

## ANALYTICAL STUDY OF CIRCULATION AND SPACE ARRANGEMENT OF BAITURRAHMAN GRAND MOSQUE BASED ON GENDER ACCORDING TO ISLAMIC SHARIA

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**Abstract:** The mosque is a Muslim worship building that is commonly found in Muslim-populated areas. As the main building in Islam, with its significant role, it is relevant if the mosque building applies Islamic concepts in its spatial arrangement and circulation. One of them is the concept of gender-based spatial arrangement. However, in the mosque's spatial arrangement and circulation, it is often found that the arrangement is not in accordance with the Islamic principles. This causes discomfort for some building users. This study revealed an analysis of circulation and spatial arrangement in the Baiturrahman Grand Mosque building, the largest mosque in Banda Aceh, which became an icon of the city of Banda Aceh. This study is also carried out based on gender in accordance with Islamic sharia. Using the qualitative approach, observation being carried out as well as the study of Islamic source and Ching's theory of circulation. The result shows that there is still a potential of *ikhtilath* (mingled each other between genders) happened in the recent space arrangement and circulation of the Baiturrahman Grand Mosque.

**Keywords:** *space circulation, gender space, mosque architecture*

### Introduction

The mosque is an important building for Muslims which is not only functioned as a place of worship, but also as a center of the community activities. According to some *hadits*, there are at least five functions of the mosque during the time of the Messenger of Allah SAW, namely as a place of worship, learning, deliberation, caring for the sick and boarding. Even though in Indonesia the function of the mosque is still limited to a place of worship, learning, and deliberation, but the mosque remains as an important building for Muslims that attracts many people to gather around (Laksono, 2015). Because its function is vital and it is a gathering place for many people, the circulation within the mosque is very important. Therefore, a good circulation will make it easier for people to regulate their movements.

The Prophet SAW encouraged every Muslim male to pray at the mosque (hadits shahih, Irwa' al-Ghalil no.551). If everyone carries out the Prophet's orders, the mosque will always be full at least at prayer times. With the gathering of many

people, a good circulation becomes very important. Even so, it is not only men who can go to the mosque. Many women also desire to worship in the mosque.

Regarding the ability of women to be present at the mosque, Rasulullah SAW said, "Do not prevent your wives from going to the mosque. If they ask permission from you then allow them" (al Hadits, reported by Muslim no. 667). However, in another hadith the Messenger of Allah SAW said "Do not prevent your women from going to the mosque, even though their houses are better for them" (Reported by Abu Dawud in al-Sunan, see also Sahih al-Jaami', no. 7458). This is because, it is concerned the *ikhtilath* (intermingled) between the opposite sexes will be occurred. This shows that a good circulation arrangements is important therefore can regulate this does not happen.

This study takes the Baiturrahman Grand Mosque as the object to analyse the space arrangement and circulation. This mosque is the jami mosque in the city of Banda Aceh located in the city center. This mosque has been established since the days of the Sultanate of Aceh which was built by Sultan Iskandar Muda in the 15<sup>th</sup> century (Raap, 2009). With its existence that has been hundreds of years, the Baiturrahman Grand Mosque has changed several times. This certainly causes the pattern of space circulation also changed since it was first planned. However, this study only focus on the recent space arrangement and circulation.

## Literature Review

As far as the search conducted by the researcher, studies that examine the circulation of the mosque building considered to be non-existent. Several studies conducted on circulation include:

1. Pynkyawati et al. (2009), in a study entitled Interior Circulation Design as A Tool of Fire Evacuation in Carrcadin Hotel Bandung. The study discusses the circulation design related to its function as a tool of fire evacuation. In this research, the study included analysis of interior space circulation, division of function zones, shape and size of evacuation routes, materials used, fire safety equipment, and placement of such devices inside buildings. Quantitative analysis is carried out in the form of measuring the length and width of the corridor along with sprinkler and hydrant service areas, as well as reviewing the number of uses and layout of fire safety devices on the space circulation system in buildings.
2. Pynkyawati et al. (2012) also conducted research under the title Study of Outdoor and Interior Circulation Design for People with Disabilities in the Ciwalk Building Area (Cihampelas Walk). This study discusses the circulation that supports accessibility for people with disabilities. The analysis conducted in this study is the analysis of the layout of the outer and inner space, facilities and supporting facilities for the accessibility of persons with disabilities.
3. Pynkyawati et al. (2014) performed circulation-related research under the heading Efficiency of Circulation Design in the Mall Buildings and BTC

Hotels. This research emphasizes the efficiency of circulation design. The analysis conducted in this study is the analysis of the shape of the circulation space, the zone of space function, the pattern of space circulation, the efficiency of distance and time of achievement, and the application of circulation elements in buildings in the form of signage.

4. Pynkyawati et al. (2013) also conducted a circulation-related study in a study entitled Circulation Pattern Design Study as A Tool of Fire Evacuation in IGD and COT Buildings in RSHS Bandung. The analysis was carried out in the form of study of zones, flow of activities and patterns of circulation and means of evacuation.

However, there has been no specific research on circulation in mosque buildings, specifically related to the arrangement of gender-based circulation. Research on building mosques has been carried out by:

1. Laksono, Pebri Arif (2015) in a thesis entitled The Spatial Concept of the Prophet's Mosque during the Prophet Muhammad. This study tried to reveal how the Nabawi Mosque spatial pattern concept. There is a small section that discusses the concept of circulation in this study. However, in general this research focuses on the mosque's spatial concept.
2. Mustafa, Faris et al (2013) in a study titled Mosque Layout Design: An Analytical Study Of Mosque Layouts In The Early Ottoman Period which focus on mosque layout in the early Ottoman period specifically. The study aims to measure the efficiency of spatial configuration using space-syntax theory.

Thus, it can be concluded that there has not been any research specifically analyzing the circulation of mosque buildings that are gender based.

### Theoretical Framework

The Hadith of Abu Hurairah r.a issued by Imam Muslim, the Messenger of Allah SAW said, which means: "The best male shaf is the front and the worst is the rear. And the best of female shaf is the most back and ugly is the earliest. " (al-hadits, reported by Muslim, no 664). Imam An Nawawi in the Muslim Shahih Shariah said: "in fact that the best female shaf is the most back and the best male shaf is the first, this is because the state of female shaf and male shaf is far from each other so it is not going on *ikhtilath* and looking at each other". Ash Shan'ani in Subulus Salam mentioned: "this hadits explains because the sunnah of the female shaf is behind the male shaf therefore the conditions of the place of women and men in prayer should be as far as possible from one another so there is no *ikhtilath* between them". Asy Syaokani in Nailul Authar (3/189) stated: "The reason of the benefit of the female rows behind the male is because there is no *ikhtilath* between them". Explanation of the above hadits states that this condition is demanded so that there is no *ikhtilath* between them. Therefore, the separation of space based on gender in the architecture of the mosque, is based on sharia law which is regulated

in valid Islamic sources. Based on this understanding, the separation of circulation according to gender is also important in a mosque.

In a hadith it is said:

حين ان النساء قاموا سلموا إذا سلموا عليه صلى الله عليه وسلم كان  
- نرى قال في بلان يدير مقامه في هو ويمكث ليمتدس ي قضي  
أحد ي دركهن أن قبل النساء ي نصرف ل كي كان ذلك أن - أعلم و الله  
الرجال من

"The Prophet sallallaahu 'alayhi wa sallam greetings and when the women stood up he sallallaahu 'alayhi wa sallam himself remained in his place for a while before he stood up. It is evaluated that this is done so that women first leave the mosque so they don't cross paths with men." (narrated by Bukhari in Shahih Bukhari, no 977). In this hadith it is clear that in the arrangement of circulation of the mosque is also needed to prevent *ihktilath*.

Considering the circulation, Ching (1993) mentioned that the flow of circulation can be interpreted as a "rope" that binds the spaces in a building or a row of spaces inside and outside to be interconnected. In the same book, he revealed about the elements of circulation, namely: approach, entrance, configuration of the path, path-space relationship, and form of the circulation space. These five elements constructed circulation flow is studied accordingly to the demanded situation as mentioned in the hadits before.

## Research Methods

The research method used in this study is descriptive analysis method and document study. Descriptive analysis is a description of a condition in accordance with reality through observation. In collecting research data, observation and documentation techniques are applied.

Referring to the Ching's theory, the circulation analysis of the Baiturrahman Grand Mosque was carried out in 5 (five) observations as mentioned above in theoretical framework. Observations of the elements of circulation mentioned above are adjusted to the existing shari'ah concepts based on the source of Islamic law, which is the text of the hadith (As-sunnah).

In observation techniques, the instruments based on the focal points of the issues raised in this study (which are space configuration and circulation) is arranged. The observation is carried out after the prayer times during the day in several days. Then the observations (the flow of circulation and the use of space) is recorded using a visual recording device. The documentation technique is carried out to explore written documents and drawing documents of the Baiturrahman Grand Mosque planning.

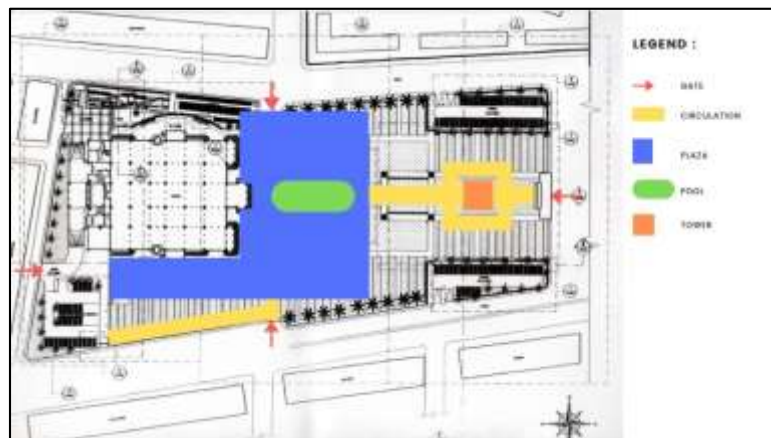
After the data is collected, it is processed, interpreted and analyzed qualitatively. The stages are carried out through several studies that include analysis

of space circulation (both inside and outside), separation of space circulation, and spatial arrangement based on gender in accordance with Islamic law (*sharia*). The analysis was carried out by comparing the facts found in the field with the theory from Ching and Islamic concepts based on hadith related to *ikhtilath* (intermingled).

## Results and Discussion

### A. Approach

The first phase of the circulation system is the approach in which the building user starts entering the building area and starts the circulation path before entering the entrance with a view. Based on observations in the field, the approach to the mosque building starts from the gate to the mosque area, which are 4 points of gates including 1 point for parking lane. Because the focus of the observation here is devoted to the pedestrian circulation path, the focus of observation is carried out at 3 points namely the east gate (main gate), the north gate and the south gate.



**Figure 1.** The circulation in Grand Mosque Baiturrahman Banda Aceh (source: analysis)

Approach, according to Ching (1993) is divided into 3 types namely frontal, oblique, and spiral. In this Baiturrahman Grand Mosque building there are 2 kinds of approaches, namely frontal and oblique.

The frontal approach starts from the east gate (main gate) with a frontal circulation that leads to the Baiturrahman Grand Mosque tower (see figure 1). The view that is seen from the direction of the main gate is obstructed by the tower, so in this case the purpose of the frontal approach in the form of a building facade view is not achieved.



**Figure 2.** The view from the main gate towards Baiturrahman Grand Mosque is blocked by the tower (source: Author, 2019)

However, when this circulation continues through the tower, then the view towards the mosque is open and the front facade of the Baiturrahman Grand Mosque is seen. From this direction also visible the old main gate of the Baiturrahman Grand Mosque which has the same style as the Baiturrahman Grand Mosque facade.



**Figure 3.** The view from the main gate towards Baiturrahman Grand Mosque after getting through the tower (source: Author, 2019)

There are two points of the oblique approach, which is from the north gate and the south gate (see figure 1.). View from the north and south is open to see the Baiturrahman Grand Mosque building in 3 dimensional visual image, in accordance with the objectives of the oblique approach. So in this case it can be said that the purpose of this approach is achieved.



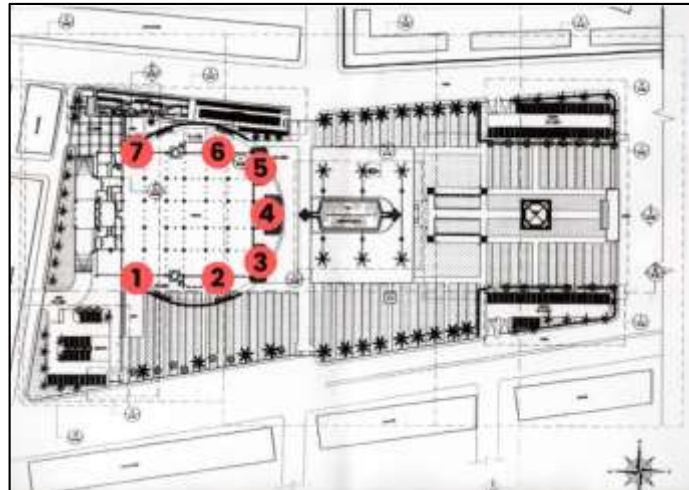
**Figure 4.** The view from the south gate of Baiturrahman Grand Mosque (source: Author, 2019)

Overall, the objectives of the oblique approach are achieved. Users are able to see the building in three dimensional view and are able to see the entrance clearly. Eventhough the goal of the frontal approach is not achieved, the goal is reached after the circulation movement through the tower.

Related to the separation of circulation by the gender, approach can be used by the users to decide which pathway and direction they will take to the entrance. However, this is not provided by the landscape of the mosque.

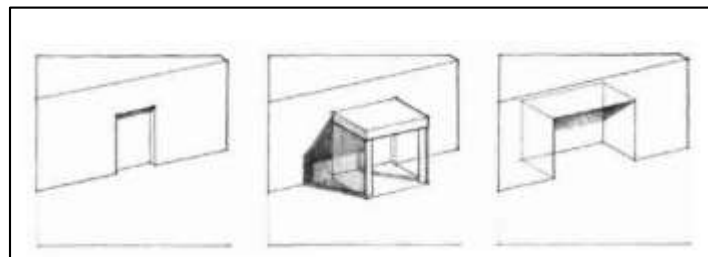
## **B. Entrance**

The Baiturrahman Grand Mosque has 7 entrance points spread north, east and south. There are 3 (three) entrances to the east, and 2 (two) entrances to the north and south each respectively.



**Figure 5.** The entrance points distribution (source: analysis)

The entrance forms are categorized in 3 types: flush, projected, and recessed. Based on observations, all the entrances of the Baiturrahman Grand Mosque belong to the projected category, which is the entrance that is extended from its facade wall.



**Figure 6.** The entrance forms (source: Ching, 1993)



**Figure 7.** The main entrance (source: Author)



Commonly, this type of entrance has a shelter (as shown in Figure 7). In this case the shelter also functioned as the foyer of the mosque. The extended entrance is clearly visible from the side of the entrance as shown in Figure 8.



Figure 8. The main entrance from side view (source: Author)

Since the entrance also functioned as the foyer of the mosque, the *ikhtilath* is potential to be happened here. Therefore, the separation of the entrance is an important thing. According to the interior space inside the mosque, the separation of the entrance should be as shown in figure 9.

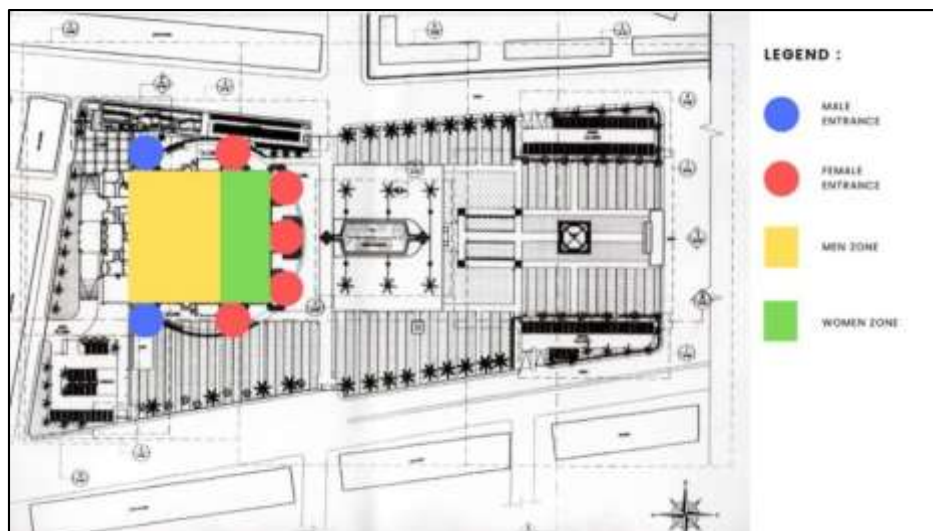


Figure 9. The separation of entrance based on gender (source: analysis)

However, the *ikhtilath* (intermingle) is still happening in the foyer as the entrance (see figure 7). This could be happened because there is no clear line from the approach to the entrance. The continuation of unclear separation of circulation from the approach persists in here. There is also considerable possibility this happened because the lack of entrance for men comparing to women, since the *ikhtilath* usually happened at the women's entrance.

### C. Configuration of The Path

There are several types of configuration of the path, namely *linear*, *radial*, *spiral*, *grid*, and *network* (Ching, 1993). Based on observations in the field, the path configuration in the Baiturrahman Grand Mosque is linear. However, this path does not reach the entrance (see figure 1). The path at the south gate stops before the plaza (see figure 4.). This causing chaos at the plaza and the intermingle (*ikhtilath*) is happening at the plaza due to lack or even no sign of circulation path. There is no sign of path getting through until the entrance. Whereas at the north gate point there is no path at all. Users are immediately greeted with a plaza right after passing through the gate (see figure 10).



Figure 10. The north gate and the plaza (source: Author)

### D. Path-Space Relationship

According to Ching (1993), the relationship between path and space is divided into 3 (three), namely: *pass by spaces*, *pass through spaces* and *terminate in a space*.

Based on observations in the field, the relationship between circulation path and space is *pass through spaces*. Circulation from gate to entrance is clearly through space, which is a plaza. However, there is no clear direction from the entry

point area (gate) to the entrance. This causes the plaza to mix up (*ikhtilath*) due to the absence of a special path for circulation.

The relationship between the path and space in the Baiturrahman Grand Mosque can be categorized as *terminate in a space*. Circulation of this model is intended in a functional and symbolic way to important spaces. The location of the space causes the pathway to be created.

#### **E. Form of The Circulation Space**

The form of the circulation space can be *enclosed*, *open on one side*, or *open on both sides*. In this case the circulation space in the Baiturrahman Grand Mosque can be categorized as a circulation space that is open on both sides. However, in general, even though the circulation space is open on both sides, there should be a clear circulation path either through differences in floor height, differences in floor material, or differences in the color of the floor. But in the case of Baiturrahman Grand Mosque, the location of the circulation space is not clear so that in the plaza the user can be disoriented without any direction and the *ikhtilath* is happening.

#### **Conclusion**

The circulation of Baiturrahman Grand Mosque creates a chaotic circulation which in the end causes an intermingle between men and women. Separation of circulation based on gender only exists in the basement, specifically in ablution area. Whereas in the plaza there is no separation according to the gender differences.

For circulation in the plaza, it is necessary to clarify the direction of circulation, using different materials or different colors for gender based circulation separation.

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