



## Exploring Ideas in Formulating Urban Design Guidelines for Public Open Space in Sumatra Utara, Indonesia

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### Abstract

The aim of this study is to explore some design ideas that can be applied in public open space (POS), particularly in Sumatra Utara regions. The objective is to get a set of design model of POS that can meet people needs and support their quality of life. The first part of this article resumes the findings of previous research of 21 POS and 1346 respondents. The result will be the "raw material" to define problems and potencies. Next, the study analyzes some aspects of POS to construct the initial design concept. In the end, this paper describes the proposed strategy to implement this design model to the cities and town in Sumatra Utara.

*Keywords:* urban design guidelines; public open space; quality of life; Indonesia

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### 1.0 Introduction

Many towns and cities in Indonesia, particularly in Sumatra Utara province, implement a car-oriented planning and development. The space for human tends to be denied in the urban space arrangement. In contrast, the vehicle claimed many spaces for circulation and parking (Zahrah et al., 2016). Therefore, there is no place in the city for people to enjoy together the urban space by walking, but public open space. This facility is the only hope for the community to do various physical activities in the middle of greenery and taking such a health benefit. In this area, people gather with families and relatives and meet their needs to interact each other. Public open space becomes a field where children play, teenagers exercise, senior citizens talk and parents company their children, picnicking, or just sitting and dining together in an outdoor space. All the activities generate relaxation and physical and psychological comfort. It shows that POS become the room where citizens maintain and improve their quality of life by doing an interaction with the urban environment.

In the issue of the social gap and gated community (Aulia and Ismail, 2013), and the degradation of urban environment due to the pollution and traffic jam (Zahrah and Nasution, 2015), the presence of POS becomes essential among the other urban elements. The fact shows that no matter good or bad the design quality of POS is, the community keeps visiting it, make it an active and vibrant atmosphere in the town (Nasution and Zahrah, 2015). Since the Indonesia government applied autonomy regulation in 1999, there is an opportunity to enhance urban environment (Bunnell et al., 2013), including public open space. According to Kallus (2001) and Lang (1994), the POS get success while responding well the community preference. One of the ways to get the information of people needs is by asking their perception (Kallus, 2001). The authors have studied about how the community used and perceived the public open space in 21 towns in Sumatra Utara province, Indonesia that involved 1346 respondents. The respondents were the visitors that doing their activities in the POS and agreed to participate in the survey. The investigation indicates that the physical quality of POS in the cities is lower than the other POS of developed countries. However, from the activity aspects, the POS reflects a successful place since the community of various social background and age group utilize it intensively (Gehl, 2002; CABE and DETR, 2001). There are many public activities they do in POS, both passive and active ones. The recreational activity is one of the indicators that a POS

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works well (Gehl, 1996). Meanwhile, the majority of the POS visitors perceived the POS quite good, but the level of satisfaction does not reach the highest score yet. This condition demonstrates they still wish a better quality POS (Nasution and Zahrah 2014, 2016). This paper means to explore the design idea to improve the quality of POS in Sumatera Utara. The result can be a reference to government policy to develop POS that satisfy people needs, and next, increase their quality of life.

## 2.0 Public open space in Sumatera Utara : problem and potency

### 2.1 Potencies

From the aspects of social background, age group and activities, many characteristics of POS in Sumatera Utara show that the places are the successful POS as mention by Gehl (2002). The visitors that come to the POS are children, teenagers, senior citizens and new young parents. Like the POS in Medan, the majority of visitors are teenagers. However, there are also many new families of two to three children come, play, sit or eat together, enjoying their mutual time. It shows that POS works well to be a free recreational facility. This is a different condition compares to capital city Medan, where people tends to come to many privatized public spaces, such as malls, theme parks, cafes and restaurants (Nasution and Zahrah, 2012). It is a 'lucky' situation because the 'competitor' of POS in the towns is not as 'big' as Medan's. It means, there is a greater opportunity to improve POS as a public service that enhances a quality of life than the same place in Medan.

The people that visit POS in Sumatera Utara's towns do many activities that are beneficial to the quality of life (Figure 1). Most of them state that the primary motive they come to POS is to take sport-exercise and socialization (Table 1). This activity has a positive contribution to physical and psychological health (Chiesura, 2004). There are many physical activities and sports found, such as walking, jogging, gymnastic, badminton, basketball, volleyball, rollerblade, and skateboard. The visitors also play kites, play and run in the field, play on tot lot. All the activities do not always relate to the availability of facility. The fact shows that with a minimum sports services, the activities occur intensively. There are a lot of people comes to POS for one to three times a week, and they spend their times for minimum two hours. (Table 2)



Figure 1. The two examples of active POS in Sumatra Utara: Labuhan Utara (left) and Dairi (right)

Table 1. The visitors' motivation coming to POS

Motiv	%
Relaxation	20,2
Sport/exercise	38,7
Playing	11,5
Picnicking	4,0
Gathering with family and or relatives	24,6
Being alone	3,4

Most of POS in Sumatera Utara are squares, in the Indonesian language known as 'Lapangan Merdeka' (Independence Field). The square is a typical urban element that always found in former colonial cities. It is located in the center or in the surrounding of main public services, such as townhall, Post Office and or Grand Mosque. Therefore, the official national ceremony, such as Independence Day, always takes place in this POS. It looks like that it is a 'default' function of the square. The other periodical service is a place for Eid Prayer twice in a year, especially in towns of the Moslem majority. Besides, the square becomes a place for a general meeting of mass organization or political party, trading and cultural exhibition and festivals, as well as music and other cultural shows. In these periodical events, the squares are crowded with people. The fact indicates that the squares are crucial for communal life.

The majority of people visits POS in a group, either family or friends. This fact points out that the POS work well to be a melting pot for socialization. The visitors said that it is common to say hello and greetings, at least make an eye-contact with the other people (Table 3). Since this act can not be held from a motor-vehicle, and the most of them are the vehicle-dependency community, the POS is the most potential trigger to unite people in a harmony interaction. The POS also work to be a free friendly urban service for most of the community that has just the average income of 2.5 million IDR per month. They come to the place mainly in the weekend, in the morning or in the evening, and stay there up to 3 hours. The utilization duration of POS in these small towns is more intensive than Medan's POS (Nasution and Zahrah, 2014). There are still activities in the night, mostly done by kids and teenagers.

Table 2. The intensity of POS utilization

Variable	Very disagree	Disagree	Less agree	Agree	Very agree	Average score
Spend more than 2 hours in POS	5,3	5,7	12,1	55,6	21,2	3,82
Come to POS more than 3 times a week	2,8	5,0	9,8	57,0	25,3	3,97

Table 3. Activities in POS

Variable	Very disagree	Disagree	Less agree	Agree	Very agree	Average score
Doing physical activities (sports, exercising, playing	1,9	3,9	7,6	58,0	28,6	4,08
Sitting and talking with family/relatives	1,0	2,7	8,3	62,7	25,3	4,09
Picnicking	3,5	11,6	20,9	48,4	15,7	3,61
Say hello/greetings to the other visitors	5,6	2,9	7,9	61,7	21,8	3,91
Grouping than being alone	2,7	8,0	8,5	56,7	24,2	3,92
Being alone	10,4	22,6	19,8	33,3	13,9	3,18

In general, POS in small towns of Sumatera Utara province has easy access from the community settlements due to a short distance and light traffic. It is also easy to enter the POS since there is no filtering for visitors. There is a set of POS facilities, such as multi-purpose grass field, bench, public toilet, kids' playground, prayer facility, sports arena, and greenery surround. However, there is a variation of quantity and quality of the services among the POS.

Table 4. Community perception about the benefits of POS to QOL

Variable	Very disagree	Disagree	Less agree	Agree	Very agree	Average score
The activity in POS makes healthy	2,9	2,9	6,0	59,6	28,6	4,08
Being in POS makes soul more calm and relax	2,4	2,3	6,7	58,1	30,5	4,12
Visiting POS makes social cohesion better	2,7	2,7	6,6	59,9	28,1	4,08
Being in POS makes a happy feeling	0,9	2,2	7,9	60,7	28,3	4,13
POS makes urban environment better	5,5	3,9	5,7	49,2	35,7	4,06

With its good and bad natures, POS in Sumatera Utara is perceived as quite good by the community (Table 3). Yet the level of satisfaction do not reach a high score (4), but those who gives score 4 (satisfied) and 5 (very satisfied) is larger than the respondents that give score 1 (very unsatisfied). This information illustrates that the POS in Sumatera Utara has a good image from the user's point of view. Most of the citizens believe that POS can give positive contribution to their quality of life (Table 4)

## 2.2 Problems

POS in Sumatera Utara, though has a good accessibility, is not integrated with transit point of public transportation. The place also does not have a good pedestrian linkage as mentioned in some common indicators of a good public space (see Project for Public

Space, 2000; Gehl 2002; CABE and DETR, 2001). The fact has a strong correlation with the macro policy of urban planning that implemented in Indonesian cities, including towns in Sumatera Utara province. It is very rarely that urban space gives respect for people, especially the pedestrians. In contrast, the cities are planned as a car-oriented space. The proportion of the vehicle circulation path is much larger than the pedestrian path. Besides, the government does not provide an adequate public transportation. The public transport mode that operates is a minibus type of maximum twelve passengers. This minibus has no consistent schedule, neither a comfort room for passengers. Moreover, the sales of motorcycle become more aggressive and get cheaper. People can get a motorbike with less than 100 USD. As a result, the population of the motorbike is getting higher day by day. This policy generates a kind of 'collective culture' that citizens become a vehicle-dependency community. It looks like they forget how to get any place by walk. The urban space never gives experience for people walking on the pedestrian path. Thus, this study demonstrates that more than 50 % of visitors come to POS by motorcycle or private car, though the distance between POS and their home is less than one kilometer. It can be said that only inside the POS people use their foot to move. There are no adequate facilities to do that in the other urban space. The sidewalk has bad quality; discontinue, unshaded, and has many holes and damaged-dangerous material. Furthermore, the other 'illegal stuff' claims the path. It is easy to find in Indonesian cities that sidewalk is utilized for motorcycle parking, a big flower pot, and street vendor, not for pedestrians.

A large number of vehicle needs larger space for circulation and parking, including in the POS. Thus, one of the people preferences in the POS is an adequate parking lot. The study shows that the vehicles often occupy sidewalk in the POS periphery, a part of road space, or even enter the activities zone inside the POS. Thus, the level of user's satisfaction with the parking facilities is quite low in many POS that we studied. With all the facts, the research indicates that the government policy of urban space makes a different accessibility characteristic between POS in Sumatera Utara and the other POS in developed country. According to people's perception, the accessibility does not relate to the pedestrian linkage and mass transportation as mentioned by Project for Public Space (2000), Gehl (2002) , and CABE and DETR (2001). This fact influences their physical activity that only can be accommodated on POS, not in the other side of urban space. Thus, people just rely on the POS to accommodate their physical activity, to interact each other, to fulfill their social needs.

The other issue in POS is the street vendor. The visitors actually need this nonpermanent merchant. In many POS we studied, the street vendor is one of significant activity generator. Visitors always sit, dine and talk each other in the street vendor area in POS. It makes the space more active and vibrant. The problem is the space-ordering system, the design, and the regulation of the merchants is denied in many POS. As a result, the street vendors occupy activities zones, such as grass field or area under the tree. The perception of the users about street vendor shows a low score (Table 5).

The problem that also needs a solution is the management issue. It is is also a crucial thing, since the POS has to improve comfort and services for visitors. The cleanliness is terrible, neither the maintenance of facilities. It is easy to find a damaged bench or paving, the dirty and stinky toilet, and the wet field in rainy days. The conditions is a consequence of the absence of an appropriate management organization. The local government just determine the regulation about how to use the place for special events, but not take a deeper care to control and maintain this area. No officer stands along the day in the POS to ensure people comfort using this facility nor keeping the environment clean and safe.

Table 5. The people satisfaction level with POS facility

Variable	Very unsatisfied	Unsatisfied	Neutral	Satisfied	Very satisfied	Average score
Widht	2,7	7,4	24,0	46,5	19,4	3,73
Parking lot	3,8	21,8	24,5	39,1	10,8	3,31
Pedestrian path	3,3	15,2	27,5	38,3	15,7	3,48
Toilet	20,4	32,6	20,0	20,4	6,6	2,60
Playing Area	3,9	14,7	26,3	36,8	18,2	3,51
Sport/exercising Area	2,8	10,5	23,8	44,1	18,7	3,65
Sitting Area	1,4	11,5	25,3	42,6	19,2	3,67
Garden Area	2,3	19,0	28,3	36,3	14,0	3,41
Picnicking Area	5,7	24,5	29,4	29,7	10,7	3,15
Prayer Area	8,6	26,7	26,3	25,9	12,5	3,07
Dining Area	5,3	16,4	30,1	34,7	13,5	3,35
Street Vendor	6,8	18,4	32,3	28,7	13,7	3,24

### 3.0 Some design guidelines

#### 2.3 Basic concepts

The approach in determining the design guidelines is based on users' natures, so it is hoped that the plan can fit their needs. The community in Sumatera Utara that visit POS is mostly the low-income people, vehicle-dependence, like to engage in public activity, the Moslem majority, need a recreational facility for family and does not have walking tradition. So the basic concept for the design is

making POS as an educative-entertaining melting pot. It is necessary to propose a place where people can gather, express their culture as well as experiencing a responsive built environment. The character of the space is translated to be:

- accommodating public activity
- aspiring the aspects of social, cultural, education, technology, and ecology
- anticipating economic and culture development
- adapting tropical climate and local tradition



Fig. 2. Image impression of sculpture as art and historical educating media in POS

## 2.4 Location

POS in this guideline is the square type. The study gives the fact that the plaza always located in the center of the town, near some key buildings, such as town hall, Grand Mosque, Post office, etc. The location is the best place due to its easy accessibility.

## 2.5 Function and activity

The primary function POS that can meet community needs relates to

- a. Daily public events, either active or passive. The passive activities include sitting, eating/dining, picnicking, and talking. The active ones include physical activity, such as playing, running, walking, exercising, and many kinds of sports.
- b. Periodical public events. These activities are done at a particular time, such as the collective prayer, art and culture festivals and exhibition, general meeting of the mass organization, trading expo, and bazaar.
- c. Economic activity. POS is one of the possible places where the economic event occurs. It can be day-to-day operations or annual bazaar or trading expo.
- d. Education and art function. The POS can be a media that educate and give information about history, culture, tradition and the mutual interaction between man and environment. This feature can be implemented in the design of gate, site plan, park-furniture, pavement, and buildings.

## 2.6 Accesibility

There are two kinds of accessibility; first, the accessibility to get to the POS location; second, the accessibility to enter the POS. The existing POS is mostly accessed by private vehicle and hampers a healthy physical activity. In order to improve this tradition, it is necessary to make integration with the macro plan of the city. The implementation of this policy is by assigning the pedestrianization policy. Creating a linkage between housing location and activity centers is important. It is equal with improving the quality of pedestrian path so can attract more people to walk. There should be a clear segregation between vehicle and pedestrian path to avoid the car intervention to the pedestrian path. However, this design should be supported by consistency law enforcement. The pedestrian path in many urban spaces is always claimed by street vendors and or motorcycle parking and put aside the pedestrians. One of the design solutions is making the level of pedestrian higher than vehicle path and or installing a barrier. The design of the gate also should separate the pedestrian and vehicle access. This way is aimed to prevent the vehicle intervention to the activities area.

## 2.7 Facility and design criteria

The service seeks to support all the activities, either the daily and annual activities. The service design implements the standard public open space design with some modifications to fit local people needs, anticipation to vandalism behavior, and considering the easy and cheap maintenance.

### a. Gate

The gate is functioned as a mark and orientation point. Since the POS can be accessed by everyone in every time, the gate can be placed on all side of the square to make an easy access. It is necessary to put some interesting theme in the design, such as history or local culture. This can enrich space experience of the visitors.



b. Parking area

POS should have an adequate parking lot for motorcycle and private cars. This area is design to be greenery, with trees and non-waterproof pavement. The area should be easy-controlled, and has an adequate lighting in the night.

c. Public transport shelter.

Even though the study shows that the visitors is very rarely in using public transport to get to the POS, it is highly recommended to put a bus, trishaw and taxi shelter that connected with the pedestrian path. The facility should be set back to avoid street congestion.



Fig. 3. Image impression of multi-purpose stage

d. Grass field

The area should be wide enough to accommodate the public official ceremony and or exhibition, sport-games, collective prayer and cultural show. It is necessary to consider natural drainage to keep the area dry and prevent a 'pond' in rainy days.

e. *Pendopo* (multi-purpose stage)

The *pendopo* is an open air building typology that used in the national ceremony for the invited audience. In daily used this building can be functioned as a place to art training, gathering, and discussion. The design of the *pendopo* can express local culture and should consider tropical climate and maintenance.

f. Playing/sports field

Playing/sports field should be multi-purpose for some kinds of favourite sports games, such as basketball, volleyball, and badminton. It is recommended to consider national standard so it can be used in local sports competition.

g. Fitness Area

The fitness area can be located parallel with the pedestrian path /jogging track or clustered in a spot near children playground. The design should consider the safety and maintenance.

h. Sitting area

Most of the visitors come to POS in a group, though a small part of them come to the POS for being alone. Therefore, the sitting area design should have variation, so can accommodate all needs, both group, and single sitting. The material used should consider the weather and maintenance. The area should be protected from sun and rain. The protection can be a canopy, tree, or pergola-vegetation. This area should be controllable visually from all direction to prevent crime and vandalism. The area should be located in a place that enables someone to watch something like an attraction, such as watching kids playing, the landscape objects, or sports activity. The area should be dry in the rainy day and connected with the pedestrian path.

i. Kids playground

The playground can stimulate kid's motoric ability. This area should be ergonomics, safe, and controllable.

j. Jogging track

The jogging track is a multipurpose path that can be used for jogging, running, walking. This track should long enough to enable people enjoying pedestrian activities. It is necessary to plan an individual track for biking to avoid conflict with pedestrians. The pedestrian path should be designed to be comforted, continue, and safe.

k. Public Toilet

One of the facilities that have a low score of visitors' perception is the public toilet. The availability of water and cleanliness is the usual problems in the other public services. Therefore, it is necessary to support the maintenance by a cleaning service officer. The design should consider maintenance. The water source can implement rain harvesting because Sumatera Utara is a region with abundant rainy days.

l. Mushola/prayer facility

Sumatera Utara province is an area of the Moslem majority. Therefore, the prayer room is crucial in designing public open space. The facility can be conceived as an open-air building for saving energy and prevent other activities except praying. A moveable screen can be installed to protect it from rain.

m. Water outlet

POS in Sumatera Utara is always functioned as common prayer area in Eid feast. In order to make ablution easy, it is necessary to provide water outlet. It does not take a particular place, but a lot of water outlet and drainage channel. The water resources can be implemented rainwater harvesting system.

n. Dining area and street vendor.

The street vendor can be placed in a cluster, in a paved area with adjustable canopy. This area should be equipped with adequate utility, such as fresh water, drainage and trash can. The utilization of this space should be supported by regulation, particularly in modifying design, extended area, and cleanliness.

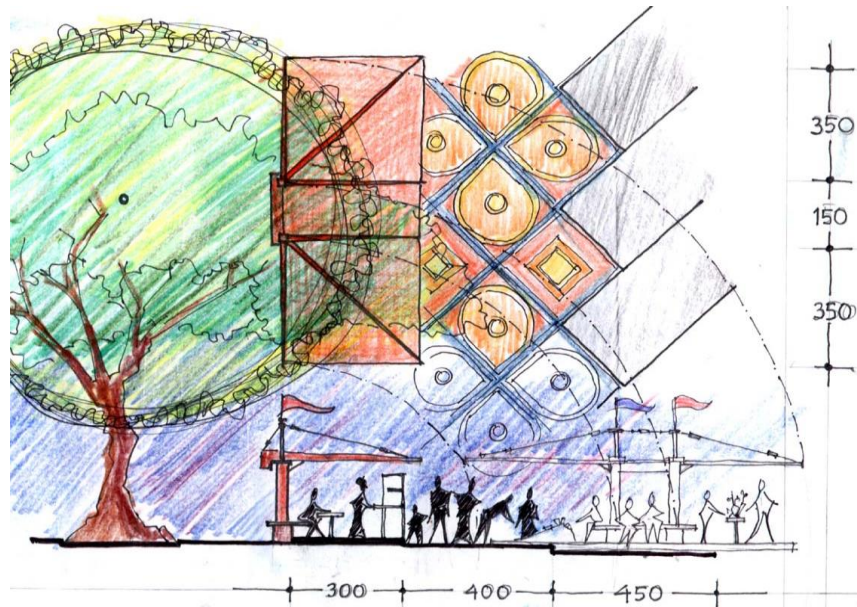


Fig. 4. The sketch of plan and section of sitting area that has a shady tree or canopy to ensure comfort

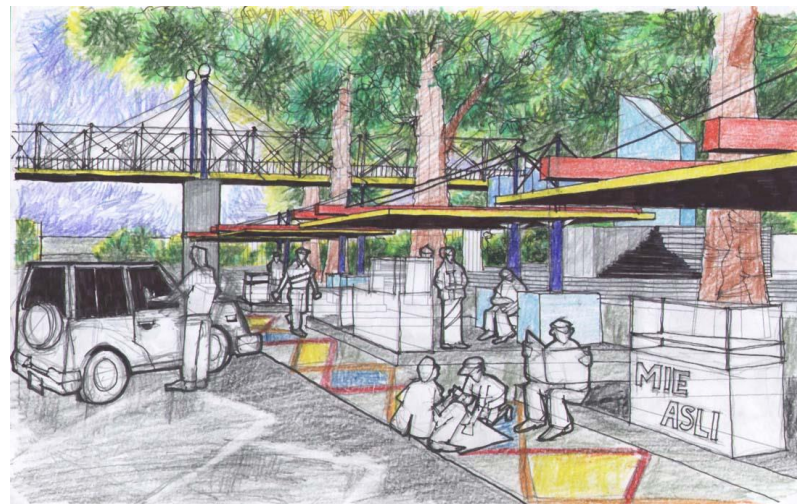


Fig. 5 Image impression of street vendors spot

o. Trash can

The cleanliness is one of the biggest problems in many Sumatera Utara towns. One of the facilities to improve cleanliness is a garbage can. It is necessary to design this equipment strong enough to prevent vandalism. It should be distributed in every activity zone.

p. Lighting

The adequate lighting, particularly in the night, is critical to enable people doing their activities until night without worries about crime and immoral act. Since the conventional electricity is a crisis in Sumatera Utara, it is recommended to install lighting with renewable energy, such as solar panel/ photovoltaic.

q. Art and education objects

Art and learning objects can be integrated into the design of landscape and its features, such as sculpture, historical/legend figures, information board/signage that explain vegetation identity or city history, or pavement pattern that illustrated some knowledge and interesting information.

## 2.8 Management

POS management in the previous study had a low score of visitors' satisfaction. Some problems relate to cleanliness, safety, and maintenance. We almost found no officer in the POS, so it is necessary to place some officers to enable safety and maintenance control.

## 2.9 Implementing strategy

Most of the Indonesian citizens, particularly in Sumatera Utara, do not have an experience about a tidy, orderly and good governance urban space. The transition from rural-agrarian to be urban-industrial community still express people with the rural tradition that live in a dense and complex infrastructure environment. Evers (2007) said that many cities in Indonesia run 'urbanization without urbanism'. Moreover, the government does not always have an adequate capacity in managing urban space, including public open space. It is always found that public open space is full of facility, but has lack maintenance. Thus, the implementation problem is based on two fundamental aspects: the awareness of people and the capacity of government. The first point needs public education. The intensive campaign about how should people use and keep public open space has to be done either verbally and visually. A verbal socialization can use social media and by inserting the development ideas at schools curricula, mass, and social organization. A visual education can apply, first, 'marketing place' by using image impression, and second by developing the 'pilot project.' The second approach can facilitate the community learn the idea by a 'direct-experiencing.' This method is integrated with the implementation of design guideline regulation. The second aspect, the government capacity should be reflected by assigning the guidelines to be a government regulation. However, after 'marketing policy' to the people, the government should uphold the law enforcement to ensure all stakeholders apply the guidelines.

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