

Adaptation of occupants with its environment in the official residence (case study: Housing of TNI AD Gaperta)

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Abstract. An official residence is a housing provided by the state and used as a residence occupied by the official duties of officials and civil servants during their service in the city. The property rights of the official residence have limit, only valid while the residents serve in the city. The process of adaptation becomes indispensable because, in the early days of occupying the housing, residents will face a new social environment, which may be different from their previous environment. Furthermore, backgrounds such as economic, cultural, and social factors of each occupant will also determine the adaptation process that occurs. This research aims to find out and analyze adaptation process of the official residence's dwellers to its environment. This study used the descriptive-qualitative method by interviewing ten occupants who selected by purposive sampling method. Results of research indicated that the most adaptation process occurs adaptation by the reaction such as adding the number of room and service area.

Keywords: adaptation process, official residence

1. Introduction

State housing or often known as an official residence is provided by the state and serves as a residence occupied by the incumbent civil servants during a stint in the city [1]. Residents in the housing are already determined by the owner of the housing agencies so that its residents have the same background, in this case, is the professional work.

The existence of this official residence is throughout the city in Indonesia, including in the city of Medan. There is the broad range of official residences located in the city of Medan. One of these is the official residence of TNI-AD Gaperta. This official residence belonged to the residents with the profession of TNI-AD and located in Gaperta street, Medan, North Sumatra, Indonesia. Besides of having the same background of occupation, the residents are also having similarities in the validity of house's ownership. The property rights of the official residence have limit, only valid while the residents serve in the city. The property rights that has limit will cause displacements as a mandatory cycle and make the inhabitants in it should be able to adapt to the surrounding environment quickly.

According to W.A. Gerungan, adaptation is a process of changing themselves and change to the state of the environment or alter the environment by the self-circumstances (wishes) [2]. The process of adaptation is indispensable because, in the early days of occupying the house, they will confront with a social environment consisting of a variety of individual character, values, and norms that are attached to the environment, which may be different from their previous environment. Also, a background as a factor of economic, cultural, and social of each resident also be decisive the process



of adaptation that occurs. The process of adaptation is indicated by the changes that are made by the residents.

2. Literature Review

2.1. Adaptation of residents

According to Indonesia Dictionary, adaptation is the process of adjusting to the environment, employment, and the lessons [3]. Adaptation aims to obtain conformity between requirements to what has been provided to the environment, because if such compliance is not achieved, then it will cause further stress, which will impact severely on other things. According to Iskandar, the process of stress involves several components of individual psychology, such as intellectual property, experience, knowledge, motivation, and cognitive factors as well as the control of perception, which then these factors if got influences from the environment, then it would cause one's stage in reacting. If it fails, it will cause stress, and if successful, that's what called an adaptation [4]. The process of occurrence of stress can explain by the following scheme:

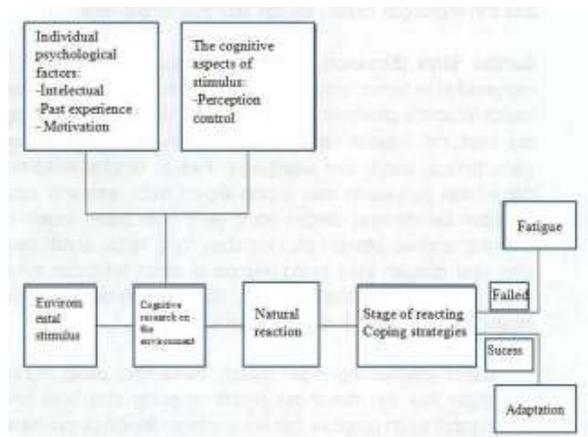


Figure 1. The schema model of stress.
(source: Iskandar, 1990 (in Prabowo))

The process of adaptation is also valid on the physical condition of the house. Environmental conditions such as demographic characteristics & social culture when merged with the physical situation of the house then it will cause the value of satisfaction of residents, then raises the tendency of self-adjustment and the process of adaptation [4]. The process of adaptation of occupants can explain by the following scheme:

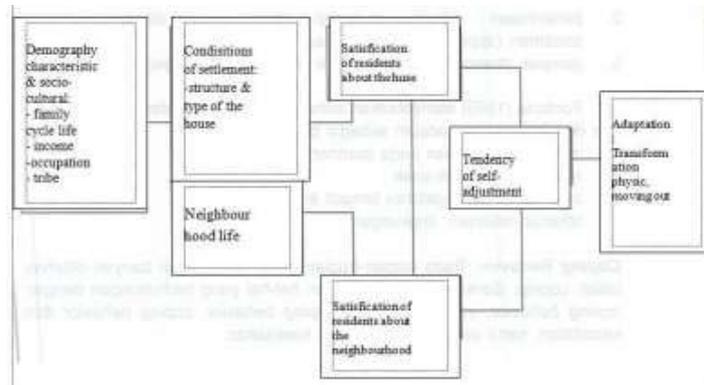


Figure 2. The schema model of the behavior of the residents.
(source: Iskandar, 1990 (in Prabowo))

2.2. *Adaptation according to Altman*

Adaptation in the context of the architecture can differentiate into adaptation behavior and adaptation of buildings [5,6]. According to Altman, the adaptation itself can define as the ability of individuals in responding to the environment. It says that adaptation is a part of the human response to the surrounding environment. The phenomenon that occurs, due to the discrepancies or outside the habits that lead to the existence of human adaptation to achieve balance [5]. Self-adjustment schemes can be explained by the scheme below:

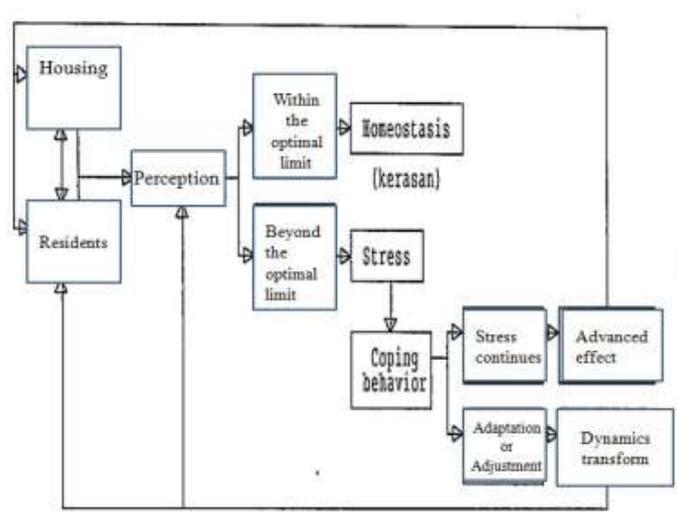


Figure 3. Skema penyesuaian diri terhadap lingkungan.
(source: Altman, 1992)

Furthermore, Altman suggests that the form of the copying process done by that individual distinguished into three types of adaptation that is [5],[6]:

- Adaptation by adjustments that adapt to the way of aligning themselves with the surrounding environment. In this adaptation, humans are finding ways or replacing their standard to comply with the existing environment.

- Adaptation by action that adapts to how to do changes in the environment and can judge as an act of rejecting or fight against the environment. In this adaptation, humans are trying to maintain the standard.
- Adaptation by the withdrawal that adapts by withdraw or move out of the neighborhood.

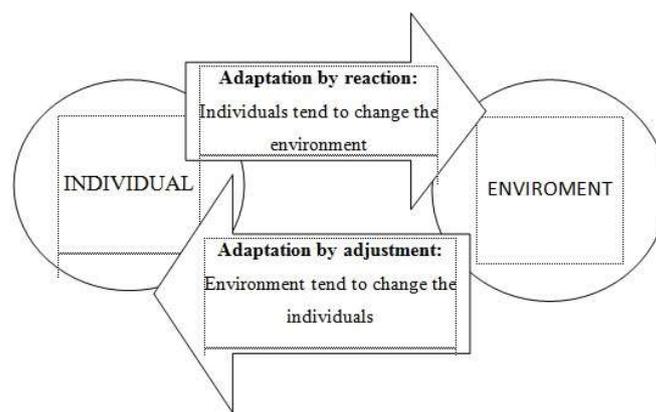


Figure 4. Skema penyesuaian diri terhadap lingkungan.

2.3. Adaptation according to Habraken

According to Habraken, the transformation of the built environment can occur at three orders: the physical change, the transformation of the territory, and cultural transformation. However, physical transformation is the object which reviewed in this research. Three things be an indication of the physical environment as a transformation process of adaptation [7], namely:

- **Addition.** The addition of an element in a site so that there is a change from the original form. For example is the addition of insulation in space, so another new area is created.
- **Elimination.** The reduction of an element in a site so that there is a change from the original form. For example, dismantling the walls to meld two rooms into one or eliminating the window at certain positions.
- **Movement.** The movement is the change of shape from the beginning by moving an element. For example, is moving the position of the door from one side to the other side or move the area for drying clothes that used to be in the back of the house to the front of the house.

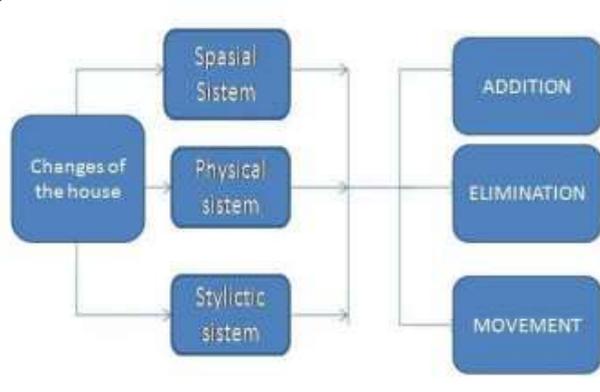


Figure 5. The adaptation process scheme.
(source: Bukit, Santa Elya, et al, 2012)

3. Research Methodology

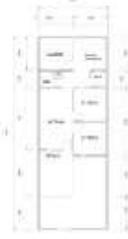
This research uses the ecological approach with the theme human-behavior environment. This study uses qualitative methods, namely by searching for related literature reviews and compare it with the results of the field. The technique of sampling in this research is purposive sampling. Purposive sampling is a method of determining the research sample by using several terms as the goal to make the data acquired more representative [8]. By using this technique, it can determine that the population of this research is the residents of TNI-AD Gaperta's official residence which amounted to 373 residents. The samples by using this technique are the ones who selected by the researchers and owned a criterion that has a lot of changes in their house regarding economic activity, hobby, and social and obtained the number is ten residents.

This research used primary data and secondary data. Primary data collected through interviews and observations with the ten residents who have selected and the secondary data collected through the documentation of applicable official residence's regulations. Data observations and interviews analyzed in qualitative descriptive.

4. Finding

There are a lot of changes in resident's floor plans from the early time the residents occupy the house until now as the result of a resident's adaptation process with their environment, which can show in the following table:

Table 1. Changes to the floor plan of the resident's house.

No	The Resident	Preliminary Floor Plan	The Final Floor Plan	No	The Resident	Preliminary Floor Plan	The Final Floor Plan
1.	K-136			6.	K-107		
2.	K-21			7.	K-81		



5. Discussion and Analysis

5.1. Based on economics

Based on the results of interviews and observations and analyzed with the theory related, then it can be identified, the process of adaptation that occurs in conventional housing's resident based on economic activity are as follows.

Table 2. The adaptation process of residents

No.	The Resident	Room	The Process Of Adaptation		The cause
1.	K-136	Stall	Reaction	Add at the terrace	The wife wants to help the family's finance by working at home
		Room	Reaction	Add in the back	Residents need extra room for his eldest son who has started being teenagers and require a separate room from his siblings
			Adjustment	Unite	
		Bathroom	Reaction	Add in the back	Residents need more bathroom for 5 people in the house
Kitchen	Reaction	Demolish the old kitchen and move to the rear area	Residents think that the kitchen is too close to the bedrooms and they are worried in case of accidents such as gas cylinders		

				explode kitchen, for example	
	Carport	Reaction	Reduce the terrace area	Residents need area for his car parked	
	Service Area	Reaction	Add on the side	Residents need area for washing and drying clothes	
	Family Room	Reaction	Add in the back	Residents want a more private living room lying on the back so that it is separate from the living room	
2.	K-21	Stalls	Reaction	Add permanent building next to the house	The wife wants to help the family's finance by working at home
		Room	Adjustment	Merging the two daughters into one room	Resident do not need two separate bedrooms for two children of the same sex
		Kitchen	Adjustment	Utilizing the room that used to be bedroom in the back of the house	Residents think that the kitchen is too narrow for cooking and they decided to use the old bedroom which is not needed anymore
		Warehouse	Adjustment	Utilizing the early kitchen	The old kitchen is changed into the warehouse to keep the goods
		Carport	Adjustment	Add in front of House area	Residents need area for his car parked
3.	K-85	Stalls	Adjustment	Utilizing the front	The wife wants to help the family's finance by working at home
		Room	Reaction	Add in the back	Residents need additional room to separate the sons and the daughter.
		Bathroom	Reaction	Add in the back	Residents think that the early bathrooms are too narrow.
		Kitchen	Reaction	Add in the back	Residents think that the kitchen is too narrow for cooking and can not be used as dining room
		Service Area	Adjustment	Add in the front area of the terrace	Residents think that the front area of house is enough to be utilized as a drying area
		The Family Room	Reaction	Add in the back	Residents want a more private living room lying on the back so that it is separate from the living room
		Carport	Adjustment	Add in the front area of the house	Residents need area for his car parked

Based on the observations and the results of the interview which has described above, it can conclude that the most adaptation process occurs based on economics is the adaptation by reaction of adding. It is more when compared to who adapted adjustment. Residents tend to do the addition in front of their house area. The reason is that the area that can still be utilized to support economic activities is the front area of the house, while the back area of the house already used for the addition of other indoor areas.



Figure 6. Adaptation based on economic activity.

5.2. *Based on hobbies*

Based on the results of interviews and observations and analyzed with the theory related, then it can be identified, the process of adaptation that occurs in official housing's resident based on hobby are as follows:

Table 3. The adaptation process of residents

No.	The Resident	Room	The Process Of Adaptation		The cause
1.	G-25	Fish pond	Reaction	Add a permanent fish pond in front of the house	Residents like to working the hobby at home
		Room	Reaction	Demolis the walls of two rooms next door to get 1 spacious room with large size	Residents want to get spacious large rooms so that both his daughters who was 5 and 7 years old can sleep in the room as well.
		Warehouse	Adjustment	Utilizing one unused bedroom	Old unused bedroom is used for a warehouse to keep the goods.
		Service Area	Adjustment	Add in the front area	Residents think that the front area of house is enough to be utilized as a drying area
2.	K-90	Mini Garden	Reaction	Add in the front area	Residents like to working the hobby at home
		Room	Adjustment	Uniting the daughter with her grandmother using a single room	Residents think it was enough if Grandma and daughter just using one room
		The Dining Room	Adjustment	Utilizing the family room that was in the back area	Residents need room as a dining room
		Service Area	Adjustment	Add in the back area	Residents need area for drying clothes
		Carport	Adjustment	Add in front of house area	Residents need area for his car parked

Based on the observations and the results of the interview which has described above, it can conclude that all the adaptation process occurs based on the hobby is the adaptation by reaction of adding. Residents tend to do the addition in front of their house area. The reason is that the area that can still be utilized to support economic activities is the front area of the house, while the back area of the house already used for addition for other indoor area.



Figure 7. Adaptation based on hobby.

5.3. Based on social

Based on the results of interviews and observations and analyzed with the theory related, then it can be identified, the process of adaptation that occurs in official housing's resident based on social are as follows:

Table 4. Proses adaptasi penghuni

No.	The Resident	Room		The Process Of Adaptation	The cause
1.	K-107	Terrace	Reaction	Add the size	Residents would like to get the area to be used for a social activity (wirit)
		Permanent bench in front of the terrace	Reaction	Add in front of house area	Residents would like to get a place for socialize with other residents
		Kitchen	Reaction	Utilizing the area which used to be the family room	Residents think that the kitchen is too narrow for cooking and can not be used as dining room
		Warehouse	Adjustment	Utilizing the area which used to be the kitchen	The old kitchen is changed into the warehouse to keep the goods
2.	K-81	Terrace	Reaction	Add the size	Residents would like to get the area to be used for a social activity (wirit)
		The bench in front of the terrace	Reaction	Add in front of the terrace	Residents would like to get a place for socialize with other residents
		Bathroom	Reaction	Adding in the back area	Residents need an extra bathroom
		Service Area	Reaction	Add in the back area	Residents need area for drying clothes.
3.	K-174	Permanent Bench	Reaction	Add in front of the terrace	Residents would like to get a place for socialize with other residents
		Room	Reaction	Add in the back area	Residents want to get separate rooms to 1 daughter already moving up.
			Adjustment	Merging the two daughters into one room	Resident do not need two separate bedrooms for two children of the same sex
		Kitchen	Reaction	Add in the back area	Residents think that the kitchen is too narrow for cooking and can not be used as dining room
		Service Area	Reaction	Add in the back area	Residents need a specific area for washing and drying clothes.
		Warehouse	Adjustment	Utilizing the old kitchen	The old kitchen is changed into the warehouse to keep the goods

4.	K-27	Permanent Bench	Reaction	Add in front of the terrace	Residents would like to get a place to socialize with other residents.
		Room	Reaction	Add a room on the back area	Residents would like to get an extra room for their nephew who would live well at home.
		Carport	Adjustment	Reduce the terrace area	Residents need area for his car parked
		The Family Room	Adjustment	Utilizing the old dining room	The residents need the private family room more than the dining room
		Warehouse	Adjustment	Utilizing the old bedroom	The old bedroom is changed into the warehouse to keep the goods, such as cabinets
		Service Area	Adjustment	Add in the back area	Residents need area for drying the clothes.
5.	K-177	Permanent Terrace	Reaction	Add in the front area	Residents would like to get a place for socialize with other residents
		Room	Reaction	Add rooms in the back area	Residents would like to get an extra room for Grandma
			Adjustment	Merging the two daughters into one room	Resident do not need two separate bedrooms for two children of the same sex
		Kitchen	Reaction	Add a kitchen in the back area	Residents think that the original kitchen is too narrow so that residents make the kitchen with the wider size and use it as a dining room too.
		Service Area	Reaction	Add the service area to wash clothes, in the back area	Residents need a specific area for washing and drying clothes
		The Family Room	Reaction	Add in the back	Residents think that it must be located on the back and is separated from the living room

Based on the observations and the results of the interview which has described above, it can conclude that all the adaptation process occurs based on social is the adaptation by reaction of adding. Residents who join the social activities on housing tend to have a wide terrace with a reason it can utilized if the social events held in their home, for example for write activity that held every week. In this case, no resident adapting to adjustment



Figure 8. Adaptation based on social activity.

The resident's frequency adaptation processes based on economic activity, hobby, and social can be seen in the following table:

Table 5. Frequency of resident's adaptation processes

Activity Based on	The Number Of Residents	Adaptation by Reaction	Adaptation by Adjustment
Economy	3	2	1
Hobby	2	2	0
Social	5	5	0

6. Conclusion and Recommendation

Based on the results of the research and the discussion which has described previously, it can conclude that the most adaptation process occurs in resident at the housing of TNI-AD Gaperta is an adaptation by the reaction, by transforming the physical shape of the house. The adaptation process only a few states residents were doing adaptation by adjustment. It happens because adaptation change itself can

not fulfill the residents' need for a room. The sequence of place that most experienced a process of adaptation by the residents is the bedroom, service area, kitchen, warehouse, carport, living room, bathroom and dining room.

The most adaptation by the reaction that occurs in the resident's adjustment process is increasing the number of rooms and service area. The reason why they increase the number of bedrooms is that the residents feel less by the number of available bedrooms. It can see from this conclusion that the two available bedrooms in the official residence are no longer enough for the majority of the residents. Most of the residents also adapt by the reaction to get the service area for washing and drying clothes. It shows that the residents need the service area, which is not available in the original floor plan of the house. Other conclusions pointed out that residents who have warehouse in the house are those that tend to adapt to adjustment, by utilizing the unused room.

Then the next conclusion is the inmate's behavior based on social relations between residents contributed in creating an adaptation process to occur. The results showed that the majority of residents who actively join the social activities on housing tend to adapt reaction, by adding extensive terrace to be used as a venue for social events. The conclusion is the absence of a limitation of the existing land make residents do a lot of changes to the house.

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