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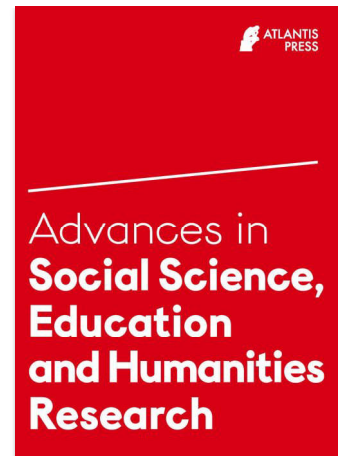
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Exploring Gambir Station by Wheelchair

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Abstract— Everyone should enjoy the need for a trip. Nevertheless, wheelchairs user cannot feel the same. Often their trips are hampered because the facilities provided are not friendly to wheelchair users, one of which is the railway station. Gambir Station as one of the largest stations in Jakarta should be an example for other stations to provide equal opportunities for all passengers, including wheelchair users to able to explore Gambir Station comfortably. Therefore, in this paper, the author will evaluate what aspects of facilities for wheelchair users at Gambir Station. This research uses qualitative methods that focus on whether the wheelchair facilities provided in Gambir Station has aligned with Indonesia Ministry of Public Works Regulation No. 30/PRT/2016 and Accessible Train Station Design for Disabled People. The study employs an analysis method which includes wheelchair circulation, parking area, and passenger loading zones, door and entrance, elevator, restroom, furniture, and signages. The study also conducts an experiment and interviews on the head of Gambir Station customer service and prospective train passenger who is a wheelchair user. Even though Gambir Station already has wheelchair facilities, the study found that it has not fully met the requirements.
Keywords: *evaluation, exploring, facilities, wheelchair users, Gambir Station*

I. INTRODUCTION

According to Mr. Anies Baswedan (Governor of DKI Jakarta for the period 2017-2022), meeting facilities for disabled people in Jakarta is still inadequate [1]. Whereas in Government Regulation Number 43 of 1998 [2], especially article 1 (act 1) expressly states that like other citizens, persons with disabilities have the right to have the equal position, rights and obligations in acting and integrating totally, according to their abilities in all aspects of life and his life. However, in reality, the equality of rights for disabled people promised by the government has not been fully fulfilled even though they have considered facilities for disabilities.

Gambir Station as one of the biggest stations in Jakarta

should have facilities that can accommodate all passengers without exception and become an example for other stations in efforts to fulfil facilities for disabilities, especially wheelchair users. According to Axelsson & Barrett [3], a sound transportation system must provide facilities and excellent mobility to ensure safety and efficiency in its use. Moreover, according to data from the Central

Statistics Agency in 2010, there were around 15,594 Jakarta residents who had difficulty walking with severe categories and 63,085 residents with a moderate category. Therefore, it can be concluded that in 2010 there were around 0.8% of Jakarta residents who had difficulty walking where the population in that percentage had the opportunity as wheelchair users. Consequently, the fulfilment of facilities for disabled wheelchair members in Jakarta has become very important, especially in public facilities that are widely used by such as Gambir Station.

In this study the author took the title "Exploring Gambir Station by Wheelchair", The research will evaluate aspects of facilities for disabled people that need to be added or improved by managers from Gambir Station to provide the best service for all passengers so that wheelchair users can comfortably explore Gambir Station.

II. MATERIAL AND METHOD

A. Theoretical Review

i. Disability

Disability is a term for those who have physical, intellectual, and mental limitations in the long term and can interfere or hinder full and active participation [4]. According to the World Health Organization [5], people with disabilities are terms that include disruption, limited activities, and restrictions on participation. Interference is a problem with bodily functions or structure that makes it difficult to interact with the environment and also to participate fully and effectively.

ii. *Wheelchair User*

Disabilities people who are wheelchair users are not only those who have physical disabilities from birth. However, those who have accidents, suffer from diseases, as well as parents or people who have other problems that cause difficulty in doing mobility [6]. Wheelchair users are the most common disabilities [7]. There are around 131 million people in the world who are wheelchair user [8] and there are 15,594 people who have difficulty walking in Jakarta [9].

Wheelchair users have different characteristics and problems with other disabilities. The environment will be different between ordinary people and wheelchairs users. The following are the barriers for wheelchair users [10]:

1. **Mobility**
Wheelchair users are very dependent on the ramp and elevator to perform vertical mobility;
2. **Space**
Wheelchair users will need more space than ordinary people. Therefore, the designer needs to pay attention to space issues for wheelchair users;
3. **Posture**
There are several activities for ordinary people who are more comfortable and efficient if done in a standing position. However, for wheelchair users, they must carry out these activities from a sitting position;
4. **Reach**
Wheelchair users have a limited range, one of them with a lower level of vision than ordinary people;
5. **Strength**
Wheelchair users have problems with strength. A frequent complaint against disabled persons is the problem of a door that is difficult or impossible to open because it has heavy spring hinges. Wheelchair user should be able to use as little effort as possible to open the door.

iii. *Facility*

The facility is anything that can facilitate consumers in using a service [11]. Public facilities are all or part of the complete facilities and infrastructure in buildings and their environment so that they can be accessed and utilized by all people, including disabilities and the elderly, to realize equal opportunities in all aspects of life and livelihood [12].

B. *Method*

i. *Research Method*

This study used qualitative research methods. Qualitative research is a method that focuses research on social phenomena from the perspective of participants [13]. In this study the researcher will compare the

existing conditions of facilities for wheelchair users in Gambir Station with Indonesian Ministry of Public Works Regulation No. 30/PRT/M/2006 [14] and Accessible Train Station Design for Disabled People, observations on the behaviour of wheelchair users in accessing facilities at Gambir Station, conducting experiments to explore Gambir Station with wheelchair, and interviews with the head of the Gambir Station customer service and prospective passenger who is wheelchair user.

ii. *Analysis Indicators*

The researcher will discuss the problem based on the analysis indicators as follows:

1. **Wheelchair Circulation**
The wheelchair circulation path is the pathway used for wheelchair users. The wheelchair circulation path should be accessible safely, efficiently, comfortably, and without obstacles because corridor is manifestation of security and safety [15];
2. **Parking and passenger loading zones**
Parking areas for disabilities and passenger loading zones should be placed as close as possible to the entrance of the building;
3. **Door/Entrance**
The door is the primary access in and out of other buildings;
4. **Elevator**
An electrical device that help wheelchair user's movement vertically inside a building;
5. **Restroom**
Accessible restrooms must have sufficient space to enter and exit wheelchair users and have appropriate restroom height, handrails, and other equipment. In this study, researchers only analyzed the conditions of men's restroom;
6. **Furniture**
Public facilities must provide furniture that can be used by disabilities because disabilities have a different range than ordinary people;
7. **Signages**
Signages are facilities used to provide information, directions, or instructions.

iii. *Research Objects*

Gambir Station is one of the largest stations in Jakarta located on Jalan Merdeka Timur No.1, Central Jakarta. This station serves executive trains and mixes to and from essential cities on Java. This station consists of 3 levels. The main lobby, counters, restaurants, shops, and ATMs are on the ground floor. On the first floor, there is a waiting room and restaurant, while

the platform is on the second floor.

In this study, researchers limited the problem to wheelchair facilities located on the ground floor of Gambir Station because the main facilities of Gambir Station were located on the ground floor (see figure 1).

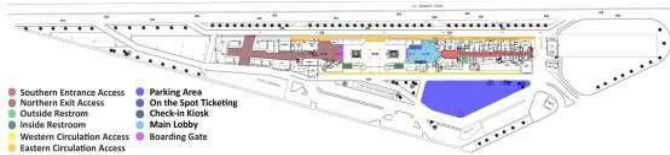


Figure 1: Gambir Station ground floor layout

III. RESULTS AND DISCUSSION

Based on the results of observations, experiments, and interviews, the researchers analysed the problem of wheelchair facilities at Gambir Station as follows:

A. Southern Entrance Access

Based on observations from the southern entrance access to the main lobby, researchers found no problems because the door openings and circulation area at the southern entrance had a width of 355 cm. In some areas, there is a narrowing because there are building columns in the middle of the room. The distance between the column and the wall is 143 cm so that wheelchair users can still get through this narrowing (see figure 2). However, the problem is that many shops put x-banners or signages outside the store area so that the narrowing area disturbs the circulation of wheelchair users.



Figure 2: Southern entrance, Gambir Station

B. Parking Area

Gambir Station has provided two disabilities parking areas which are marked by disability signs (see figure 3). This parking area is near the west entrance of Gambir Station. The distance from the disabilities parking areas to the entrance is 760 cm. However, the size of each parking area is only 230 x 453 cm. This parking area does not meet the minimum standard of the disabilities parking area, which is 370 x 550 cm. Besides, this parking area also does not provide a free area for access and entry for wheelchair users, where the

minimum standard of the free area is 120 cm.

However, the surface of the corridor is made of conblock. Use conblock as a flooring material on the surface of the corridor is not appropriate because the rough texture will cause wheelchair users to need more power to be able to access the pathway.



Figure 3: (a) parking area; (b) western circulation

C. Passenger Loading Zone

Passenger Loading Zones is located eastern of Gambir Station. Passenger Loading Zones are directly related to the entrance and eastern circulation pathway (corridor). The width of passenger loading zones at Gambir Station only has a width of 250 cm and has not met the minimum requirements of 360 cm. Besides, the ramp found in this area also has a tilt of 12° , even though the standard specified is a maximum of 6° . This condition will make it difficult for wheelchair users to access the ramp. In the western circulation area, the corridor width is 296 cm which meets the requirements. However, the surface of the corridor is the same as that in the western corridor, which is made of conblock. The choice of conblock material on the surface of the corridor is not appropriate because the rough texture will cause wheelchair users to need more power to be able to access the pathway.



Figure 4: (a) passenger loading zone; (b) ramp

D. Main Lobby

The main lobby area of Gambir Station has a reasonable right circulation path, but the main lobby problems are at the check-in kiosk and direct ticket counters. The kiosk check-in available at Gambir Station has a table height of 84.5 cm, the centre height of the screen about 135 to 140 cm (see figure 5 point a), and the overall height of the furniture is 160 cm. The maximum table height for disabled persons is 85 cm, so the check-in kiosk table at Gambir Station is appropriate, but the screen is too high, making it difficult for wheelchair users to see it. We recommend that the screen

has a centre height of 110 cm (see figure 5 point b).

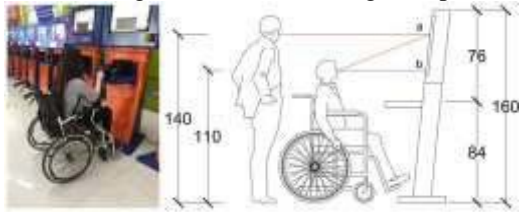


Figure 5: Check-in kiosk, Gambir Station

In the area of the direct ticket counter, it has height problems, the same as what happened at the check-in kiosk. The height of the direct purchase counter is 110 cm (see figure 6) where the ideal height for wheelchair users is 85 cm. Also, there are also problems with differences in floor height in the area (see figure 6). The problem of + 3 cm floor differences cause wheelchair users to have difficulty accessing it so that they need help from others.



Figure 6: Direct ticket counter, Gambir Station

E. Boarding Gate

The boarding gate is the entrance that serves to check the ticket of prospective passengers in order to enter the waiting area. Gambir Station has four boarding gates where the leftmost boarding gate is the largest boarding gate commonly used for wheelchair users. This boarding gate has a width of 95 cm and is according to the standard.



Figure 7: Boarding gate, Gambir Station

F. Restroom

Gambir Station has three restrooms located on the ground floor. The first restroom was outside the boarding gate, and two other restrooms were after the boarding gate (see figure 1). Restroom on outside the boarding gate does not have a disabilities restroom. Respondent complained about this problem.

In the second restroom (located near the south gate), it has disabilities restroom. On the outside of the restroom and restroom door, there are disabilities signages. This restroom has a size of 160 x 160 cm. The height of the toilet only has a height of 42 cm while the standard height is 45-50 cm. This restroom has handrails, but the handrails are too high, which is 110 cm, while the handrail height standard is 70- 75 cm. The height of the tissue box is 118 cm, while the standard height is 65 cm. The height of the sink is only 75 cm while the standard height is 85 cm. The fatal problem is that a wheelchair can not enter this restroom because there is an elevation that makes the wheelchair exceed the room and the door cannot be closed (see figure 8), and does not have an emergency lightbutton.



Figure 8: Disability restroom (south gate), Gambir Station

The third restroom is near the north gate. This restroom also has disabilities restroom and has a disabilities signages on the outside and front of the restroom door. However, outside the restroom entrance, there is a barrier. This barrier makes it very difficult for wheelchair users to get into the restroom because it is not possible to manoeuvre in a narrow area (see figure 9). The second problem is that the restroom door opens inward. This problem makes it difficult for wheelchair users to close the door when inside. Another problem is the handrail which has a height of 110 cm, and a tissue box as high as 114 cm that does not meet the standard, and the sink is slightly too high, which is 88 cm even though the standard is a maximum of 85 cm. However, the height of the toilet and the amount of space are appropriate.



Figure 9: Disability restroom (north gate), Gambir Station

G. Elevator

There are two elevators at Gambir Station. These elevators have dimensions of clean space of 180 x 240 cm, equipped with handrails, and an outer panel as high as 110 cm. However, what is not following the standard is the height of the inside panel as high as 113-142 cm while the standard is 90- 120 cm.



Figure 10: Elevators, Gambir Station

H. Northern Exit Access

The circulation path at the northern exit has met the standards and has smooth flooring material so that wheelchair users do not experience problems.



Figure 11: Northern exit Access, Gambir Station

IV. CONCLUSIONS

From the results of observations, experiments, and interviews, researchers learned that several facilities needed to be upgraded or added to Gambir Station. The first is a parking facility where the weather is still not following the standard, and there is no circulation area for wheelchair users. The surface of the western and

eastern corridors needs to be improved using smoother material but still resistant to outside buildings and not slippery when it rains. The height of check-in kiosks and direct purchase counters needs to be considered and may be able to add special check-in kiosks and direct for disabilities. Respondents strongly complained about restroom facilities. It is best for the manager to provide disabilities restroom on the outside area of the boarding gate and pay attention to the dimensions and height of restroom equipment in existing disabled restrooms. Elevator facilities although adequate. However, it should not only find in the northern gate area but also can be provided in the southern gate area so that the disabled people in wheelchair users are not too far away in accessing the elevator. The last problem is the problem of borrowing a wheelchair. Respondents complained about the location of borrowing a wheelchair located after the boarding gate. This problem makes it difficult for prospective passengers who want to borrow a wheelchair because it is located too far from the entrance. Preferably a wheelchair loan can be placed near the entrance.

Therefore, it can be concluded that Gambir Station has facilities for people with disabilities. However, the facilities provided have not fully met the standards. The facilities provided are also considered not to facilitate the activities of disabled people in wheelchair control at Gambir Station so that there is a need for efforts from managers to improve the facilities available at Gambir Station.

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