The Role of Bus Rapid Transit, Trans Mebidang in overcoming the Congestion in Medan

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Abstract

The rapid economic development make the amount of movement in urban communities also increased thus demanding additional means of transport to meet the transport needs of the community. Public transportation is the main solution suggested for urban mass transportation in order to reduce congestion due to the number of vehicles on the road. Similarly, the presence of Bus Rapid Transit Trans Mebidang provided by the government to serve the route Medan–Binjai–Deli Serdang are expected to provide satisfaction for the community in terms of services. The purpose of this study was to determine the role of Bus Rapid Transit Trans Mebidang in overcoming the congestion in Medan. This research used analytical research methodology with descriptive approach. The operation of the bus rapid transit Trans Mebidang is able to attract people to use them because the quality of service provided is better than other public transport. This of course resulted in a decline in the use of private vehicles although not significant and the level of congestion on the main arterial roads in the city of Medan is still going on.

Keywords : BRT and Congestion.

Introduction

Medan as the Capital of North Sumatra Province is the main goal for the trip nearby towns like Binjai and Deli Serdang. Medan become a travel destination for economic activity such as work or other business activities. The rapid economic development is in line with the growth of transport caused by the increased number of movements of people in Medan. Thus increasing the activity of the community is also demanding additional transportation facilities both public and private transport.

The importance of transport for the development of a city must be followed by the quality of transport services especially public transport. Where public transport is the main solution for the transport of Medan in overcoming the congestion in the midst of people who prefer to use private transport in their activities.

Some of the problems faced in realizing the maximum use of public transportation is when a trip using public transportation takes much longer than using private transport, the absence of a fixed schedule and limited public transport routes that are reachable (Tamin, 2000).These problems resulted the citizens in urban areas prefer to use private vehicles to carry out all the activities because it is considered more efficient and effective. On the other hand the demand for private vehicle ownership in urban areas increased, thereby increasing traffic congestion in Medan because the roads are not able to accommodate the entire number of existing vehicles.

Basically, the perception of people in using public transport is public transport safety and comfort is assured, accuracy and regularity of operations schedule, the cost of transport is affordable and speed to the destination. To realize the public perception as users of public transport services, the government provides Bus Rapid Trans Mebidang order to meet the transport needs Mebidang.

Bus Rapid Transit Trans Mebidang is expected to be able to give satisfaction to the community so that people want to change the using of public transport and leave their private vehicles so that the figure congestion is also reduced.

Literature Review

Transportation stakeholders face many challenges in providing transport services that satisfy customer demand (Mahmoud, *et al.*, 2011). Quality can be defined as satisfying the needs of customers hope (Shen, *et al.*, 2000). When the quality of a service is not in line with expectations, then there is a tendency passengers to leave the transportation modes. Quality of service is one of the most important factors in improving the use of the public transport system (Erdogan, *et al.*, 2013; Botzoris, *et al.*, 2015). The concept of service and intangibility services is one of quality measurement (Joseph, *et al.*, 2005), quality of service is defined as an overall assessment of the service by the customer (Eshghi, *et al.*, 2008).

Quality of service is composed of six dimensions: tangibles (appearance of physical facilities, equipment, personnel) (Ilhaamie, 2010); reliability (ability to perform the promised service accurately) (Sullivan, 2007; David & Heinelle, 2003); responsiveness (willingness to help customers and provide prompt service) (Nutsugbodo, 2013); insurance (the knowledge and courtesy of employees thereby increasing trust and confidence of customers) (Pizam, 2010; Loke, *et al.*, 2011); empathy (caring and attentive to the customer's company) (Pakdil and Feride, 2014); and the last is a comfort (Mazulla and Laura, 2006; Das, *et al.*, 2013).

Quality of service can be viewed from four directions: from the passenger side, the vehicle performance (including the human operator), the leading provider of transportation services and government (Simona, 2010). Quality of service is a decisive factor for the company's services to gain a comparative advantage (Stopka, *et al.*, 2015). That is, the state of the quality of service becomes a major factor to be considered by the services company to be able to retain the services to be used continuously. The quality of services also includes bus fare (Aidoo, *et al.*, 2013). Public transport services must understand the responsibility of providing a reliable and consistent service to passengers in order to produce a better quality of service (Randheer, *et al.*, 2011).

Research methods

This research is descriptive analysis approach where the data obtained will be analyzed by describing the data that has been collected in order to gain understanding, develop existing theories and develop the existing realities are more complex. Based on Miles and Huberman (2009) after the data obtained has the validity of the data, it will be analyzed by the stages of data collection, data reduction, data presentation, and finally conclude the study.

Data were obtained from direct observation and interviews with the users of Rapid Bus Transit Trans Mebidang by using questionnaire. All of the questionnaires were made with closed–type questions to measure the perceived quality of the bus service by passengers is indicated as 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = disagree and 5 = strongly disagree.

From the data obtained will be made after the conclusion of the study were analyzed by a picture obtained from the responses of passengers Bus Rapid Transit Trans Mebidang on this bus service performance in providing services so as to encourage people to switch from private vehicles to public transport.

Results and Discussion

The economic development in Medan as a travel destination of Medan, Binjai and Deli Serdang demanding more efficient economic activity, especially transportation. This development requires people to perform activities such as work to be able to get to their destination on time. In the traveling, communities are given many choices of transport modes such as public transport and private vehicles.

Public transport should be a solution to overcome the density of the vehicle because it can carry a lot of people with different purposes according to the route of that public transport. But the reality of mode choice of transportation in Mebidang is still dominated by private vehicle, namely 75.9%, 56.6% of motorcycles and private cars 19.3% while public transport is only 20.6%. This situation will impact on the high volume of vehicles in the road so that the road that number is not increasing will not be enough to accommodate the number of existing vehicles so that congestion cannot be avoided anymore.

The existence of Bus Rapid Transit Trans Mebidang expected to reduce the volume of private vehicles because communities will change the transport modes choice to this public transport. Bus Rapid Transit Trans Mebidang is presented to overcome the congestion that occur as a result of the high volume of private vehicles by providing comfort travel services.

Bus Rapid Transit Trans Mebidang serve two corridors, namely corridors Medan–Binjai along 23 km and takes about 90 minutes from Terminal Binjai, Soekarno–Hatta Street, Gatot Subroto Street, Iskandar Muda Street, Gajah Mada Street, S. Parman Street, Raden Saleh Street, Town Hall Street, Station Street, MT Haryono Street, Sutomo Street and Market Center (Medan). Second corridor is Medan–Deli Serdang along 32 km and takes about 100 minutes from Market Center (Medan), Sutomo Street, Perintis Kemerdekaan Street, Mohammad Yamin Street, Station Street, MT Haryono Street, Cirebon Street, Singamangaraja Street, Medan Street and terminal Lubukpakam.

No	Bus services	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Insurance Dimension					
1	Drivers are polite	31,9%	58,7%	1,4%	6,5%	1,4%
2	Security at station / stop guaranteed	15,9%	80,4%	1,4%	1,4%	0,7%
3	Security in public transport guaranteed	82,6%	15,9%	1,4%	–	–
4	Drivers are able to answer passenger questions	46,4%	50%	1,4%	1,4%	0,7%
	Empathy Dimension					
1	Drivers care to passengers	46,4%	49,3%	1,4%	2,2%	0,7%
2	Drivers understands the passengers' question	31,9%	60,7%	–	1,4%	–
3	Drivers provide help for passengers	29%	66,7%	2,2%	2,2%	–
	Reliability Dimension					
1	Time waiting for a bus is consistent		62,3%	–	36,2%	1,4%
2	Bus travel time consistent	15,2%	59,4%	–	23,9%	1,4%
3	Complaint handling system available	16,7%	79%	1,4%	2,9%	–
	Responsive Dimension					
1	The driver responsive to the needs of passengers	47,1%	43,5%	–	7,2%	2,2%
2	Fast and precise service is available	7%	73,9%	–	24,6%	7%
	Tangible Dimension					
1	Information on terminal / stop clear	71%	–	8,7%	20,3%	–
2	Cleanliness in the bus awake	2,2%	61,6%	6,5%	29,7%	–
3	Appearance of terminal modern	2,9%	83,3%	–	13,8%	–
4	Bus stop clean	7%	73,9%	–	24,6%	7%
5	Appearance bus attractive	58%	42%	–	–	–
6	Drivers tidy and clean	62,3%	43%	–	4,3%	–
7	First aid facilities available	–	–	–	83,3%	16,7%
	Comfort dimension					
1	Available seat	17,4%	24,6%	15,9%	42%	–
2	seating is comfortable	17,7%	83,3%	–	–	–
3	The driver of traffic rules	29%	63%	–	8%	–
4	Bus uses AC	66,7%	33,3%	–	–	–

Source: Survey

The results above indicate that the service of Bus Rapid Transit Trans Mebidang by the dimensions of insurance, empathy, reliability, responsiveness, tangible and comfort respond positively to the services provided. From the dimensions of insurance is obtained that the average percentage of respondents with 44.2% and 51.25% argued strongly agree and agree that the services provided provide security for the safety of the passengers. Furthermore, the dimensions of empathy where this dimension is to show how concern the driver to the passenger showed that respondents also give positive response to the bus service in terms of empathy with the average percentage of 35.7% and 58.9% believe strongly agree and agree that the bus driver care to passenger.

This reliability dimension concerns the consistency of service to the waiting time and travel time of buses as well as the availability in the handling of complaints. From the survey results showed that the waiting time 62.3% of respondents agree that the time waiting for buses consistent and timely, and for bus travel time 59.4% of respondents found the bus travel time consistently and precisely to the destination, while 23.9% respondents found inconsistent bus travel time or longer to get than the specified time. It caused by congestion that occur unpredictable while traveling, for example as a result of traffic accidents or other conditions. As for the system of handling complaints about 73.90% of the respondents found the complaint handling system available on the bus indicated by availability of telephone number to contact if passenger complaints.

The survey results on the responsive dimension of Bus Rapid Transit Trans Mebidang services show that 27% and 58.7% of respondents strongly agree and agree that the driver is responsive to the needs of passengers and the service is fast and precise available for complaints of passengers in the bus. Tangible dimension in bus Mebidang also showed a positive response from the respondent. This is evident from the average respondent argued strongly agree and agree to the terms of tangible bus service satisfactory with the

percentage of 32% and 43.3%. Tangible dimension looks satisfactory in terms of the information in the terminal / bus stops clear, cleanliness in the bus stop and maintained so that the passengers comfortable, the bus looks modern and attractive than other buses, and the driver are also tidy and clean. Just in terms of the availability of first aid facilities inside the bus, approximately 83.30% and 16.70% of respondents disagree and strongly disagree that first aid boxes are available in the bus.

The government's aim to provide Bus Rapid Transit Trans Mebidang is to attract people to use public transport and leave the old habits of using private vehicles. The concept of Bus Rapid Transit Trans Mebidang made according to the wishes of passengers so that passengers feel comfortable and sustainably use this bus because it was considered as efficient to use private vehicles. From the above survey results found that the average respondent / passenger agrees with the level of outstanding service provided Bus Rapid Transit Trans Mebidang seen from six dimensions. The existence Bus Trans Mebidang this will certainly affect the public interest in using public transport, especially Bus Rapid Transit Trans Mebidang so that the volume of private vehicles will be reduced and in line with that, the congestion will be reduced.

Conclusion

By operating the Bus Rapid Transit Trans Mebidang with good services can give satisfaction to the passengers in terms of comfort, safety and consistency of time. For the Bus Rapid Transit Mebidang comes with the aim of providing good public transport services so that people would like to use these shuttles constantly and leave their personal vehicle.

The results showed that the passenger responded positively to the services provided by Bus Rapid Transit Mebidang. This service is tailored to the wishes of public transport passengers who expect public transport to provide comfort and security as well as using private transport. With the operation of the Bus Rapid Transit Trans Mebidang able to attract people to use it because the quality of service provided is better than other public transport resulting in decreased use of private vehicles although not significant and the level of congestion on the main arterial roads in Medan is still going on.

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