

Sertifikat

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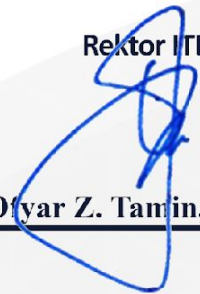
PRESENTER

dalam acara "*Symposium Forum Studi Transportasi antar Perguruan Tinggi XXIII*"
yang bertema "*Harmoni Transportasi Dalam Sistem Logistik Indonesia*"

23-24 OKTOBER 2020

INSTITUT TEKNOLOGI SUMATERA

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TRANSPORT FOR WHEELCHAIR USERS IN GREATER JAKARTA

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Abstract

Wheelchair users require certain services to be independently using public transport daily. 30 respondents (only 12 wheelchair respondents) were recruited online to fill the questionnaire. This paper will identify the level of satisfaction (from 1 very dissatisfied to 4 very satisfied) of wheelchair users on the existing services of Transjakarta Bus Rapid Transit (BRT), Greater Jakarta Electrical Rail, and Jakarta Mass Rapid Transit (MRT). The data gathered in this part was analyzed with mean difference from 2.5 (the departure from dissatisfied to satisfied) with significant level 0.05. We also identify what service should be prioritized to improve service for wheelchair users. This part was analyzed using the analytical hierarchy process (AHP). In general, all respondents were dissatisfied with the existing condition of services for wheelchair users and put the widening of exit and entry of the station as a priority to improve service for wheelchair users.

Keywords: transport, wheelchair users, Greater Jakarta

Abstrak

Pengguna kursi-roda membutuhkan layanan tertentu agar dapat secara mandiri menggunakan angkutan umum sehari-hari. 30 responden mengisi kuesioner secara online (hanya 12 di antaranya pengguna kursi roda). Makalah ini akan menemukenali tingkat kepuasan pengguna kursi-roda (dari 1 sangat tidak puas hingga 4 sangat puas) terhadap layanan BRT Transjakarta, Kereta Rel Listrik (KRL) Jabodetabek dan Moda Raya Terpadu (MRT). Data yang dikumpulkan pada bagian ini dianalisis menggunakan uji beda mean terhadap 2,5 (peralihan dari tidak puas menjadi puas) dengan taraf nyata 0,05. Kami juga mengidentifikasi layanan apa yang harus diprioritaskan untuk meningkatkan layanan bagi pengguna kursi roda. Bagian ini dianalisis dengan proses hirarki analitis (AHP). Secara umum responden tidak puas terhadap kondisi existing layanan terhadap pengguna kursi roda dan menempatkan pelebaran pintu masuk dan keluar stasiun sebagai prioritas pertama perbaikan layanan terhadap pengguna kursi-roda

Kata Kunci: transpot, pengguna kursi roda, Jabodetabek

INTRODUCTION

According to Law No.8 Year 2016, people with disability is a person with long term physical, intellectual, mental, and/ or sensory impairments, restricting full participation in society effectively along with other citizens based on equality rights. The use of a wheelchair might be caused by several factors, i.e. due to birth defects, accidents, or natural disasters.

According to Minister of Transport Decree no. 71 Year 1999 chapter 6, wheelchair users are entitled to certain facilities/ infrastructures/ services, e.g.: ramp access in the entrance and exit of a terminal, toilets that can be used independently without assistance from the others, public transport stops platform that can be easily accessed/ accessing public transport, priority in public transport ticket purchase, space that can be easily used for movement.

According to Tarsidi (2011), there are several architectural obstacles for wheelchair users, e.g. significant elevation shifts such as stairs or side ditches, unavailability of a ramp connecting sidewalk and road surface, insufficient leg room under a table or a washbasin, insufficient turning spaces/ entrance width and a narrow corridor, uneven road surfaces, heavy door (hard to open), Unreachable height of switch/ button

Technical requirement on facilities and accessibilities is determined by Minister of Public Work Regulation No. 14/PRT/M/2017 on Building Accessibility Requirement. The regulation consists of e.g.:

- Arm reach of wheelchair users both to reach the front and to sides.
- Specification of the door, including effective width of the main door and other doors, opening angle and direction of the door, free space in front of the door, non-slippery surface surrounding the door, availability of automatic door closer, and the maximum height of door handle.
- Specification of the ramp, including the maximum slopes both inside and outside the building, the minimum effective width, the height of protecting ramp sides, the length, the texture, the availability of warning guiding blocks and the position of flat surface at the beginning and end of the ramp, equipped with flat service for a break every certain length, equipped with a pair of handrails with a certain height.
- Specifications of the dimension of space in front of the lift, the height of elevator panel, effective space on the elevator, the opening width of the elevator, availability of stainless mirror and handrail with a certain height, supported by appropriate lighting and air-conditioning, supported by audio and/or visual warning and surveillance camera, elevator door equipped with a sensor.
- Specifications of the toilet, including the mandatory provision of a disabled toilet every single female or male toilet, non-slippery textured floor, minimum width and length of the toilet, minimum width of a door equipped with kicking plate in the lower part of the door, reachable toilet flush, availability of the handrail.
- Specifications of the corridor, including the effective width, equipped with signages, sufficient lighting, evacuation route free from an obstacle, equipped with railing at least on one side.
- Specification of the information desk, including desk height accessible for everybody including wheelchair users.

According to Ekiz, Demir & Özgirgin, (2014), there were many wheelchairs which were not complying the design standard such as the height of wheelchair and headrest despite its importance to the level of independence of conducting daily activities and level of participation in the community (Oyster, et al., 2011). Furthermore, the type of wheelchair should be based on the reason for wheelchair use, otherwise, this will cause other problems (Jatmiko & Dharmastiti, 2017).

This paper is intended to identify the level of satisfaction of wheelchair users on the existing services of Transjakarta Bus Rapid Transit (BRT). We also identified what service should be prioritized to improve service for wheelchair users.

METHOD

30 respondents were recruited online to fill the questionnaire. This consists of 12 wheelchair users and 18 non-wheelchair users. All of them should either use Transjakarta Bus Rapid Transit (BRT), Greater Jakarta Electrical Rail (KRL), and Jakarta Mass Rapid Transit (MRT). This paper will identify the level of satisfaction (from 1 very dissatisfied to 4 very satisfied) of wheelchair users on the existing services of Transjakarta BRT, KRL, and MRT. The data gathered in this part was analyzed with mean difference with 2.5 (the departure from dissatisfied to satisfied) with significant level 0.05. We also identify what service should be prioritized to improve service for wheelchair users. This part was analyzed using the analytical hierarchy process (AHP).

The questionnaires consisted of general data and perceptual data. The general data consist of gender, age, education attainment, and residential location. The perceptual data consists of availability of priority area in the vehicle, availability of wheelchair fastener in the vehicle, the spaciousness of the priority area in the vehicle, appeal from public transport staff for prioritizing wheelchair users, the assistance of public transport staff in boarding and alighting of wheelchair users, height accessibility of ticket counter, sufficient turning space for a wheelchair in the vehicle, accessibility of entrance/ exit width in the vehicle, sufficient corridor width in the vehicle, the gap between the vehicle and the station/ stop platform, Exclusive use of priority areas by people with disabilities, general passengers support to wheelchair users, accessibility of the elevator, accessibility of the elevator button, availability of handrails surrounding toilet seats and urinary, sufficient legroom underneath washbasin, width of entrance/ exit door, appropriateness of ramp slope, easiness of entrance/ exit door operation.

PROFILE OF RESPONDENTS

There were 12 wheelchair users respondents consist of 9 males and 3 females. There were 18 non-wheelchair users consist of 13 males and 5 females. Most of the respondents (40%) were aged between 21 and 30 years with an almost uniform number of respondents in the age group of 31-40, 41-50, and 51-60 years old, i.e. 4, 5, and 6 respondents, respectively. There were 8 students, 5 entrepreneurs, 3 employees in the sample. The rest 14 respondents (47%) claimed themselves as others. Most of the respondents (47%) have got a bachelor's degree. Interestingly, both wheelchair and non-wheelchair users share 7 respondents each who have got a bachelor's degree. However, all (5) respondents who have got a postgraduate degree came from non-wheelchair users. Most of the respondents (53%) lived in Jakarta whilst the rest lived in the Greater-Jakarta. However, the number of non-wheelchair users who lived in Jakarta (11) was more than twice the number of wheelchair users who lived in Jakarta. This might describe that in terms of place of residence, wheelchair users were disadvantaged. As KRL and Transjakarta BRT networks were significantly more complete than the new MRT Jakarta network, the respondents were mostly used Transjakarta BRT

(53%), followed by KRL (33%) and only used MRT. None of the MRT Jakarta respondents were wheelchair users.

RESULTS

Table 1. shows a summary of one sample t-test analysis results.

Table 1. Summary of One-Sample T-Test Results

Variable Group	Variable	Significant Results (Yes/No?)	
		Wheelchair users	Non-wheelchair users
A priority area for a wheelchair in the vehicle	Availability of priority area	No	Yes
	Availability of wheelchair fastener	No	No
	The spaciousness of the priority area	No	No
Availability of staffs	Prioritizing wheelchair user	No	Yes
	Boarding/ alighting support	Yes	No
Infrastructure for the wheelchair user	Accessibility of ticket counter height	No	No
	Sufficient turning space	No	No
	Accessibility of exit/ entrance width	No	No
	Sufficient corridor width	No	No
Support from other passengers	The gap between vehicle and stop platform	No	No
	Priority area only for disabled people	No	No
Elevators at MRT and KRL	Support for wheelchair users	No	Yes
	Accessibility of elevators	No	
Toilets at MRT and KRL	Accessibility of elevators buttons	No	
	Handrail surrounding toilet seats/ urinary	No	
Entrance/ exit of Transjakarta BRT	Sufficient legroom under the washbasin	No	
	Width of entrance and exit	No	
	Ramp slope	No	
	Easiness of entrance/ exit door operation.	No	

It can be seen that in most cases, the respondents were not satisfied with KRL, MRT, and BRT services. This might be caused by a limited number of respondents (wheelchair and non-wheelchair users evaluated in each mode). Therefore, although in many cases the mean responses were higher than 2.5, they can not be considered statistically significant results. However relieving results are shown in the human side of this analysis, i.e. wheelchair users considered public transport staffs support during boarding/ alighting were satisfactory (N=12, mean 3.08, $\alpha=0.027$). Even the non-wheelchair users considered that public transport staff was significantly prioritizing the wheelchair users (N=18, mean 3.17, $\alpha=0.040$).

Table 2. shows the summary of improvement priority from AHP results. It can be seen that both wheelchair and non-wheelchair users mentioned the same top improvement priorities, i.e. widening of entrance/ exit of the station and the vehicle. They also both considered that adding public transport staff were the least important thing. This might be related to the result in Table 1 regarding their satisfaction on the human side of the public transport services for wheelchair users.

Table 2. Summary of Improvement Priority from AHP Results

	Wheel- chair users	Rank	Non- wheel- chair users	Rank	Combine	Rank
Additional staffs in the station and vehicle	0.084	5	0.135	5	0.114	5
Widening of priority area within the vehicle	0.157	3	0.139	4	0.147	3
Widening of entrance/ exit of the station	0.375	1	0.304	1	0.329	1
Widening of entrance/ exit of the vehicle	0.269	2	0.273	2	0.274	2
Widening of the priority toilet area	0.116	4	0.148	3	0.136	4

CONCLUSION AND RECOMMENDATION

In general, both wheelchair and non-wheelchair users were not satisfied with KRL, MRT, and BRT services for wheelchair users except for the human side of the public transport staff. Both wheelchair and non-wheelchair users mentioned the same top improvement priorities, i.e. widening of entrance/ exit of the station and the vehicle. Therefore, the transport authority should consider this finding for the immediate improvement of public transport services.

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