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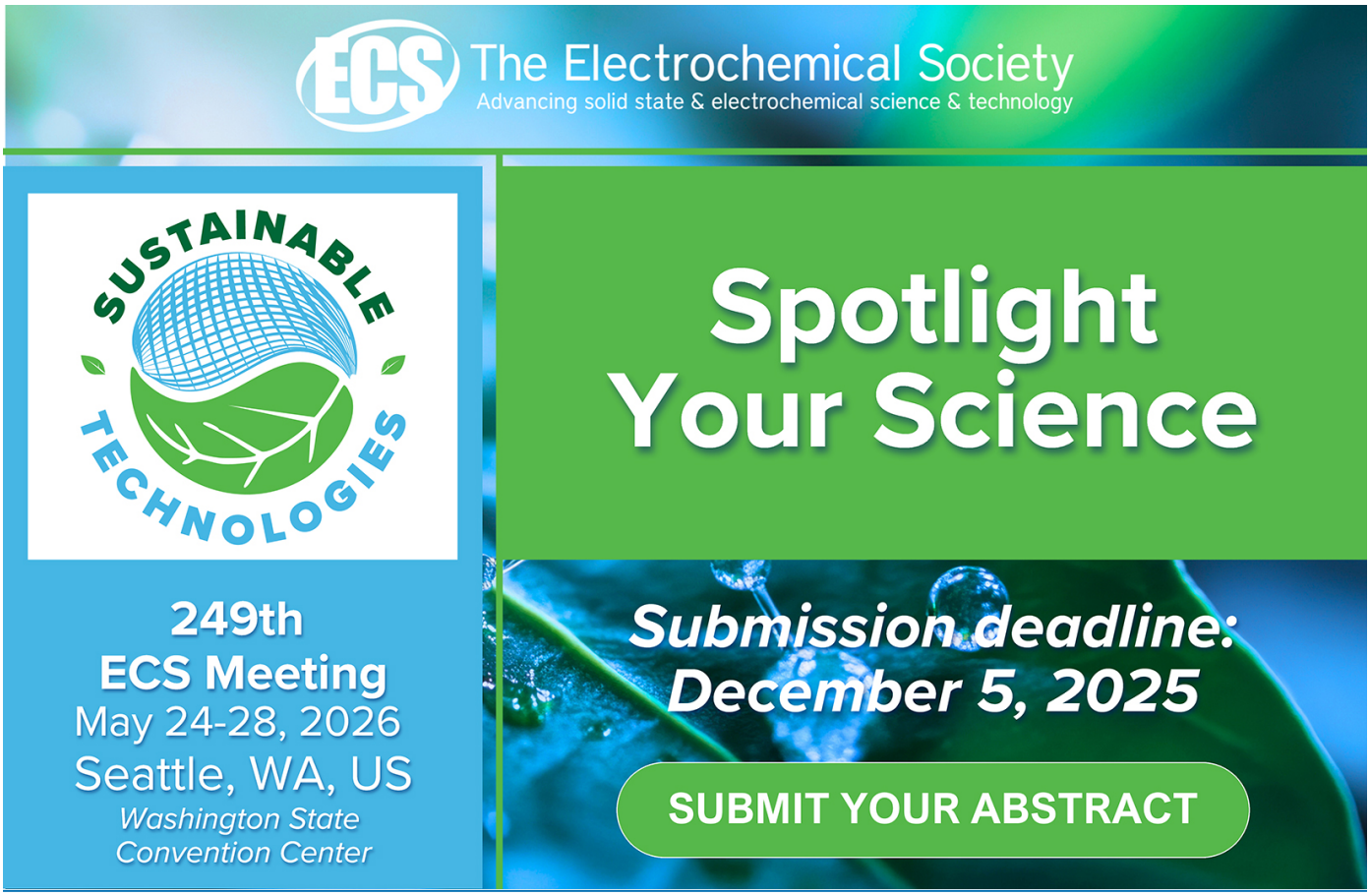

# Public open space as the only urban space for walking: Sumatera Utara experience

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**Abstract**. One of successful public open space (POS) criteria is the proper pedestrian linkage. Furthermore, a good quality POS should pay attention to pedestrian activities. This will contribute to the physical and mental health of people and enhance their quality of life. The research means to investigate how POS accommodate the pedestrians. The study takes place in twenty small towns in Sumatra Utara province, Indonesia. The analysis is a descriptive, explorative study that collects data about physical elements of POS. The survey also uses a set of questionnaire to get information about the visitors walking tradition. The result of the study shows that most of the citizens approach and get to the POS by vehicle, both cars, and motorcycles. They use their private vehicles although the distance between their houses and the POS is less than one kilometer. There is no pedestrian linkage that connects the POS with the other part of urban space. However, the POS is active by various physical activities, such as walking, playing and exercising. These events occur both in pedestrian ways in the periphery, inside the POS, and in the other spots of the POS, such as grass field or multipurpose plaza. The visitors' vehicle tradition relates to the whole urban space which is planned in a car-oriented way. Thus, the POS becomes the only space that people can walk and enjoy the environment.

## 1. Background and Issues

A successful public open space (POS) should provide physical activities, such as walking. This aspect relates to the quality of health of the POS visitors [1]. The good urban space is indicated by the proper pedestrian path [2]. Besides, walking can decrease accident and air pollution, increase public life in POS [3], becomes a low-cost transportation as well as sport and leisure, and promote social cohesion [4][5].

The pedestrian issues in POS associates with two factors, the first, the accessibility and the second, the activities. The useful accessibility is supported by a high-quality pedestrian linkage and networking that encourage people to go to the POS by walk [6] [7]. The activities in POS always link with pedestrian activities, such as sport and playing. Thus, POS should have some facilities that accommodate the walker activities.

The facts show that physical appearance of Indonesian cities gives an insufficient space for the pedestrian. In contrast, there is more space for vehicles. Meanwhile, the sales of cars and motorcycles become more aggressive, but there is no comfortable public transportation. As a consequence, the community does not have many choices for their movements, so the private vehicles become 'the must-have.' This situation generates a vehicle-dependent community. It is common that people access any neighborhood facilities by vehicles, though the distance not more than 500 meters. Even though they want to walk, there is no comfort and safe pedestrian path [8]. In this situation, the POS can be the place where people walk, meet and greet each other. All these activities will improve physical

health and fulfill psychological needs [9]. The paper means to describe how POS accommodate pedestrian Spaces the visitors' activities and walking tradition.

## 2. Methods

Sumatera Utara is one of Indonesia's province that consists of 33 regencies and towns. Since local government autonomy regulation applied on 2004, several rural regions has been turning to be more urbanized. The changes are characterized by the increasing of the population as well as trading activities and built environment. Unfortunately, same with the older towns that have been developed, the new regencies and towns' development does not spare a proportional space for humans, such as pedestrian and public open spaces. By this condition, it is necessary to take a closer look about the POS. Does the POS provide pedestrian needs? How the accessibility of the POS in relation with community's walking tradition? How intensive the people's activities in the POS? How is their perception of the physical quality of POS?

The study is located in 20 towns in Sumatera Utara Province. They are Batubara, Berastagi, Binjai, Kisaran, Lubuk Pakam, Pandan, Pematang Siantar, Sipirok, Stabat, Tarutung, Sibolga, Tanjung Balai, Rampah, Pangururan, Aek Kanopan, Kota Pinang, Panyabungan, Rantau Parapat, Salak, and Sidikalang. The research use mix method, qualitative and quantitative approach. The analysis of accessibility and pedestrian activities is qualitative, based on field survey and mapping and observation. The study of the intensity of using, users' perception and their walking tradition based on questionnaire supported by the descriptive statistic. There are 1212 respondents of active visitors that found in the POS and agree to participate in the survey. They are randomly chosen in every activities zone of POS.

## 3. Result and Discussion

### *3.1. Respondents and public open space characteristics*

The visitors of POS consists of all social, age and gender, but males are a little bit larger than females. They are mostly males of 16-20 years, not married and monthly expenses not more than 2.5 million rupiahs (Table 1).

**Table 1.** Respondents' characteristics.

| Variables | Batu bara | Beras tagi | Binjai | Kisa ran | Lubuk Pakam | Pandan | Pem. Siantar | Sipirok | Stabat | Taru tung |
|---|---|---|---|---|---|---|---|---|---|---|
| Respondents | 68 | 70 | 70 | 70 | 70 | 70 | 70 | 89 | 70 | 70 |
| Female | 30,9 | 28,6 | 55,7 | 38,6 | 24,3 | 58,8 | 71,4 | 52,8 | 42,9 | 45,1 |
| Male | 69,1 | 71,4 | 44,3 | ,61,4 | 75,7 | 41,2 | 28,6 | 47,2 | 57,1 | 54,9 |
| Age | 31-35 = 16,2% | 16-20= 41,4% | 16-20= 38,6% | 16-20= 37,1% | 16-20= 40,6% | 16-20= 38,0% | 16-20= 50,0% | 16-20= 80,9% | 16-20= 47,1% | 16-20= 32,9% |
| Job | Private officer 36,8% | student s 84,3% | student 47,1% | student 44,6% | Student `50% | student 36,8% | student 75,7% | student 86,5% | student 51,4% | student 50,7% |
| Monthly Expenses | < 2,5 M IDR 45,2% | < 2,5 M IDR 82,9% | < 2,5 M IDR 77,1% | < 2,5 M IDR 63,2% | 2,5-5 M IDR 41,7% | < 2,5 j M IDR 75,4% | < 2,5 M IDR 73,0% | < 2,5 M IDR 87,5% | < 2,5 M IDR 72,9% | < 2,5 M IDR 51,4% |

| Variables | Sibolga | T. Balai | Ram pah | Pangu ruran | Aek Kano pan | Kota pinang | Panya bungan | R. Parapat | Salak | Sidika lang |
|---|---|---|---|---|---|---|---|---|---|---|
| Jumlah | 44 | 45 | 30 | 39 | 89 | 81 | 30 | 98 | 39 | 34 |
| Female | 47,7 | 32,6 | 36,7 | 48,6 | 62,9 | 43,2 | 53,3 | 50 | 5,1 | 79,4 |
| Male | 52,3 | 67,4 | 63,3 | 51,4 | 37,1 | 56,8 | 46,7 | 50 | 94,9 | 20,6 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | 16-20= 34,1% | 21-25=77,8% | 16-20= 36,7% | 10-15= 27% | 41-50 = 18,0% | 16-20= 29,6% | 26-30= 33,3% | 31-35= 22,4% | 16-20= 74,4% | 16-20= 38,2% |
| Job | student 43,2% | student 59,1% | student 50,0% | student 57,9% | others 40,4% | student 39,5% | others 36,7% | student 26,5% | Officer 82,1% | student 70,6% |
| Monthly Expenses | < 2,5 M IDR 73,0% | < 2,5 M IDR 71,1% | < 2,5 M IDR 56,7% | < 2,5 M IDR 71,8% | < 2,5 M IDR 68,5% | < 2,5 M IDR 74,1% | < 2,5 M IDR 60% | <2,5 M IDR 53,1% | < 2,5 M IDR 97,4% | < 2,5 M IDR 76,5% |

### *3.2. Accessibility and walking tradition*

The accessibility aspect can facilitate the community to come, approach and enter the POS. The determinant of this factors is indicated by the distance [12] [13], the easy-access to go inside [14][15], and the easy-traffic to approach to the POS [16][17]. All of the aspects correlate to transportation mode and system, POS linkage to the other elements of the urban space, and the suitable pedestrian network [12] [13].

The survey shows that there is no pedestrian linkage as mentioned in many POS literature (see Project for Public Space, 2000; Gehl, 2002; CABE and DETR, 2001). Though the pedestrian path exists in the POS periphery and inside POS, the POS almost appears as an 'island' that only can be accessed by vehicles. Physically, the POS can be reached by pedestrians, but there is no continuous path from another part of the towns. There is just 3 of 20 POS studied that accessed by walk. In the other 13 POS, most of the visitors come and reach the POS by vehicles, mainly motorcycles. They still visit the POS by cars, though the distance between POS and their home not more than one kilometers or less. The facts indicate that the vehicle-dependency look like the habit of the community.

POS can be entered freely, without control. There are some gates as the sign to come in. In some cases, the entrance is not clear enough. However, since there is no fence surrounding the POS, it can be accessed from any points. The condition shows that the POS in Sumatera Utara is favorable to be functioning as free access public space, but mostly by motor vehicles. When reaching the area, people walk to the POS after parking their cars. In some POS, the visitors enter inside POS by motorcycles. They sit on the bikes, talk with their friends, doing socializing. However, they do that while making an "invasion" pedestrian zone inside POS (Figure 2). There is no adequate public transportation that used by the community to the POS. They rely on their private cars or motorcycles. The ownership of private vehicles is up to 92 % of visitors. As a consequence, the POS design should spare large space for parking. However, parking area does not always have an appropriate capacity to contain the vehicles. It makes the visitors put their cars anywhere without order. This condition distracts pedestrian zones and causes discomfort. Some POS that has sufficient parking lot looks tidier and well organized, but the fast-growing cars and motorcycles force a high-cost construction for providing larger space for vehicles.

In this circumstance, most of the respondents feel satisfied with the accessibility of POS, including the aspect of distance, access, transportation and traffic convenience. Although the level of satisfaction does not reach 4 (satisfied), those who say "satisfied" and "very satisfied" is bigger than "unsatisfied" and "very unsatisfied" answers (Table 2a and 2b). It can be said that the visitors' satisfaction with the accessibility aspects does not relate to the quality of pedestrian path and pedestrian linkage. They look feeling comfort while accessing POS by vehicle and does not prefer to walk.

**Table 1a.** Respondents' characteristics.

| Variables | Batu bara | Beras tagi | Binjai | Kisaran | Lubuk Pakam | Pandan | Pem. Siantar | Sipirok | Stabat | Taru tung |
|---|---|---|---|---|---|---|---|---|---|---|
| Vehicles ownership | Yes, motor cycle 61,2% | No 57,1% | Yes, motor cycle 64,3% | Yes, motor cycle 59,7% | Yes, motor cycle 53,6% | Yes, motor cycle 43,9% | No 57,1% | No 54,5% | Yes, motor cycle 57,1% | Yes, motor cycle 50,0% |
| Accessing the POS by | motor cycle 52,3% | walk 61,4% | motor cycle 51,4% | motor cycle 64,3% | motor cycle 48,6% | motor cycle 50,7% | walk 38,6% | motor cycle 51,7% | motor cycle 67,1% | motor cycle 52,9% |
| Distance from home | < 500 m 35,3% | < 500 m 45,7% | > 5 km 34,8% | 3-5 km 35,7% | 500 m - 1 km 50,7% | < 500 m 35,3% | > 5 km 30,0% | > 5 km 47,7% | > 5 km 37,1% | > 5 km 28,6% |

**Table 1b.** Respondents' characteristics.

| Variables | Sibolga | T. Balai | Ram pah | Pangu ruran | Aek Kano pan | Kota pinang | Panya bungan | R. Parapat | Salak | Sidika lang |
|---|---|---|---|---|---|---|---|---|---|---|
| Vehicles ownership | No 40,9% | Yes, moto r cycle 48,9 % | Yes, motor cycle 46,7% | No 55,3% | Yes, motor cycle 69,7% | Yes, motor cycle 64,2% | No 60% | Yes, motor cycle 65,3% | Yes, motor cycle 92,3% | No 67,6% |
| Accessing the POS by | motor cycle 45,5% | moto r cycle 38,6 % | motor cycle 22,7% | walk 43,6% | motor cycle 87,6% | motor cycle 75,3% | motor cycle 36,7% | motor cycle 66,3% | motor cycle 94,9% | motor cycle 35,3% |
| Distance from home | 3-5 km 36,4% | 1-3 km 43,2 % | 500 m-1 km 30,0% | < 500 m 52,8% | 1-3 km 37,1% | < 500 m 23,8% | < 500 m 30% | 500 m-1 km 28,6% | 500 m-1 km 87,2% | 500 m-1 km 38,2% |

**Table 2a.** Level of satisfaction with accessibility factors in POS.

| Variables | Batu bara | Beras tagi | Binjai | Kisa ran | Lubuk Pakam | Pandan | Pem. Siantar | Sipirok | Stabat | Taru tung |
|---|---|---|---|---|---|---|---|---|---|---|
| Distance from home | 3,65 | 3,21 | 3,34 | 3,34 | 3,54 | 3,34 | 3,36 | 3,12 | 3,20 | 3,24 |
| Entering convenience | 3,76 | 3,49 | 3,79 | 3,79 | 3,65 | 3,57 | 3,67 | 3,34 | 3,81 | 3,36 |
| Transportation convenience | 3,73 | 3,47 | 3,79 | 3,70 | 3,54 | 3,47 | 3,76 | 3,47 | 3,57 | 3,30 |
| Traffic convenience | 3,49 | 3,53 | 3,54 | 3,70 | 3,64 | 3,31 | 3,96 | 3,72 | 3,81 | 3,27 |

**Table 2b.** Level of satisfaction with accessibility factors in POS.

| Variables | Sibolga | T. Balai | Ram pah | Pangu ruran | Aek Kano pan | Kota pinang | Panya bungan | R. Parapat | Salak | Sidika lang |
|---|---|---|---|---|---|---|---|---|---|---|
| Distance from home | 3,77 | 3,64 | 3,03 | 3,87 | 3,40 | 3,07 | 3,56 | 2,97 | 3,66 | 4,40 |
| Entering convenience | 4,14 | 3,89 | 3,83 | 3,62 | 3,69 | 3,93 | 3,81 | 3,27 | 3,97 | 4,60 |
| Transportation convenience | 4,02 | 3,62 | 3,73 | 3,69 | 3,63 | 3,54 | 3,69 | 2,97 | 3,64 | 4,40 |
| Traffic convenience | 4,00 | 3,77 | 3,63 | 3,64 | 3,64 | 3,66 | 3,84 | 3,23 | 3,73 | 4,80 |

*3.3. Pedestrian activities*

There is pedestrian way exist in all POS that observed. The path is placed both in the boundary of POS and inside POS (in the activities zones) with various quality. The study shows that not all pedestrian facilities that designed in a good quality associated with the level of using. For example, in Salak and Raya there is a wide-comfort-good quality pedestrian path, but the two POS is less of visitors. In contrast, in Aek Kanopan and Kota Pinang, it can be found a poor pedestrian way, but the two POS is very busy with many visitors. With this condition, the respondents perceived the facilities as 'satisfy.' The fact is different with the POS of developed countries that 'the higher the quality, the larger the recreational activities can be" [10][11].

**Figure 1.** Some pedestrian activities in POS.

The most activity done in POS is sport/exercise and socializing with friends, family or relatives (Figure 1). Primarily, visitors feel satisfied to the function in POS. Meanwhile, the activities that rarely done is political interest (Table 3a. 3b). All various events show that POS in Sumatera Utara is the successful place in responding the pedestrian needs. The activities are done when people walk. It gives a significant opportunity for them to get healthy and interact each other. As a pedestrian's container, the POS contribute the maintenance and enhancement of citizens' quality of life, physically and psychologically. While there is no enough facilities for pedestrians in the other part of urban space but POS, people rely on it for fulfilling their needs.

This study points out that the community approaches the POS by motorcycle. They park their vehicles and doing pedestrian activities inside the POS. After that, they use their cars again to go home or the other destination. They use their cars in the entire urban space except inside the POS. Thus, the POS becomes 'the only island' for them for walking. The other part of urban space does not provide the adequate walking facilities. The existing path is discontinued, no connection each other, harmful, and dangerous as the consequence of bad quality and maintenance. Besides, there is no mass transportation that encourages people to walk, at least from transit point to the activities area. It looks like 'make-sense' that the community prefers private vehicles to support their mobility. However, this tradition decreases the opportunity for them to do physical activities, such as pedestrian activities, except they came to and engaged in the POS.

**Figure 2.** The 'invasion' of vehicles in pedestrian zone.

**Table 3a.** Level of satisfaction of visitors with function and activity in Public Open Space.

| Variable | Batu bara | Beras tagi | Binjai | Kisa ran | Lubuk Pakam | Pandan | Pem. Siantar | Sipirok | Stabat | Taru tung |
|---|---|---|---|---|---|---|---|---|---|---|
| Recreational function | 3,52 | 2,96 | 3,31 | 3,57 | 3,40 | 3,40 | 3,24 | 3,70 | 3,61 | 3,17 |
| Sport/exercising function | 3,91 | 4,04 | 3,51 | 3,96 | 3,96 | 3,69 | 3,47 | 3,48 | 3,73 | 3,14 |
| Social interaction function | 3,72 | 3,39 | 3,51 | 3,66 | 3,61 | 3,49 | 3,56 | 3,53 | 3,76 | 3,23 |
| Political function | 3,31 | 3,03 | 2,99 | 2,96 | 2,99 | 3,21 | 2,77 | 3,33 | 3,21 | 3,10 |

**Table 3b.** Level of satisfaction of visitors with function and activity in Public Open Space.

| Variable | Sibolga | T. Balai | Ram pah | Pangu ruran | Aek Kano pan | Kota pinang | Panya bungan | R. Parapat | Salak |
|---|---|---|---|---|---|---|---|---|---|
| Recreational function | 3,40 | 2,75 | 3,28 | 2,66 | 3,12 | 2,43 | 3,68 | 4,41 | 3,00 |
| Sport/exercising function | 3,77 | 3,77 | 3,33 | 3,27 | 3,41 | 2,23 | 3,96 | 4,49 | 3,68 |
| Social interaction function | 3,70 | 4,07 | 3,38 | 3,47 | 3,64 | 3,50 | 3,45 | 4,69 | 3,44 |
| Political function | 2,41 | 2,97 | 3,31 | 3,48 | 3,63 | 2,27 | 2,96 | 4,28 | 2,94 |

## 4. Conclusion

Many scholars argue that one of the indicators of successful public open space is the good quality of pedestrian linkage that influences the intensity of its using. The different fact is found in

Sumatera Utara's POS. The absence of the proper walking path that connects POS to the other part of the urban area does not prevent people from coming to the POS. Although in some cases there is a pedestrian path, the community does not use it to access POS. They visit POS by using their vehicles, cars or motorcycles. The study shows that the urban space without the pedestrian facility and mass transportation on one side, and the easiness to own private vehicle on another hand, causes the 'walking culture' is more uncommon than moving by cars. Thus, public open space becomes the only 'container' in the towns to accommodate pedestrian activities. The POS should be maintained to keep this function run well. Meanwhile, the development of pedestrian facilities should be done intensively, so urban space can be a human space, not a vehicle space. The study is limited by only observing the pedestrian in the POS and the surrounding area. In order to get a comprehensive description, it is hoped that the next research will explore the pedestrian activities in the other part of urban space.

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