

## Accessibility of Public Transportation Service for People with Disability (A Case Study in Surakarta, Indonesia)

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### ABSTRACT

Accessibility is an effectiveness, efficiency, and satisfaction in a product (service, device and environment) that can be used or accessed by everyone including individuals who have disabilities. Accessibility refers to the ease for all people to obtain some particular products, services, activities, and purposes. This article aims to describe the accessibility of public transportation service centers for people with disability through a Descriptive Qualitative Method. The data included the factual accessibility of public transportation service center for people with disability set at Tirtonadi Terminal in Surakarta, Indonesia. It deployed observation and documentation for the data collecting technique. Meanwhile, the data analysis was explained using the item percentages. The findings asserted that Tirtonadi Terminal scored 74-percent in the accessibility for people with disability.

**Keywords** – Accessibility, Transportation, Disability

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### I. INTRODUCTION

The 1945 Constitution of the Republic of Indonesia had briefly regulated the equality for all people, of which became the global concern in the discussion forum such as United Nations and Convention of Rights for People with Disability (CRPD). One of the rights that the constitution guarantees is the equal opportunity for all people to carry out their activities in an easy, safe, and convenient manner through the available physical access (Kurniawan, 2014). Tyler (2011) stated that everyone is entitled in full equality to fairly obtain public access.

Accessibility consists of the effectiveness, efficiency, and satisfaction to some particular products offered in the forms of services, sets of devices, and environment to accommodate the public use and those with physical defects (Poothullil, Sahasrabudhe, Chavan, & Toppo, 2013). Maghribi in Ramdhani et al (2016) mentioned the accessibility as the ease in the aspects of costs, timing, and effort. Meanwhile, Litman (2017) stated that accessibility refers to the ease for all people to obtain some particular products, services, activities, and purposes.

The regulation that relates to public accessibility includes in the Regulation of the Minister of Public Works No. 30/PRT/M/2006 concerning the technical guidelines for facilities and accessibility of buildings and environment. It explains accessibility as the ease to earn equal and

fair access for people with disability in all life aspects. The concept had been firstly introduced in Europe to create technical access for people with disability (Kwan, 2005). According to Legislation of Law on People with Disabilities No. 8/2016 at the article 1, people with disability are those who suffer from long-term physical, intellectual, mental, or sensory limitations that cause the limitations to join in the equal environmental interaction and social participation.

Furthermore, article 18 asserts that people with disability are rightful to obtain convenient accessibility in some aspects, including: (a) public facilities; and (b) individual accommodation. The law also regulates the rights for people with disability to earn public access under several specific principles that can support their activities, including ease of access, usage, safety, and independence. Those principles must be applied wholly at the public infrastructures, including housing and transportations, social service centers, education infrastructures, sports centers, and recreation areas.

Surakarta had appeared as the inclusive-friendly city by providing the convenient access for people with disability through its infrastructures, including: (a) office buildings for public services, such as banks, post offices, and administrative service centers; (b) trade centers, such as stores, supermarkets, and malls; (c) transportation service centers, such as terminals, stations, and airports; (d) public health centers, such as hospitals and clinics;

(e) house of worships; (f) education centers, such as schools, museums, and public libraries; (g) convention centers and event venues, such as cinemas, conference halls, sport centers, and recreation areas; (h) restaurants, such as bistros and cafeterias; (i) housings, such as flats and orphanage centers; (j) factories; (k) public spaces, such as parks, zoos, and cemeteries (Department of Public Works, 1998).

Some previous studies concerning the accessibility of public services in Surakarta had been revealed. Wardany et al (2007) pointed out that one of the trade centers in Surakarta had provided a special lift for people with disability. In contrast, Khakim, Prakosa, and Himawanto (2017) found out that inclusive schools in Surakarta had not offered the standard accessibility for people with disability. Ulfa et al (2017) also asserted that the University of Sebelas Maret had not provided standard space for blind people.

Some global studies had also discussed the similar topics. Lorreta Offei et al (2017) stated that some tourist resorts in Ghana, such as ancient castles and forts had been designed with sloping wide ramps, in addition to handrails at the restrooms, however, the whole facilities had not met the concept of easy access for people with disability.

Ochieng' Marilyn Ahonobadha et al (2017) stated that West Kenya Terminal had not provided accessible restrooms for people with neurological disorders, especially those who use wheelchairs, crutches, walking sticks, and special needs footwear. Stephanie Gamache et al (2017) revealed that some cities in Quebec, Canada that have less than 15,000 people in population had provided special needs infrastructures.

Markku Karhu et al (2012) evaluated the website accessibility and readability from seven universities in Finland. In the term of accessibility, they found out that there were only two universities providing excellent access, meanwhile, the other three only offered medium access and the other two had not provided the inclusive access at all due to heavy obstacles. In the term of readability, the websites from the three universities were difficult to read, meanwhile, the other four were strongly difficult to read.

The background has initiated this study to evaluate the availability and accessibility of inclusive infrastructures at the public transportation service centers in Surakarta. It is expected to encourage the development of an inclusive city for people with disability. Transport is a means of achieving the objectives in order to cope with the gap distance and time (Morlok, 1988).

The transportation system in Indonesia set up in the National Transportation System or Sistranas which consists of road transport, railways,

rivers, lakes, and forming a network of crossings so that it becomes an effective transportation and efficiently. Every region in Indonesia have terminal as a means of liaison between regions with the appropriate terminal type with a coverage area served (Prisamsiwi, Santosa, & Pramesti, 2015)

The bus terminal is a terminal type of Surakarta who serve Intercity interprovince, Intercity transit in the province, transport in the city and rural transport.

## 1. METHODOLOGY

This article deployed a Descriptive Qualitative Method. It aims to describe the inclusive accessibility of public transportation service centers for people with disability, which was set in Tirtonadi Terminal in Surakarta, Indonesia. The data were collected through observation and documentation. It uses the item percentage in the process of data analysis. A Descriptive Qualitative study mainly seeks to explain some particular phenomena in detail, including activities, characteristics, mobilities, interactions, contrasts and comparisons with other phenomena (Sukmadinata, 2012).

## II. RESULT AND DISCUSSION

This study observed the facilities at Tirtonadi Terminal in Surakarta for people with disability. It used a checklist as the instrument of observation, which highlighted some aspects as follows:

### 1.1. Room Size

According to the Regulation of the Minister of Public Works No. 30/PRT/M/2006, the standard 3D room size (length, breadth, and height) must refer to three indicators, including the measure of an adult human body, the measure of belongings, and the measure of space to accommodate the body movement. In the aspect of the room size, Tirtonadi Terminal has met the three indicators of an inclusive building for people with disability. The measure of the terminal's room has been in accordance with its functions and minimum standard size.

### 1.2. Guidelines

According to the Ministerial Regulation No. 30 PU/PRT/M/2006, line guides are lines that guide the disabled to walk by leveraging the referring tiles and tile texture of warning. In the aspect of the guiding pathway, Tirtonadi Terminal has met four indicators of an inclusive building for people with disability, including special needs guiding pathways, round warning tiles, guiding blocks, and special color for people with disability pathways. As a public space, Tirtonadi Terminal has met the standard requirement as an inclusive building with the availability of the guiding pathways.



Figure 2. Guidelines

### 1.3. Parking Lot

According to the Regulation of the Minister of Public Works No. 30/PRT/M/2006, parking lot for people with disability must be designed in a wide space to accommodate special needs vehicles and wheelchairs. Meanwhile, passenger loading zones refer to the space of the parking lot to accommodate the mobility of the passengers, including people with disability. The observation revealed that public building have not been accessible for people with disability due to the unavailable special needs parking lot. Meanwhile, the Regulation of the Minister of Public Works No. 30/2006 obliged the public buildings to provide at least one special needs parking lot as per 25 parking lots in total. In the aspect of the parking lot, Tirtonadi Terminal has not been accessible for people with disability due to the unavailability of a special needs parking lot.



Figure 3. Parking Lot

### 1.4. Door

According to the Regulation of the Minister of Public Works No. 30/PRT/M/2006, a door is the part of a site, building, or space for the entry and exit, which generally has a leaf. In the aspect of the door, Tirtonadi Terminal has met eight among ten requirements as an inclusive building, including easy-to-use door for people with disability, standard measure of the primary door (around 90 cm in width) and secondary doors (around 80 cm in width), no ramp around the doors, no difference of

floor height around the doors, lightweight doors, availability of door handle, non-slippery floors around the doors, and special plate at the bottom of the doors.



Figure 3. Doors

### 1.5. Ramp

According to the Regulation of the Minister of Public Works No. 30/PRT/M/2006, a ramp is a circulation pathway with a certain tilt used as the alternative of stairs. In the aspect of the ramp, Tirtonadi terminal has met three among seven indicators of an inclusive building, including less than seven degrees in tilt, 150 cm in length, and 95 cm in width without the edge guard.



Figure 5. Ramp

### 1.6. Restroom

According to the Regulation of the Minister of Public Works No. 30/PRT/M/2006, a restroom is a sanitary facility for public use, including people with disability and elderly people. Tirtonadi Terminal has met seven among eight indicators of an inclusive building, including special signs for Disabilities, sufficient room for the movement of wheelchair users, 40 to 45 cm in toilet height, reachable toiletries which include wipes and faucets, faucet levers at the sinks, non-slippery floors, and easy-to-open door.



Figure 6. Restroom

### 1.7. Sink

According to the Regulation of the Minister of Public Works No. 30/PRT/M/2006, a sink is a fixed basin for hand-washing, face-washing, gargling or tooth-brushing. Tirtanadi Terminal has been accessible for Disabilities as it has met four among five indicators of an inclusive building, including 85 cm in sink height, 120 cm in width of sink installation, availability of free space at the bottom of the sink, and standard adjustment of the mirror installation with the reach of wheelchair users.



Figure 7. Sink

To provide a brief review of the accessibility of the building, this article presents the item percentage based on the factual report of observation in line with the standard Ministerial Regulation as follows:

Table 1. Scoring on Observation Result

No.	Aspects	Score
1.	Room size	3
2.	Guiding pathway	4
3.	Parking lot	0
4.	Door	8
5.	Ramp	3
6.	Restroom	7
7.	Sink	4
Total		29
Percentage		74%

The table confirms that the accessibility rate of public transportation service centers in Surakarta is 74 percent.

### III. CONCLUSION

Based on the Regulation of the Minister of Public Works No. 30/2006, Tirtanadi Terminal has met the standard criteria of accessibility for Disabilities, yet still require a few enhancement for the wheelchair users, especially in the aspects of special needs parking lot and signs. The enhancement should also be available for all the public facilities in Surakarta as the whole implementation of an inclusive city.

### REFERENCES

- [1]. Ahonobadha, O.M., Mark, O.G., dan Godwin, W.G. (2017). Accessibility of Washrooms in Bus Terminals in Western Kenya to Learners with Physical Disability. *Journal of Accessibility and Design for All*. Volume 7, Issue 2. (CC) JACCES, 2017. ISSN: 2013-7087
- [2]. Anonim, Keputusan Menteri Pekerjaan Umum Republik Indonesia No.468/KPTS/1998 Tanggal Desember 1998 (Jakarta: Departemen Pekerjaan Umum, 1998).
- [3]. Departement of economic and social affairs. (2013 june). *Accessibility and Development: environmental accessibility and its implications for inclusive, sustainable and equitable development for all*.
- [4]. Gamache, S., Routhier, F., Morales, E., Vandersmissen, M., Leblond, J., Boucher, N., McFadyen, B.J., dan Noreau, L. (2017). *Journal of Accessibility and Design for All*. Volume 7, issue 1 (CC) JACCES, 2017, ISSN: 2013-7087.
- [5]. Karhu, M., Hilera, J.R., Fernandez, L., dan Rico, R. (2012). Accessibility and Readability of University Websites in Finland. *Journal of Accessibility and Design for All*. Volume 2 (2):178-190. ISSN 2013-7087. DOI: 10.17411/jacces.v2i2.70.
- [6]. Khakim, A.A., & Prakosa, D. (2017). Aksesibilitas Bagi Anak Berkebutuhan Khusus dalam Lingkungan Pendidikan Sekolah Inklusi Karisidenan Surakarta. *Indonesian Journal of Disability Studies (IJDS)*. vol 4 (1) : pp 16-18
- [7]. Kurniawan, H. (2014). Implementasi Aksesibilitas Pada Gedung Baru Perpustakaan UGM. *Indonesian Journal of Disability Studies*. Vol. 1 Issue 1 pp. 44-51.
- [8]. Kwan, J. (2005). Director of UIA Region IV. *Journal Issues*. Vol 42 (2).

- [9]. Litman, T. (2017). Evaluating Accessibility for Transport Planning. Victoria Transport Policy Institute. diperoleh dari [www.trb.org](http://www.trb.org)
- [10]. Morlok, E.K. (1988). Pengantar Teknik dan Perencanaan Transportasi. Jakarta : Erlangga.
- [11]. Offei, L., Acheampong, E., Appiah-Brempong, E., Okyere, P., & Isaac Owusu (2017). Accessibility of Tourist Sites to People with Disabilities: The Case of Cape Coast and Elmina Castles in Ghana. *Journal of Accessibility and Design for All*. Volume 7, Issue 2. (CC) JACCES, 2017. ISSN: 2013-7087
- [12]. Peraturan Menteri Pekerjaan Umum Nomor 30/PRT/M/2006 Pedoman Teknis Fasilitas dan Aksesibilitas pada Bangunan Gedung dan Lingkungan
- [13]. Prisamsiwi, N.A., Santosa, B.H., & Pramesti, L. (2015). Terminal Tirtonadi dengan Pendekatan Green Terminal di Surakarta. *Arsitektura*, Vol. 13, No. 1, April 2015.
- [14]. Poothullil, J.M.M., Sahasrabudhe, S., Chavan, P.D., & Toppo D. (2013). Captioning and Indian Sign Language as Accessibility Tools in Universal Design. *SAGE Open*. pp 1-16. diperoleh dari [sagepub.com](http://sagepub.com) DOI: 10.1177/2158244013491405
- [15]. Sukmadinata, N.S. (2012). Metode Penelitian Pendidikan. Bandung: PT Remaja Rosdakarya.
- [16]. Tyler, N. (2011). Capabilities and Accessibility: A Model For Progress. *Journal of Accessibility and Design for All*. Vol 1(1): pp 12-22
- [17]. Ulfa, D.A., Khasanah, E.Z., Putri, N.D.A., & Himawanto, D.A. (2017). Aksesibilitas Bagi Difabel pada Gedung Pascasarjana Universitas Sebelas Maret. *Jurnal Special Edu*. Vol 2 (1).

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