Crossing the threshold: understanding spatial patterns formed by threshold space in urban contexts

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Abstract. This paper explains how human perceives threshold space and its effect on spatial experience in urban contexts in Jakarta. Threshold space provides the key to the transition and connection between areas with different territorial claims. This makes the threshold space an interesting condition to see the correlation between interior and exterior spaces. This paper will focus on the threshold space formed between the commercial area and pedestrian paths in Senopati area, Jakarta. In this paper, we will analyze how threshold space eliminating the sharp division between interior of commercial buildings and exterior spaces (pedestrian paths) in order to present continuous spatial experience between two different spaces in selected urban area. This research is conducted using Boettger’s method and its six elements to analyze threshold space. This research found that a different arrangement and completeness of elements in threshold space will produce different spatial patterns.

Keywords. Threshold space, spatial pattern, spatial quality, spatial experience.

1. Introduction
Nowadays, people easily feel disoriented and disconnected from their city environment. This condition can happen because of the small amount of time people spend in the city [1]. Due to the high cost of living inside the city, many people choose to live outside the city while working in the city. This causes people to spend a lot of time on the road and less time spent in the city [1]. Another thing that causes people to experience disorientation in cities is the design of the buildings. Many buildings have designs that are similar to each other, making it difficult for humans to distinguish one from another. Buildings in the city are a container that holds 'the meaning' which can be said as the interior of the building [2]. Buildings also have the purpose to communicate with humans. If buildings in a city cannot communicate the information contained therein, humans can experience disorientation [2]. Threshold space is one of the entities in an urban context that can help humans orient themselves and play a role in shaping the identity of the city. Threshold space becomes a space where dialog occurs between two different spaces.
with different territorial claims [3]. Threshold space is formed from tangible and intangible elements that will affect a human’s experience in it [3][4].

1.1. Research Objective
The purpose of this paper is to reveal the role of physical elements within threshold space in forming spatial patterns in a commercial area in Jakarta. By looking at the spatial pattern, we can see the role of threshold space in helping humans orient themselves in urban contexts. One of the ways to look at the role of threshold space in urban contexts is to examine the threshold space that already exists in commercial areas and its effects on human’s experience. Therefore, this paper will discuss:

- The elements that form the threshold space in commercial buildings.
- The role of elements in forming spatial patterns on threshold space and their effects on human experience.

2. Literature Review
Threshold space is located between two or more space with different territorial claims [3]. The encounter of elements belonging to two different regions will initiate a mutual hybridisation that results in a new entity with the physical state resulting from mixing the two regions [5]. Threshold space symbolizes the point where the exchange of spatial quality and the meeting of two different worlds takes place [5]. Due to its location, threshold space has spatial ambivalence which makes it interesting to see the relationship between two spaces with different spatial qualities [4] [6].

The presence of a threshold space reduces the difference between two regions with different territorial claims [3]. With the presence of threshold space, it will form an intermediate space that reduces the differences between two spaces and forms a continuous human experience. Threshold space serves as an introduction to enter a different region and provides an overview of the activity, spatial quality, social and cultural conditions of the space you want to enter [4]. Therefore, people can obtain adequate information and they do not require a long time to orient themselves in a new environment. Threshold space presents a feeling of anticipation for people who pass through it [4]. Threshold space also function as an invitation to people [4]. Threshold space is closely related to doors, windows, and other spatial elements that connect 2 spaces and provide access to pass them [7]. Threshold space must be able to attract attention and invite people to come closer so that they do not hesitate to go inside or vice versa. The various functions of threshold space have a goal to help people orient themselves in the environment. With the presence of threshold spaces, people can easily identify any building that can be entered and not be entered.

Threshold space can perform various functions, because it has certain quality that are different from other spaces. "Always open-always close" is Stalder’s view [8] regarding the qualities that threshold space should have. Threshold space must be able to provide privacy while inviting people to enter. Threshold space gives permission for exchange occurred, both human and experience, between two spaces. Threshold space has two basic qualities, that is ambiguity and permeability [9] [3] [4] [10]. Threshold space must have both of these characteristics in order to function optimally as a bridge between two regions with different spatial experiences.

According to Boettger [4], threshold space can be linear, two-dimensional, or three-dimensional in volume to form a specific region. In this paper, the discussion will be focusing on the three-dimensional threshold space in which there is a sequence of spaces within it [7]. Threshold space has several physical characteristics, where these characteristics can present and reinforce qualities of the threshold space. There are 6 threshold space’s characteristics according to Boettger [4]:

- Spatial delimitation is a physical boundary that forms a threshold space. Spatial delimitation will determine how open or close the threshold space is.
- Sequence can be interpreted as a path through the threshold space that is affected by physical conditions. We can analyze whether the threshold space has a predetermined sequence from the
beginning or people are given the option to choose how to pass the threshold space. Are there any stimuli, specific objects, and changes in elevation that affect human movement?

- **Spatial geometry** shows how the space from the threshold space is arranged. The commonly used approach is to present the geometry of a threshold space that is different from the geometry of the environment. This is done to emphasize the threshold space.

- **Materiality** looks at what material is being used in the threshold space. Material is an important element because it will affect the atmosphere and human experience within the threshold space.

- **Furnishings** show the addition of objects and their effects on changes in function of the threshold space. Objects can extend or shorten human duration within the threshold space.

- **Site topology** shows the position of the threshold space associated with the building and the environment where the threshold space is located.

Using the physical characteristics of threshold space according to Boettger [4], this paper will look at the role of physical elements within threshold space in forming spatial patterns and their role in shaping human experience.

3. **Location of Study**

Senopati area in the Kebayoran Baru District, South Jakarta, is an area designated for housing with other functions as offices and trade. The Senopati area stretches from Senopati Street that is adjacent to the Senayan Roundabout to Suryo street which is close to Blok S. Senopati area is surrounded by three business districts, namely Blok M, Mampang, and SCBD, which encourage changes in building functions. Many buildings that were originally intended for residential area are changed into shophouses for offices, restaurants, shops, and entertainment venues. These changes has made Senopati area a destinations for Jakartans to socialize.

The regional focus of this study is Suryo street, Kebayoran Baru. Suryo street is one of the arterial roads in the Senopati area. On Suryo street, there are multiple building functions and other buildings that are still under construction or not inhabited. These various functions can form a threshold space with different spatial patterns and diverse human experiences.

4. **Explanation of Case Studies**

The object of the case study in this paper is the threshold space that formed between interior spaces to public spaces (sidewalks) along Suryo street. As the first step, the author mapped out the building's functions that is on Suryo street. From the mapping, it is found that there are 55 facades with six different building functions along Suryo street (Table 1).

| Building Function       | Quantity |
|-------------------------|----------|
| Restaurant              | 14       |
| Office                  | 7        |
| Shop                    | 4        |
| Worship Place           | 1        |
| Residential             | 16       |
| Uninhabitable/ under construction | 13       |
| **TOTAL**               | **55**   |

Table 1. Number and Function of Buildings on Suryo Street.
After the author gets the number, the author chooses three restaurant buildings with transitional spaces that have different physical elements from each other. The three restaurant buildings that the author choose as the object of this case study are RJ Restaurant, SH Restaurant, and SK Restaurant.

5. Case Studies Analysis

5.1. Threshold space in RJ Restaurant

RJ restaurant is located at a junction between Suryo Street and Birah II Street. RJ Restaurant takes advantage of this situation by opening access from the two roads. The façade of RJ Restaurant, both on the side of Suryo street and Birah II street, has quite a lot of openings that can shape the perception that the RJ Restaurant is a building that is open for public. The type of glass used in RJ Restaurant windows is dark in color which aims to preserve the privacy of its visitors (Figure 1).

![Figure 1. The use of dark glass on the window of RJ's Restaurant. Source: maps.google.co.id/](image)

There is a small garden in front of the RJ Restaurant entrance which forms two pathways. One pathway can be accessed from Suryo Street while another one can be accessed from Birah II Street. The pathway is formed from vertical delimitation with concrete material with a height of approximately 80 cm. The wall's height of only 80 cm does not disturb and limit the visuals of the people passing the pathway. The presence of a small garden and potted plants serves to create an atmosphere as a sanctuary or a place of refuge from the hustle and bustle of Jakarta.

The dominant material used in RJ Restaurant's parking area is paving block material (Figure 2). The area that should be a sidewalk is converted into a parking area using the same material to form a continuous space. There is no fence between the parking area and the road, so it does not limit human movement between those two areas (Figure 2). There is a continuity of material from the pathway, entrance area under the canopy, and interior spaces using exposed cement material (Figure 4). The use of this same material presents an ambiguous feeling to the passers-by. The floor material that is found in the interior of the restaurant can also be found on the pathway located on the outside of the building. When people pass through these three areas, there is a change in the delimitation that surrounds them. Gradually, the further you go inside the more delimitations you surround yourself with.
The spatial pattern is formed by a combination of the presence of physical elements and the use of materials creates spatial zoning. There is one zone designated for circulation of motorized vehicles, and the other one is meant for human circulation (Figure 2). Based on the analysis, I can conclude that the threshold space present at RJ Restaurant extends from the pathway to the area under the canopy in front of the restaurant entrance (Figure 3). The continuous use of materials presents an ambiguous quality of the threshold space. The presence of other physical elements such as walls and potted plants on the pathway serves to direct human movement towards the entrance. Additionally, elements such as signage and openings on the facade help to provide certain information to people outside about the function of RJ Restaurant building.

5.2. *Threshold space in SH Restaurant*

Windows cover most of the facade of the SH Restaurant (Figure 4). The large opening provides an excellent visual connection between interior and exterior spaces and provides enough information to people outside regarding the atmosphere and activities that occur inside the restaurant. The large opening also creates the perception that the building is a public building that can be entered by anyone. The level of transparency in building facades can affect human perceptions of the public degree of the building.
The openings that cover almost all parts of the facade have a disadvantage of a loss of visitors’ privacy.

![Image of SH Restaurant's facade](archify.com)

**Figure 4.** SH Restaurant's facade that has large openings and shows the grandeur of the interior.  
Source: [archify.com](archify.com)

There is a configuration of placing the entrance to the SH Restaurant, which aims to keep people from walking toward the window while maintaining the privacy of the restaurant's visitors. The door is placed on the left side of the building, and there is a long corridor in front of it (Figure 5). The corridor's entrance is located close to the sidewalk, which purposes to reduce the possibility of people walking toward the big windows on the façade.

The corridor at the SH Restaurant serves as a bridge to reduce the difference in the atmosphere between exterior and interior spaces [3]. This corridor is made of concrete delimitation, and at the paving area, there is white gravel on the right and left. The combination of materials and elements in the corridor manages to present a soothing Zen garden atmosphere. This corridor reduces and bridges the difference in the "chaotic and tangled" atmosphere of exterior space to the "calm" atmosphere of its interior space. There is also a yellow led strip light in the corridor that will direct the movement of people towards the restaurant entrance.

The door configuration on the SH restaurant is quite different from other restaurants, so that it may confuse first-time visitors. To make it easier for people to identify where the entrance is, several elements are added to the corridor entrance to reinforce its existence. The first object is the placement of the SH Restaurant signage on left of the entrance to the corridor. The second object is the placement of the tree behind the SH Restaurant signage (Figure 5).

The use of different materials can be seen between sidewalks, parking areas, and corridors leading to the entrance (Figure 5). People can perceive the use of different materials as an invisible barrier. The use of certain materials can create a specific atmosphere as well. The use of concrete and sandstone in the corridor can give the feeling of being in a Zen garden, a type of garden from Japan. The use of this material can reinforce the function of the SH Restaurant building as a Japanese restaurant.
The spatial pattern that is formed in SH restaurant's transitional space creates a continuous space between the interior and exterior area. The presence of openings that fill almost all parts of the facade blends the boundaries between interior and exterior space. The addition of a corridor in front of the entrance forms a transitional space isolated from the continuous space created by the openings in façade (Figure 7). The addition of trees and signage helps to assist people in identifying corridor entrances so that people don't need a long time to find the restaurant entrance. Through the analysis that has been carried out, I can conclude that the threshold space formed at the SH Restaurant is in the corridor in front of the restaurant entrance (Figure 6).

5.3. Threshold space in SK Restaurant
SK Restaurant consists of two floors, where the openings are focused on the first floor. The type of glass used in SK Restaurant façades is opaque. This condition results in the absence of visual connectivity between the restaurant interior and the exterior area. The purpose is to maintain the privacy of SK Restaurant visitors and provide an intimate and exclusive atmosphere.

SK Restaurant is one of the thematic restaurants along Suryo Street. The theme for the restaurant can be seen from the addition of many Japanese elements to the façade of the SK Restaurant. One of them is the design of the window attached to the facade (Figure 7). The façade also contains the Seigaiha texture, a traditional Japanese texture (Figure 7). There is signage explaining the name of the SK Restaurant. The use of window designs and textures on the Japanese nuances of the facade, as well as
the presence of signage, helps people understand that the building is a public building that functions as a Japanese restaurant.

![Image](image_url)

**Figure 7.** Japanese nuances of SK Restaurant’s facade.
Source: Harvian, 2019

There is a canopy that is placed in front of the entrance to form a small terrace. In front of the small terrace, there is a garden with a red bridge that creates a pathway to SK Restaurant's entrance (Figure 8). The process of crossing this bridge can reinforce the people's experience of crossing into the next area and build the anticipation [4]. The garden, which is in front of the entrance and terrace, is filled with bonsai plants. The combination of using bonsai plants with gravel material transforms the garden into a zen garden with Japanese nuances. The use of plants with Japanese nuances forms a perception and reinforces the function of SK Restaurant as a Japanese restaurant.

The use of different materials can be seen between the parking area and the terrace at the SK Restaurant. Parking areas and sidewalks are using the same material, namely concrete. This condition presents the perception that parking areas and sidewalks are areas with the same authority (Figure 8). Whereas in the terrace area, the paving area is covered with wood material with gravel, and the walls use wood material. The combination of wood materials commonly used in interior spaces with stone, which is often used in gardens, presents the ambiguous quality of the terrace (Figure 8). The atmosphere that forms on the terrace is a mixture of the atmosphere of the exterior and interior spaces of the SK Restaurant.

![Image](image_url)

**Figure 8.** Spatial pattern at threshold space in SK Restaurant.
Source: diagram by author

The use of materials and the presence of elements in the SK restaurant's transition space form spatial zoning (Figure 9). There is a clear boundary between the parking area and the terrace area with the presence of wooden fences, bushes, and a canopy. The red bridge, which is in front of the entrance,
serves as a link between the terrace area and parking area. Based on the results of the analysis, I can conclude that the threshold space at the SK Restaurant is located in red terrace and bridge area (Figure 9). The terrace can be said to be a threshold space because it can present ambiguous feelings to the people who are in that place. The red bridge is an element that comes out of the threshold space, which functions to fetch and direct humans to the SK Restaurant's entrance. The addition of other elements such as signage, plants, textures on the facade, and window designs serve to provide information and reinforce the function of SK Restaurant as a Japanese restaurant.

Figure 9. Section that shows threshold space position of SK Restaurant.
Source: diagram by author

6. Conclusion
Nowadays, there is a shift in the culture of life and in the condition of the city. As a result, human’s experience in the city has become disjointed, and people feel disoriented to their environment [1]. Threshold space is one of entities in an urban context that can help people orient themselves and play a role in shaping the identity of the city. The threshold space being analyzed is in restaurant buildings along Suryo street, Kebayoran Baru. Based on the results of the analysis, the author discovers that threshold space can be formed from several physical elements, such as fences, canopies, plants, corridors, stairs, doors, windows, signage, different materials, and textures on the facade. These elements will play a role in forming the character of spatial patterns such as open, closed, fetching, or inviting. With the presence of physical elements, threshold space can carry out its functions to provide information, invite, and prepare people to face the spatial conditions in the other space they want to enter. Threshold space's qualities, namely permeable and ambiguous, can be perceived through the presence of physical elements in the threshold space.

Based on the analysis that has been conducted, we can see that the role and placement of physical elements can affect how humans perceive and pass through the threshold space. By placing certain elements, we can manipulate people's movement. These findings can help us in designing threshold space in the commercial area. We can insert branding and characteristics of the restaurant to the design of threshold space so that people can quickly get information about the type of restaurant from the physical elements.

In this paper, the author only analyzed threshold space in three restaurant buildings. There are still other restaurants and other functions of buildings on Suryo street with different threshold space characteristics. Further analysis is needed to analyze the other building function on Suryo street to gain a better understanding of the role of threshold space in helping people adjust to an urban context in a holistic manner.
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