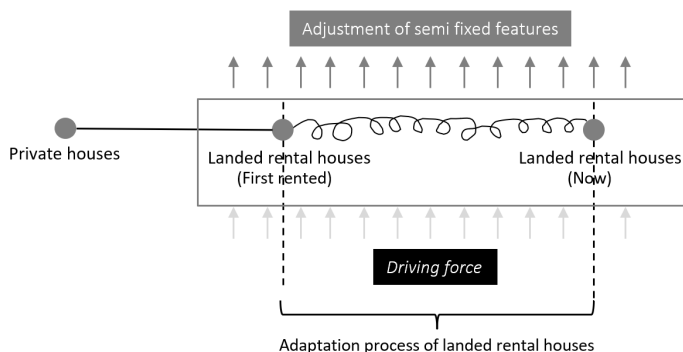
**Keywords:** *adaptation pattern, semi-fixed features, landed rental houses*

### INTRODUCTION

The phenomenon of private rental housing is often found in Indonesia. The tenants (temporary residents) range from students and families to office and factory workers (Kesha et al., 2018). There are various types of rental housing, ranging from flats (*runaway*), boarding houses, apartments, and landed houses. Rented houses, or what will be called landed rental houses in this study, are a type of rental house shaped like a house in general and rented out. It is different from boarding houses and flats, which rent out room units and are in the form of vertical housing. According to Wulandari, contracted houses are developed spontaneously by homeowners as the cheapest alternative to rented houses and with flexible contracts (Wulandari et al., 2014).

Therefore, at first, the landed rental houses were not designed to suit the needs of the tenants. This sparks some questions: How does adaptation occur in landed rental houses if it was not explicitly designed for the needs of tenants? Specifically, how is the type of adaptation classified based on the patterns?

Activities carried out by residents/temporary residents to manage their space are called adaptations. According to Nakib in Kooi, adaptation is the ability to adjust and change several aspects, such as configuring elements that lead to changes in spatial patterns, functions, and technological components without requiring major disruptions that affect buildings. Kooi also explained that adaptation is an ongoing activity in a building (Kai, 2022). According to Mangdziak, adaptability has similarities with flexibility because both will be needed as the occupants' needs change (Magdziak, M., 2019). Meanwhile, Scuderi stated that there are several levels of adaptation, including flexible, active, dynamic, interactive, intelligent, and innovative (Scuderi, G., 2019). From the definitions mentioned above, it can be interpreted that adaptation is a process that will continue to occur because there will always be a driving force that stimulates adaptation.



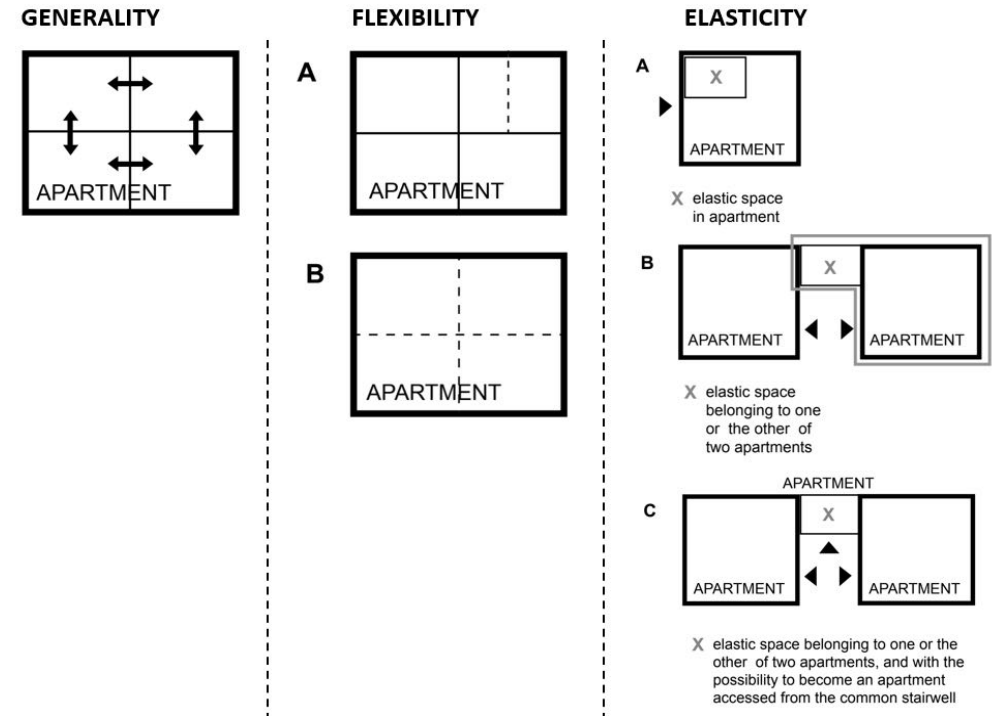
**Figure 1.** Illustration of Adaptation Process of Landed Rental Houses  
Source: Author, 2022

From the problems mentioned, the fundamental questions asked are how the adjustments occur in their homes and the pattern for this adaptation. This research aims to identify the transformation of semi-fixed features and analyze the adaptation pattern in landed rental houses. In addition, it is expected that knowing the adjustment and adaptation pattern of the house will benefit and provide an overview of how architects should design adaptive landed rental houses with the known patterns.

## THEORY / RESEARCH METHODS

The pattern of adaptation to landed rental housing will be reviewed based on the three concepts of adaptability. Braide states that the three main concepts of adaptation patterns are generality, flexibility, and elasticity (Braide, A, 2019) (Figure 2). In the generality pattern, it is found that the room does not have a fixed function; therefore,

it is interchangeable. A flexible layout can be seen from the shape of the movable/mountable adjustment of objects in the house as a process of adaptation for the occupants. Furthermore, elasticity is a form of adaptation by expanding and contracting the room's size.

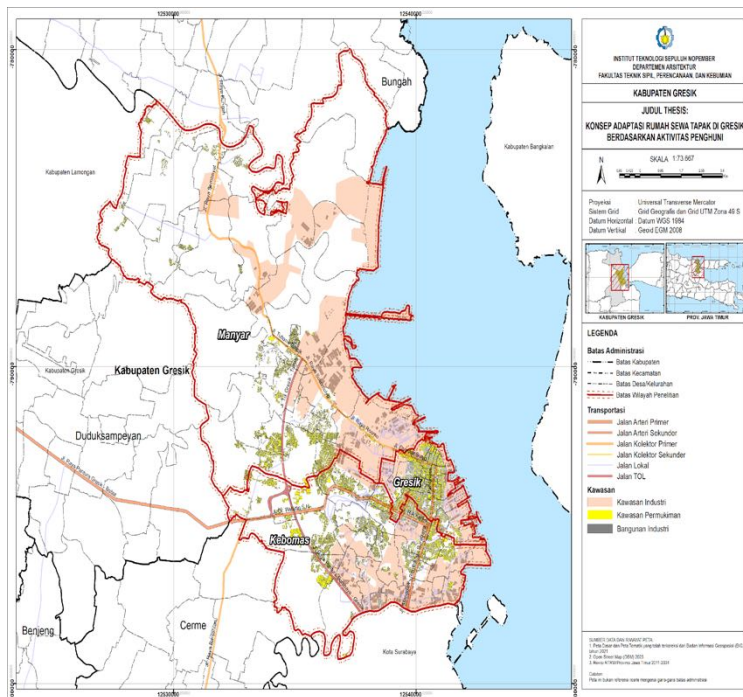


**Figure 2.** Three Concepts of Adaptability

Source: Braide, A., 2019

As stated before, adaptation is the ability to adjust and change several aspects, such as configuring elements that lead to changes in spatial patterns (Kai, 2022). Rapoport states three types of spatial elements: fixed, semi-fixed, and non-fixed features (Rapoport, A., 2005). Rapoport states that fixed features are elements in the house that cannot be changed and are permanent, for example, the area of the house, walls, and ceilings. Meanwhile, semi-fixed features in the house can be intervened by shifting, adjusting, and changing them. An example of a semi-fixed feature is the furniture in the house. Non-fixed features are elements in the house that are not permanent, for example, the activities of the house's occupants. However, in most rental houses, regulations will be found that do not allow changes or interventions in the fixed features of the house. Therefore, this study will only look at changes in semi-fixed features.

## Methods



**Figure 3.** Research’s Location  
Source: Author, 2023

This research will be carried out within the boundaries of Gresik as a research area (Figure 3)—due to the large number of migrants (industrial area workers) and the emergence of new architectural objects, including landed rental houses. First, a preliminary survey has already been conducted to find the right participants to be interviewed with the right landed rental houses. It was conducted in the three biggest subdistricts in Gresik with industrial areas, which are Gresik, Kebomas, and Manyar, with 104 respondents (using Slovin’s formula). The preliminary survey results create criteria for the landed rental houses and participants to avoid bias.

Participant's criteria:

1. Family of four—considering the uniformity of the participants and the majority of families renting the landed rental house in Gresik.
2. Are housewives/work-at-home mothers who are most often spending their time at home and will understand the changes in the house?
3. Have lived in a rented house for at least one year—considering the richness of the adaptation process there.

Landed rental house's criteria:

1. The land rental houses' area is 40, 50, and 60 m<sup>2</sup>—based on most respondents.
2. Have a core room in the house, namely, a family room/living room, bathroom, two bedrooms, and kitchen.

3. Location/distribution of landed rental houses in the Gresik Regency area. More specifically, it is located on the edge of an industrial area in the Manyar, Kebomas and Gresik sub-districts.

The method used in this study is descriptive-qualitative. According to Neuman, the method in qualitative research can be done using the descriptive method. The descriptive method can be used for several purposes, describing problems and classifying types for research results (Neuman, 2014). In this research, both types of descriptive methods will be used. The description of semi-fixed feature adjustment will be used to describe the problems or the phenomena. Then, at the end of the study, it will be used to classify the adaptation patterns of landed rental houses.

This study will also use three data collection techniques: observation, on-the-spot sketch, and in-depth interviews. These three techniques will be carried out iteratively to identify adjustments and analyze adaptation patterns in landed rental houses. The number of participants is determined proportionally, following the three types of landed rental houses, with three participants in each type of house. Later, the adjustment process will be analyzed using the three concepts of adaptation to determine the adaptation pattern of each landed rental house.

## RESULTS AND DISCUSSION

The results chapter will first discuss the adjustments to semi-fixed features made by tenants so that we can see the process of their adaptation by using the descriptive-qualitative method. House objects will be discussed sequentially according to the area of landed rental houses (40, 50, and 60 m<sup>2</sup>). After that, we will discuss the adjustment analysis based on the concept of adaptation to get the tendency of the adaptation pattern of each landed rental house.

### The Adjustment of Semi-Fixed Features in Landed Rental Houses

In the first type of landed rental house (40 m<sup>2</sup>), the adjustments made by P1, P2, and P3 show that they are carried out continuously, adjusting to the activities that are currently happening. For example, the adjustment of the family room from P1 in the morning and evening is different. In the morning, the family room is used as a dining and gathering room; in the afternoon, the family room is used for studying, watching TV, and gathering with family (Figure 4). Semi-fixed features (furniture) follow their changing activities as the day progresses. Likewise, for P2 and P3, they adjusted their semi-fixed furniture based on the activities they carried out (Figures 5 and 6). The reason for the tenants of landed rental housing (40 m<sup>2</sup>) to adjust their space continuously and by moving the semi-fixed features is due to the lack of space, so more space utilization is needed. Based on the results of in-depth interviews, it can be found that tenants' motivation to adapt is related to Maslow's hierarchy of needs.

*"Yes. Due to a limited budget, we can only rent 40 m<sup>2</sup> landed rental housing. So as much as possible, the area of a rather large room (living room) is used for various activities; after all, the furniture is also easy to move."— P1*



**Figure 4.** Semi-fixed Features Adjustment of P1 (40 m2)  
Source: Author



**Figure 5.** Semi-fixed Features Adjustment of P2 (40 m2)  
Source: Author



**Figure 6.** Semi-fixed Features Adjustment of P3 (40 m<sup>2</sup>)

Source: Author

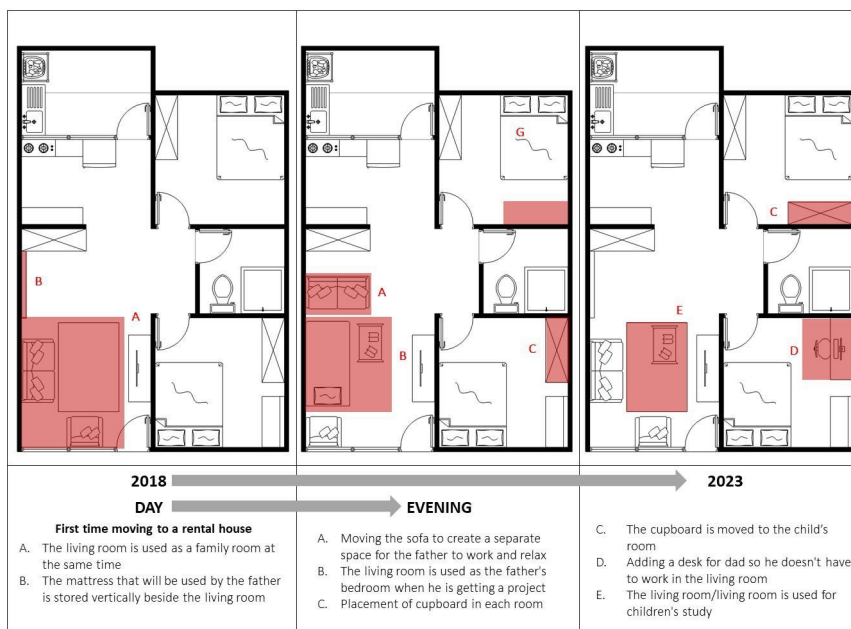
In the second type (50 m<sup>2</sup>), P4, it was found that there was an expansion of space while hosting monthly events (for example, *artisan* or regular social gatherings). They take advantage of the ample space from the terrace and living room; they will use the dining room if more is needed (Figure 7). The adjustments for P4 and P6 (Figures 7 and 9) are almost identical to those for P1, P2, and P3, carried out continuously from morning to evening/night. However, in P5, it can be seen that the adjustments were made to divide the living room so that the father can have a private room for him to work (Figure 8). They use the sofa as a partition and create their own space to increase privacy. They chose a partition that only covers some of the vertical elements of the house because it is only a differentiator between rooms, for example, by using sofas, tables, and other semi-fixed features that are not high. By differentiating space using furniture, the space in the house will look smooth.

*".... Then we also avoid adding permanent or semi-permanent partitions. So, yes, we work around this by limiting the room to existing furniture (sofa, bookcase, etc). The problem is that if it is limited by a partition that covers up, it will look cramped. That is why it is better to separate by the sofa."*— P5.



**Figure 7.** Semi-fixed Features Adjustment of P4 (50 m2)

Source: Author



**Figure 8.** Semi-fixed Features Adjustment of P5 (50 m2)

Source: Author





**Figure 9.** Semi-fixed Features Adjustment of P6 (50 m<sup>2</sup>)

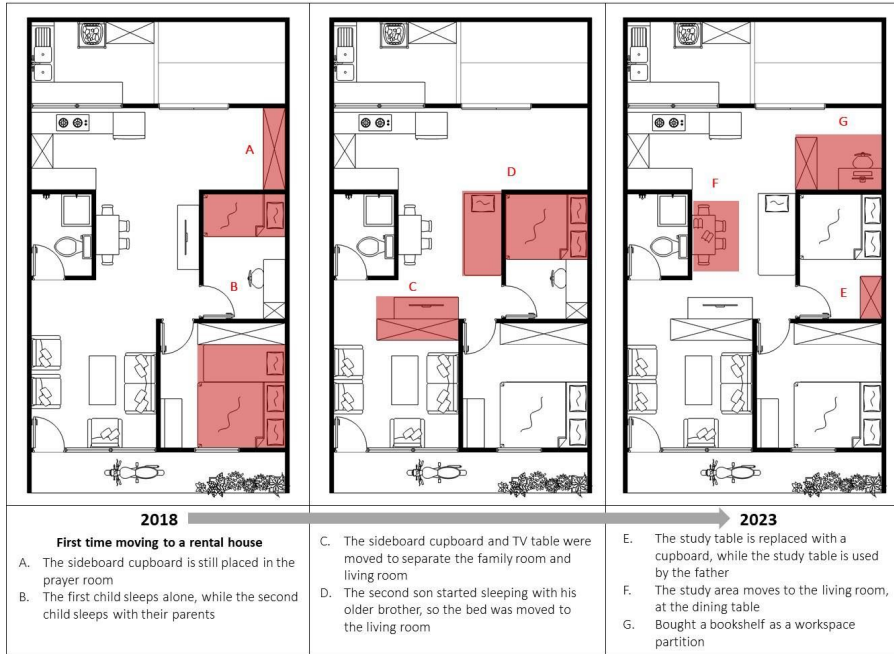
Source: Author

In the third type of landed rental house (60 m<sup>2</sup>), they only adjust the semi-fixed furniture sparingly. It can be seen in P7 and P8, where adjustments were made due to the need for new space and privacy (Figures 10 and 11). However, because of their wide space area, space formation can be formed using a higher partition, unlike in P5.

*"At first, the living room was spacious, and its function was just to receive guests, but because there had been no guests for a long time, I finally divided it into two so that there could be a family room all the time when the children were playing it was not immediately visible from the outside."*— P8.

In addition, the changes made to the third type are not limited to the family's economic conditions, as found in the first and second types, because they can afford additional furniture according to their wants and preferences (Figure 12).

*"Yes, so adding a cabinet in the living room and a place to mount the bicycles was due to my husband's and children's wants. Because our family's hobby is cycling."*— P9.



**Figure 10. Semi-fixed Features Adjustment of P7 (60 m2)**

Source: Author



**Figure 11. Semi-fixed Features Adjustment of P8 (60 m2)**

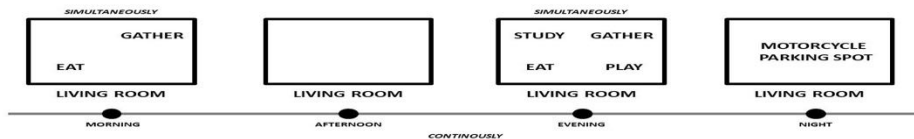
Source: Author



**Figure 12.** Semi-fixed Features Adjustment of P9 (60 m2)

Source: Author

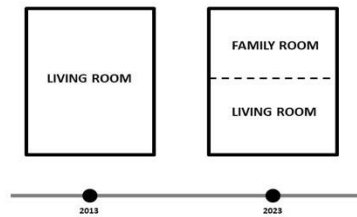
### Adaptation Pattern based on the Area of Landed Rental Houses



**Figure 13.** The Generality Pattern is seen in P1

Source: Author

Based on the three adaptability concepts, landed rental houses with 40, 50, and 60 m2 tend to follow the generality adaptation pattern. When viewed from the semi-fixed features adjustment process, one room is used for several activities; therefore, it is interchangeable. The generality of the room in the first type of landed rental house can be seen continuously (at night) or simultaneously. The continuous and simultaneous adjustment can be seen in P1 (Figure 13).



**Figure 14.** Flexibility Pattern seen in P7 and P8

Source: Author

As for the flexibility pattern, we can find it in the second and third house types (50 and 60 m<sup>2</sup>). The area of the room in their house is wide enough to be partitioned to produce new space (Figure 14); however, the difference in flexibility at 50 and 60 m<sup>2</sup> is in the degree of closure in the room's height. In landed rental houses with 50 m<sup>2</sup>, they use partitions that are not high (sofa, table), so they are not too narrow. Meanwhile, for landed rental houses with 60 m<sup>2</sup>, they use high partitions (bookshelves, curtains, cupboards) because their rooms are wide enough to do so. The adaptation pattern of landed rental houses can be seen in the table below (Table 1).

**Table 1.** Adaptation Pattern on Landed Rental Houses based on their Types

Type of LRH	Participant	Adaptation Pattern	Explanation
40 m <sup>2</sup>	1	Generality	Due to the lack of space, the generation pattern is used by adjusting their space continuously (moving semi-fixed features).
	2	Generality	
	3	Generality	
50 m <sup>2</sup>	4	Generality	In the flexibility pattern, they use partitions that do not cover the house's entire height because they will cramp it.
	5	Generality	
	6	Flexibility Generality	
60 m <sup>2</sup>	7	Generality	In the flexibility pattern, they use partitions that cover the house's entire height because it will not cramp the house due to the spacious room.
	8	Generality	
	9	Flexibility Generality	

Source: Author

## CONCLUSIONS

Given the phenomenon of private rental housing in Gresik and the fact that landed rental houses are not designed to suit the needs of tenants, this research seeks to look further into the adaptation process for architectural objects both from an architectural perspective and the opinions of residents. Therefore, this study aims to identify the transformation of semi-fixed features and analyze the adaptation patterns of landed rental houses in Gresik.

The preliminary survey results show three types of landed rental houses in Gresik—40 m<sup>2</sup>, 50 m<sup>2</sup>, and 60 m<sup>2</sup>. Where in each type of house, an adaptation pattern can be found. From the description of adaptation semi-fixed features, the adaptation patterns experienced by each type of landed rental house can be analyzed. The general pattern is found in adapting all types of landed rental houses. In contrast, the flexibility pattern can be found in landed rental houses with an area of 50 and 60 m<sup>2</sup> with certain conditions. Meanwhile, based on the results of descriptive analysis, it was found that the motivation for the adaptation process of tenants was related to the hierarchy of needs proposed by Maslow.

For further research recommendations, it is interesting to find out what factors influence the occurrence of adaptation in landed rental houses so that research can be more measurable (quantitative) and produce criteria for adaptive landed rental houses according to residents' preferences.

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