Public transport service relating to safety

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Abstract. Urban areas are experiencing rapid population growth now. The presence of public transport modes does not automatically solve transportation problems especially safety issues for users. This study presents the results of research on public transport services relating to safety, including the provision of public transportation services by government and private parties as well as the utilization of public transportation services by the public. Content surveys conducted on 332 public transport vehicles in the form of cars and buses. Public transportation data obtained through questionnaires and interviews at terminals, shelters, and centers in districts throughout Indonesia. The variation of public transport modes is limited to four-wheeled and conventional mode only. The results of the discussion show that public transport companies that organize public transportation on the route have not met the minimum service standards of public transport. The dominant facilities available on public transport are still below the minimum standard. The results of the discussion concluded that to improve the transport service for the government is required to play a role in making the policy of transport management and in law enforcement so that the transport service can be more integrated with transport network.

1. Introduction

Transportation system functions to move people or goods from one place to another as an attempt to cope with geographical and topographical distance obstacles. Also, transportation contributes to the spatial, social, and economic evolution of cities [1] [2]. Public transportation is a transportation service for everybody [3]. Some of them are domestic and or intercity trips [4].

That public transportation (also known as mass transportation) is a transportation system designed to move people in a large number of different destinations [5]. The route of buses plays an important in providing city public transportation services [6] [7]. Issues in public transportation divided into six aspects of public transportation service minimum standards: safety, security, comfort, affordability, equality, and regularity [8], which all refer to the traffic performance.

As the rapid growth of technology, public transportation identified by two types; there is conventional and online based transport. In Indonesia, the percentage of personal vehicle ownership is quite high (82.77% for two-wheel vehicles and 10.40% for four-wheel). Indicates that the interest of using public transportation is quite low [9] [10].

In fact, using public transportation reduces the use of personal vehicles which leads to economic factors of the road use [11]. Thus, strategies to enhance comfort, punctuality, duration, and safety, should be prioritized [12] [13]. To cope with it, the involvement of policymakers and certain private parties are in need to make a sure the solution of continuous transportation such as improvement of
accessibility of the transport, telematics applications, and multimode/inter mode stations [14]. Based on the facts, it found that the issues and risks related to the public transportation are high [15]; thus, needs to be an analysis of public transportation with a high level of safety.

2. Methodology
To Refer to the purpose of the study; this paper administered a qualitative approach promoting observation and interview. The interview, in the center of related activities and stations the public transportation. The variables of the study can see in Table 1.

| Purpose | Parameter |
|---------|-----------|
| To evaluate the services of public transportation | Driver Competencies Safety equipment Health facilities Emergency information |

The method used in this study surveyed and the sample was public transportation in the forms of registered buses (autobus, microbus, and minibus). The number of registered buses was 1052. The studied collected information on the safety of public transportation in West Java province, Indonesia.

3. Result
Quality services which are ideal conditions or characteristics of public transportation expected by the customers consist of safety, comfort, beauty, accessibility, reliability, budget comparison, comfort in mode changing, efficiency, minimum waiting time, distance from the bus stop to their destinations, quick and special access [16]. Based on the facility standards of buses, the buses divided into economy class and non-economy class. The economy class is a minimum service class without any additional facilities yet with full attention to safety and service quality. To improve the quality of the services, one of the effective ways is by identifying the existing services with the expectations of the customers [17].

The number of sample of the bus in this study is 332 units with the degree level of 95% and level of error at 5%. From the results of the survey, the quality of the services is determined based on the standards shown in Table 2 [18].

| Criteria  | Total Score |
|-----------|-------------|
| Good      | 18.00-24.00 |
| Moderate  | 12.00-17.99 |
| Deficient | <12.00      |

An analysis used to investigate the perception of the society towards the service level of public transportation is the probability value of the opinions obtained from the Severity Index (SI) calculated based on the answers of the respondents on the public transportation services and the number of the respondents involved.

From the severity index, the classification categorized the scaled perception. As follows: very low (0.00 ≤ SI ≤ 12.49), low (12.50 ≤ SI ≤ 37.49), moderate (37.50 ≤ SI ≤ 62.49), high (62.50 ≤ SI ≤ 87.49), very high (87.50 ≤ SI ≤ 100).

The evaluation of service variables of the bus on the availability of parameters and whether or not the transportation refers to the minimum standards of public transportation services. The review described in Table 3.
Table 3. Evaluation of the transportation mode services,

| Parameters                | Elaboration                              | Existing condition (%)                  |
|---------------------------|------------------------------------------|-----------------------------------------|
|                           |                                          | Availability | Functioning |
|                           |                                          | Yes  | No  | Yes  | No  |
| Drivers                   | Prioritizing safety in the traffic       | 32   | 68  | -    | -   |
| SOP                       | Obeying the speed limit                  | 69   | 31  | -    | -   |
| Competencies              | Having good knowledge, skills, and behaviors | 76   | 34  | -    | -   |
| Safety equipment          | Simple fire extinguisher                 | 8    | 92  | -    | -   |
|                           | Lighting                                 | 100  | -   | 95   | 5   |
|                           | Glass breaker                            | 53   | 47  | 70   | 30  |
|                           | Seat belt                                | 5    | 95  | -    | -   |
| Health facilities         | First-aid kit                            | 15   | 85  | -    | -   |
| Emergency information     | Sticker of phone number or complaint SMS | 20   | 80  | -    | -   |
|                           | Emergency practical guide                | 23   | 77  | -    | -   |

From all the vehicles surveyed in this study regarding safety, it has found that 40.1% of the cars belong to “moderate” level of the service. Aspects such as punctuality, short waiting time, and low frequency of the vehicles are also considered other obstacles of the public transportation services. Thus, the buses are still running despite the fact that they lack security, safety, and comfort aspects. The bad service of the public transportation is caused by:

- Lack of comfort and safety factor.
- Forcing the number of passengers, in which the buses usually overloaded.
- Low of route consistency. Some of the vehicles do not finish their route (they go back to the departure station without arriving at the last station). As a result of a decrease of passengers or the driver's behavior.
- Lack of orderly behaviors of the drivers; some of them neglects such crucial aspects as safety, security, and comfort.

Therefore, the recommendations of the study are:

- The government must be committed to improving the quality of the public transportation services.
- Revitalization of the public transportation by setting the maximum age of the vehicles
- Rules of public transport.
- Guarantee from the government for the public transport which is comfortable and safe. Thus, the society will prioritize using public transportation.

4. Conclusion

Based on the analysis of the results of the study, concluded that the public transportation services, mainly buses, in this study to categorized into moderate regarding safety and comfort. Several minimum standards of the excellent quality services of the public transportation are not yet. The superb quality of public transportation services determines the quality of good cities. The improve quality of public transportation services, needs to be proportional and professional planning and management. The support of relevant and adequate facilities from the government and the other private parties should also be a considering.

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