

Characteristics of Public Open Space Area in the Kampung Settlement (Case Study: Kampung Cungkeng, Bandar Lampung, Indonesia)

Nova Asriana*, Fanny Fatti Rahmah, Nadia Almira Mezzaluna

Architecture Study Program, Faculty of Infrastructure and Regional Technology, Institut Teknologi Sumatera, Kabupaten Lampung Selatan, Indonesia

Corresponding e-mail*: nova.asriana@ar.itera.ac.id

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Abstract. This study investigates the characteristic of public space area in kampung settlement, Kampung Cungkeng, Teluk Betung, Bandar Lampung, Indonesia. The aim of this study is to identify the public space utilization and the elements moulding open space in this urban kampung. This study is to identify the characteristics of public space, the social interaction of communities and the dynamic interplay between public space and the activities. It identifies the utilization of public open space which is used by communities or dwellers to interact and socialize some activities in Kampung Cungkeng. The research is framed by qualitative method descriptively through collecting data and observing area is accomplished by surveying in certain time. The method of data analysis is constructed by technical quality analysis based on factual and perceptive. The shortage of public space availability influences dwellers' interaction. They bond engagement in semi-public zones, such as terrace and yards, where dwellers share the private house area to facilitate social activities. The lack of public space availability makes folks to reorganise the existing public space as well as completing the additional facilities, features, or infrastructure to facilitate a better social interaction and to enhance a comfort in Kampung Cungkeng.

Keywords: public space, social interaction, kampung settlement

1. Introduction

Kampung, an informal settlement, is one of unplanned traditional settlement type in Indonesia with minimum facilities and urban services. The growth population and urbanization affect the growth of kampung settlement increasingly turning densely so that it has likely driven a less public space. The public open space is a fundamental need for development of cities that facilitate in varied activities of communities, individually or groups. It was aligned with Sustainable Development Goals Number 11 in 2019 that community can easily access public open spaces in neighbourhood. However, the limitation number of public open space becomes a pivotal and struggling issue in social interaction of communities and city spatial, especially each residential unit in kampung. This condition simultaneously leads combination to shared activities in living space and production space (Anindya Pitoka Pramono & Hadi Rahmi, 2021).

Kampung in Indonesia is normally recognised a unique type of urban settlement with poor condition physically and economically, but it is well-socialised (Funo et al., 2002). In addition, kampung has grown naturally and spontaneously to a densely populated area from buildings and street patterns (Asriana et al., 2023). It causes an inadequate area of open space to carry out social activities, including interactions with other people. At the same time, this limitation is not an obstacle for dweller, because they can accommodate their needs to create public open spaces that can be used by various groups who live in the kampung neighbourhood. In terms of this notion, it leads to objectives in this study how dwellers create public open space based on their needs and what types and characteristics of public open space that are created by dwellers.

Generally, public open space is an unbuilt space to enhance the physical environment, aesthetic quality, and well-being. According to Nurhijrah & Wikantaria (2019), public space is felt by humans or other in outdoor area which is used freely and accessibly by communities to present activities and social interaction (Carr et al., 1993). The quality of public space relates how public open space can support and share values of joyful experiences to communities or users that need attention (Beqaj, 2016) in creating comfortable living for residents (Ischak et al., 2019). If the public space could not fulfil or shape the inter-relationship among others individuals, the public space is malfunction improperly (Siahaan, 2010). The public open space and users' existence will image and present an identity the area (Banapon, 2018). It also images the city and gives appreciation to citizens with openness. Varied activities in public space consists of routine or scheduled activities repetitively or temporarily to create public activities and interaction. The existence public open space in urban kampung will be quality indicators in neighbourhood, where the quality features can be interpreted as a successful attribute in image, access, comfort, continuity, usage and social activities (Carmona et al., 2008). Previous works of spatial studies in residential areas emphasize to spatial patterns, including buildings, open spaces, physical and non-physical elements, in facilitating social interaction among dwellers (Carrilho & Trindade, 2022; Liu et al., 2018; Omer & Goldblatt, 2012).

The characteristic of public open space is divided to functions, forms, and types. According to Krier (1979), the form of public open space contain two types is lengthways (the street) and square pattern. On one hand, the lengthways pattern usually have a longer dimension and construct a linear circulation pattern, one direction, and parallel form. It looks alike streets, rivers, corridors, sidewalks, alleys, and paths. On the other hand, the square pattern usually has a similar dimension in every side and create all directions, organic, and disordered. It is depicted in parks, fields, plaza, and boulevard (Asriana & Indraprastha, 2016). In terms of functions, the public open space has general and ecology functions (Daud et al., 2022; Hakim, 1987). The general function shows the area to playing, sporting, relaxing, interacting individually or groups, waiting, or transitional place. While, the ecological function is to air refreshing, rain absorbing, flood controlling, ecosystem stabilising, and built environment softening. In addition, public open space leads to generate behaviour setting milieu as an importance of interaction between people in cities. It reveals a physical environment and a relationship between users' behaviour, activities and physical attributes in the spatiality (Darmawan & Utami, 2018). The elements public space can be defined as landscape, hardscape (street, sidewalk, avenues, squares, plazas, pavements, paths, traffic islands, and roundabouts) and softscape (parks, trees, vegetation, gardens, and playgrounds) (Shirvani, 1985; UN-Habitat, 2018).

The role of public open space is to enhance the quality area and give the importance of behaviour improvement (Ischak et al., 2019; Setyowati, 2012). The former is related to fulfil the users' needs in creating public open space (Carr et al., 1993), such as comfort, relaxation, passive engagement, and discovery (Abdelhamid & Elfakharany, 2020) (Table 1.1). While the latter is related to emphasize a perception of dwellers in social interaction with this environment. The social interaction in public open space is the socio dynamic relationship between individual-to-individual, individual-to-groups, or groups-to-other groups. This dynamic relationship also describes the relation the intensity of land use to distribute urban activities (Asriana, 2021). This is classified by three categories; (i) the necessary activities are daily activities such as go to groceries, working, school, mosque, and other facilities; (ii) the optional activities are leisure activities such as strolling, walking, delighting natural views, sitting, and sightseeing, and (iii) the social activities are interaction activities that interrelate with other dwellers (Gahl, J., 1996 in Ilyas, 2016).

Table 1.1. users' needs of	public space in a settlement (Abdelhamid & Elfakharany, 2020)
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Features	Descriptions
Comfort (C)	 Fundamental prerequisite the success of public space
	 Length of stay as a comfortable measurement
Relaxation (Re)	 Related to psychological comfort
	Relaxation atmosphere
Passive engagement (PE)	 Activities are influenced by environmental conditions
	 Passively activities, such as strolling while seeing park, statue, and so on
Active engagement (AE)	 Well-designed public space will succeed as if it could facilitate social interaction among other communities/dwellers
Discovery (Di)	Heterogeny or multi activities
	Less mundanity

Kampung have heterogenous communities of complex habitants with traditional worth (Anindva Pitoka Pramono & Hadi Rahmi, 2021; Funo et al., 2002). Consequently, kampung arises as multi-dimensional milieu with physical, economic, and social existence. The spatiality in urban kampung area leads into the image and character of a place, where the function and image of places are identified the interaction between space and activities ((Montgomery, 1998) as social identity of urban kampung (Hutama, 2016). The property ownership of places could be divided into private, semi-public, and public (Alexander et al., 1977), where these categories are key features of how a society organize itself (Madanipour, 2017). The status of ownership generates the variety and intensity of occupation (activities), wherein dwellers adjudicate to use places for divergent intentions (Purnamasari et al., 2019). The private zones such as a house, office, and yard have a limited access and authority to strangers to do their activity, while public zones determine all individuals to occupy the place. The semi-public zones are usually grown by orders and understanding of people, for example terrace, shops, yard, and commercial (Hickman, 2013). Previous works called these features of semi-public zones as a transitional zone or life in-between space that related to indoor and outdoor space (Can & Heath, 2016; Gehl, 2006, 2011; Nooraddin, 2002).

Mostly urban kampung in Indonesia, the public open space feature is a unique because the property of a place is shared within community (Setiawan et al., 2010). It was a response of community to the needs and limitations of open space facilities and urban services. Additionally, it is appeared to be more creative in accommodating the social interaction among dwellers as the pressure matters the lack of public open spaces. The result is dwellers or communities transform and adapt some peculiar places creatively to be public spaces acceptably in urban kampungs. Those particular spaces namely pathways, alleys *(gang)* (Kurniawati et al., 2022), local shops, public facilities, and fields (e.g., guard posts, community building, mosques, meeting halls). It is highlighted that a street, road, and alley have a certain social space degree (Mehta, 2013). Usually, it can be found in low traffic area or the amenities availability. So, it is critically stated that the streets or footpaths have a significance role for dwellers in urban kampung to bond social interaction, such as selling drinks, foods, or toys (Hantono, 2019). Therefore, it will create a noticeable identity in an urban kampung.

According to this potential aforesaid, the goal of this study in Kampung Cungkeng aims to investigate and assess the sort of dwellers activities in public open space location. This study is also to look into the characteristic public open space that is created by dwellers to fulfil their needs in Kampung Cungkeng. These will regard the social interaction types among dwellers and the utilization the public spatiality. Stephen Carr (1993) and Mehta (2014) assess comprehensively the quality of public open space considering three aspects to (Table 1.2).

Table 1.2. Assessment quality aspects of public open space
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Assessment aspects	Descriptions					
Responsive (R)	defines that the area is designed and organized with consideration of users					
	needs					

Democrative (D)	identifies that users can use public open space expressively and freely, but the spatiality usage will be tolerable and limitable among users.
Meaningful (M)	defines the emotional bonding between users and their lifestyle.

2. Methods

The research is framed by qualitative method descriptively. In addition, collecting data and observing area is accomplished by surveying in certain time. This sample of this study is non-random purposive sampling technically, such as physical features and dwellers features in this area. Meanwhile, the method of data analysis is constructed by technical quality analysis based on factual and perceptive. These methods will be explaining the factual conditions of case study and supporting by local communities' perceptions where these figures will be mapped based on actual condition utilization public open space points by dwellers. The analytical stage is divided into two stages, namely (i) identification case study boundaries, identification activities, typology and elements of public space; and (ii) intervention of public space in Kampung Cungkeng based on needs and quality aspects (Figure 2.1).



2.1 Selection of case study area: Kampung Cungkeng

Kampung Cungkeng (Figure 2.1) is posited in the coastline of Bandar Lampung, where it is a dense and irregular settlement as well as socially populated by heterogenous folks. It has interesting settlement characteristics which mostly the dwellers are fishermen, salted-fish centres, and well-known as a Bugis ethnicity settlement. Kampung Cungkeng is also popular with fishermen village that is one of urban kampung category. The streets have only 2-3 meters and affects a lack of transport accessibility for vehicles, such as cars. The majority of this area has densely settlements and lack of public open space. According to Bandar Lampung Government, this area is categorized slum settlement area with around 2061 dwellers. Geographically, this location is framed on the Lampung Bay on the eastern part, included neighbourhood unit or *Rukun Tetangga (RT),* RT 4, RT 5, RT 6, and RT 7. This area has a breath-taking experience, such as views and community activities. It is selected case study area that is registered slum and potential vulnerable kampung in terms of infrastructures and physical quality.

Based on the snapshot of field observation, the case area was categorised into four zoning activities based on administrative determination (Figure 2.1); Zone A (RT 4), Zone B (RT 5), Zone C (RT 6), and Zone D (RT 7). These zones are linked with a street, Teluk Bone, to alleviate the dwellers movement. The activities are observed on periodic time (weekdays and weekends). The observation is conducted during weekdays and weekends to map the kind of activities in public spaces. It results that the public open spaces in Kampung Cungkeng is classified into spatial utilization for some activities in a distinctive place.



Figure 2.2. Kampung Cungkeng area (Authors, 2023)

2.2 Identification of activities

According to the observation, this area can be identified that the public space characteristics classified into three typologies; public open/green spaces, public open spaces, and semi-public open spaces. Those public space is also partly belongs to officials/governments and dwellers. The former is usually well-planned public spaces with urban services, planned vegetation, and public furniture, while the latter is typically shared area between their houses area and alleys.



Figure 2.3. Identification of activities in public open space in Kampung Cungkeng area (Authors, 2023)

Table 2.1. Public space typologies								
Types	Descriptions							
public open/green spaces	 Belong to officials/governments Have a park with planned vegetation Have a park furniture, benches, pedestrian paths, 							
Public open spaces	The pavementsLack of vegetation							
Semi-public open spaces	 Belongs to dwellers Guard posts House terraces House yards Stalls 							

3. Discussion

The divided zones in Kampung Cungkeng are zone A (RT 04), zone B (RT 05), zone C (RT 06), and zone D (RT 07). Those area show a distinctive characteristic and utilization the public space in this kampung, respectively. Also, this kampung shows that the public space is fundamental area to express and accommodate dwellers' daily activities and social interaction. The majority users of public open space in Kampung Cungkeng are dwellers from this area and others who living around in this kampung. The users are in productive ages such as children, teenagers, men, and women. Table 3.1 describes the sort of characteristic public open space, users, activities, spatial form, spatial elements, and quality public space in Kampung Cungkeng. The public space quality is determined by Comfort (C), Relaxation (Re), Passive Engagement (PE), Active Engagement (AE), Discovery (Di), Responsive (R), Democratic (De), and Meaningful (M).

No	Public open	Locati	User	Activities		patial		tial		Description
	space types	on	(s)	/101111100				nents	Quality	Decemption
	obree ()bee	Point(s)	(0)			square		soft	,	
Zon	e A (RT 04)					104000				
1	Semi-public open space		-children -teenagers -women -men	-gathering -chit-chat -discussion -playing -sitting		V		V	R, M, C	
2	Semi -public open space	0	-women -men	-gathering -chit-chat -discussion -playing -sitting	N			V	R, M, C	
3	Public open space	•	-women -men	-gathering -chit-chat -discussion -playing chess -snacking		V		\checkmark	R, M, C	
4	Public open space	•	-women -men	-gathering -chit-chat -discussion -playing chess -snacking	V		\checkmark		R, M, C, Re	

Table 3.1. Identification characteristics public space in Kampung Cungkeng

				1		1	1			
5	Green public		-children	-playing	\checkmark			N	D, Di, M, AE,	
	open spaces		-teenagers	soccer -running						111
6	Green public open spaces		-children	-playing soccer -running -jumping rope -playing <i>congklak</i>	V			N	D, Di, M, AE	
7	Semi-public open space (guard posts)		-women -men	-gathering -chit-chat -discussion -playing chess -snacking	N			V	R, M, C	
8	Semi-public open space (guard posts)	•	-women -men	-gathering -chit-chat -discussion -playing chess -snacking		V	V		R, M, C	
9	Semi-public open spaces (terraces and stalls)		-women -men -teenagers	-gathering -chit-chat -discussion -playing game -selling		V	V		R, M, C, AE	
10	public open spaces (guard posts)	•	-men	-gathering -chit-chat -discussion -playing chess -snacking		V		V	R, M, C	
	e B (RT 05)	_		T	I /	r	1		D M O	
1	public open/green spaces		-children -teenagers -women -men	-gathering -chit-chat -strolling - sitting	V			N	R, M, C, D, PE	
2	public open/green spaces		-children -teenagers	-gathering -chit-chat -discussion -playing mobile phone	N			V	R, M, C, D,	
1	Semi-public open space (guard posts)	0	-women -men -teenagers	-gathering -chit-chat -discussion -sitting	N			V	R, M, C	

2	Semi-public open space (guard posts)		-women -men	-gathering -chit-chat -discussion -sitting		V		N	R, M, C R, M, C,	
3	Semi-public open spaces (terraces and stalls)		-children -teenagers -women -men	-gathering -chit-chat -discussion -sitting -selling		V	\checkmark		AE	5,000/3
4	Green public open spaces			-playing soccer	V			V	D, AE	
5	Public open spaces		-men -children	-playing soccer -bird matching -running	\checkmark			\checkmark	R, M, C, D, AE, PE	
6	Semi-public open spaces (guard posts)		-men	-gathering -chit-chat -discussion -sitting	V			V	R, M, C	
7	Green public open spaces		-children -teenagers	-playing soccer -parking	V			V	R, Di, D	
8	Semi-public open spaces (terraces)	•	-men	-gathering -chit-chat -discussion -sitting		V	V		R, M, C	
9	Semi-public open spaces (guard posts)		-men	-gathering -chit-chat -discussion -sitting	N		V		R, M, C	
Zon 1	e C (RT 06) public		mon	gathering				V	R, M, C	
	open/green spaces (guard posts)		-men -women children	-chit-chat -discussion -sitting -parking	V			N	Ν, ΙΨΙ, Ο	
Zon 1	e D (RT 07) Semi-public		-women	-gathering	1	√	1		R, M, C,	
	open spaces (terrace)		-children	-chit-chat -discussion -sitting		v	v		AE	

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2	Semi-public open spaces (terrace)		-teenagers	-gathering -chit-chat -discussion -playing game		V	V		R, M, C	
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The utilization of public open spaces leads to one of place to facilitate the communities' activities in daily or temporary in this kampung due to the lack of availability and the ownership space. The ownership of spaces is belonged to officials/government and communities. The official's ownership is identified only in zone B (RT 05), while others are belonged to communities. The utilization of public open space in shared area is mostly to have social interaction and leisure activities, such as strolling, gathering, sharing information, discussing, playing and enjoying the area. It means that inhabitants living in Kampung Cungkeng, as a densely settlement, utilize the public space freely and expressively based on their needs or periodic times, especially in shared area, compared to other areas.

Zone A (RT 04), the majority of public space presents semi-public open space through shared area that shows a responsive (R) quality, such as guard posts and also meaningful (M) that is used for gathering, sitting, and chit-chat. In terms of this, dwellers are comfortable (C) in this area as a facility to stimulate social interaction likes active engagement (AE). Zone B (RT 05), the public space in this zone is more appropriate than zone A (RT 05) since it has a wide range of public open space. The dwellers depict a responsive (R) quality (guard posts), also meaningful (M). Regarding this, folks feel comfortable (C) and Democratic (D) in public open/green space that well-planned and designed by government. In addition, dwellers can have social interaction for active engagement (AE) and passive engagement (PE). However, Zone C (RT 06) and Zone D (RT 07) are lack of the availability public space. Dwellers should have shared area between their house and alleys or paths to have public space and accommodate social interaction or other activities. In this shared area presents a responsive (R) quality (guard posts or terraces) and also meaningful (M) to fulfil dwellers' social needs.

4. Conclusion

The finding of this study is that Kampung Cungkeng has shortage the public space availability. Hence, most of dwellers or communities contribute their own area, such as terraces, vards. corridors, and houses to facilitate the social interaction and multi social activities. Some dwellers also use the alleys or paths in front of house to have a social interaction or engagement. There are incidental activities that occurred only on occasionally, irregularly, and not routinely in this kampung. According to the aforementioned, there are five characteristic public open space in Kampung Cungkeng, such as responsive (R), the public space is to fulfil users' needs, such as, guard post, yards, terraces; meaningful (M), the public space guard posts and terraces have social interaction: comfortable (C), dwellers contribute urban features. such as a bench and table; active engagement (AE), dwellers show the kinship among users who have an mutual and close relationship, such as warung or stalls; and passive engagement (PE), dwellers have watching or viewing the activities and views. Therefore, the most noticeable characteristics in Kampung Cungkeng as a dense settlement is that the created public open space in this kampung seems as a responsive (R), meaningful (M), and comfort (C). The lack of public space availability makes dwellers to reorganise the existing public space as well as completing the additional facilities, features, or infrastructures, such as bench, tables, vegetation, and roof to facilitate a better social interaction and to enhance a comfort in social interaction between dwellers in Kampung Cungkeng.

This investigation only focuses on Kampung Cungkeng, Lampung, Indonesia with small sampling and lack of details regarding the participants characteristics. Thus, it would be a

potential study for further research to compare other urban kampung environment locations and other contexts. For instance, this research could compare other kampungs with a distinctive community and area in how dwellers can behave and deal with the limitation of public open space creatively to build and engage their needs, especially in social activities phenomena. In this sense, dwellers and communities in Kampung Cungkeng create types of public space based on their motives and lead to a recognizable characteristic of public open space. Then, it could also contribute to a deeper understanding to enhance the public space in a dense area, especially kampung settlement.

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