Coastal Settlement Behavior Setting in Kampung Blok Empang, North Jakarta

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Abstract. The purpose of the study was to find out behavior setting and its elements in Kampung Blok Empang. Kampung Blok Empang which is located on the coast of North Jakarta has a port setting and is bypassed by tourist access to the Kepulauan Seribu, so it is interesting to know how the behavior setting in this village is. Data collection is done by field observation and secondary data. The approach used in this research is deductive-qualitative with the research variables in the form of behavior setting. The Behavior Setting in Kampung Blok Empang is shown by how the setting of the urban village located in the port area affects most of the relationships between physical objects and the behavior of residents in the village. The best performance of behavior setting in Kampung Blok Empang is shown in the open space because its milieu-behavior interdependency. It is shown by the repetitive behavior in this specific milieu. The spatial Pattern type is formed by the collective activity of residents and the sea condition. They were characterized by the repetitive activities within their economic and social aspects.

1. Introduction
Kampung Blok Empang is an urban village in the Muara Angke harbour area, North Jakarta administration area. Setiawan says that urban villages are settlements that grow in urban areas without infrastructure planning and urban economic networks [1]. The urban village has the uniqueness of the settlement with its various inhabitants and activities to form the identity of the respective urban village. Due to its location in the Muara Angke Port area, the daily life of the people cannot be separated from the activities of coastal communities, namely fishing and fish processing. Kampung Blok Empang area is also included in the structuring plan by the DKI Jakarta government through the Pluit Village Community Action Plan.

The interaction between the residents of Kampung Blok Empang and its setting, namely the coastal area of Muara Angke, forms a distinctive pattern of behavior. The coastal area is a transitional area of land and sea that is influenced by ocean dynamics. The physical of coastal settlement is characterized by collective activity [2]. It is shown by the majority of residents who work as fishermen and the growth of supporting facilities for fish processing. One of these forms of utilization and behavioral patterns is due to the absence of boundaries between the Blok Empang village area and the coastal area of Muara Angke, so it is necessary to examine the relationship between human behavior and the physical environment in the village. The physical environment in Kampung Blok Empang includes fishing piers, seafood processing sites, trading stalls and settlements.

Bechtle says that behavior setting is the relationship between behavior and the space in which the behavior is carried out [3]. The definition of setting is defined as the order of an environment that can
affect human behavior, meaning that in the same place, human behavior can be different if the order is different. Barker states that behavior set is a pattern of human behavior related to the order of the physical environment [4]. Moore mentions that the interaction between humans and the environment will shape human behavior. Humans have a great ability to adapt so that human behavior can sometimes adapt to their environment. However, humans can also change their environment to suit their behavior [5].

Zeisel formulated six elements forming behavior setting, namely actor, act, significant others, relationship, context, and setting [6]. Relationship in behavior setting explains the relationship systematically so that it can be seen the differences and similarities between several behaviors in the setting. Context is how the situational and cultural properties of individuals are formed and how individuals interpret their behavior and the behavior of other individuals. Things that need to be considered in observing the behavior mentioned earlier, are in an environmental setting. Two things need to be considered in observing the setting where the behavior occurs, namely the potential environmental setting on behavior and the basis for making decisions on the design of the environmental setting.

In a previous study, Dzulfikar found differences in Behavior Settings that occurred in Kampung Pulo which was influenced by eviction activities and the social system [7]. Zulfikar found that the physical setting of street space such as building functions, building setbacks, pedestrian paths, street furniture, and vegetation affected the distribution pattern of street vendors in Kampung Lalong, Medan [8]. Setiawan in his research found that the river is an important environmental element in North Code Village, Yogyakarta is related to children's playing behavior [3]. Research by Lauria suggests some aspects of spatial use in the cities of Surabaya in the analysis of behavior in the context of the setting neighborhood are street usage for the economic, social, cultural, spiritual, and parking space [9]. Generally, outdoor space which has been defined as a shared outdoor space is providing a setting for casual social interaction; strengthening social networks in the local neighborhood; children’s play; and enhancing a sense of responsibility and safety in the neighborhood [10].

Settlement conditions in coastal areas are very different from downtown areas and research on behavior settings located on the coast has never been carried out. This study aims to provide an overview of Behavior Setting and its elements in Kampung Blok Empang, one of the densely coastal settlements areas in North Jakarta.

2. Materials and Methods
The research approach used is deductive-qualitative. Qualitative research is research that is carried out by producing a description, namely written or spoken words from the observations being studied [11]. The deductive approach is based on a framework derived from certain estimates or thoughts towards the data to be explained [12]. The analysis used in this study is descriptive qualitative. Data collection is done by collecting secondary data and conducting field observations. This study uses 4 variables as listed in table 1.

Variables observed is formulated by Barker which is the main four criteria of the formation in behavior setting [4]; the first one is standing pattern of behavior, repetitive activities that form behavior patterns. The second is Circumjacent Milieu, the physical order that supports the occurrence of a behavior. The physical order is a permanent or temporary physical limit of a setting. The third is synomorphy. The principle of synomorphy in the perspective of behavior setting states that the social and physical aspects of the environment must go hand in hand [13]. A behavior setting exists at the interface between the standing patterns of behavior and physical “milieu”, the “milieu” in some sense matches the behavior wherein the behavior is happening in the milieu. “Behavior-milieu interfaced” in the technical idiom called the synomorph. When interdependency occurs between behavior and milieu, then it is considered as the best performance of behavior setting [14]. Fourth is the specific period of time, which is a certain physical order that can be a place for other behavior settings to occur if other forms of activity occur at different times. Moore mentions that the behavior setting concept offered by Barker focuses on measuring social and behavioral phenomena (such as adaptive reactions to
environmental conditions) and gives little emphasis on the physical elements contained in the setting [7].

| Purpose                      | Variable                        | Indicator                                                      | Method   |
|------------------------------|---------------------------------|----------------------------------------------------------------|----------|
| Identifying behavior settings | Standing pattern of behavior    | Overt behavior that forms a pattern                            |          |
|                              | Specific period of time          | Specific times of behavior pattern                            | Observation |
|                              | Circumjacent milieu             | The physical setting in which the behavior occurs              |          |
|                              | Synomorphy                      | Interaction between individuals and groups with a milieu       |          |

The research area is divided into three zones, in each zone a potential setting that has certain characteristics will be selected. Each selected setting represents two or one activity in the study area, namely domestic and economic activities. Each of these settings has its constituent elements.

![Figure 1. Observation Zone Division](image)

3. Results and Discussion

3.1 Kampung Blok Empang Location

Kampung Blok Empang is part of Kampung Pluit, located in Penjaringan North Jakarta. This village has been inhabited since 1970. Recently consists of nine RTs and is administratively registered as 22 RWs (citizens association). The physical condition of the Kampung Blok Empang environment consists of semi-permanent and permanent buildings. Kampung Blok Empang has high-density residents who live in row houses types. The main access to the Kampung Blok Empang area is via Jalan Pelabuhan (harbour road) which is located in the north of the village. Harbour Road access is the road that is used as the main road if you want to go to Muara Angke Harbour, which is usually passed by tourists when they want to cross to Pulau Seribu. That road can be passed by two vehicles, both two- and four-wheeled vehicles consisting of private and public transportation such as pedicab and odong-odong.
3.2 Behavior Setting Zone 1
Zone 1 is an open space around the fishing pier. Human behavior in zone 1 is fishing and trading activity. Fishermen’s activities include loading and unloading fish and repairing ships. The visible trading activities are the establishment of food stalls and street vendors on the port access road with the target market of residents and tourists. Zone 1 is located close to the coast and experiences high tides at certain hours, resulting in flooded roads that are used for children to play.
The movement of traders, loading and unloading of fish on the dock forms a repeating pattern so that the activity space formed is fixed feature space and semi-fixed feature space. Likewise, food trading activities form fixed feature space and semi-fixed feature space. According to Hall, the basic types of spatial patterns that can act as the milieu in a behavior setting are divided into three, namely "fixed feature space" is a space enclosed by architectural elements (such as walls, floors, doors, or windows) that fixed or not easy to shift [4]. Then "semi-fixed feature space", which is a space enclosed by a barrier element that can be moved when different environmental settings are needed, such as non-permanent partitions, carpets or curtains. Meanwhile, "non-fixed space" is a space that is formed briefly and temporarily (such as the interaction room between buyers and travelling merchants) which in this case is indicated by the children’s "playroom" at high tide and in the dock area.

| Circumjacent Milieu | Standing Pattern of Behavior | Specific Period Time | Synomorphy |
|---------------------|------------------------------|----------------------|------------|
| Open space around fisherman's pier | Traders, residents and tourists with trading activities | 08.00-22.00 | • The open space of the pier area with fishing activities forms repetitive behavior, namely loading and unloading fish and repairing ships. |
|                     | Children playing in the tide pool | Around 15.00-17.00 | • Food trade is growing for residents and tourists who pass through the access road to the port of Muara Angke. |
|                     | Fish loading and unloading and boat repair by Fishermen | 10.00-16.00 | • The puddles of tidal water are used by children as a temporary “playroom” |

The behavior setting in zone 1 shows the relationship between the physical environment and human behavior. It can be seen by how fishermen's activities relate to their location at the fishing pier, trade that grows because of tourist behavior, and high tides that are used for children's play activities. Tourists in this case act as “significant others” in the elements forming the behavior setting on the Port Access Road. The presence or absence of significant others has a side effect on the relationship between actors, actions, and the overall setting being observed.

3.3 Behavior Setting in Zone 2
Zone 2 is in a residential area. Human behavior that appears in the potential settings there is sports activities and fish processing activities. Sports activities are carried out on the badminton court which is usually used by teenagers to exercise in the afternoon. These sports activities are supported by a fixed feature space, namely the badminton court. In addition to exercising, the badminton court is also used by residents to relax to form a semi-fixed feature space.

Meanwhile, fish processing activities can be seen in open areas in residential areas, namely fish drying activities by utilizing the bamboo yard as a drying medium which is then processed into fish drying. To support the drying activity, residents made a pavement where the bamboo yard was placed. Pavement with bamboo courts is a fixed feature space, while bamboo yards without pavements form a semi-fixed feature space.
The behavior setting in zone 2 shows the relationship between the physical environment and human behavior. It can be seen there how the behavior of sports habits grows with the physical object of the sports field. In addition to exercising, sports fields provide a place for community socialization so that community kinship can be strengthened. Pavement provided for drying fish is made due to fish processing activities. Physical objects in the fish drying area are influenced by the behavior of residents [15].

### 3.4 Behavior Setting in Zone 3

Zone 3 is a residential area, in this zone the potential setting chosen is the Nurul Hudda Mushalla which is usually used by RT 04, 06, and 07. The prayer room is a fixed feature space. This prayer room is used by residents to worship, it was built to meet the needs of the community's worship space. Repeated patterns of human behavior are formed with prayer times, which are five times a day. In addition to prayer activities, residents also use the prayer room to gather and discuss religious studies.

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**Figure 4. Potential Setting in Zone 2**

**Table 3. Behavior Setting in Zone 2**

| Circumjacent Milieu | Standing Pattern of Behavior | Specific Period Time | Synomorphy |
|---------------------|-----------------------------|----------------------|------------|
| Sports field        | Teens exercising            | 16.00-17.00          | The sports field fosters residents' exercise habits and becomes a forum for social interaction for residents. |
|                     | Housewives relax and chat.  | 16.00-17.00          |            |
| Fish drying area    | Fish drying by the residents| 09.00-16.00          | The fish-drying area is formed due to fish drying activities by residents before being processed into dried fish |
The behavior setting in the potential setting of zone 3 is shown by how the prayer room forms a repetitive pattern of worship activities for the surrounding RT (neighborhood association) residents. This shows how a physical object affects human behavior, but vice versa, by recognizing the perpetrators of their activities who are predominantly Muslim, the Mushalla is built based on the behavior needs of the perpetrators in worship [16].

### 3.5 Analysis

a. Open Space as a milieu of most actors’ behavior

Milieu, the physical setting in which the behavior occurs, suggests the space usage pattern by the actors. Open space is a milieu in Kampung Blok Empang that shown a repetitive behavior pattern by the most actor in zone 1 and zone 2. This is common in villages in dense urban areas [17]. Milieu-behavior interdependency in this specific milieu is considered as the best behavior setting performance in Kampung Blok Empang. It can be seen by its people everyday behavior; such as how fishermen using the open space for their fishing activities, food trade by the residents for tourists as a significant other, and “playing area” for kids where the risen tide in the most specific period time.

Open space in zone 2 is a shared outdoor space, such as a shared fish drying area for resident’s dried fish business and sports field for residents’ social interactions. The concept of sharing open space is formed by the interaction of residents’ activities [18]. As cities are developing while handling sustainability objectives and challenges, the consequences generated by the local, small-scale operations occurring throughout urban areas may be serious [19].

b. Spatial pattern type is formed by the collective activity of residents and the sea condition

Being lived in the coastal area, residents’ activities are influenced by the sea conditions and resources. In the economic aspect, spatial patterns consist of fixed featured space and semi-fixed featured space. The time difference between individual and group activities makes this dense village spaces a dynamic spatial pattern. Ecosystem services are essential in urban sustainability infrastructure. Urban systems catalyse sustainable economic development [20]. These spatial patterns are influenced by the
economic activities of the residents themselves. It is shown on the physical object such as fish drying area and street vendors. In the social aspect, spatial patterns consist of all the featured-space types. Mushalla and sports field as a fixed-featured space because of the repeated standing behavior of residents, community social interactions that need chairs for their semi-fixed featured space on the sports field, and a non-fixed space because of the sea condition, the rising tide within a specific period time. Religious activities still play an important role in coastal settlements. Subjective perceptions can be used in conjunction with unbiased indicators to obtain a thorough understanding of urban environments [21].

4. Conclusion
The behavior setting in Kampung Blok Empang is shown by how the setting of its settlement is located in the port area. This affects most of the relationships between physical objects and the behavior of residents in the village. Physical objects that are formed include supporting the behavior of its citizens, most of whom work as fishermen and fish processors, another is how human behavior formed due to the availability of residential facilities such as sports fields and prayer buildings. In addition, there are physical objects built to support community trading activities, such as kiosks and street vendors on the Port Access Road. The road is passed by tourists who act as "significant others" in the behavior setting.

The best performance of behavior setting in Kampung Blok Empang is happening in the open space because of its milieu-behavior interdependency. It is shown by the repetitive behavior in this specific milieu. The spatial pattern type is formed by the collective activity of residents and the sea condition. They were characterized by the repetitive activities within their economic and social aspects. The concept of sharing open space formed from the interaction of residents' activities is a unique and characteristic feature of dense villages in coastal areas. Swift urban expansion may generate significant appropriation of ecological lands and disintegration of natural settings. This needs to be the basis for consideration in planning the rejuvenation of slum villages in the coastal areas of Jakarta in the future.

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