Public spaces in Bangkok and the factors affecting the good public space quality in urban areas

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Abstract. Public spaces are an important component of the urban area used to support public activities. The aim of this study is to evaluate the quality of public spaces where subdivided into districts of Bangkok city area. A methodology is carry out preliminary site surveying in a 31 public parks based on four main good public space indicators, which including accessibility, imageability, usability and sociability. In this study, the Z-score or standard score is defined as a statistical measurement of the associate of site characteristics score, has been apply to determine quality of public spaces. The results reveal that the all of public spaces are outstanding scores in terms of imageability and usability, and their Z-score values are consistently coherent, especially the high-quality public spaces located in the inner zone of Bangkok. While accessibility and sociability factors are poor quality, their values show on some public spaces that mostly located in the middle and in the outer zones of Bangkok. These results can be helpful to given a priority when managing city facilities in the Bangkok’s urban space and maintaining or improving its public space value.

1. Introduction
Public spaces are one of the most important of social components of the city. They have been used to support human activities in daily life from the past to present [1,2,3]. Within the public spaces, there are the various relationship of interaction between people, people and space, and its surrounding [4,5]. Public spaces associate with their neighbourhoods and located districts, reflecting social, economic and environment [5,6]. They were shaped and shaping together, coursing the unique character of them both public spaces and their located zone [6,7]. Quality of a city is often associated with its public spaces. Good public spaces give many advantages to all sectors of a city [8]. The standard of public spaces has no stereotype, they were assessed their quality by many indicators with vary scholars. Good public space began to be considered as an important issue by Jan Gehl since 1974 [9] and it has been continuously consideration on urban planning to the present. There are many major terms for improving quality of public spaces. Moreover, there are many keywords for good design of public open spaces including protection, comfort and enjoyment, cleanliness, tidiness, accessibility, attractiveness, comfort, inclusiveness, vitality and viability, function, distinctiveness, safety and security, robustness, greenness, unpollutedness and capacity for fulfilment [10], liveability, character, connection, mobility, personal
freedom and diversity [11], access and linkages, comfort and image, uses and activities and sociability [12], imageability, visual enclosure, human scale, transparency and complexity [13]. This study is a preliminary survey of urban public space in Bangkok, the city was divided to three zones according to the location of the area [14]. As shown in figure 1, the three circles represent the different urban development density zones of Bangkok.

Figure 1. The location of public parks in three areas represent the different urban development density zones of Bangkok.

2. Research Methodology
In order to get the results, this study used a checklist of elements of public space covered four dimensions and thirteen factors as seen in Table 1. In terms of accessibility, there are two factors refer to convenience of entering including number of bus station point and entrance. As regards imageability, it is the physical relationship of the surrounding environment with each other, which creates images of the distribution of urban parks and understanding for the users within the service areas—a walking distance of 500 meters from any parks. There are four factors represent to convenience, importance, background or history and appreciation consisting of the number of facilities, age of park, be donated from aristocratic and wealthiest people (refer to an important history of parks), classify the park contents of the city images into five types of elements which are paths, edges, districts, nodes and landmarks. Regarding usability there are five factors that interpret to role and usage of public spaces inclusive of the number of user on weekday and weekend, size, the number of role and the number of important building which located on the public spaces. With regard to sociability, there are two factors that citing to social significance of public spaces which includes the number of nation of user and element of social (in case of Thai context), which including residence in background, educational institution and religious institution. On the process of analysis, all factors’ scores were converted to standard score or Z-score, a unit of measurement that is converted from raw scores to measurement results, used to describe the quality level of public spaces in each zones. The formula for calculating is given below:

\[ Z_i = \frac{X_i - \bar{X}}{S} \]  

(1)

Where, \( X_i \) is a raw score, \( \bar{X} \) is the mean of the sample and \( S \) is the standard deviation of the sample. 

The Z-score can be both plus or minus, showing that the Z-score’s ability is above or below average respectively. Each Z-score of the factors and dimensions were considered on comparison among thirty-one main parks.
Table 1: Summary of dimensions/factors and Z-scores affecting the good public spaces quality in Bangkok urban areas (N=31)

| No. | Dimension/Factor | Z-Score |
|-----|------------------|---------|
| 1   | Zoning           |         |
| 2   | Entrance         |         |
| 3   | Landscape Design |         |
| 4   | Accessibility     |         |
| 5   | Safety           |         |
| 6   | Maintenance      |         |

Source: User study (2020)
3. Results and Discussion

The Z-score of the factors of each dimension of thirty-one public spaces among three zoning of Bangkok are various, every Z-score imply to performance and quality of public spaces where located on each zoning which can be seen in table 1. A comparative performance of the public spaces in three zones was represented in the form of a spider diagram which can be seen in figure 2

3.1. Public space in the inner zone of Bangkok

The quality of public space in the inner zone are the greatest than public spaces in the middle and outer zone. Their dimension Z-score are apparently high, most of them are plus status. In terms of accessibility, entrance factor is the top of all. Its Z-score is 3.127. In the same time with imageability, the number of facility, age of park, be donated by important people and the number of element of image of the city factors are the highest. Their Z-score are 4.466, 3.650, 2.556 and 3.534 respectively. And usability, the number of user on weekday and weekend, role and important building factors are the highest. Their Z-score are 4.297, 4.507, 3.935 and 4.512 respectively.

3.2. Public space in the middle zone of Bangkok

Public spaces in this zone have the unique character. Their Z-score are plus and minus status in the same dimension. In terms of accessibility, both bus station points and important people factors are the highest. Their Z-score are 4.573 and 3.127 respectively. On usability, size factor is the highest. Its Z-score is 3.162. And sociability, the number of nations of user and element of social factors are the highest. Their Z-score are 3.746 and 4.213 respectively.

3.3. Public space in the outer zone of Bangkok

The quality of public spaces in the outer zone are the poorest than the other zones. Most of their Z-score are minus. Their dimension Z-score are apparently low in every factor of the dimensions. Especially imageability, usability and sociability dimensions. Their Z-score of be donated by important people, the number of important building and nation of user are 0.379, 0.325 and 0.258 respectively.

4. Conclusion

Quality and character of public spaces in each urban zoning are different, their quality followed to physical of urban zoning. In the inner zone of Bangkok, their public spaces were used to many roles. Its public spaces are quite good quality. They perfect with good access and have many mode choices of

Figure 2. The overall Z-score dimensions of public spaces in different urban zones and the Z-scores of accessibility (a), imageability (b), usability (c) and sociability (d).
transportation, linkage between building or place, and sight attraction from elements in its public spaces. Public spaces in the inner zone are plenary consistent with the area where there is prosperity as the districts within the city centre. While the middle zone of Bangkok is semi-suburb area, the main role of its public spaces was used to support community activities. The public spaces are various characteristics, outstanding with size; there are both the biggest and smallest area of all the main public spaces in Bangkok, convenience on access and linkages and importance in history. Moreover, their public parks are significant in sociability, they located on the districts that contain many nations of user distribute surrounded with elements of social structure of Thai. The contexts between public spaces and middle zone represents the neighbourhood that is community. And the outer zone of Bangkok is a suburb area, where their facilities are less than urban centre. Their public spaces are quiet poor, and the poorest in many dimensions including imageability, usability and sociability. The results of this study are obtained from the analysis that focused on physical factors. For more clear results, economic and social factors should be considered in further studies.

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