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Research Article

Analysis of the Performance of Public Transportation Services in the Traffic Perspective of the City of Bandung, West Java, Indonesia

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Abstract

The city of Bandung has a congestion problem that is of concern to the public. In terms of supporting the improvement and development of public services in the transportation sector, currently, there are 38 (thirty-eight) urban transportation routes that are spread across several strategic routes. Based on the field survey, it is known that the operational performance of public transportation in the city of Bandung is not optimsal enough in serving the public, especially on routes 03 and 06. Evaluation of Bandung city transportation performance is carried out to find the right solution to the problem for the creation of better public services. Qualitative methods with descriptive analysis were used in this study. This study indicates that routes 03 and 06 experience operational losses that need to be resolved immediately, the time between vehicles (headway) exceeds the standard that occurs on route 06. The waiting time for vehicles that are too long to exceed the middle appears on route 03.

Keywords
Transportation, Public Transport, Transportation Operational Performance.

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Introduction

The development of a city is generally directly proportional to the increase in the population of the town. The increasing population causes various activities, including educational activities, offices, trade and services, and so on (Baumol, 1967; Clark, 2004; Molotch, 1976). To support these various activities in a city, of course, requires a transportation mode as a means of movement. The implication of this movement cannot be denied that it creates transportation problems, one of which is the increase in traffic volume, which impacts congestion, especially those caused by increased use of private vehicles (Dyckman, 1965; Kain, 1966; Ma, Yang, & Shi, 2007).

The increasing use of private vehicles compared to public transportation can be caused by several factors. The level of service offered by each means of transportation is a determining factor for someone choosing a means of transport (Haradongan, 2014; Laloma, Rompis, & Longdong, 2018). The possibility of not optimal public transportation services can be why the high use of private vehicles as the means of transportation chosen by residents to travel (Herbowo, 2012; Pambagio, 2013).

Bandung is the largest city after Jakarta and Surabaya, located in the West Java region with a population density of approximately 2,481,469 people. Bandung is known as a metropolitan city that has complex problems related to traffic jams. This condition is, of course, unsettling for most of the community because the congestion that occurs is almost spread throughout the city of Bandung; therefore, it requires a varied, reliable, and integrated transportation alternative to overcome this.

Transportation plays an important role in the wheels of government because it is claimed to have a share in the economic development and development of a region (Elmansouri, Almhroog, & Badi, 2020; Weiner, 1987). Transportation can also be a basic need at this time because it is a means of supporting community needs. Along with the increasing population and modern lifestyle, the demand for public transportation has increased significantly. The availability of public transit, in essence, must have a good level of efficiency; for example, it must have reliability, comfort, safety, speed, and timeliness so that it can meet the needs of the community (Amponsah & Adams, 2016; Mokonyama & Venter, 2013).

The development of socio-economic activities in urban areas, followed by the increasing demand for travel, can negatively impac not handled properly (Chang & Lee, 2008). The poor performance of passenger public transport services and the dominant use of private vehicles causes traffic jams and will have a negative impact, which can be in the form of longer travel times, higher vehicle operating costs, and increased pollution due to motorized vehicle exhaust gas (Sohail, Maunder, & Cavill, 2006).

On the other hand, the government is currently faced with providing an integrated mode of transportation that is superior in service to different transportation modes (Eboli & Mazzulla, 2008; Govinder, 2014). This can be a consideration for the Bandung City Government to choose transportation which, in addition to overcoming congestion, can also generate public interest to switch from private vehicles to public transportation. Based on these conditions, the City Government of Bandung has made various efforts to improve and develop public services by providing adequate public transport through the implementation of public transportation that is spread across several strategic points in the city of Bandung.

The implementation of public transportation in Bandung City requires proper planning and implementation because its operation involves three viewpoints of interest: service users (passengers), operators, and regulators (government). Where, of course, each party has different parts and priority scales. This difference in interests often creates problems that need adequate attention to produce mutually beneficial cooperation for each party. However, from the field survey conducted, there were s eral operational constraints on public transport (in existing conditions) which claimed to be not optimal enough in serving the public, especially those that occurred on Routes 03 and 06. The problems that arose were caused by the time between the ehicle (headway) vehicle frequency hourly rates. Seeing the issues that occur, we need an assessment of the performance of public transport services in Bandung.

Furthem re, in this study, three research questions will be developed. First, the condition of the existing performance of urban transport services in Bandung City on routes 03 and 06. Second, how to improve the service performance of routes 03 and 06. Third, what are the best reco mendations for and scheduling of city transport operations? Routes 03 and 06.

The purpose of this study is to evaluate the performance of urban transport services in Bandung

City, especially on routes 03 and 06, and as a basis for consideration for operators to seek and find the right solution to these problems so that operators can benefit from their operation.

Literature Review

Description Of Transportation Conditions in Bandung City

The city of Bandung has two modes of land and air transportation. There are 17 terminals, 6 train stations, and 1 airport. There are shuttles with a total of 392 public microbus vehicles. The number of buses operating is 426 units of cars. The operating rate of city bus vehicles in Bandung is 87%, so it can be seen that the average number of passengers that can be transported every day in Bandung is 21,567 passengers. Based on the survey, the city of Bandung has 38 (thirty-eight) urban transportation routes scattered in several strategic locations, so that it is very helpful for community mobility. The following can be seen in Figure 1, a map of the public transport network in the city of Bandung.

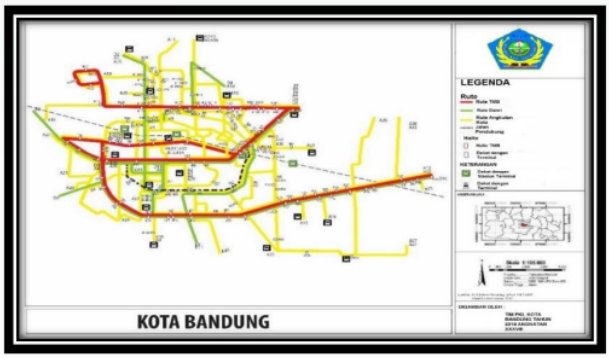

Figure 1 map of Bandung's public transport route network

(**Source:** Analysis Results of the Bandung City PKL Team, 2018)

Congestion Perspective

Congestion has become a classic challenge for many countries in the world, especially cities. This phenomenon is claimed to be a major obstacle in today's society because, in addition to hindering individual mobility, this condition is also considered to reduce industrial efficiency in an area, reputation, economic losses, and causes of environmental damage (Hu et al., 2017; Lee, ng, & Tsai, 2009; Liebig et al., 2017). A similar opinion was also expressed by Nadrian et al. (2019), traffic and transportation are important determinants in the social, economic, and regional development fields, but when ban planning and transportation are not managed properly, mortality and morbidity due to pollutants released from motorized vehicles to traffic congestion, is also a major challenge for public health (Arifwidodo & Ch drasiri, 2020).

In general, traffic congestion occurs due to an imbalance between population growth and the number of vehicles that increase from year to year. The flow of cars moves very slowly until it becomes stagnant / stops and disrupts people's mobility in one place. According to Boediningsih 011), several factors can cause traffic congestion, including the number of irregular road users, road users to the flow, the lack of traffic officers to supervise, cars parked on the road, and uneven road surfaces. , the road is rough, there is a pedestrian bridge, and the vehicle type is not obstructed. Meanwhile, quoted from the West Java (BKKBN, 2020), congestion can also be caused by factors such as the construction of skyscrapers, expansion of road and bridge networks, traffic rules, driver behavior, and population explosion. Where every aspect is interrelated and becomes a single overlapping unit causing congestion in an area

Transport

Transportation has a close relationship with the development sector, especially in developing

countries (Locatelli, Invernizzi, & Brookes, 2017; Skorobogatova & Kuzmina-Merlino, 2017). As Ramanathan and Parikh (1999) state, transportation is an important infrastructure needed in the development process because it is proven to contribute to most of the people's consumption in India. Besides, transportation infrastructure also plays a role in facilitating relations between regions or countries. Therefore, transportation brings economic benefits and mutually beneficial socio-cultural services (Skorobogatova & Kuzmina-Merlino, 2017).
Transportation needs arise from human needs who want high mobility to move from one place to another. According to Elmansouri et al. (2020), transportation is divided into private transport and public transportation, where vehicles emphasize two types of delivery: goods and people.

Public Transportation - Passenger Public Transportation (PPT)

Public transportation is part of the public transportation system or mass transportation which has an operational essence, namely providing transportation services to meet the community's needs. Usually, public transport is arranged according to schedule, operates by the route, and is charged a rental fee or payment system for each trip (Heydt-Benjamin et al., 2006; Vuchic, 2002).
According to Warpani (2002), transportation refers to moving people and/or goods from one place to another using a motorized vehicle or non-motorized vehicle. Meanwhile, public transportation can also be interpreted as a shared passenger transportation service that applies to general needs and meets people's basic needs who need mobility and access (Ambak et al., 2016).
The need for public transportation is increasing rapidly from year to year, especially in urban areas, which are not only in demand in developed countries but are also starting to be concentrated in developing countries, such as Malaysia (Ambak et al., 2016). For the general public, public transportation is the main choice for travel and a more flexible and inexpensive option for people who cannot drive (Pfeiffer, Sell, & Bevans, 2020). Besides, the availability of efficient public transportation services can also increase personal economic opportunities, save fuel, save costs and reduce environmental impacts (Bachok, Osman, & Ponrahono, 2014).

Public Transport Performance

Public transport performance can be divided into two performance dimensions, namely efficiency, and effectiveness. Efficiency is the relationship between input (resources) and output (production) of what is called "productive" or "technical" efficiency. On the other hand, effectiveness refers to using a product to achieve a goal or service (Karim & Fo[illegible]d, 2018). Performance checks are basically to motivate behavior that leads to the continuous improvement of customer satisfaction, flexibility, and productivity, so checking public transport performance is necessary for a modification (Onatere, Nwagboso, & Georgakis, 2014).
According to Boyne et al. (2010), the performance of public services needs to be assessed in terms of the realization of the results packaged in a certain policy so that it is easier to achieve a "mission" such as an organization and can explain changes over time whether it is for the better or worse. .
In short, to measure service performance, providers need to focus on the process components and practices used to provide services. On the other hand, service performance measurement is also influenced by several factors, including (1) external environment such as regulation, complexity, dynamism, (2) characteristics of service provider organizations such as planning, culture, leadership, and human resource characteristics. And (3) organizational strategy. Such as innovation, knowledge, partnerships (Boyne et al., 2010).
According to Bachok et al. (2014), there are several problems related to the performance of public transport services such as limited facilities, use of facilities and availability of low-quality public transportation, fleet inconvenience, low passenger trips, and long waiting times. The problem above is one of the many transportation service performance problems that need attention and improvement, where the consequences of passenger satisfaction are an important part of the service.
Currently, many countries in the world are focused on improving and developing the performance of public transport services, such as what happened in China, to improve the efficiency of urban public transport, the Chinese government is taking advantage of the sophistication of information technology so that it can provide real-time accurate traffic information and make it easier. Users to set travel time (Lei, Xiao, & Drukker, 2017).

Public Transport Service Performance Indicators

Measuring public transport performance is an important agenda for transport operators. Public transport service performance can be evaluated both qualitatively and quantitatively.
According to Karim and Fouad (2018), the measurement of public transport performance can be based on 4 different perspectives, (1) passenger perceptions, related to service/reliability aspects of satisfaction, rates, frequency, comfort, cleanliness; (2) general public perception, regarding social elements such as the extent to which public transportation meets the needs of the elderly and persons with disabilities or environmental issues (congestion, pollution); (3) evaluate and compare the performance of public transport with service providers (system level, route level, operator level); (4) overall performance.
Meanwhile, according to Nasution (2004), the performance of public transportation can also be determined based on service quality by taking into account the following aspects: (a) safety, (b) reliability, (c) flexibility, (d) comfort, (e) speed, (f) environmental/social impacts arising from traffic operations. The operational performance effectiveness of public transport can also be measured using operational cost parameters; (a) Frequency, (b) Waiting for time (headway), (c) Calculation of Vehicle Operating Costs (BOK), (d) Income, (e) Calculation of standard load factor (load factor), (f) Advantages and disadvantages, (g) Fleet Needs Evaluation.

Method

This research is descriptive analysis, non-experimental by collecting relevant data needed for analysis and drawing general conclusions. Descriptive research is intended to describe or provide an overview of an object under study through data or samples that have been collected as is without analyzing and making general conclusions (Sugiyono & Kuantitatif, 2009). Meanwhile, according to Abdullah (2015), descriptive research aims to describe something that was happening when the research was conducted and to examine the causes of certain symptoms. From this understanding, it can be concluded that this study seeks to provide a certain picture of the performance of public transport services in the city of Bandung to seek and get problem-solving suggestions.
Data collection methods are (1) static surveys and dynamic surveys, (2) interviews. To support the research's credibility to obtain detailed and accurate data, researchers also use secondary data that comes from literature and data collected by government agencies such as the Central Statistics Agency (BPS), the Regional Development Planning Agency (BAPEDDA), and the City Government. Department of Transportation. Bandung.

The research location was carried out on route 03 and route 06, which have the following routes:
1. Route 03 has a route starting point from Abdul Muis terminal and an ending point from Ledeng terminal.
2. Route 06 has a journey starting point from the Cicaheum terminal and an ending point for the Ciroyom terminal.

Result And Discussion

From the survey that has been conducted, the researchers tried to compare the number of vehicles allowed, vehicles operating in the field, and vehicles needed to serve service users in Bandung by taking into account the operator's income, load factors, and vehicle operating costs. So that there is a balance between service users and operators. Through static and dynamic surveys and interviews, the following results were obtained:

1. Based on the level of vehicle operation, it is known that the number of vehicles allowed is not following the number of vehicles operating in the field; this is due to the lack of supervision from the government.
2. Service Quality, the number of vehicles passing every hour on average for route 03 is 3 vehicles (not meeting the standards), and for route 06, as many as 10 cars have met the standard.
3. The time between vehicles (headway) is known if there is one route problematic because the improvement exceeds the standard, namely route 06.
4. Vehicle waiting time, it is known that route 03 has a problem because the waiting time at peak time is too long to exceed the standard. Meanwhile, route 06 has sub-standard waiting

times, which means getting better from the service user's point of view.
5. Vehicle load factor, all routes do not meet the standard criteria. This is due to the low public demand to use public transportation. Besides, other service providers are competitors in providing services.
6. Travel time or travel time 03 (68 minutes) while for route 06 (42 minutes) the travel time for route 03 is 10 minutes for route 06 is 8 minutes, while for route 03 travel speed (11.4 km) / hour) and for route 06 (17.2 km / h)
7. The number of passengers per day. It is known that the number of passengers carried per vehicle on route 03 is 8 people and route 06 is 8 people.
8. The calculated vehicle operating costs are BOK with a 12-seat MPU. Based on the research results, the value of Rp.203.85 pnp-km that the transportation service company must issue is obtained.
9. According to operations/day, the highest operating income is obtained for route 06, with the highest income of Rp. 240,000 and income per route/day, the crew of route 06 gets the highest income of Rp. 9,120,000.
10. The highest vehicle operating cost/day is obtained for route 06, namely Rp. 262,440 per vehicle/day, and the highest revenue per route/day was obtained route 06, namely Rp9,972,720
11. If viewed from the Operator's Profit and Loss per vehicle/day, the two routes have suffered losses, which means that the route is not feasible to operate.
12. If seen from operators' advantages and disadvantages per route/day, the two routes incur losses, namely, route 03 amounting to Rp. 935,760.

The problems that exist in urban transportation in Bandung can be overcome in a way:

Merasionalisasi Jumlah Armada Yang Beroperasi.

Rationalization aims to increase or decrease the number of urban transport fleets in operator and service user excellence to reach an optimal point. To determine the required vehicle, the standard load factor must be calculated first. In setting load factor standards, the operator's profit limit must be limited based on the Director-General of Land Transportation's technical guidelines with a profit limit of 10%. Rationalization can be the right solution, where routes that are carried out with reduced fleets get greater benefits after rationalization, and all routes do not suffer losses. As shown in the following table:

Table 1
Standard Load Factors After Rationalization

Existing Conditions of Public Transport Operations Before Rationalization					
Route Code	**Operating Vehicles**	**Headway (Minutes)**	**Frequency (Vehicle / Hour)**	**Waiting Time (Minutes)**	**Load Factor**
03	20	23	3	12	30%
06	38	7	10	4	33%
Standard Load Factors After Rationalization					
Route Code	**Operating Vehicles**	**Headway (Minutes)**	**Frequency (Vehicle / Hour)**	**Waiting Time (Minutes)**	**Load Factor**
03	Rp 190,788	Rp 19,079	Rp 144,000	30%	44%
06	Rp 262,440	Rp 26,244	Rp 240,000	33%	40%
Rationalization of the number of operating fleets					
Route Code	**LfP**	**LfS**	**Operating Vehicles**	**Vehicle required**	**Subtraction/Addition**
03	30%	44%	20	14	-6
06	33%	40%	38	32	-6

Source: Anggraiwan (2019)

In Table 1, it can be seen that effective rationalization can increase the load factor from 30% to 40% per operating fleet, with information requiring a reduction of 6 passengers in one fleet for routes 03 and 06. Besides, rationalization also affects vehicle operating costs (VOC)) issued by the operator per day, can be seen in Table 2 below this:

Table 2.
Vehicle Operating Costs (VOC)

After Rationalization

VOC per vehicle/day after rationalization					
Route Code	**Rit**	**Route length (km)**	**Mileage / vehicle**	**VOC/KM**	**VOC per vehicle/day**
03	3	5	26	130	Rp 1,893
06	6	8	24	192	Rp 1,626

VOC per route/day after rationalization			
Route Code	**KT VOC per vehicle/day**	**VOC per vehicle/day**	**VOC per vehicle/day**
3	14	Rp 246,090	Rp 3,445,260
6	32	Rp 312,192	Rp 9,990,144

Source: Anggraiwan (2019)

In Table 2 it can be seen that Rationalization can be the right solution to the problem of minimizing losses for the operator as one of the parties providing the fleet. In addition, it also has a big role in increasing operator profits, it can be seen in Table 3 below:

Tabel 3
Operator Benefits Before and After Rationalize the number of fleets

Profit and Loss per day before Rationalization			
Route Code	**KO**	**Income / Vehicle / Day**	**Income / Route / Day**
03	20	Rp 144,000	Rp 2,880,000
06	38	Rp 240,000	Rp 9,120,000

Profit and Loss after Rationalization			
Route Code	**KO**	**Income / Vehicle / Day**	**Income / Route / Day**
03	14	Rp 300,000	Rp 4,200,000
06	32	Rp 480,000	Rp 15,360,000

Source: Anggraiwan (2019)

In Table 3 it is known that rationalization efforts can minimize the risk of operator loss. Not only that,

after the rationalization of the fleet according to the needs in the field, it will also improve the operational performance of planned public transport, as shown in Table 4 below:

Table 4
Operational Performance Before and After rationalization of the number of fleets

Operational Performance Plans before Rationalization					
Route Code	**Operating Vehicles**	**Headway (Minutes)**	**Frequency (Vehicle / Hour)**	**Waiting time (Minute)**	**Load Factor**
03	20	23	3	12	30%
06	38	7	10	4	33%
Operational Performance Plans after Rationalization					
Route Code	**Operating Vehicles**	**Headway (Minutes)**	**Frequency (Vehicle / Hour)**	**Waiting time (Minute)**	**Load Factor**
03	14	16	4	8	44%
06	32	6	10	3	40%

Source: Anggraiwan (2019)

Schedule Proposals.

Schedules are important in the scheduling process because disseminating information to passengers is very important for the successful operation of public transport services and for maintaining and encouraging consumer demand (Govinder, 2014). The scheduling proposal is expected to be the right alternative to improve the quality of the operational performance of city transportation routes 03 and 06 as well as user satisfaction. The following can be seen the differences in the old data scheduling and after rationalization, in Table 5 and Table 6 below:

Table 5
Data Related to the Compilation of the Number of Old Fleets

Route Code	**Vehicle Required (KT)**	**RTT (minutes)**		**Headway (minutes)**	**LOT**	**Hours of Operation**
			Travel Time (minutes)			
03	14	146	68	16	10	06.00 - 18.00
06	32	90	42	6	8	06.00 - 18.00

Source: Anggraiwan (2019)

Tabel 6
Proposed New Scheduling After Rationalization of Route 03

Number of vehicles	Abdul Muis terminal		Ledeng Terminal	
	Arrive	Depart	Arrive	Depart
1		6:00	7:08	7:18
2		6:16	7:24	7:34
3		6:32	7:40	7:50
4		6:48	7:56	8:06
5		7:04	8:12	8:22
6		7:20	8:28	8:38
7		7:36	8:44	8:54
8		7:52	9:00	9:10
9		8:08	9:16	9:26
10		8:24	9:32	9:42
11		8:40	9:48	9:58
12		8:56	10:04	10:14
13		9:12	10:20	10:30
14		9:28	10:36	10:46
1	8:26	9:44	10:52	11:02
2	8:42	10:00	11:08	11:18
3	8:58	10:16	11:24	11:34
4	9:14	10:32	11:40	11:50
5	9:30	10:48	11:56	12:06
6	9:46	11:04	12:12	12:22
7	10:02	11:20	12:28	12:38
8	10:18	11:36	12:44	12:54
9	10:34	11:52	13:00	13:10
10	10:50	12:08	13:16	13:26
11	11:06	12:24	13:32	13:42
12	11:22	12:40	13:48	13:58
13	11:38	12:56	14:04	14:14
14	11:54	13:12	14:20	14:30
1	12:10	13:28	14:36	14:46
2	12:26	13:44	14:52	15:02
3	12:42	14:00	15:08	15:18
4	12:58	14:16	15:24	15:34
5	13:14	14:32	15:40	15:50
6	13:30	14:48	15:56	16:06
7	13:46	15:04	16:12	16:22
8	14:02	15:20	16:28	16:38
9	14:18	15:36	16:44	16:54
10	14:34	15:52	17:00	17:10
11	14:50	16:08	17:16	17:26
12	15:06	16:24	17:32	17:42
13	15:22	16:40	17:48	17:58
14	15:38	16:56	18:04	18:14

In Table 5, it is known that the scheduling of public transport on route 03 previously did not provide sufficient real-time information regarding the timeliness of departure. Through an orderly and detailed scheduling method, it is hoped that service users will get certainty of information related to waiting times so that service efficiency and passenger satisfaction can be maximized, as shown in Table 6.

Besides, we can see from the perspective of congestion that occurs in the city of Bandung. This is evidenced by Tirto (2020) article, which states that Bandung is the most densely populated city in Indonesia or is ranked the 14th most densely populated city in Asia based on a survey conducted by the Asian Development Bank (ADB). Congestion in Bandung is said to be worse than in Jakarta, which is 17th, and Surabaya at 20th. This is based on ADB research in 278 cities from 45 countries. In Bandung, congestion is an incident that we often encounter every day, especially on weekends

and long national holidays; congestion occurs almost evenly in all corners of the city. According to Tamin (2000), urban congestion is a critical problem faced by many big cities, such as Bandung. City planning without paying attention to adequate transportation facilities and infrastructure will certainly cause traffic jams. Economically, congestion problems will cause social costs, high operational costs, lost time, air pollution, high accident rates, noise, and pedestrians' discomfort (Soesilowati, 2008).

The perspective related to congestion has interrelated scope, both socially and economically. In general, various factors such as urbanization, rapid population growth, economic growth rate, and high traffic growth, high vehicle growth, especially private vehicles, if not balanced with adequate infrastructure and supporting transportation facilities, namely the road network, can cause congestion. Meanwhile, quoted from the Kompasiana news page (2019), the congestion problem is inseparable from three factors. First, in the form of road infrastructure. Second, the volume of the vehicle. Third, related to people's behavior in traffic.

Infrastructure has an important role in the development of a region. The availability of adequate infrastructure is directly proportional to economic stability, therefore supporting facilities and infrastructure for transportation in the form of the number and length of roads need to be considered. However, in reality, congestion is a problem that is very difficult for the City of Bandung to solve. Many infrastructure developments have been carried out in Bandung City, one of which is a flyover; this solution effectively reduces congestion but is not a permanent long-term solution (Kompasiana, 2019). Increasing population, high tourist visits, rampant street vendors using sidewalks, road shoulders used for parking lots, and walking mobility are also claimed to improve traffic congestion (BKKBN, 2020). The whole road network also exacerbates this due to limited vacant land.

Based on Bandung's information in Figures, the length of roads in Bandung is relatively stagnant each year, namely 1,236.48 kilometers. This is inversely proportional to the number of vehicles increased by more than 12 percent in two years, from 1,617,022 units in 2015 to 1,811,498 in 2017 (Wartabandung, 2018).

The limitation of motorized vehicles in Bandung does not appear to be an easy thing to realize because it can reduce regional income from the motor vehicle tax sector (Kompasiana, 2019). On the other hand, the government's efforts to socialize the use, development, and development of public transportation have also been carried out. However, people who are lazy to walk and are reluctant to use public transportation are still an obstacle that has not been done much. Receive the right solution.

The Head of the Bandung City Transportation Agency (Dishub) said that one reason the city of Bandung is labeled as the most populous city in Indonesia is that its citizens still prefer to use private vehicles compared to public transportation been commonly found in Indonesia. Most of the roads in Bandung (MindRakyat, 2019). This is also evidenced by the results of the Bandung Raya Commuter Survey 2017, which recorded that of the 8.7 million residents of the Greater Bandung area, 7 percent of them are commuters who commute every day to do activities outside their place of residence. 72 percent of the commuting population mobilize using motorbike transportation, while only 12 percent of public transportation users (News, 2019). From the survey results, it is also known that 95 percent of Bandung Raya commuters who travel activities using private vehicles or on foot said they do not want to switch to using public transportation because the travel time is long and impractical. This means that public transportation available in the city of Bandung has not been able to meet the wider community's needs. Pada dasarnya gaya hidup masyarakat modern seperti saat ini menuntut terpenuhinya kebutuhan akan transportasi yang mempunyai tingkat efisiensi yang tinggi, dimana masyarakat membutuhkan transportasi yang dapat menunjang mobilitasnya. Ketika angkutan umum belum mampu menjangkau kebutuhan masyarakat, tidak menutup kemungkinan masyarakat menggantungkan diri pada moda transportasi pribadi daripada beralih ke angkutan umum. Hal tersebut juga disampaikan oleh Wakil Walikota Bandung yang menyatakan bahwa angkutan umum yang dioperasikan di wilayahnya kurang jelas ketepatan waktunya dan terbilang kurang dapat menunjang kebutuhan masyarakat (MindRakyat, 2019).

Another perspective that also contributes to the high congestion in Bandung is road users' behavior who are far from being disciplined and obeying the rules, where it is very easy to find several traffic violations committed by the community, such as going against the flow, using the telephone while driving, using wrong turn signals and careless parking which not only has the potential to cause traffic jams but also endangers and disturbs comfort. Other road users. Reporting to (Kompasiana, 2019), road users are only afraid of police or just raids. The rest, the

community, remains ignorant and violates the rules on the highway. Community behavior that often breaks the rules is deviant, and it is time for a firm law enforcement effort.
Congestion is indeed a challenge faced by big cities such as Bandung City. It should label Bandung as the most populous city in Indonesia and be a reflection, not only for the government or the authorities but also for all Bandung people to support the government. Performance in breaking down congestion. The government's efforts to overcome congestion have been carried out by providing public transportation that needs to be supported by pro-government behavior such as the people of Singapore and Malaysia.

Conclusion

To improve the operational performance of city transportation routes 03 and 06 to optimize its function and existence, it is necessary to rationalize the fleet. Fleet rationalization can be an attempt to transform existing workflows into workflows that are based on new rules and become the best solution in minimizing losses for operators. From the analysis, it was found that the number of fleets needed so that the operator would not suffer losses, for the number of caravans for route 03 after rationalization was done as many as 14 vehicles and for route 06 as many as 32 cars, then for the headway after rationalization was carried out. Rationalized on route 03 to 16 minutes and for route 06 to 6 minutes, after being rationalized, it takes 4 vehicles on route 03 and route 06 to 10 vehicles and waiting time after being pardoned on route 03 becomes 8 minutes, and route 06 becomes 3 minutes.
After rationalizing the fleet according to the needs in the field, it was found that the recommended number of operating vehicles was less than the number of cars in the area. This means that there will be several vehicles that will stop working. If the car outside of necessity is stopped immediately, this proposal will be rejected by the angkot driver. Therefore, the suggestion that researchers can give is that the rolling system must be implemented. This system is intended to ensure that the entire existing fleet operates by adjusting the number of vehicles operating per day according to the proposed needs. Besides, to improve service quality, it is necessary to make changes to the vehicle operation scheduling to enhance the operational performance of city transportation routes 03 and 06 in Bandung.

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