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PASSENGER REQUEREMENTS FOR SERVICES ATTRIBUTES DESIGN OF PUBLIC TRANSPORT TERMINAL IN INDONESIA

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Abstract

Determination of minimum service standards by the government of Indonesia as a commitment to serve the people in all development sectors including transport infrastructure, especially public transport terminal. Public tranport terminal is one of all transportation infrastructure has important role to support Indonesian development. Meanwhile to now, public transport is a good solution to solve transportation problems in Indonesia. Now, the customer is tend to dislike the public transport. The terminal of public transport is one of the transportation infrastructure greatly influence the success of public transport services. The public transport terminal for passengers in Indonesia now doesn't has a minimum service standard. Code, regulation, and other policies had not been made more detailed and complete to provide guidance on terminal minimum services. This research suggests the determination of service attributes according to customers needs. The customer needs are called voice of customer. Customers consist of the passengers who often and rarely use the terminal. Information obtained by preliminary survey, interview technique, and distributing questionnaires. The questionnaires are distributed to 45 respondents. This research resulted in 10 attributes of terminal services consist of reliability, availability, easy, durability, responsiveness, convenience, assurance, frequency, performance, and aesthetic. The top three attributes according to the customers will be considered are public transport reliability, security and safety, and facilities availability. Therefore, the ten attributes can be used as a reference in the subsequent analysis.

Keywords: service attributes, minimum service standards, public transport terminals

INTRODUCTION

The Government of Indonesia try to meet commitment to serve the people. The government establish policy of a minimum service standards in all development sectors, including transport infrastructure for national and local area. Public transport terminal is one of the transport infrastructure still not have a minimum service standards. Government policies on the terminal such as codes, regulations, and other policies that have not been detailed and complete set up and provide guidance on terminal minimum service. Along

with the declining in the performance and effectiveness of the terminal, public transport services are also low [1]. The problems to become more complex because of the high interest of the public on private vehicles, for example for the city of Surabaya, which is one of the major cities in Indonesia increased 455% use of private vehicles from 1976 to 1998 [2]. This conditions need improvement, because the transportation infrastructure effect on the macros transport system that are needed by the community [3]. This research was motivated by the lack of service attributes for measuring the terminal performance. These attributes are used as attributes of Minimum Service Standards in the planning and development of terminals. The determination of service attributes refers to previous researches and preliminary survey. The purpose of this study was to determine and define attributes of a Minimum Service Standards according to the perception and the needs of customers that called voice of customer. The previously study of existing terminal evaluated and designed the terminal use technical aspects only, without consider the needs and desires of customers.

METHOD

Determination of the framework of a terminal minimum service standards is based on the concept of Performance Based Design of Buildings (PeBBu), Final Report Domain. CIBdf 2005 [4], that providing the understanding and performance-based development by considering the similarity between the technical aspects of the terminal to the needs of customers who called voice of customer. Stages of research carried out by the preliminary survey to respondents and scoring the need for terminal service attributes. Preliminary survey consist of observation of terminal existing condition and distributing questionnaires to terminal customer as the respondent. Service attributes as a research variable is based on the attributes of a terminal rule in Indonesia, studies and previous research, and attributes according to customer needs. From the scoring process is derived rating level of service attributes requieements. Visualization program with a visual basic used to present quantitative data in tables and graphs. The final results of the research process was used as first references for further more detailed analysis. The research method development are shown in Figure 1.

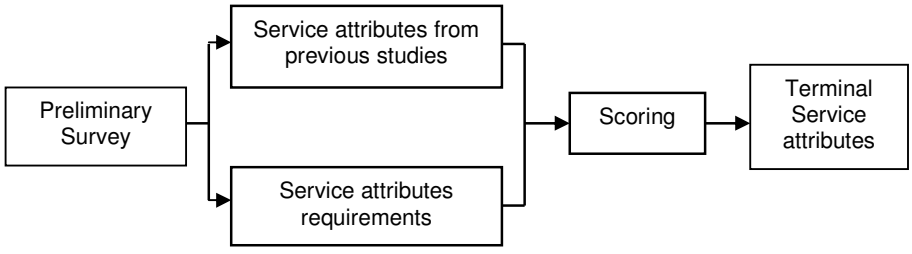

Figure 1 Research method development

The terminal of this research is the terminal type A and B as regulation of KM 31/1995 [5] which gives the definition and classification of the terminal in Indonesia as follows:

1. Type A, has function to serve public transport for inter-city and inter-provincial transportation, state boundary transportation, transportation between cities in the province, and urban and rural transportation;
2. Type B, has function to serve public transport for transportation between cities in the province, and urban and rural transportation;

This study will assess terminal type A and B, because both terminals in Indonesia called main terminal. Many variables from previous researches is shown in Table 1. These variables are taken in accordance with the conditions in Indonesia and added to the variable that comes from the voice of customer.

The research location are three cities in Indonesia, namely Surabaya, Malang, and Kediri, with details such as the terminal type in Table 1 below.

Table 1 Terminal type A and B of three cities in Indonesia

No	City	Terminal	
		Type A	Type B
1	Surabaya	Purabaya	Joyoboyo
2	Malang	Arjosari	Tlogomas
3	Kediri	Tamanan	Pare

The terminal service attributes that refers to previous researches are described in Table 2. Service attributes were adopted and adapted to the existing condition and location of the terminal.

Table 2 *Variables from previous researches*

No	Researcher	Year	Variables
1	Harsanto [7]	2007	Reliability, Responsiveness, Assurance, Empthy , and Tangible
2	Rini [8]	2007	Security, Availability of facilities and personnel services, parking management, bus services, ticketing, cleanliness and comfort, crossing road facility and access to bus stop, accessibility, safety, and public service operator.
3	Marliana [9]	2008	Employees capability, convenience, timeliness, employees accuracy in serving passengers, the number of shelter, the number of routes / bus lanes, shelter facilities, bus density, and facilities for the disabled
4	Purba [10]	2009	Facilities and management, accessibility, level of service roads, safety and environmental comfort.
5	Weningtyas [11]	2009	Reliability, the physical aspect, and responsiveness.
6	Pati [12]	2009	Time, flexibility for ticketing, safety of passengers and goods, and ease of telephone service
7	Saputra [13]	2010	Arrival and departure times, information systems for services, regularity of luggage workers and brokers, road conditions, and terminal facilities

The services variables as shown in Table 2 are grouped into ten dimensions of quality, include:

1. Assurance is the services provide assurance in security, safety, health, and availability of transport modes
2. Responsiveness that is staff responsiveness in provision of care, responsiveness to problems, polite and friendly, and have good skills
3. Performance is a good level of consistency and product functions. Terminal facilities performance include lighting, air circulation, parking lots, roads, waiting room, small mosque, stalls, kiosks, hall, corridors, toilet, sculpture, and waste management
4. Aesthetics are associated with the appearance of product and facilities, equipment, personnel, and communication materials related to the services. Facilities aesthetics include waiting rooms, corridors, arrival and departure gate, parks, and landscaping.
5. Amenity and Easy are service ability related to improve the product easily. Easy accessbility in location, circulation, tickets, prices, information, facilities, and no additional cost (extortion)
6. Reliability is the probability of the product or service within a certain period. Reliability in arrivals and departures, waiting time, and public transportation ticketing service.
7. Durability of public transport services and facilities that is defined as the useful life of the product. Durability
8. Frequency is terminal condition that is give comfort to passenger, for example frequency in passenger queues, overcrowding, and the level of traffic congestion.
9. Convenience and comfort is getting amenities of passenger and avoid from cigarette smoke, fumes, odors, noise, glare, view, brokers, and gain terminal cleanliness and regularity.
10. Availability is availability of terminal facilities to serve passenger and support their travel. The facilities are parking area, waiting room, Kiosks and retail, rest area and lodging facilities, tariffs board per route, information and complaints center, signs transportation routes, religious facilities : place for pray, money changer, etc.

RESULTS

The results of the observations and documentation that has been done on the existing terminal condition is shown in Table 3.

Table 3 The results of observation and documentation of six terminals in Indonesia

No	City and Terminal	Land area (m^2)	Start to operate
1	Surabaya		
	a.Type A : Purabaya	124369	1991
	b.Type B : Joyoboyo	11134	1970
2	Malang		
	a.Type A : Arjosari	60030	1989
	b.Type B : Tlogomas	30457	1991
3	Kediri		
	a.Type A : Tamanan	27085	1992
	b.Type B : Pare	13854	1994

Table 3 shows the terminal which has the largest land area is Purabaya with 124.369 m^2, while the Joyoboyo terminal has the smallest land area with 11.134 m2. The table shows the difference between the terminal type A to type B.

This research suggests the determination of service attributes according to customer needs. The customer needs are called voice of customer. Customers consist of the passengers who often and rarely use the terminal. Information obtained by preliminary survey, interview technique, and distributing questionnaires. The respondents consist of a passenger terminal. Number of respondents by taking a sample of at least 30 people [6], in order to obtain the 45 people to the terminal type A, and 30 people for the terminal type B. To determine the level of customer needs of service attributes for three terminals of type A can be seen in Table 4, where the attributes that got the highest score is security and safety (total score 537), while the availability of the facility to be rank-2 with a total score of 535. Two attributes have similar score the attributes are aesthetics and convenience (total score 520), and the attributes of responsibilties and frequency with total score 489. The terminal management abroad must prioritize the repair and improvement of service attributes according to the score rank of customer needs. Table 4 shows the score rank of service attributes for three terminals of type B.

Table 4 The Level of customer needs and service attributes rank of terminal type A

No	Terminal Service Attributes	Terminal Type A		Terminal Type B	
		Score	Rank	Score	Rank
1	Assurance	537	1	359	2
2	Responsiveness	489	7	336	7
3	Performance	493	6	334	8
4	Aesthetics	520	4	355	3
5	Easy	520	4	343	6
6	Reliability	534	3	365	1
7	Durability	476	8	317	10
8	Frequency	489	7	324	9
9	Convenience	515	5	346	5
10	Availability	535	2	352	4

Table 4 show the service attributes of terminal facilities availability, can be defined with terminal facilities requirements by the customer. Availability includes amount, performance, and condition of facilities that serve the customer. Table 5 shows the score and level of requirements for terminal facilities of type A. From Table 5, the facility that

the most requirement is a waiting room with score 552. The second and third rank are health aid center (score 548) and ATM center (score 545). Facility that the lowest rank is a facility for travel information board with score 482.

Table 5 The level of requirement and availability rank of terminal type A facilities

No	Terminal Facilities	Terminal Type A		Terminal Type B	
		Score	Rank	Score	Rank
1	Parking area for Bicycle and motorcycle	528	9	353	6
2	Parking area for car	528	9	349	8
3	Waiting room	552	1	353	6
4	Kiosks and retail	529	8	347	9
5	Waste management facilities	500	16	316	16
6	Rest area and lodging facilities	526	10	338	15
7	Canteens, restaurants and food shops	497	17	361	3
8	Travel information boards	482	19	349	8
9	Information and complaints center	529	8	369	1
10	Goods repository	534	6	345	11
11	Tariffs board per route	540	4	350	7
12	Toilet	533	7	365	2
13	Religious facilities : place for pray	522	12	350	7
14	Religious facilities : mosque	496	18	346	10
15	Signs transportation routes	521	13	340	14
16	Telecommunication facilities (telephone,internet,TV)	538	5	354	5
17	Travel agent counters	525	11	341	13
18	Health aid center	548	2	365	2
19	Bank	514	14	343	12
20	ATM center	545	3	355	4
21	Money changer	501	15	301	17

Availability of facilities at the three terminals of type B are shown in Table 5. The highest score is information and complaints center (score 369). The second rank is toilet and health aid center with score 365, while third rank is the availability of canteens, restaurants and food stores (score 361). The lowest rank is money changer (score 301).

DISCUSSION

The results showed differences in the level of customer demand to service attributes and the availability of terminal facilities. Information needs of service attributes and the availability of facilities obtained from respondents to the proportion of 45 people for terminal type A and 30 people for terminal type B. Required service attributes consist of Assurance, Responsiveness, Performance, Aesthetics, Ease, Reliability, Durability, Frequency, Comfort, and availability. Service attributes in the terminal type A as shown Table 3 shows that the highest are Assurance, Availability, and Reliability. This indicates that the security, safety, and health is very important for the customer. Besides a complete and adequate facilities and reliability of public transport services to be second and third important requirement. The durability is the lowest score of service attributes. For terminal type B as shown in Table 4, the service attributes with highscore consist of Reliability, Security, and Aesthetics. This shows that the attributes include reliability of public

transport, security and safety, and aesthetic aspects to be rapaired and develop. The same conditions with terminal type B, where the attributes that have the lowest score is facilities durability .

The Level of customer requirements for availability of terminal facilities consist of : 1). Main facilities (primary) is facilities that must be exist in terminal to support essential functions and important activities include: waiting rooms, parking area for transport, space for management, and visitor parking; 2). Supporting facilities (secondary) is facilities to support the additional activity other than the main facility and give convenience for customerr include: cafeteria, kiosks, rest areas and lodging, goods repository, praying area and mosque, health center, ATM center, and telecommunications facilities. Table 5 shows the facilities score and rank of three-terminal type A, where the waiting room is the highest rank (score 552) and travel information boards is the lowest with score 482. Facilities that are needed attention by the management instituion is waiting rooms, health aid center, ATM center, or tariffs board per route, telecommunication facilities, and bathroom. Table 6 shows the facilities score and rank of the three terminal type B. Information and complaints center is the highest score with score 369, while the money changer facility is the lowest rank (score 301).

CONCLUSION

The Level of customer requirement of service attributes and availability of facilities are different between terminal type A to terminal type B for the three cities in Indonesia include Surabaya, Malang, and Kediri. It can be seen from the score and rank of requirement and existing facilities in the two types of terminal. There are 10 attributes that are needed by the customer, namely Assurance, Responsiveness, Performance, Aesthetics, Ease, Reliability, Durability, Frequency, Comfort, and availability of facilities. The most important service attributes in the terminal type A from the first to third rank are security and safety with score 537, terminal facilities with score 535, and the reliability of public transport with score 534. According to the customer of terminal type B, the most important service attributes such as first rank for reliability of public transport with score 365, second rank is security and safety attributes with score 359, and the third rank on the aesthetic attributes with score of 355. There are seven other attributes that are required by customer. The management institution to consider and evaluate the service attributes in accordance with the priority of customer needs. While in the availability of terminal type A facilities, the customer need waiting room with score 552, health aid center with score 548, and ATM center with score 545. The different case with customer requirement of terminal type B, where the most important facilities are information and complaints center with score 369, health aid center and bathroom with score 365, and canteens, restaurants and shops with score 361. The management must to improve performance and increase the availability of terminal facilities. There are 18 other facilities are also considered important by the customer, but have different ranks. Terminal facilities are classified into two categories according to function. The facilities consist of main facilities (primary) and supporting facilities (secondary).

RECOMENDATION

The terminal management institution must pay attention to terminal facilities that are required by the customer including information and complaints center, bathrooms, cafeteria, ATM center, telecommunications facilities, waiting room, and praying area or mosque. This analysis can be increased to Importance Performance Analysis (IPA) and Quality Function Deployment (QFD) [14], so we get service attributes priority that are most important and essential role in terminal services.

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