Physical Behavior in Physical Elements of Public Space on the Use of Mobile Phone Features

This research builds upon the idea of the phenomenon of public space as a means of communication and interaction, and the phenomenon of the use of technology communication devices that is mobile phone. In the public space and the mobile phone are human elements. Human in the public space in this case was the visitors who use the mobile phone. Phenomenon in human are in the physical behavior pattern, ie standing, sitting, walking, and leaning. Thereby there are three aspects that will be examined in this research, namely; public space as a means of social interaction and communication, human behavior in public space, and the phenomenon of mobile phone use in public space.

Public space as social and cultural functions describes the expression of local culture, a means of communication, interaction and a place for play and recreation. One of the functions of public space is as a means of social interaction and communication between the visitors.

Public space is three-dimensional (3D) space in architecture and urban space that can accommodate the need for meeting between people to communicate and interact with each other. It is a space where anyone has the same right to access and doing any interest and public activities, no need to feel inferior because of economic and social condition, no need to ask permission to access it.

The development of architecture and urban design is so complicated that the human behavior should be considered in the process of build environment design. In architectural and urban design context human behavior is a basic concept in the process of analysis interactions of environment behavior in the design of public space. One of the fascinating behaviors is mobile phone users behavior.

In the era of communication technology, mobile phone use is a common thing in public space. Mobile phone is one of the most important information and communication technology devices and the characteristic of modern urban society, which have high mobility. The use of mobile phone has become a lifestyle in public space and private space.

Mobile phone is often used in public space. It is one of the most popular tools/devices that people use to interact and communicate in public space. Almost all of people from any generation are using a mobile phone in public spaces, in any country. The visitors come from varied age generation, gender, educational level, culture, and socio-economic background.

The use of mobile phone by all ages appears in everywhere. They come to public space with friends, couple or just alone. While doing the activities, they still use a mobile phone features such as calling, SMS, listening music, taking pictures with camera phone, and variety of behaviors related to mobile phone features. The visitors of public space are using mobile phone features with some physical behavior in some elements public space.

The dimensions of public space are complicated. They consist of several elements, namely: physical environment, human actor, time, and things.

Several Elements in Public Space

- Physical Environment
- Surrounded Environment
- Physical Behavior
- Activities
- Social-Cultural Background
- Time
- Things
- Period
- Session
- Mobile Phone Features

Some aspects and elements in public spaces can be used to perform the analysis as a standing point such as the period, the physical setting, the physical elements, and surrounding environment. Standing point in this study is limited to the similarities and differences of period, physical setting, and social-cultural.
Period approach meant to examines the changes of physical behavior in public space by time. Physical setting and social cultural approach is used as a reference to examine the comparison of physical behavior among public spaces. The research problem is the differences, the similarities and the changes of behavior of visitors of public space who use mobile phone features influences by the differences and the similarities of physical element, surrounding environment, social cultural and period of activities.

Research questions are:
1. How do the characteristics of public space visitors that use mobile phone features in physical elements of public space?
2. How does the physical behavior of public space visitor’s on the use of mobile phone features in physical elements of public space?
3. Where do the physical elements of public space usually occupied by the visitors of public space that use mobile phone features?

The objectives are:
1. To determine the changes of physical behavior on the visitors of public space who use mobile phone in physical elements of public space based on the difference of period and the similarity of physical setting.
2. To compare the physical behavior on the use of mobile phone features in public space based on the difference of physical setting and the similarity of social cultural and period.

There are several variables to determine the changes and to compare of physical behavior on the visitors of public space who use mobile phone in physical elements of public space, such as:
1. The characteristics of public space visitors that use mobile phone features in physical elements of public space.
2. The physical behavior of public space visitors on the use of mobile phone features in physical elements of public space.
3. The physical elements of public space frequently occupied by the visitors of public space that use mobile phone features.

The location and site of the research conducted in Losari Beach Platforms: Pantai Losari Platform and Bugis – Makassar Platform in Makassar City Indonesia; and Kotodai Park in Sendai City Japan. This study focuses on physical behavior of public space visitors on the use of mobile phone features in physical elements of public space and also based on about the issue and the phenomenon of mobile phone use in public space. Those are the state of the art of this study. At least there are 3 (three) essential point of this study were also part of the uniqueness of this study. Which three points so far not been studied in unity by the experts. As for the three points in question are:
1. The physical elements of public space (architectural and urban design aspect), the use of physical elements in public space on mobile phone features.
2. Physical behavior (human behavior), the tendency of physical behavior on the use of mobile phone features.
3. Mobile phone features behavior (human behavior on the use of Information Communication Technology (ITC) devices), Mobile phone features in physical elements of public space.

The study of public space associated with behavioral setting had been carried out by researchers in the field of architectural behavior. Similarly, research in the field of information communication technology related to public setting also has a lot to do.

This study examines two aspects that are in between these fields, namely mobile phone physical behavior in public space. Concretely the study of the physical behavior on the use of mobile phone features in the physical elements of public space.
The method of data collection is done by observation and questionnaires. Data collection method adjusted to cultural and environmental conditions in which the study was conducted. Data collection carried out in two phases of observation.

Before conducting surveys and two phases of observations, first performed initial observation in both case studies sites to recognize the physical character of both public spaces and categorize visitors based on age generation. Then perform preliminary observation in Pantai Losari Platform in Makassar, Indonesia at 2011. In 2012 was also perform preliminary observation in Kotodai Park, Sendai, Japan.

Factual observations perform in two steps. First factual observations perform in Pantai Losari Platform at 2012. Second was performs in Pantai Losari Platform and Bugis Makassar Platform at 2013.

Mobile phone features are divided into three based on physical characteristic on use it; "calling features", "touch features", and "camera features". Data collecting was divided into three sessions; session 1, 06:00 – 08:00; session 2, 11:00 – 13:00; and session 3, 17:00 – 19:00.

Schema of analysis is a method to answer the research objectives. Therefore arranged some configuration scheme that enables to analyze the changes and differences in the physical behavior of visitors who use mobile phone in the physical elements of public space. The observation is done in Losari Beach and Kotodai Park.

The configuration of the scheme of analysis enables for the analysis of research objectives. Based on these figures there are six possible configurations that can be done: configuration PLP1 and PLP2, PLP1 and BMP, PLP1 and KDP, PLP2 and BMP, PLP2 and KDP, and BMP and KDP.

Configurations were analyzed in accordance with the standing point: period, physical setting, social and cultural. Based on these two configuration generated that can answer the purpose of this study, namely:

- Configuration 1: PLP1 and PLP2
- Configuration 2: PLP2 and BMP
Configuration 1 is a configuration scheme to analyze the changes in the physical behavior of visitors who use mobile phone in the physical elements of public space. Configuration 2 is a configuration scheme to analyze the differences in the physical behavior of visitors who use mobile phone in the physical elements of public space.

Once the data is collected and then this data was analyzed with excel and SPSS statistical software by using frequency, cross tabulation, chi-square test, and analysis of variance (ANOVA).

The general conclusions of this study are:
1. Every age generation has its own mobile phone features and physical behavior characteristics in public space.
2. In a period of less than 1 year from 2012 to 2013 there are some changes in the behavior of visitors of Losari Beach. Changes that occur due to changes in the physical environment around Pantai Losari Platform is that the new platform, namely Bugis-Makassar platform. Likewise, the installation of additional facilities such as wifi network has an impact on the physical behavior of mobile phone use in public spaces. The differences between PLP2 and BMP are not so much. Both of public spaces have the same on social – cultural, observation in the same period, and difference of physical setting.

The characteristic and physical behavior of visitor’s who use mobile phone features in physical elements of public space influenced by the difference of physical setting and the similarity of social - cultural and period.

3. The physical behavior on mobile phone features in public space tends to be different based on the experience of every generation using mobile phone.
4. The relationship between the availability of physical elements of public space and the physical behavior on the use of mobile phone feature is different based on generation in Pantai Losari Platform and Bugis Makassar Platform.
5. The characteristic of movement patterns of Losari Beach Platforms visitors who use mobile phone is as a destination. So in Losari Beach Platforms, the visitors tend to sitting on the bench. The use of physical element associated with the physical behavior and the condition of surrounding environment.

The knowledge of the physical behavior changes can be identified physical elements whatever is needed to prioritize in public space for convenience in communicating using a mobile phone in a public space.

In additional the following are the recommendation of the result of this study:
1. The human needs based on age generation and gender is important to provide comfortable public space.
   Recommendation: The architect and urban designer in designing public space should be make scale of priority for the needs of the dominant generation and gender in using mobile phone in public space.
2. A good public space design is one of problem solving for the rising complaint in mobile phone behavior in public space.
   Recommendation: The architect and urban designer in designing public space should considering for the different mobile phone features and physical elements of mobile phone physical behavior of every generation in public space.
3. Human behavior and the physical environment is a unity that must be considered to make a good design of public space.
   Recommendation: The tendency of the similarities and the differences of mobile phone usage behavior and physical features of visitors in public space can be considered an architect and urban designer of the needs and behavior of visitors in the design of convenient public space for mobile phone users.