

Analysis Method for Arrangement of Signage by Pedestrian Readability and Visibility

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1. Background

The signage system is important for pedestrian's movement within a railway station. However, the lack of proper signage system makes passengers difficult to reach their destinations. Therefore, it is essential to study the effectiveness of the signage information at the railway station in order to design user friendly signage system.

2. The purpose and the method of study

The study focuses on the continuity of the signage and clarifies the analysis method of its assessment in term of applicability in the real space and identifies the issues.

The study applied Computer Aided Design (CAD) modeling. Over the base information of the plan of railway station, locations, heights, area of existing signage are layered. Then, in order to recognize the correlations of existing signage, definitions of signage Readability and Visibility will be determined taking into account the peculiarity of human site.

3. Study Area

The study picked up the Hanshin Railway Sannomiya Station and its vicinity for the target area. This area is in the hub for major railway stations such as Japan Railways (JR), Hankyu, Port Liner, and Kobe City subway. Moreover, the area is close to the commercial districts that continuity of the signage should be significant.

4. Definition of Readability Area and Visibility Area

The study defined the Readability and Visibility as follows. Readability is whether or not the contents of a signage are recognized and understandable.

Visibility is whether or not people recognize the signage. It does not need to read the contents but to understand the figures and colors on the signage. The idea of visibility always connotes the readability.

The authors think that correlation of readability and visibility area is essential for guiding pedestrians. Because the pedestrians who can read the letters express information that they need on sign, they would look for next visible sign of the same type.

5. Methodology

The study applied readability and visibility area to the modeled signage from the in Hanshin railway station taking into account the characteristics of human vision. The modeled signage installed six lights in every corner and center of the signage and elevated the floor level to 1,500 mm to match with the human viewpoint. The study defined the visibility area where reflection of lights was seen on the floor.

In order to confirm the accuracy of the analysis method, the study utilized GIS for the Visible-invisible Analysis for the 30 cm grid Digital Surface Model (DSM) data. Only the allowable margin of error was indicated.

6. Results of Analysis

The study focused on the signage which contains the guidance to the "Port Liner." The Port Liner station is the elevated one that guidance from the basement station needs to be easy for pedestrians to understand their whereabouts. The study found out the statuesque of the signage as mostly fragmented. Only the readability of the individual signage area is secured around the exit of the Hanshin station for pedestrians but lacks the continuity to the Port Liner station. Also, there is other signage located near the exit of Hanshin station and visibility areas are piled up each other that it may be guide for pedestrians.

7. Conclusion

The study analyzed the correlations of signage in the urban railway stations for the convenience of pedestrians.

The findings are; 1) the effect of the signage is not enough when these were stand alone, and 2) considering the readability and visibility of signage, continuity of the signage (visibility of the next signage to guide the routes to the destination) is significant.

The study will consider proper locations of signage in focusing on a pedestrian's eye movements.

Keywords: sign, guidance, readability, visibility, pedestrian