

DIFABLE PERCEPTION FOR ACCESSIBILITY AND INFORMATION OF PUBLIC TRANSPORT IN JAKARTA

Mochdiana Hernawan
Ministry of Transportation Republic of Indonesia
Email: mcdiee@yahoo.com

ABSTRACT

Every human being has equal right for accessing to the transportation. Difable persons that have different ability also have the same right. The provision of the accessibility and information facility in public transport is not fully meet difable need and therefore difable persons have difficulties in accessibility and information while using public transports.

This research will investigate the difable perceptions about accessibility and traveler information for the public transport in Jakarta. Questionnaire method will be used for this purpose and then analyzed by Importance Performance Analysis. The improvement for the transport infrastructure and information system will be elaborated. The findings of the research could be used as input for the local authority while planning or re-construction public transport infrastructure and information system so that difable persons become more accessible and convenience.

The study results show that the average value of the perceived performance for the accessibility is 2.78 from 5 scales. This means the performance of the accessibility in overall is fairly. For the information facility, the average performance is 3.11 that meaning the performance in overall is good. The respondents required the provision of waiting room for difable persons as a priority. The information about the departure of the vehicle should been improved as priority to be increased. Furthermore, it is obtained that the Customer Satisfaction Index (CSI) value for accessibility is 56%. This indicates the entire respondents satisfied sufficiently with the accessibility facility. Also, 62% of the CSI value shows that the respondents satisfied sufficiently with the provided information.

Keywords: difable, accessibility, information, public transport, Important Performance Analysis

1 INTRODUCTION

1.1 Background

United Nations have specified 3 December as International Day of Disabled People and 10 December as International Day of Human right. Rights of disabled people is human right too. Therefore, disabled people require to the conscious of its rights in order not to again live by pity compassion and other party aid but having freedom to determine their will themselves.

People with different abilities (difable) have the same rights and opportunity in all existence aspect. The opportunity can be realized by provision of the public facilities including public transport that accessible for the difable. In the other hand, while travelling, as normally ones, difable persons need information about their journey. The information can help them make a suitable decision and more convenient.

1.2 Objectives

This research is aimed at:

- a) Identifying the accessibility and traveler information of the public transport facility for the difable persons.
- b) Analyzing the perception of the difable persons about the public transport accessibility and information.
- c) Suggesting for the improvement of the public transport facility for the difable persons accessibility and information.

2 LITERATURE REVIEW

2.1 Perception

Perception could be defined as a process which involves the recognition and interpretation of stimuli which register in human senses such as: eye or visual, ear or hearing, nose and skin (Rookes and Willson, 2000).

2.2 Difable Persons

Definition for difable persons is difable persons are everyone that having physical and or mental impairment, this impairment could affect and or become his or her obstacle for doing activity normally (Indonesian Law Number 4 Year 1997).

2.3 Accessibility and Information

Accessibility is the ease with which it provided to all persons including difable and elderly in order to achieve equal opportunity in all aspects of life and livelihood (Indonesian Law No. 4 Year 1997). Government Act No. 43 Year 1998 stated that every provision of public facilities and infrastructure required providing accessibility. Information service at public transport is aimed to inform difable about the facilities and available accessibility in public transport (Indonesian Law No. 4 Year 1997).

2.4 Public Transport

Public transport are the services that are available to the general public and intended to transport more than one passenger or small group of passengers traveling together (Fisher and Coogan, 2000). Bus terminals, railway stations and airports are a form of buildings that are used by the general public should also provide facilities and accessibility for their users. The technical requirements for accessibility and sign or information facilities are regulated in Ministry Regulation of Public Work No. 30 Year 2006

3 RESEARCH METHODOLOGY

3.1 Research Location

Research is conducted at some public transport facility in Jakarta city. Kampung Rambutan bus terminal, Gambir Station and Soekarno Hatta international airport are chosen as major research observation. Respondents are difable persons with physical impairment e.g. physic impairment or disabled, visual impairment and hearing-speech impairment in Jakarta province. Most of respondents come from social rehabilitation places e.g.: PSBRW Melati, PSBD Budi Bhakti, PSBN Cahaya Bathin, LBK Pondok Bambu and LBK Ceger. Research conducted at November 14 - December 23, 2011. Research methodology flowchart is shown in Figure 1.

The research starts with problem identification then continued with formulated research objective. Literature study is conducted to obtain the theoretical base and literature related with the research. Pilot survey is conducted before collecting data. Data collection consists of primary and secondary data.

Primary data is obtained from field survey and questionnaire. Furthermore, data collected analyzed using statistic descriptive and Important Performance Analysis method. The last, the research covered by conclusion and suggestion for further research.

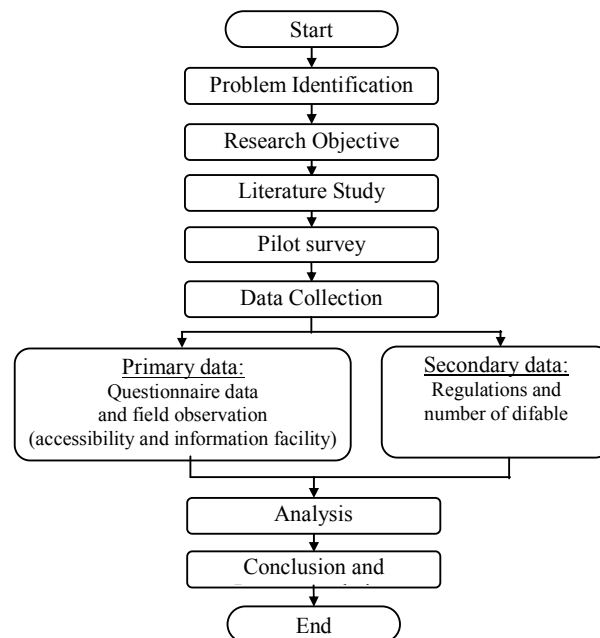


Figure 1. Research simulation flowchart

3.2 Questionnaire

About 200 questionnaire papers offered, 169 papers replied correctly. Online survey is offered from October 20, 2011 via web and email and obtained 2 respondents. The total respondents are 171 persons.

4 RESULT AND DISCUSSION

4.1 Respondent Profile and Experience with Public Transport

Respondents' profile is resumed in Table 1 while respondents' experience with public transport is resumed in Table 2.

4.2 Relationship between Respondents Profile and Trip Pattern

Crosstab analyze with chi-square test is used to examine relationship between respondent profile and trip pattern. Hypothesis used in this test are:

H0 = there is no relationship between respondents profile with trip pattern

H1 = there is relationship between respondents profile with trip pattern.

H_0 is accepted if the value of chi-square probability is more than 0.05 and rejected if otherwise. The result is shown in Table 3. It is shown that respondents' profile

has related with trip pattern in trip in one week and mode type used (except gender) and there is no relation in ability for trip (except difability type).

Table 1. Summary of respondent profile

Profile	Category	Number (in persons)	Percentage
Gender	Men	103	60%
	Women	68	40%
Age	< 20 year	50	29%
	20 - 30 year	80	47%
	> 30 year	41	24%
Since When You are difable?	from birth	74	43%
	when the children	34	20%
	as adults	63	37%
Difability (impairment) type	disabled	63	37%
	blind (visual impairment)	37	22%
	deaf-mute (hearing-speech imp.)	71	42%
Tools that You use	sticks	21	12%
	white cane	37	22%
	shoes	1	1%
	wheelchair	17	10%
	hearing aids	67	39%
	nothing	28	16%

Table 2. Summary of respondent's experience with public transport

Profile	Category	Number (in persons)	Percentage
Type of public transport that ever You use	Bus / Trans Jakarta	170	99%
	Train	130	76%
	Aircraft	92	54%
Station in Jakarta that You ever visited	Gambir	47	27%
	Senen	43	25%
	Stasiun Kota	61	36%
	the other	29	17%
Bus terminal in Jakarta that You have been visited	Pulogadung	41	24%
	Kampung Rambutan	108	63%
	Kalideres	49	29%
	the other	38	22%
Airport in Jakarta that You have been visited	Sukarno - Hatta	92	54%
	Halim Perdana Kusuma	0	0%
Have you ever refused when going to use public transport?	ever	50	29%
	never	121	71%
Have you ever been complicated when going to use public transport?	ever	48	28%
	never	123	72%

Table 3. Relation between respondent profile with trip pattern

Respondent profile	Trip pattern		
	Trip in one week	Ability for trip	Mode type used
Gender	H_0 is accepted	H_0 is accepted	H_0 is accepted
Age	H_0 is rejected	H_0 is accepted	H_0 is rejected
Since when difable	H_0 is rejected	H_0 is accepted	H_0 is rejected
Difability type	H_0 is rejected	H_0 is rejected	H_0 is rejected
Tool helper used	H_0 is rejected	H_0 is accepted	H_0 is rejected

4.3 Relationship between Respondents Profile and Experience with Public Transport

Hypothesis used in this test are:

H0 = there is no relationship between respondents profile and experience with public transport

H1 = there is relationship between respondents profile and experience with public transport

The result is shown in Table 4. It is shown that there is relationship between respondents profile and experience with public transport, except for age.

Table 4. Relation between respondent profile with experience with public transport

Respondent profile	Experience using public transport	
	Refused	Complicated
Gender	H ₀ is rejected	H ₀ is rejected
Age	H ₀ is accepted	H ₀ is accepted
Since when difable	H ₀ is rejected	H ₀ is rejected
Difability type	H ₀ is rejected	H ₀ is rejected
Tool helper used	H ₀ is rejected	H ₀ is rejected

4.4 Important Performance Analysis for Accessibility Facility

The result from importance-performance questionnaire survey for whole respondent obtained an attribute in quadrant A: the availability of the waiting room for the difable. This attribute addressed as priority while improving the service. The differences in the attributes allocated in the Importance Performance Analysis map for the three type of difability are summarized in Table 5. Physic impairment respondents have 4 attributes in quadrant A while visual impairment respondents have 2 attributes and none for hearing-speech impairment respondents. Most of respondents (whole respondent) care more about the availability of the waiting room for difable (attributes no. 7).

The differences (gap) between importance (whole respondent) and satisfaction (performance) among different difability type groups are shown in Figure 2. Each gap values are negatives; it means that the performance or availability of accessibility facility is less than what the respondents expected (the importance).

4.5 Important Performance Analysis for Information Facility

The results from importance-performance questionnaire survey for whole respondent obtained an attribute in quadrant A. This means this attribute addressed as priority while improving the service. The

differences in the attributes allocated in the four quadrants of Importance Performance Analysis map for the three type of difability are summarized in Table 6. Physic and visual impairment respondents have 2 attributes in quadrant A, while hearing-speech impairment respondent have an attribute. All difable persons highly care about the departure information of the bus/ train/ aircraft (attribute no. 6).

The differences (gap) between importance (whole respondent) and satisfaction (performance) among different difability type groups is shown in Figure 3. Each gap values are negatives meaning that the performance or availability of information facility is less than what the respondents expected.

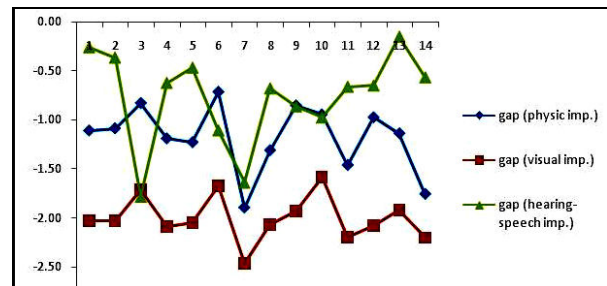


Figure 2. Gap comparisons of importance-performance of accessibility among different difability type

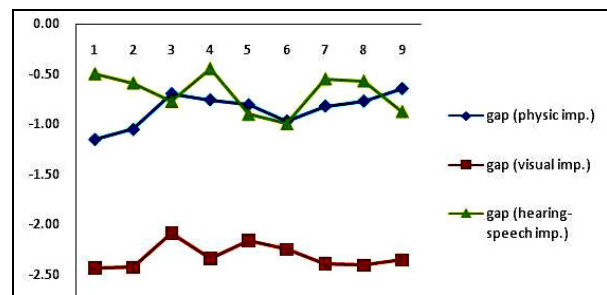


Figure 3. Gap comparisons of importance-performance of information among different difability type

4.6 Assessment

The assessment of the accessibility and information facility will be analyzed using statistic descriptive and customer satisfaction index (CSI).

a) Respondent assessment based on statistic descriptive

The questionnaire result of the performance and attributes value will be categorized into three categories interpretation of the respondent assessment: low, medium and high.

It is obtained that 51 respondents or 30% stated that the performance of the accessibility facility is low, 64% stated it is medium and 10 or 6% is high. There are 2 attributes assessed as low and

12 attributes assessed as medium. Attributes assessed as low are: the availability of the guiding block and waiting room for the difable. For information facility, it is obtained 25% respondents stated that the performance of the information facility is low, 52% stated it is medium and 23% is high. All attributes assessed as medium.

b) Customer Satisfaction Index (CSI)

CSI is used to address respondent satisfaction based on importance of the attributes. CSI value is then categorized into five criteria as shown in Table 7. CSI value for accessibility and information is resumed in table 8. The whole respondent satisfied enough with the accessibility and information facility.

Table 5. Comparison of result by different difability type for accessibility facility

Location	Physic impairment	Visual impairment	Hearing-speech impairment	All
Quadrant A	- the availability of the waiting room for the difable (no. 7) - the comfort when walking on the floor (not slippery) (no. 10) - access to the toilet (no. 11) - access to the vehicle (no. 14)	- the availability of the guiding block (no. 3) - the availability of the waiting room for the difable (no. 7)	- none	- the availability of the waiting room for the difable (no. 7)
Quadrant B	- access from/ to gate of the bus terminal/ station/ airport (no. 2) - can buy the ticket by yourself at the ticket counter (no. 5) - the sense of security while in the bus terminal/ station/ airport (no. 9) - access to the lift (no. 12)	- access from/ to gate of the bus terminal/ station/ airport (no. 2) - access to the ticket counter (no. 4) - can buy the ticket by yourself at the ticket counter (no. 5) - access to the waiting room (no. 6) - the safety when waiting the vehicle (no. 8) - the sense of security while in the bus terminal/ station/ airport (no. 9) - access to the toilet (no. 11) - access to the vehicle (no. 14)	- access from/ to parking place (no. 1) - access from/ to gate of the bus terminal/ station/ airport (no. 2) - access to the ticket counter (no. 4) - can buy the ticket by yourself at the ticket counter (no. 5) - the safety when waiting the vehicle (no. 8) - access to the toilet (no. 11) - access to the lift (no. 12) - access to the escalator (no. 13) - access to the vehicle (no. 14)	- access from/ to parking place (no. 1) - access from/ to gate of the bus terminal/ station/ airport (no. 2) - access to the ticket counter (no. 4) - can buy the ticket by yourself at the ticket counter (no. 5) - the safety when waiting the vehicle (no. 8) - access to the toilet (no. 11) - access to the lift (no. 12) - access to the vehicle (no. 14)
Quadrant C	- the availability of the guiding block (no. 3) - the safety when waiting the vehicle (no. 8) - access to the escalator (no. 13)	- access to the lift (no. 12) - access to the escalator (no. 13)	- the availability of the guiding block (no. 3) - access to the waiting room (no. 6) - the availability of the waiting room for the difable (no. 7) - the sense of security while in the bus terminal/ station/ airport (no. 9) - the comfort when walking on the floor (not slippery) (no. 10)	- the availability of the guiding block (no. 3) - access to the waiting room (no. 6) - the comfort when walking on the floor (not slippery) (no. 10)
Quadrant D	- access from/ to parking place (no. 1) - access to the ticket counter (no. 4) - access to the waiting room (no. 6)	- access from/ to parking place (no. 1) - the comfort when walking on the floor (not slippery) (no. 10)	- none	- the sense of security while in the bus terminal/ station/ airport (no. 9) - access to the escalator (no. 13)

Table 6. Comparison of result by different difability type for information facility

Location	Physic impairment	Visual impairment	Hearing-speech impairment	All
Quadrant A	- information about the destination/ route (announcement board/ electronic display) (no. 1) - the sign to the ticket counter (no. 2)	- the sign enter/ exit to the gate (no. 8) - the availability of emergency exit sign (no. 9)	- information about the departure of the bus/ train/ aircraft (no. 6)	- information about the departure of the bus/ train/ aircraft (no. 6)
Location Quadrant B	Physic impairment - information about the ticket's price (no. 3) - the sign enter/ exit to the gate (no. 8) - the availability of emer-gency exit sign (no. 9)	Visual impairment - the sign to the ticket counter (no. 2) - information about the ticket's price (no. 3)	Hearing-speech impairment - information about the destination/ route (announcement board/ electronic display) (no. 1) - the sign to the ticket counter (no. 2) - the sign to the toilet (no. 4) - the sign from/to the parking place (no. 7) - the sign enter/ exit to the gate (no. 8)	All - information about the destination/ route (announcement board/ electronic display) (no. 1) - the sign to the ticket counter (no. 2) - the sign to the toilet (no. 4) - the sign to the parking place (no. 7) - the sign enter/ exit to the gate (no. 8)
Quadrant C	- the sign to the waiting room (no. 5) - information about the departure of the bus/ train/ aircraft (no. 6)	- the sign to the waiting room (no. 5)	- information about the ticket's price (no. 3) - the sign to the waiting room (no. 5) - the availability of emergency exit sign (no. 9)	- the sign to the waiting room (no. 5) - the availability of emergency exit sign (no. 9)
Quadrant D	- the sign to the toilet (no. 4) - the sign from/to the parking place (no. 7)	- information about the destination/ route (announcement board/ electronic display) (no. 1) - the sign to the toilet (no. 4) - information about the departure of the bus/ train/ aircraft (no. 6) - the sign from/to the parking place (no. 7)	- none	- information about the ticket's price (no. 3)

Table 7. CSI criteria

CSI value (%)	CSI criteria
81 – 100	Very satisfied
66 – 80	Satisfied
51 – 65	Satisfied enough
35 – 50	Less satisfied
0 – 34	Unsatisfied

(Source: Oktaviani and Suryana, 2006)

Table 8. CSI value result for accessibility and information

Respondent	CSI value (%) for accessibility	assessment	CSI value (%) for information	assessment
Physic impairment	55.75	satisfied enough	67.09	satisfied
- Wheelchair users	41.11	less satisfied	64.05	satisfied enough
- Sticks and shoes users	57.69	satisfied enough	65.28	satisfied enough
- Non-helper tools	64.05	satisfied enough	70.84	satisfied
Visual impairment	39.16	less satisfied	37.78	less satisfied
Hearing-speech impairment	66.41	satisfied	70.67	satisfied
All difable	56.00	satisfied enough	62.15	satisfied enough

4.7 Recommendations

Suggestion to improve the accessibility and information facility in public transport especially for the difable persons based on their satisfaction. It is expected that the satisfaction or the perception of the difable persons will increase due to the improvement. Adapted from on the EDP framework (Oliver in Haglund and Stalhammar, 2000), modified EDP framework is used to explain the improvement strategy (Figure 4).

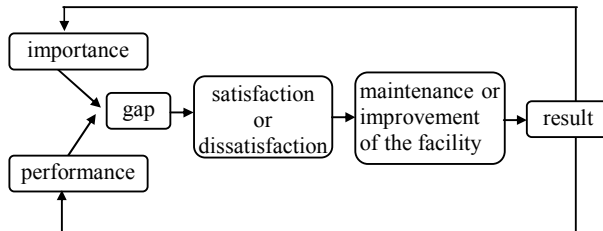


Figure 4. Improvement strategy based on EDP framework

The gap is the result from the difference of the performance and the importance value. A positive result when the importance value below the performance, null when same value and negative value when the importance above the performance.

Based on Importance-Performance Analysis, it could be concluded the priority for the improvement of the accessibility, attributes on the quadrant A. It could be addressed the improvement for accessibility attributes as follow: the availability of the waiting room for the difable, the availability of the guiding block, the comfort when walking on the floor (e.g. not slippery), access to the gate, access to the toilet and access to the vehicle.

For information facility, it could be concluded the priority for the improvement, attributes on the quadrant A. The improvement for information attributes as follow: information about the departure of the vehicle, information about the destination or route, the sign of gate entrance or exit, ticket counter sign and emergency exit sign

5 CONCLUSION

5.1 Conclusion

- a) The study result shows that the average value of the perceived performance for the accessibility is 2.78 that mean in overall it is fairly. For the information facility, the

average performance is 3.11 that mean it is good.

- b) The availability of the waiting room for the difable, the provision of the guiding block at public transport facility, the comfort when walking on the floor, access to the gate, access to the toilet and access to the vehicle are addressed as priority to be improved soon.
- c) Information about the departure of the vehicle, destination or route information and the sign to the ticket counter, the gate entrance or exit and emergency exit sign are addressed as service that needs improvement.
- d) Based on the descriptive statistic analysis more than half of respondents assess the performance as medium. Furthermore, CSI value shows that the respondents satisfied enough with the provided accessibility and information.
- e) The improvement strategy to increase satisfaction is proposed. The basic idea is to reduce gap value between the performance and the importance. It involved multiple parties to provide or improve accessibility and information facility at public transport

5.2 Suggestion

The suggestions for future research are:

- a) It is need to study or evaluate the accessibility and information facility at sea port facility for difable persons as completing this research so that it involved all public transport.
- b) The provision and improvement accessibility and information facility involved the stakeholder, so their point of view about the provision of the facility is needed to be addressed.

REFERENCES

- Anonym. (1997). Indonesian Law No. 4 Year 1997 about Difable Persons. Jakarta
- Anonym. (1998). Government Act No. 43 Year 1998 about Effort of Increasing Social Prosperity to Difable Persons. Jakarta
- Anonym. (2006). Minister Regulation of Public Work No. 30 Year 2006 about Guidance of Technical Requirements for Building. Jakarta.

Fisher, L.A. and Coogan, M.A. (2000). TCRP report 62 - Improving Public Transportation Access to Large Airport, Transportation Research Board, Washington, Available at: books.google.com, last visited: February 18, 2012

Haglund, L. and Stalhammar, A. (2000). Market and Service Orientation in Public Transportation. Service Research Center. Karlstad

Oktaviani, R.W. and Suryana, R.M. (2006). Analisa Kepuasan Pengunjung dan Pengembangan Fasilitas Wisata Agro. Jurnal Agro Ekonomi. Volume 24 No 1 pp 41-58

Rookes, P. and Willson, J. (2000). Perception: Theory, Development and Organisation. Routledge, London