Factors Influencing User's Behavior at Riverbank Space

Suryaning Setyowati[1,2], Achmad Djunaedi[2], Ahmad Sarwadi[2] , Diananta Pramitasari[2]

[1] *Department of Architecture, Faculty of Engineering, Universitas Muhammadiyah Surakarta Indonesia*

[2]*Doctoral Program of Architecture, Department of Architecture, Faculty of Engineering, Universitas Gadjah Mada, Indonesia*

***Abstract*—The pedestrian path on one of the riverbanks that divides Surakarta, namely Kali Pepe, which is primarily used for circulation, is also used for a variety of activities by the surrounding communities The purpose of this research is to identify the factors that influence riverbank space use behavior. A qualitative descriptive case study was used as the research method. The Pringgodani Row House, Pringgading Village, Setabelan Village, Banjarsari District, Surakarta City, and 6 samples of row houses were chosen as cases on the banks of the Kali Pepe river. The findings indicated that space constraints, occupant status, health, livelihoods, and security were factors that influenced he behavior of using the edge space, evidenced by the closure of the pedestrian street with a full canopy that functions as a living room, terrace, kitchen, gathering room, space for drying and circulation. This paper would help pedestrian planners in the edge space make the most of it as a public space and circulation space.**

***Keywords*—Riverbank, behavior, space use, public space**

I. INTRODUCTION

The riverbank area in the middle of the city has an interesting phenomenon in changing the physical structure of the residential environment. The arrangement and physical appearance of a city do not solely reflect the social structure of society or the norms, values, and behavior of its citizens, but also imply a combination of preservation and growth, stability and change, order and chaos, certainty and uncertainty, formal and informal, the past and the future, and so on [5].

According to Koentjoroningrat (2002) one type of culture is activity, which is defined as a complex of human activities, actions, and patterned actions in the context of social life [8]. The housing and settlement sector is critical in the development of a city to the effects of urbanization. On the one hand, urbanization is associated with environmental degradation and community social conditions in addition to increasing economic developments.When immigrant of communities that have urbanized do not have a fixed destination after moving to urban areas, they tend to occupy land that was built independently without regard for environmental aspects, despite all existing constraints. These factors can give the impression that they live in a slum in their neighborhood [2].

Surakarta is one of the cities in Indonesia that has felt the effects of urbanization and rapid development. Empirically, the emergence of slum settlements along the banks of the Pepe River in Surakarta City indicates a change in the city's state.

The Pepe River is one of the rivers that divide Surakarta and has historical significance. The river that runs for about five kilometers from Sangkrah Village to Gilingan Village is also the reason for the establishment of Surakarta City, as it is the confluence of two rivers, the Pepe River and the Solo River. This river used to play an important role in city mobility, and it is one of the small ports that are part of the two Bengawan Solo trade routes.

The beauty of the Pepe River, which was once beautiful, and even became a vital trade route in the Gedhe Market and Chinatown is now just a beautiful old story that is gradually transforming into a spooky garbage stream. Given the current state of apprehension, concrete actions to restore Pepe River to its former state are being encouraged. The City Government initiated the Pepe River arrangement to restore the function of the Bengawan Solo tributary and make it one of Solo's tourist destinations.

According to Prayitno (2014) that Surakarta City Government has a vision for the future in which the city will be free of slum areas by 2015. To realize this vision, the Surakarta City Government has implemented a program for dealing with slum areas and improving the quality of uninhabitable houses (slum and substandard house upgrading) since 2006, which is carried out through Bapernas (Community Empowerment Agency) Surakarta City, and aims to improve the quality of uninhabitable houses. As many as 6,612 units are livable. Surakarta City's approach to slum settlements focuses not only on repairing houses and improving the quality of the residential environment but also on structuring to improve the quality of the economy [2].

The Decree was ratified on December 12, 2014 by the Mayor of Surakarta No. 032/97-C/1/2014 concerning Determination of Housing and Slum Locations in Surakarta City has been used as the basis for planning and implementing urban slum management in support of the National Medium Term Development Plan in the field of Human Settlements up to 2019. At the same time, the Surakarta City government has a big agenda in optimizing Pepe River as one of Surakarta City's great potentials. Pepe River, which is in a strategic location and cannot be separated from its strategic value, has the potential to become a tourist route, which is expected to bring positive changes to both the City of Surakarta and the people who live in the area [10].

The arrangement along the Pepe River's banks began in

2014 with the construction of row houses in Pringgading Village as a pilot arrangement of settlements on Surakarta's Pepe River banks. The year 2016 was completed by repairing and maintaining the environmental infrastructure in all the slum area along the Pepe River's banks, from upstream to downstream.Infrastructure improvements implemented include the purchase of communal toilets, pump wells, waste treatment installations, the paving of roads and pedestrian paths, as well as the river normalization through dredging and the construction of dams along the river.

The arrangement on the Pepe River's banks is expected to have a positive impact and to transform slum settlements into comfortable settlements. This is of course inseparable from the physical and non-physical structuring factors that are implemented, so that settlers can maintain a friendly environment, have a positive impact on settlers living in residential areas, and educate the negative behavior that has been carried out so far. Factors contributing to the occurrence of slum settlements include littering and the use of facilities that do not meet their functions.

There is need for architectural revitalization in the form of circulation structuring, reforestation, utility systems, clean water channels, and public facility provision. In addition to having an impact on the environment, revitalization has an impact on the behavior of residents [12]. People's daily behaviors in utilizing the river have been carried out for generations, such as defecating, bathing, and washing in the river because the river is a source of easy and cheap fulfillment of needs. In addition to being a source of needs fulfillment, it will have an impact on public health and the beauty of the river, and it may cause pollution [13]. Not only that, other community behaviors such as dumping waste, garbage, and chicken manure into the river also contribute to decline in the river water quality [11].

Law enforcement regarding spatial planning is critical in events like this to ensure development [7], and visual problems in riverbank areas can be solved through solutions related to the environment, visuals, citizen behavior, and regulations [3]. As a result, by incorporating the characteristics of the residents and an ecological approach, the improvement of villages surrounding the river banks aims to improve the quality of life of residents as well as the quality of the surrounding environment [14].

This is where the Pepe River has an interesting dynamic of environmental development following the waterfront environmental arrangement that began in 2016, and is scheduled to be completed in 2018 as part of the government's efforts in the process of restoring the city's image, in this case, accommodating waterfront city tourism.The promotion of the improvement of the Pepe River is frequently carried out, but sustainability has not been given much attention, particularly in terms of the community environment's ability to accept change and care for the environment. The arrangement of pedestrians and gardens used as circulation and public spaces along the Pepe River is an example of progress [10].

The constraints of public space will create a common space for various types of activities that take place there permanently or alternately (at a specific time) [4]. This is also supported by the belief that knowledge and policies are required to create public open spaces that integrate natural resources and encourage social resilience [9].

The unique phenomenon found along the riverside pedestrian in row houses on the riverbank has changed dramatically. By providing a full canopy at the edge of the embankment, public spaces along the pedestrian in front of the row houses were privatized. This is an interesting case to investigate because it differs from other locations that still serve as pedestrian circulation path.

It is critical to research to identify the factors that influence riverbank users' behavior. The goal of this research is to describe the behavior of settlers on the banks of Kali Pepe river in Surakarta, factors that influence the behavior of settlers on the river's banks. Furthermore, it can aid the designer in the design of the riverbank area. The research method that will be used is an exploration in the field, which is constructed with theories on relationship or interaction between behavior and the environment based on the research objectives, and focus on the behavior of using space.

II. MATERIALS AND METHODS

This study is a component of the larger study of environmental architecture and behavior. Although the research methods for environmental and behavioral architectural studies are nearly identical to those used in other fields, there are a few technical differences[6].

This is a qualitative study that employs certain cases that are more of an assessment or other formulation in stages using specific benchmarks [1].

While the research focuses on the behavior of settlers' use of space, the case of the *Pringgodani* Row House, *Pringgading* Village on the banks of the Pepe River in Surakarta (see Figure 1). The Grand Tour is the reason for selecting the location. The researcher discovered that the setting of the area was a physical arrangement and improvement area that the Surakarta city government had planned from 2016 to 2018. After the physical arrangement of the pedestrians and public facilities, the physical boundaries of the study area in this case were specifically on the Pepe River bank area.

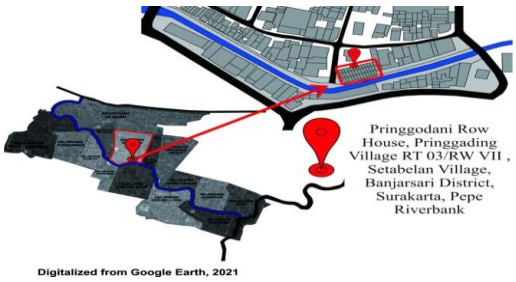

Figure 1.The research location is on the Pepe Riverbank, Pringgodani Row House, Pringgading Village RT 03/RW VII ,Setabelan Village, Banjarsari District, Surakarta

Direct observation and documentation in the field to assess the condition of the object of research in the field, (2) interviews, and (3) conduct behavioral mapping are data collection techniques for this type of research that lead to behavioral-based architectural research. Behavior mapping is described in the form of a sketch or diagram of an area where humans carry out various activities [6]. The method of person centered mapping and place centered mapping that occurs in the research sample object. Behavioral mapping is very much needed in this study because it is in accordance with the research objective, namely to find the factors behind the behavior of riverbank space users so that behavior settings can be known in the environmental arrangement of residential areas on the banks of Kali Pepe Surakarta.

The person centered mapping method is carried out by observing the occupants of houses one to six in the Pringgodani row house for five days (morning, afternoon, and evening) with the following conditions:

1) The riverbank room located at the front of the houses of the Pringgodani Row House occupants numbers one to six was monitored (as shown in Figures 7 and 8).

Figure7. The plan of the research area for Houses Number 1 to 6 Pringgodani Row Houses

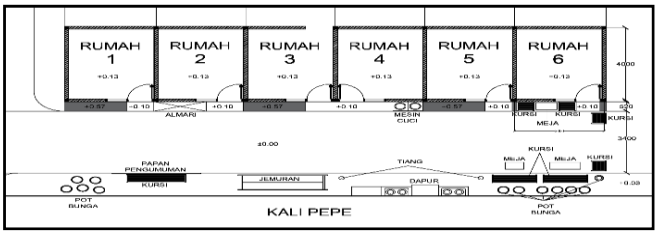

Figure 8. Plans for row houses no. 1 to 6 Pringgodani row houses

2) To make the trend more evident, observations were made for 5 days and 3 times namely:

   a. Morning (06.30 am to 08.30 am), taking into consideration when inhabitants begin doing activities at home, at work, or school.
   b. Afternoon (01.30 to 03.30 pm), taking into account when inhabitants are resting and returning home from work.
   c. Evening (07.30 to 09.30 pm), with residents speaking with their relatives and before resting time.

Because the average activity shift is 15 minutes at the start of the field study, each observation is 2 hours long to achieve maximal activity shifting.

3) Individual activities in using the bank space were separated into four categories:

   a. Activities inside the house (not identified because it is outside the bank area);
   b. Non-domestic activities or outside the home in the bank area;
   c. Activities outside the houses located outside the bank area (not identified);
   d. Domestic activities outside the home (should be done inside the house but carried out in the bank area);
   e. Activities outside (not identified because it is outside the bank area).

The place centered mapping method is carried out by observing the places that are often used to carry out activities by residents of houses no. 1 to 5 in the outskirt room for 5 days in crowded conditions (morning, afternoon, and evening) and in quiet conditions (morning, afternoon, and evening). Crowded and quiet conditions and the time of data collection are determined based on the average number of residents who use the space on the edge of the area.

Triangulated data from the three methods of person-centered mapping, place-centered mapping, and interviews were used in data analysis techniques.

III. RESULTS AND DISCUSSIONS

A. Overview of the Pepe Surakarta River

The Pepe River is one of the rivers that divide Surakarta City, and it is the reason for the city's evolution which is located at the confluence of two rivers, the Pepe River and the Bengawan Solo (See Figure 2).Administratively, the Pepe River area is divided into three sub-districts, each of which includes 15 urban villages: *Jebres (Kepatihan Kulon, Kepatihan Wetan, Sudiroprajan, Gandekan, and Sewu villages), Banjarsari (Gilingan, Kestalan, Setabelan, Mangkubumen, Punggawan, Ketelan, and Keprabon villages), and Pasar Kliwon (Kampung Baru, Kedung Lumbu and Sangkrah villages)* (see Figure 2).

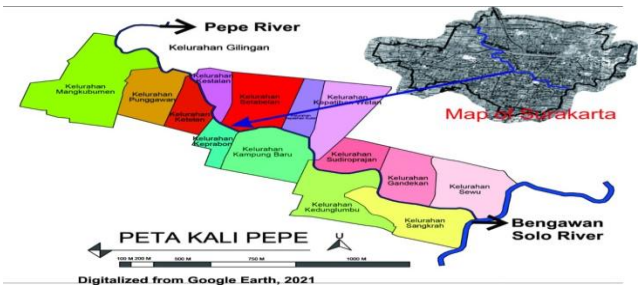

Figure2. Map of Kali Pepe (Pepe River) Surakarta

Meanwhile, the geographical condition of the Pepe Riverbank area is a flood-prone area with insufficient drainage facilities. The embankment construction and dredging along the riverbanks began in 2016, and there have been no floods so far [10].

Figure 3. Building a talud along the Pepe River

B. Surakarta's Pepe Riverside Environmental Arrangements

The Surakarta City Government has a large agenda in optimizing the Pepe Surakarta River to support the National Medium-Term Development Plan in the field of Human Settlements through 2019. The riverbank arrangement program in Pepe River, which runs from Sangkrah Village in the east to Gilingan Village in the west includes three sub-districts: *Pasar Kliwon, Jebres, and Banjarsari*. According to [10], the environmental arrangement of residential areas along the Pepe River's banks is part of the Pepe River slum management program which includes :

1) Flats located at Jl. R.M. Said and Keprabon (Figure 4).
2) Deret House, Pringgading Village, Setabelan Village (Figure 4).

Figure4. PepeRow Houses and Flats in the Pepe River Bank Area

3) Infrastructure improvement being carried out in all areas of the Pepe River's Bank residential area, from upstream to downstream, through the repair and maintenance of environmental infrastructure. Improvements include the purchase of communal toilets, wellpumps waste-water treatment installations, and the paving of the roads and pedestrian paths (see Figure 5).

Figure 5. The Atmosphere of Entering Settlements on the Pepe River's Banks, Setabelan Village, Looks Neatly Paved and Separated from the River Lips

C. Pringgading Village as a Research Site

Pringgading Village as a Research Site Pringgading Village is a village in Surakarta City, Central Java Province, located in the Setabelan Village area of the *Banjarsari* District. Administratively, *Setabelan* Village is bounded to the north by *Gilingan* Village, to the south by *Keprabon* Village and *Kampung Baru*, to the west by *Kestalan* Village, and the east by *Kepatihan Kulon* Village. *Setabelan* Village is made up of two old villages: *Jogobayan* Village and *Pringgading* Village. Administratively, it is made up of the following 9 RW (Citizens Association):

1) Jogobayan Village (RW I to RW VI)
2) Pringgading Village (RW VII to RW IX)

D. Pringgodani Row House as a Research Facility

This study focuses on *Pringgading* Village, specifically RT 04/RW IX and RT 03/RW VII on the north side of the Pepe River. Kampong *Pringgading* is divided into three RW, with each RW containing three to four RT (Neighborhood Association) and each RT containing approximately 56 KK (Head of Family).The *Pringgodani* Row House, located at RT 03/RW VII (see Figure 6), has been established at this location. This row house in Solo serves as a test-bed for the development of livable housing for low-income residents.

The Grand Tour is the reason for selecting the location. The researcher discovered that the setting of the area is a physical arrangement and improvement area that the Surakarta city government has been working on from 2016 to 2018.There are variations in the environmental management program for the bank area, such as flats on both sides of the riverbank, row villages, and infrastructure improvements such as the procurement of communal toilets, wellpumps waste-water treatment installations, paving of the roads and pedestrian paths.Precisely, in one of the villages on the Pepe Riverbank in Surakarta-*Pringgading* Village located in *Setabelan* Village, *Banjarsari* District in the *Pringgodani* Row House This Row House is a pilot arrangement for the area along the Pepe River when Ir. Joko Widodo as Mayor.

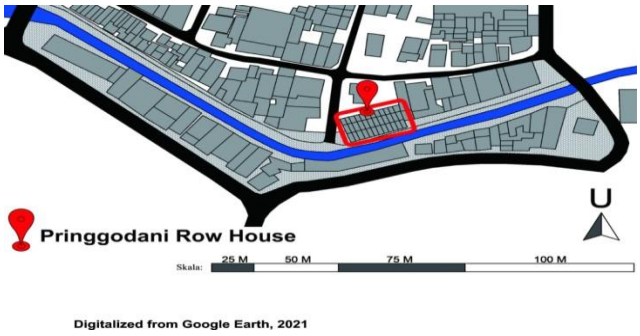

Figure 6. The location of the Pringgodani Row House and a map of Pringgading Village

E. Pepe River Bank Space Users' Activity

The use of space along the Pepe River is affected by the river bank design adopted by the government. The conditions vary in each section of the process of structuring the condition of the banks, only in the form of an inspection road, some as a public space equipped with a garden and group sitting.People use the space on the banks for a variety of purposes, including sewing clothes, drying clothes, storing carts and bicycles. The pedestrian area is used for the children's play area and the seating, washing and bathing areas.

F. Using the Person-Centered Mapping Method to Analyze Observation Results

The *Pringgodani* Row House RT 03/RW VII, *Pringgading* Village on the banks of the Pepe River with banks covered with a galvalume canopy to the edge of the river or talud fences with the occupants of houses numbered one to six, was observed.

The recapitulation results depended on the time of day (morning, afternoon, or evening) and the duration of the activity. The following tendencies were discovered based on observations of the behavior of the movement of activities carried out by each individual who resides in row house no. 1 to 6: (see Figure 15)

Individual 4b (wife) 49.5 percent of the time in the morning was spent cooking rice wraps to be deposited at the angkringan around Pringgodani Village, and 5b (wife) 63.3 percent of the time in the morning was spent doing domestic activities outside the home (in the bank area), namely cooking rice wraps to be deposited at the angkringan around Pringgodani Village.

It was discovered that activities outside the home continued to take place in the waterfront area, namely:

1) House no. 1 (1a/ Mr. Triwanggono/31.5 percent) with cleaning operations, bird and kid care (working on making boxes and parking attendants).
2) House no. 2 (2c/child II/20.2 percent) with activities to clean motorbikes, care for birds, and baby children (working at the dealer from 08.00 am to 04.00 pm) and (2b/child I/48.3 percent) with activities to clean motorbikes, care for birds, and baby children (working at the dealer from 08.00 am to 04.00 pm). (working at POM Gasoline in shifts).
3) Residents of House No. 3 tend bank space infrequently. (Mrs. Suparmi is a senior citizen.)
4) Sunbathing, sitting, and childcare activities are available at House No. 4 (4c/ Child I/ 40.5 percent) (working in the shop from 08.00 am to 04.00 pm).
5) House no. 5 (5a/Bp. Muhtaram/22%), by sitting and conversing (working as a home tailor).
6) House no. 6 (6a/ Mrs RT/36%), with sweeping activities, sitting about and caring for grandchildren, and (6b/ Pak RT/32.2%), with sitting, speaking with neighbors, and greeting visitors.

The percentage of usage of the bank-space in the afternoon in row houses no. 1 to 6 indicated the following tendencies in the activities of the tenants of houses no. 1 to 6 during the day (01.30 pm to 03.30 pm):

1) Individuals found in houses 4 and 5 still show the same propensity with morning activities, with 4b (wife) 16.8 percent conducting culinary activities and 5b (wife) 11.5 percent doing activities on the outskirts of the house, namely, completing domestic duties outside the home (inside the house). angkringan surrounding Pringgodani Village) which was cooking rice wraps to be put at angkringan.
2) It has been discovered that activities outside the home were still in the bank's jurisdiction, namely:
    a. Residents of Houses 1, 2, and 3 spend virtually little time at the waterfront area outside of their homes.
    b. House no. 4 (4b/ wife/22.7%) was engaged in activities such as sitting and raising grandchildren, (4c/ Child I/20.7%) was engaged in chatting, sitting, and raising children, and (4e/ Child II/29.8%) was engaged in activities such as talking, sitting, and eating.
    c. House no. 5 (5b/wife/42.2%) engaged in activities such as raising grandchildren and sitting about, whereas (5c/Child I/23%) engaged in activities such as bird care.
    d. Sweeping and sitting activities were carried out by House No. 6 (6c/ Child I/ 23.5 percent).

While the activities of the tenants of homes 1 to 6 at night (between 19.30 and 15.30 WIB) exhibit the following tendencies, the percentage of use of the bank space in the evening in row houses 1 to 6 shows the following trends:

1) In house no. 4, the occupant of code 4e (Mr. Triwidodo's second kid) who worked in the workshop, there was a tendency to carry out domestic activities outside the home, with sleeping activities accounting for 62.2 percent.
2) Non-domestic activities outside the home were still found in the bank area, specifically:
    a. Non-domestic activities or activities outside the home in the bank area, particularly the occupants of house no.5, Mr. Muhtarom's second five children (5c) accounted for 28.3 percent of the time spent sitting and chatting.
    b. House no. 6, specifically the head of RT (6a), engaged in non-domestic activities on the waterfront area, with 23.2 percent sitting and chatting.

c. The rest of the residents on average spend the night at home.

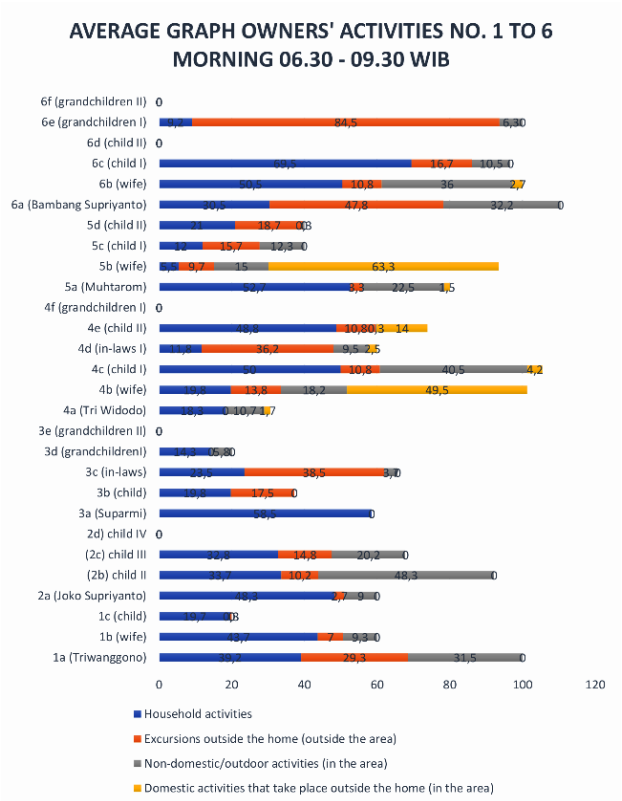

Figure 15. One of the results of observations of house no.1 to 6 in the morning.

G. Using the Place-Centered Mapping Method to Analyze Observation Results

The following superimpose results are presented as follows:

1) Superimposed results in crowded conditions in the morning, afternoon, and evening. (Figures 9,10, and 11).

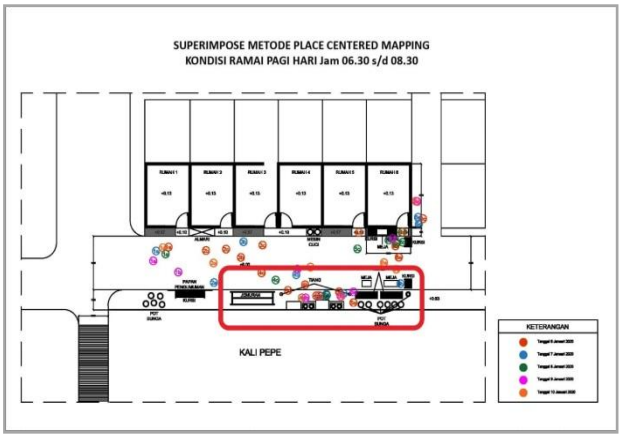

Figure 9. Superimposed results in crowded conditions in the morning.

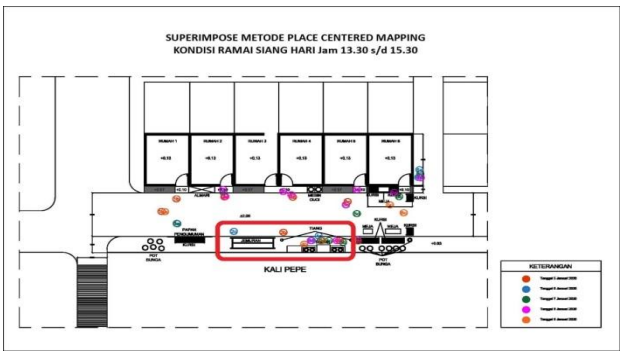

Figure 10. Superimposed results in crowded conditions during the day

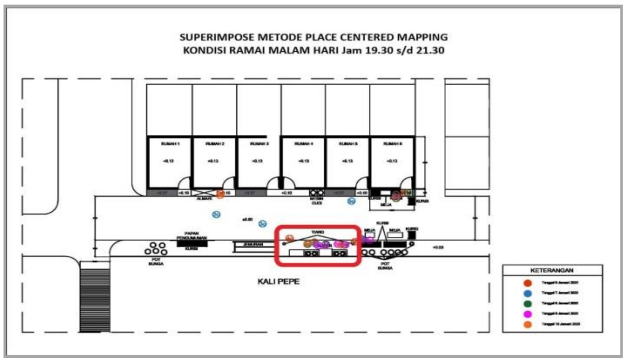

Figure 11. Superimposed results in crowded conditions at night

Based on the image of the superimposed results in quiet conditions in the morning, afternoon, and evening which is not significantly different from the results of the superimposed results in crowded conditions in the morning, afternoon, and evening, it appears that the areas most frequently used by residents of houses one through six were areas near the embankment, near the kitchen, and the sitting group. (see Figures 12, 13 and 14).

2) Superimposed results in quiet conditions in the morning, afternoon, and evening The image of the superimposed results in quiet conditions in the morning, afternoon, and evening is not dissimilar to the image of the superimposed results in crowded conditions in the morning, afternoon, and evening.

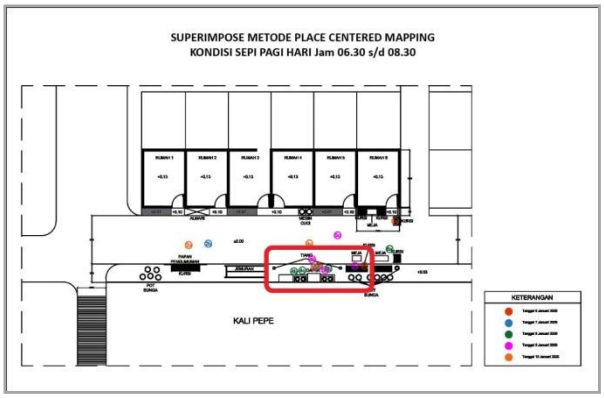

Figure 12. Superimposed results in quiet morning conditions

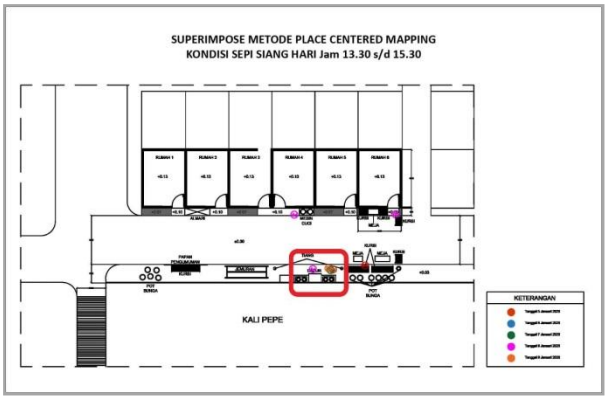

Figure 13. Superimposed results in quiet conditions during the day

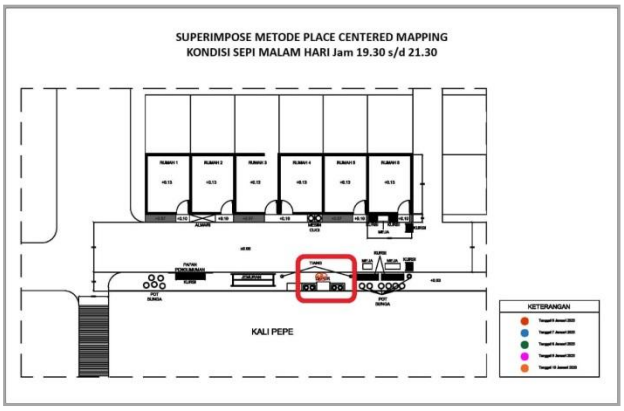

Figure 14. Superimposed results of quiet night conditions

The areas near the talud, kitchen, and group sitting were the most frequently used by residents of houses numbered one to six. Aside identifying the most frequently used places, the results of superimposing also identified the activities carried out by residents in the most frequently used places.

H. Triangulation Data

Triangulation data or crosscheck was performed to determine the validity of the data based on the results of the research using the methods of person-centered mapping, place-centered mapping, and interviews, as shown in Table 1.

The following trends were discovered based on the triangulation of the data presented:

1) Based on the technique of person centered mapping, place centered mapping and interviews, residents tend to carry out domestic (household) activities (cooking and making rice wraps to be sold at wedangan) in the kitchen, which is placed in front of the house no. 4 and no.5 for reasons of limited space and health reasons for the occupants (newborn grandchildren). Occupants tend to carry out non-domestic activities (socializing) most dominantly in the group sitting room in front of house no. 6, sitting and chatting activities. While the residents' activities are non-domestic activities (routines and hobbies) such as drying clothes, babysitting, cleaning motorbikes, sitting on the terrace and chatting in front of each other's houses other than the occupants of house no. 4,5 and 6.
2) The trend was supported by the findings of behavioral mapping using the place-centered mapping technique that reveals a preference for the chosen location to be near the talud around the kitchens of houses 4 and 5 for domestic activities (household), and a group sitting in front of house number 6 for group sitting (socializing).
3) The placement of the kitchen in the bank room and the group sitting room was facilitated by a galvanized cover on the edge of the room to protect it from heat and rain, as supported by the interview results.

The triangulation results show that the behavior of using the settlers' space (the occupants of row houses 1 to 6) using activities in the outskirts for household activities, livelihoods, daily routines, channeling hobbies and socializing, and the selected adjoining space were the spaces near the talud area around the kitchen and sitting group.

I. The relationship between physical settings, activities, and factors influencing riverbank space use.

According to the findings of the analysis, the edge room at the row house on the banks of the Pepe River was equipped with a shelter (galvalume canopy), which was supported by the findings of interviews, as shown in Table 2.

1) The factor of limited space in the occupant's house is only 12 m² (3 m x 4 m), moving the kitchen and placing a guest chair in the side room.

TABLE I. Triangulation of Research Data

House Number	Person-Centered Mapping	Place-Centered Mapping	Interview
1	MORNING Non-domestic activities in the morning: (regular) cleaning, kid rearing, and (passion and livelihood) bird care	MORNING Non-domestic activities in the morning: (regular) cleaning, kid rearing, and (passion and livelihood) bird care.	MORNING Non-domestic activities in the morning: (regular) cleaning, kid rearing, and (passion and livelihood) bird care.
2	MORNING Non-domestic activities in the morning: (routines) drying, cleaning motorcycles, parenting children, and (passion and livelihood) bird care	MORNING Non-domestic activities in the morning: (routines) drying, cleaning motorcycles, parenting children, and (passion and livelihood) bird care	MORNING Non-Domestic Activities In The Morning: (regular) cleaning, kid rearing, and (passion and livelihood) bird care.

3	Household pursuits (elderly occupants)	In the bank's room, there is no activity.	Because of the elderly residents who live there, there are only a few activities in front of the number one house.
4	MORNING Household cooking and non-household activities in the morning Children's care, drying, and sitting AFTERNOON Cooking and non-domestic activities; (routine) sitting about, raising grandchildren, conversing, and eating NIGHT Domestic pursuits: (regular) sleeping close to the kitchen	The chosen location is near the talud, in the kitchens of houses 4 and 5, where domestic activities (home and livelihood) are carried out (daily cooking and making rice wraps for sale at wedangan)	Because I have a newborn granddaughter, the occupant of house no. 4 is moving the kitchen outside so that the fumes do not affect the baby's health.
5	MORNING Domestic activities in the morning (household and livelihood) non-domestic activities, sitting and chatting, cooking and making rice wraps AFTERNOON Domestic activities (household and livelihood) include cooking and preparing rice wraps, as well as non-domestic activities such as sitting around and socializing (hobby and livelihood) take good care of the birds NIGHT Non-domestic activities; sit and chat		Because he had a job selling wedangan rice and his husband worked as a tailor, the occupant of House No. 5 moved the kitchen outside.
6	MORNING Non-domestic activities include sweeping, sitting, chatting, raising grandchildren, and entertaining visitors. AFTERNOON Cleaning and lounging are examples of non-domestic activities (both routine and socializing). NIGHT Non-domestic activities, such as (socialize) sitting and chatting	The chosen location is near the talud, in front of home no. 6, among a sitting group engaged in non-domestic (socializing) activities (sitting and chatting)	A pair of seats and a table are set up in front of the chairman of the RT's residence, number 6, to receive visitors. Because there is no special space for residents to gather, a galvalume canopy is installed in front of row houses 1 to 6 from the terrace to the edge of the river or a cliff fence to be used as a community gathering room. In the end, it is used by residents for parking, keeping birds, cooking, sunbathing, and sitting.

2) The existence of a shelter and the placement of 1 set of guest chairs in the bantaran room due to the need to receive guests, and as a meeting room or gathering of residents are the status factors of the occupants in this case.
3) Because of the presence of a newborn grandson, the occupants' health factor, in this case, is the relocation of the kitchen in the room to avoid smoke from the stove.
4) Because the house on the first floor is used by the husband to work sewing clothes, the livelihood factor in house no 5 moves the kitchen to a side room that is routinely used for domestic activities, namely cooking food to make rice wraps that are sold every day.
5) Parking motorcycles in front of the house's terrace is a safety factor in all the houses.

TABLE 2.The relationship between physical settings, activities, and factors that influence user's behavior at the riverbank space.

Space on the banks of Pepe River	Activities	Factors affecting the use of riverside space
In front of the house	Socialize	Space limitations Resident status Livelihood
	Daily routine	
	Livelihood	Health Security
Living room	Passing or riding a motorized vehicle (not identified)	
Near talud	Household	
	Socialize	
	Livelihood	

IV.CONCLUSION

Based on the findings of the preceding research, it is possible to conclude that there is a wide range of activities on the banks of the Pepe River.

1) Domestic activities outside the home take precedence were 62.2 percent are involved in sleeping activities.
2) Non-domestic activities outside the home are still prevalent in the bank area with 51.5 percent engaging in activities such as sitting and chatting. The rest of the residents on average spend the night at home.
3) There was the tendency to use the edge room for household activities, livelihoods, daily routines, channeling hobbies, and socializing, with the preferred side room being the space near the talud area around the kitchen and group sitting.
4) Factors influencing riverbank space utilization included

- limited space;
- resident status;
- health;
- livelihood;
- safety.

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