Activities pattern of planned settlement’s residence and its influence toward settlement design

Dwira Nirfalini Aulia
Department of Architecture, Faculty of Engineering, Universitas Sumatera Utara, Jl. Dr. Mansur Kampus USU, Medan 20155, Indonesia

E-mail: dwira.nirfalini@usu.ac.id

Abstract. Everyday activity of residents in a housing area will create activities pattern. Utilization of public spaces in a housing area with repeating activities pattern will affect the design of public spaces. Changes in public space usage in a housing area happen as a result of residents’ activities pattern. The goal of this paper is to identify residents’ activity pattern and connect its influence towards public spaces utilization in planned housing in micro and urban area in macro. Housing residents classified into four respondent groups based on marriage status which is unmarried, single parents, the family without child and family with a child. The method used in this research is the qualitative descriptive approach. Research finding showed that housing area with housing facilities capable of creating happiness and convenience for its residents doing their activities in public spaces.

Keywords: activities pattern, public space, planned housing

1. Introduction
The housing area is closely related to its resident livelihood area (jobs, recreation, and place of living). Housing area with its public areas is where subsistence activities collectively occurred. A house is where an individual lives and raise a family. Housing area, urban area, and open spaces are creating the whole living environment together. Some of the values that create living environments such as the presence of a specially designated place to trading such as the market. Collective agreement to choose one of its residences as its leader. The existence of a social status symbol using particular building material. Norms are passed down from the earlier generation in living activities. To fulfill these needs, a house should provide at least two things which are physical satisfaction and psychological satisfaction. [1].

Discrepancies in design and residential satisfaction criterion cause dissatisfaction for residents of mass housing (planned settlement). However, due to limitations in choice, residents are required to be able to adapt to those conditions. There are some behaviors that human has to adjust to their housing design limitation in their environment. Some of them adjust their activities in housing public spaces, while some can modify their house design to suit their activities in their living space. As the analysis suggests, there is a correlation in human activities and housing design. What is the relation between housing design and its resident’s activities pattern and vice versa considering activities of the residence affects those living environment?
2. Classification of Planned Housing Residence
According to [2], residents can be classified based on their family status into (1) Single. (2) Single parents. (3) Couples. (4) Two parents family. The difference in marital status affects their activities pattern in their home. Activities pattern is also being affected by their interaction with their neighborhood and the frequencies of activities inside and outside of their house.

3. Activities Pattern of Planned Housing Resident
According to [3], time management enabled an individual to split their activities into several categories such as rest, study, eat, traveling, job activity and recreation. Each has different activities pattern resulted in various time management as well. According to Michelson and Reed in [4], analysis of activities pattern can be observed using time budget. Time budget allows the observation on resident composing their activities daily, weekly or seasonally. It also allows observation on how an individual uses their time.

Resident activities pattern can classify into two categories which are home based and home range. In social hierarchy [5], home base and home range were used as a reference to categorized resident activities so that activities pattern in their housing can discover. Home base refers to resident activities around their house and its neighborhood. Activities such as eating, sleeping, watching TV, interacting with the family member as well as neighbors around their neighborhood are examples of home base activities. Home range refers to resident activities in wider scale with activities involving their job or routine activities in a wide urban area.

According to [6], home range is the common limitation in the periodic movement for the resident in an urban area which consists of different settings and locations and the link between settings. Home range refers to activities related in economic, politics, education, government, culture, etc. because of its wider scale than home base. Home range affected the forming of movement pattern in urban resident so that they can adapt to an existing home range.

4. Planned Housing Environment
According to Perry in [7], an ideal housing environment will gather the whole public spaces and the condition needed by the average families for their satisfaction and fairness of life in their neighborhood. There are six principles in planning a housing environment which is:

- **Housing size.** Developing a housing environment must always consider the particular size of population corresponding with standards in housing facilities;
- **Housing boundary.** Housing boundary must be visibly seen with precise dimension and road size proportionally with housing scale;
- **Open Space.** Public areas must be made available by the open space standard needed;
- **Education facilities.** Education services required for their residents;
- **Daily shopping facilities;**
- **Environmental road.** Environmental road designed to simplify circulation inside the housing environment.
Research framework schematics can be seen in Figure 1 below.

![Research schematics](image)

**Figure 1.** Research schematics.

5. **Research Method**

This research is a qualitative descriptive research. The goal is to identify the activities of residents in a planned housing environment and determine their pattern as well. Data sampling obtained with the purposive sampling of respondents based on the marital status of each respondent. Data acquisition can also be made using questionnaire related with behavior analysis in a housing complex. To obtain the data needed, aside from distributing questionnaire, researchers also conduct interviews with several respondents. Direct observation also done towards research objects aside from interviews. Variables used in this study are types of activities carried out and the location of public space in a housing complex where respondents perform their daily activities.

Analysis methods used in this research is behavioral mapping. Behavioral mapping is a systematic observation technique used to record the activities of an individual or a group of persons in particular place for a certain amount of time. After recording and drawing their behavior using behavioral mapping, mapping residents’ behavior can be accomplished by observation in the field. Every repeated activity creates certain activities and behavior pattern which will categorize in research findings. In the process of observation, researchers will outline the behavioral setting of each facility in each planned housing complex in Medan city.

6. **Result and Discussion**

**Identifying residents activities (People centered mapping).** One of the findings from the observation is the frequency of activities of planned housing residents. Researchers divide these activities patterns into daily frequency, weekly frequency and monthly frequency based on the day-to-day activities classification of a planned settlement residents in Medan City. (Figure 2)
Activities pattern of planned housing residents. The activities of residents on holiday are as follows: recreations with the parents, gathering with extended family, hang out with friends/relatives, enjoyed the housing facilities and relax at home (Figure 3).

Analysis of the users of housing facilities showed that the residence enjoying housing facilities with family (72.7%), friends (13.6%), the couple (9.1%) and alone (4.5%). From all the results on the pattern of social interaction at the planned housing in Medan city, public open space (park) and public housing facilities such as supermarkets or mini markets, swimming pool, basketball court, tennis court, badminton field are a place where all groups of variables can assemble.
Analysis of activities based on the socioeconomic, resting is the most activity conducted by residents while at home. Residents of housing make their homes as a place to eliminate fatigue and gather with family after doing activities outside the home. The most activity that is in the settlements is August 17th and gotong royong. The activity is a cross-activity that mostly done by all social status of residence either high-income society, middle or low income. The events are still included in the activities to enliven the existing environment in housing. The fact makes the housing situation becomes mixed and makes people interact with each other.

Analysis based on cultural activities based on the culture of residents, at home, became the most choice when organizing a routine event or not regular in the housing. Regular events often are done in the house of religious events such as wirid, pengajian and worship, and wedding ceremony. The occurrence of the routine at home keeps the neighbors coming and knowing and interacting with each other, and there are also some who come before the event to help prepare the equipment and prepare the food. The activity adds to the closer the kinship tied into the housing environment.

According to Perry in [7], an ideal housing environment can provide public facilities such as open spaces, schools, shopping facilities and environment road. The existence of activities in the public areas indicates that the design of housing facilities complies with the need for residents’ public spaces for their daily activities.

**Figure 4.** Scenery and activities in an internal street inside of Cemara Asri housing complex, Medan.

The atmosphere of environment road in a planned housing can be seen in Figure 4. The Dimension and quality of the road comply with the traffic needs in the housing complex. On a particular time, Sunday morning as an example, some of the roads will be functioned into trading place for street vendors coming to the housing complex. Shopping facilities in a housing complex are available so that residents can shop for their daily needs without going out of their complex. Open space available in the housing complex can support resident activities such as resting, playing and interacting with other residents.

The most influencing factor on behavior and lifestyle in this research is sociocultural factors. This condition is because there are still many religious activities and social events that routinely performed like wirid, pengajian and devotions in the housing and supported by the location of housing located in the City of Medan. Religious events and social activities that make the housing environment to mingle and make people interact with each other. The events can add to the closer the kinship that intertwined in the housing environment. In [5] social hierarchy, home base, and home range become a reference to categorize residents’ activities to discover activities pattern of residents in housing environment on a micro scale and urban environment on a macro level. Some activities cannot do inside their housing environment which pushes residents to conduct their activities outside of their housing environment. In other words, residents need to use facilities outside the housing complex. However, some residents also use services outside their housing complex even if their housing complex provide similar facilities for their activities.
This activities pattern is used to ascertain the mobility pattern of planned housing residents which geographically spread in sub downtown and suburban area of Medan City. This activities pattern can also be used to plan development and improvement of city transportation network especially the road network connecting housing location with office facilities, education facilities and shopping facilities in an urban area.

Figure 5. Activities in open space (left) and around local shops (right) in a planned housing in Medan City

7. Conclusion
The presence of well-planned facilities in a housing environment will make residents of the settlement environment comfortable in living and doing their activities in their house and their neighborhood. Even if the facilities provided, poorly maintained facilities will make residents prefer facilities outside of their housing environment because the sense of place toward the facilities has disappeared. From this conclusion can be derived that a suitable housing environment is not only capable of providing facilities for their residents but also needs to be able to maintain their facilities so that residents can still find the sense of place in those housing environments.

Acknowledgments
The authors gratefully acknowledge that University of Sumatera Utara support the present research. The support is under the research grant PU USU of Year 2017 Contract Number 36/UN5.2.3.1/PPM/KP-TALENTA USU/2017.

References
[1] Omar, E O, Endut, Esmawee, & Saruwono, Masran. 2010. Adapting by Altering: Spatial Modifications of Terraced Houses in The Klang Valley Area. Asian Journal of Environment - Behavior Studies vol 1 no 3
[2] Kartsen, Lia 2012 The Middle Classes and the Remaking of the Suburban Family Community: Evidence from Netherlands (Springer+Bussiness Media B V)
[3] Douglas, Porteous, J 1977 Environment and behavior:planning and everyday urban life (Addison Wesley)
[4] Laurens 2004 Arsitektur dan perilaku manusia (Jakarta: Grasindo)
[5] Chombart, de Lauve 1965 Les sciences humaines et le pouvoir Nouvelle series 337 (4) pp 698-709
[6] Haryadi 2010 Arsitektur,Lingkungan dan Perilaku (Yogyakarta: Gajah Mada University Press)
[7] Wiguno Setio 2007 Pola Pergelakan Berbelanja Oleh Penduduk Perumahan di Wilayah Pinggiran Kota Bandung
