

Public Transport Reform in Indonesian Cities

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Abstract: Urban public transport condition in Indonesia is little regulated which most of mode transport operated by paratransit system. One of the major reasons is that individual businessman were still given the right to provide public transport services (according to the Law No 14 Year 1992 concerning Road Traffic and Transport). Hence, the primary consideration to run the services is how to make profit instead of customers' satisfaction. The right has been then deleted since the revised Law No 22 Year 2009 has been issued. Unfortunately, it cannot be effectively applied to improve urban public transport service because the Government Regulation (PP) No 41 Year 1993 concerning Road Network, which regulates urban public transport services, had not been revised until 2014 (enactment of the PP No 74 Year 2014 concerning Road Network). It shows that public transport services have not become a priority, even the revision of a new PP should be applied at no more than 2 years after the issued of new law. This paper will discuss about government programs to increase public transport system that previously operated by paratransit system become more organize, problem of paratransit in cities and give recommendation to government about minimum service standard, operator, and financing opportunity.

Keywords: paratransit, minimum service standard, financing mechanism, operator.

1.INTRODUCTION

The existing urban public transport services in Indonesia that have operated by paratransit system tend to be unreliable in terms of safety, security, regularity, and affordability. Regarding 'Safety', traffic accident often occurs involving public transport which claimed passenger even drivers' life. (*Tempo.com*, 5 September 2013 and *Republika Online*, 24 July 2013). Concerning 'Security', there were robbery and rape happened in the Urban Paratransit (*news.Detik.com*; 15 September 2011 and 14 Desember 2011). Unfortunately, the cases were not solved clearly since criminal was only sent to the driver of urban public transport. If the safety and security has been neglected by operator of urban public transport so that the regularity is difficult to be guaranteed. Case of rape and robbery indicated there was no strong regularity because the accidents happened in the out side of service-line of the urban public transport and even out side of time frame they should serve.

Meanwhile regarding affordability, the fare, especially for economic class, determined by the government which according to the operators it is too low, but according to the most common society it is too high. The reasons are that the work trip of urban people can not be

serviced in one corridor service only. Hence, the role of government is important to judge how much the tariff that has fairly burdened the cost of transport between the operators and the consumers. In addition, the government has an authority to determine route network and tariff especially economic class in order to guarantee the services and distribute fairly burden between transport operators and the consumers even the government can provide subsidy if government contribution's needed. On the other hand Organda as an association of land transport businessman has also responsibilities to improve the services because this organization has the right to issue a recommendation for a transport operator who want to take an opportunity in urban public transport service business.

Since an individual person has the right to run urban public transport services so that he/she will apply a proper and easy management. In general, they choose a "setoran" management (Darmaningtyas et.al, 2012). Basically, *setoran* means a system that bus-owner stated certain fee that has to be paid by dirver who want to run the vehicle in terms of daily basis services to the passengers. The magnitude of the money depends on not only kinds and size of vehicles but also the line or corridor services. This certain amount of money has to be submitted to the owner when the vehicle come back to the garage regardless the revenue from the ticket enough or not. That is why the urban public transport drivers often stop quite long time every where to wait passengers, known as "ngetem". They often 'ngetem' in intersection, or in front of market, so that congestion is initiated to happen. Not only 'ngetem' they run after among them to obtain a number of passengers, even stop every where to boarding and alighting passengers in order to get enough money so that they avoid to payment with their own money. In other words, the driver concern on how to get enough money with less cost to operate the vehicle insteads of the consumers satisfaction regarding safety, security and convinience.

Furthermore, government has program to increase public transportation system that was adopted in 17 cities which implement Bus Rapid Transit System and Transit System. However, to build this system local government has denial from existing paratransit operator to establish this system and other problem such as financing, and implementation of minimum service standard.

2. CHALLENGES OF URBANIZATION

The PP No. 26 Year 2008 concerning National Spatial Plan introduces a national urban system. The system differentiates cities by activities and size of population. Based on city activities are grouped into three types, namely center for national activities, center for regional activities, and center for local activities. Meanwhile cities are classified by number of population to become five types, namely small city, medium city, big city, metropolitan city and megapolitan city. Small city is a city with population higher than 50 thousand people but less than 100 thousand people. Medium city is a city with population higher than 100 thousand people but less than 500 thousand people. Big city is a city with population higher than 500 thousand people but less than 1 million people. Metropolitan city is a city with population higher than 1 million people. Megapolitan city consitutes at least two metropolitan cities with population higher than 2 million people and have a function and create a system. Megapolitan and Metropolitan cities are center for national activities, meanwhile big cities as center for regional activities, and center for local activities located at medium and small cities (See Table 1 National Urban System).

Table 1. National Urban System

National Urban System	Type	Population (Person)
Center for national activities	Megapolitan *)	> 2000.000
Center for national activities	Metropolitan	>1000.000
	Big Cities	500.000 < X <1000.000
Center for local activities	Medium Cities	500.000 < X <100.000
	Small Cities	500.000 < X <1000.000

*) must be two or more metropolitan cities that have a function and create a system

Sources : Law No 26 Year 2007 concerning National Spatial Plan, article 41, PP No. 26 Year 2008 concerning National Spatial Plan, article 16

During four decades (1971-2010), the growth of people who live in city (urban) in Indonesia is higher than the population growth. People who live in urban area in 1971 were only 20.5 million people or 17.2% of Indonesia population. In 2010 people who live in urban were already 118.3 million people or 49.8% of Indonesia population. By 2015 it is predicted that people who live in urban will be 147.3 million people or 59.5%. It means that more people will live in urban than in rural areas. (See Table 2 Composition of Population Live in Urban and Rural 1971-2010 and prediction 2015). In addition, in 2010 poverty rate in urban was 9.23% or 11.1 million people, which counted for 35.8% of all Indonesian poor (See Table 3 Number and Composition of Poverty in Urban and Rural 2007-2012). Therefore, Indonesia has to prepare its cities to accomodate and facilitate their people to have a better life or prosperity. If the government's preparation is too late or inappropriate it will create many problems faced by urban societies such as unemployment and crime, slum areas and traffic jam.

Table 2. Composition of population live in Urban and rural 1971-2010 and prediction 2015

	Year						Growth 1971 - 2000	Growth 2000 - 2010	Growth 2010 - 2015
	1971	1980	1990	2000	2010	2015			
Indonesia	119.2	147.5	179.4	206.3	237.6	247.6	73 %	15.2%	4.2%
Urban (million people)	20.5	32.8	55.5	85.8	118.3	147.3	318.5%	37.9%	24.5%
%	17.2	22.2	30.9	41.6	49.8	59.5			
Rural (milliom prople)	98.7	114.7	123.9	120.5	119.3	100.3	22%	-0.9%	-16%
%	82.8	77.8	69.1	58.4	50.2	40.5			

*) Prediction by UN and Bappenas 2010

Sources: BPS Census of Population 1971, 1980, 1990. 2010

Table 3. Number and Composition of Poverty in Urban and Rural 2007-2012

No	Region/Year	Poverty (Million People)	Percentage of Poverty (%)	Percentage of Poverty Composition (%)
1	Urban			
	2012	10.65	8.78	36.5
	2011	11.05	9.23	36.8
	2010	11.10	9.87	35.8
	2009	11.91	10.72	36.6
	2008	12.77	11.65	36.5
	2007	13.56	12.52	36.5
2	Rural			
	2012	18.49	15.12	63.5
	2011	18.97	15.72	63.2
	2010	19.93	16.56	64.2
	2009	20.62	17.35	63.4
	2008	22.19	18.93	63.5
	2007	23.61	20.37	63.5
3	Total			
	2012	29.13	11.96	100
	2011	30.02	12.49	100
	2010	31.02	13.33	100
	2009	32.53	14.15	100
	2008	34.96	15.42	100
	2007	37,17	16.58	100

Sources: BPS, Poverty Profile in Indonesia March 2012

According to Population Census 2010 Indonesia consists of 33 provincial governments and 497 districts/cities. The 94 out of 497 districts/cities are cities and the 27 out of 94 cities have population more than 500 thousand people. There are five cities that can be considered as metropolitan city with population more than 2 million people and six metropolitan cities with population more than 1 million people and 16 big cities with population more than 500 thousand people (See. Table 4 Cities with Population Higher than 500 Thousand People in 2010). Agglomeration cities have happened in Indonesia. For instance, Jabodetabek of Greater Jakarta consists of 10 cities and 3 districts with population 27.9 million people in 2010. Other agglomeration has taken place for Greater Surabaya (Gerbang Kertosusilo means Gresik, Bangkalan, Mojokerto, Surabaya, Sidoarjo, Lamongan with population 9.119.044 people in 2010); Greater Makassar or Maminasata (Makassar, Maros, Sungguminasa, Takalar with population 2.579.112 people in 2010); Greater Medan or Mebidangro (Medan, Binjai, Deli Serdang, Karo with population 4.495.071 people in 2010); Greater Bandung (Bandung, Bandung Barat, Cimahi with population 7.622.905 people in 2010); Greater Denpasar or Sarbagita (Denpasar, Badung, Gianyar, Tabanan with population 2.222.876 people in 2010).

Table 4. Cities in Indonesia with population more than 500 thousands people in 2010

No	City	Province	Number of Population (Person)
1	Jakarta	Jakarta	9.558.198
2	Surabaya	East Java	2.765.908
3	Bandung	West Java	2.393.633
4	Bekasi	West Java	2.336.489
5	Medan	North Sumatera	2.109.339
6	Tangerang	Banten	1.797.315
7	Depok	West Java	1.736.565
8	Semarang	Central Java	1.553.778
9	Palembang	South Sumatera	1.452.840
10	Makassar	South Sulawesi	1.339.374
11	Tangerang Selatan	Banten	1.303.569
12	Batam	Riau Archipelago	949.775
13	Bogor	West Java	949.066
14	Pekanbaru	Riau	903.902
15	Bandar Lampung	Lampung	879.651
16	Padang	West Sumatera	833.584
17	Malang	East Java	819.708
18	Denpasar	Bali	784.445
19	Samarinda	East Kalimantan	726.233
20	Tasikmalaya	West Java	634.424
21	Banjarmasin	South Kalimantan	625.395
22	Serang	Banten	576.961
23	Balik Papan	East Kalimantan	559.196
24	Pontianak	West Kalimantan	551.983
25	Cimahi	West Java	541.139
26	Jambi	Jambi	529.118
27	Surakarta	Central Java	500.642

Sources : Indonesia BPS: Population census 2010

That data shows how big the number of people in urban area of Indonesia's cities, It means that public transportation is very important to support all commuter activities. In fact, most of public transportation in cities operated in paratrasit system that can't provide better service and ensure society to use public transport than private vehicle.

3. URBAN PUBLIC TRANSPORTATION SYSTEM IN INDONESIA

One of city preparations to face the urban challenges is related to transportation matters. Jean Paul Rodrigue in his book *"The Geography of Transport System"* refer to Merlin's opinion that *"The ideal transport mode would be instantaneous, free, have an unlimited capacity and always be available. It would be render space obsolete. This is obviously not the case. Space is a constraint for the construction of transport networks. Transportation appears to be an economic activity different from the others. It trades space with time and thus money"*. Meanwhile James Heilbrun in his book *"Urban Economics and Public Policy"* stated *"Cities exist to facilitate human interaction. If transportation were instantaneous and costless we would not need cities; we could have as much interaction as we wished while living at the four corner of the globe"*. These two opinions indicate that transport needs time and cost. In general, relation between time and cost in transport is positive, it means the quicker- the

higher cost; the slower the lower cost.

Mobility needs differ from one person to another. Fulfillment of the mobility needs depend on the availability of transport infrastructure (road, rail track) and means of transport (car, bus, train). Since the cost of transport infrastructure is relatively higher than those of means of transport so that it is unlikely for individual to have transport infrastructure, they would like to have means of transport. It is matters of individual efficiency before a determination to make a journey by calculating directly cost and benefit for individual. Different from individual efficiency, societies efficiency in transport is considered all aspect of life when mode of transport is chosen. That is why in societies it is differentiated transportation based on its function, namely between public and private. Private transportation is a transportation that is exclusively owned and used by individual or groups so that outside of the group can be rejected to use it. On the other side public transportation is a transportation that can be used by everyone if the one is willing to meet the requirement to use it and nobody can rejectit. According to “Urban Transport Benchmarking Initiative, Year Three Final Report” Year 2006 prepared by Transport and Travel Ltd for European Commission Directorate General of Energy and Transport the size of population is critical to establish a sustainable public transportation system. Indonesia has 27 cities with population more than five hundred thousands people so that urban public transportation system can potentially be established and sustained if it is managed and regulated in a proper way.

In urban area people mobility is heavily depended on modes of land transport either road based or rail based. In this paper we will focus on urban public transport system, especially road base. Setting road transport in the urban area has a strategic role in supporting the development and national integration as part of efforts to promote the general welfare, as mandated by the Law No. 22 of 2009 on Road Traffic and Transportation (Lalu lintas dan Angkutan Jalan = LLAJ). Accordingly, it takes a series of optimization of systems, facilities, and road transport infrastructure in order to address the mobility needs of urban communities. According to both Law No 14 Year 1992 and Law No 22 Year 2009 concerning Road Traffic and Transportation “Urban Public Passenger Transport” consist of two types, namely trajectory and non trajectory. This paper will focus on urban public passenger transport trajectory service and then for the discussion we use “public transport” term. It is mentioned that the public transport services must have a fixed route, start and end destination, regular services, embark and disembark at designated places (Terminal and shelter/halte). The major difference between them is who were allowed to conduct public transport services. The old one permitted an individual person but the new one prohibit individual person to provide the public transport services. According the new law “the Public Transport Service has to be operated by a legal institution (state or regional own enterprise or private company including a cooperation). This public transport operator has to fulfill a minimum level of service standard in terms of safety, security, affordability, equality, and regularity.

These characteristic of public transport are suitable to Munier, Nolberto’s opinion regarding transportation as a subsystem to support a sustainable city. In his book “Handbook on Urban Sustainability” he mentioned that “in a sustainable city its transportation subsystem must comply with numerous conditions”. The conditions are reliability, accessibility, safety, fast service, frequency, cost effective, connectivity, and information. Reliability means the availability of a transportation network with reasonable intervals between connecting services, and maintains reliable schedules so people can be confident of reaching their destination in a timely manner. Reliability what Munier mentioned can be fulfilled if the public transport operator is able run its vehicles in a corridor service in a fixed route, start and end destination, regular services, embark and disembark at designed places

(Terminal and shelter/halte), with affordable tariff as required by the regulation. The same goes for accessibility, safety, fast service, frequency, cost effective, connectivity, and information. They can be matched if the mandate of the law and regulation are applied not only by the public transport operator but also the transport authorities. Unfortunately, public transport operator run its vehicles out of the mandate and the law enforcement can not be effectively and consistently done by transport authorities so that the quality of public transport service is poor and far from customer's satisfactioned .

The one of major reasons which creates the poor quality is the provision of Indonesia individual person to conduct public transport services. The weakness of an individual person to conduct public transport service not only financial limitation but also managerial skill capacity to control the vehicle operation. They only have small number of vehicles and chose an easy management namely "setoran" management. They calculated how much the cost to obtain trajectory permission including the cost of vehicle and the money they will receive every day regardless the revenue of the ticket. It means they didnot know exactly how many passengers rode their vehicles and its revenue. In addition, they also didnot know the accurately operational cost of their vehicles because all operational cost and revenue are handled by the drivers. Finally they did not know the how well is the services. Is it needed to improve their services?. If yes and then what kinds of priority activities to be done. Is it needed to increase capacity by adding more vehicles or improving the driver behaviour in dealing with customer?

Actually the bigger burden for the quality of public transport services in Indonesia at this time on the shoulder of the drivers who run the public vehicle. They are the front liners who can bring good or bad public transport services. Unfortunately not only do they have to safely drive the vehicle but collect money as well to fullfill "setoran value". The value depends on agreement between the vehicle owner and the driver but in general it considers not only kinds and size of vehicles but also the line or corridor services. For instance, the setoran value Mikrolet 08 Tanah Abang-Kota (small bus with distance +/- 10 Km) was Rp130.000 per day and Patas AC Bianglala 67 Senen-Ciputat (Big Bus with distance +/- 30 km) Rp 700.000 per day (Bisnis Indonesia; Bisnis.com; **Economy** Fri, 16 Jan 2009 08:32:00 WIB). Therefore, the drivers will concentrate on how to get alot of money that excee of the value of the setoran instead of how to give a good service to the consumers. The drivers will minimize the cost to run the vehicle so that they ignore the rule of urban public transport as mandated by the law. Unfortunately the law enforcement has not been properly done so that as times went by the vehicle become obsolete, and the quality of public transport services getting worse.

4. PROBLEM IN URBAN TRANSPORT

4. 1. Poor Management and Performance Public Transport Services in Indonesia.

From various data are issued by few Cities and Ministry of Transportation it is difficult to avoid people's perception that public transport in Indonesia is in poor performance. For instance, on Table 5 Comparison of Fleet Public Transport with Big Buses in Jakarta 2007 and 2012 there was a company (PT Bianglala Metropolitan) which had 187 unit bus and served 9 routes or 20.8 unit bus per route in 2007 but in 2012 it only had 8 unit big bus and served 5 routes or 1.6 unit bus per route. It means that in 2012 the company was not able to arrange and implement a service schedule as mandated by the law. Why did the Government of DKI

who has an authority to set up a trajectory network still issue trajectory permission to this company?

Tabel 5. Comparison of Fleet Public Transport with Big Buses in Jakarta 2007 and 2012

No	Companies	Year					
		2007			2012		
		Number Bus (Unit)	Trajectory Route	Average (unit/route)	Number Bus (Unit)	Trajectory Route	Average (unit/route)
1	Perum PPD	1,700	68	25,0	279	17	16.4
2	PT. Mayasari Bakti	1,595	108	14,8	671	61	11.0
3	PT. Pahala Kencana	39	3	13,0	53	0	-
4	PT. Bianglala Metropolitan	187	9	20,8	8	5	1.6
5	PT. Steady Safe	509	46	11,1	45	7	6.4
6	PT. Agung Bakti	25	3	8,3			-
7	Koperasi Arif Rahman Hakim	2	1	2,0	16	1	16.0
8	PT. Koda Jaya/AJA P	153	6	25,5	132	6	22.0
9	PT. Jasa Utama	60	4	15,0	50	0	-
10	Koperasi Himpuna	90	6	15,0	0	0	-
11	PT. Metromini	66	4	16,5	10	1	10.0
12	PT. Transjakarta	-	0	-	0	0	-
13	PT. Putra Tasima	15	1	15,0	0	0	-
14	PT. Daya Sentosa Utama	3	1	3,0	23	1	23.0
15	PT. Sinar Jaya Megah Langgeng	-	0	-	89	14	6.4
16	PT. Hiba	-	0	-	59	5	11.8
	Total	4,444	260	17,1	1,435	118	12.2

Source : BPS Jakarta : Jakarta In Figure 2008, and Jakarta In Figure 2013

It was shocking when we see the number of fleet and seat capacity in Jakarta as shown on Tabel 6 Comparison Public Transport Fleet and Seat Capacity 2007 dan 2012. In term of fleet vehicle it was increased but in terms of seat capacity it was decreased. How come did the Provincial Government of DKI Jakarta let the companies to change fleet structure from relatively balance between big and moderate buses to small buses becoming small bus majority or 80% of public transport fleet. This condition also supported by the growth of registered vehicle in Jakarta from 2008-2012 as shown on Table 7 Number and Type of Registered Vehicle in DKI Jaya 2008-2012 (unit). During 5 years the growth of buses was the smallest among those of passenger vehicles with only 16.3 % meanwhile the growth of passenger car and motor bike were 34.8% and 60 % respectively. The major reason for this changing was that small bus needed a relatively fewer amount of money (capital) and also

fewer “setoran” value. Meaning it was easier to reach agreement between the vehicle owner and the driver and lowering risk for failure in running the public transport services. In implementation the drivers of small buses often “ngetem”, embark and disembark passengers every where, run after among them so that the public interest, namely safe, secure, regularity, convenient and affordability was neglected.

Table 6. Comparison Public Transport Fleet and Seat Capacity 2007-2012

Vehicle type	Year					
	2007			2012		
	Units	Seat Capacity Per unit*)	Total Seat Capacity	Units	Seat Capacity Per unit*)	Total Seat Capacity
Large (Big) Bus	4.783	60	286.980	2.000	60	120.000
Moderate Bus	4.979	30	149.370	1.987	30	59.610
Small Bus	9.412	15	141.180	16.671	15	250.065
Total	19.174		577.530	20.658		429.675

*) Seat Capacity According Ministry of Communication in Land Transport in Figure 2012, big buses : 55-60, moderate bus 28-30 seats, small bus 10-15 seats, car for public passengers 8-12seats
 Source : : BPS Jakarta : Jakarta In Figure 2008, and Jakarta In Figure 2013

Table 7. Number and Type of Registered Vehicles in DKI Jaya 2008-2012 (Unit)

Type of Vehicle	2008	2009	2010	2011	2012	Growth 2008-2012
Passanger Cars	2,034,943	2,116,282	2,334,883	2,542,351	2,742,414	34,8%
Buses	308,528	309,385	332,779	363,710	358,895	16.3%
Truck	538,731	550,924	565,727	581,290	561,918	4.3%
Motor Bike	6,765,723	7,518,098	8,764,130	9,861,451	10,825,973	60.0%
Total	9,647,925	10,494,689	11,997,519	13,347,802	14,489,200	50.2%

Sources: BPS Jakarta; Jakarta In Figure 2013

What happen in Jakarta as shown in the above is reflected in national data. According to Ministry of Transport during the last five year the growth of registered vehicles in Indonesia increased almost 50% (the Table 8 Number and Type of Registered Vehicles 2008-2012). The highest growth was motorbike with 56.5% and followed by car with 35.7%, bus with 19.5% and truck with 13.7%. Motorbike in 2012 constitutes 80,8 % registered vehicles. In addition to that in Jabodetabek (Jakarta, Bogor, Depok, Tangerang and Bekasi) the fleet capacity is stagnant meanwhile the population in Jabodetabek is increased. Meaning that the quality of public transport will tend to decrease because with the same fleet capacity but serve a larger number of consumers. This condition indicated that people mobility is heavily depended on private of land transport since motorbike cannot be considered as urban public transport.

Table 8. Number and Type of Registered Vehicles in Indonesia 2008-2012 (Unit)

Type of Vehicle	2008	2009	2010	2011	2012	Growth 2008-2012
Passenger Cars	7,489,852	7,910,407	8,891,041	9,548,866	10,166,817	35.7%
Buses	2,059,187	2,160,973	2,250,109	2,254,406	2,460,420	19.5%

Truck	4,452,343	4,452,343	4,687,789	4,958,738	5,062,424	13.7%
Motor Bike	47,683,681	52,767,093	61,078,188	68,839,341	74,613,566	56.5%
Total	61,685,063	67,290,816	76,907,127	85,601,351	92,303,227	59.6%

Sources: Ministry of Transportation, Land Transport in Figure 2013

Table 9. Number and Type of Public Transport Vehicles in Jabodetabek *)

Vehicle Type	2007	2008	2009	2010	2011	2012
Big (large) bus	3,845	3,845	3,845	3,845	3,845	3,845
Moderte bus	8,219	8,219	8,219	8,219	8,219	8,219
Small bus	34,521	34,521	34,521	34,521	34,521	34,521
Car for public transport	19,726	19,726	19,726	19,726	19,726	19,726
Total	66,311	66,311	66,311	66,311	66,311	66,311

*) Jabodetabek : Jakarta, Bogor, Depok, Tangerang, Bekasi

Source : Ministry of Communication : Land Transport in Figure 2012

4.2 Operating of Paratransit System

The provision of satisfied public transport system in urban areas is the desire of users of the public transportation known as “angkot”. However, in the application of the provision of this road-based transport, still often encountered a number of problems. Following information are problems in Indonesia’ cities such as Jakarta and Bogor that can be a reference implementation road-based public transport:

1. The volume of traffic is significantly increased, causing congestion and increased travel time;
2. Habit "ngetem" of urban public transport drivers to wait for passengers every where (at intersection, in front of market, etc);
3. A decrease in the number of passengers, they shift to private vehicles, especially motorcycles;
4. There was an imbalance between the availability of public transportation fleet and the number of passenger demand;
5. There is a very tight competition among the drivers to look for passengers

The condition of urban road transport services throughout urban areas in Indonesia is still dominated by conventional road transport services. Type of transit service is filled with a fleet of various sizes, ranging from small to medium buses. Operation point was sometimes still overlap. System buy the service has not been implemented at all, so that the orientation has not come to an effort to provide a sense of comfort and safety to passengers. These issues must be addressed, among others, by making systematic efforts, massive and structured to improve the public transport system from the conventional to the modern system.

In addition to the type of public transportation bus types whether large, medium or small, there is also a growing mode of transportation vehicles as an alternative to or known as paratransit. Included in this category are paratransit and three-wheeler rickshaw (Indonesia), Tuk Tuk (Thailand), microbus, minibus, Jeepney (Philippines). Transport type operating system monopoly by individuals (Cervero, 1990).

Paratransit is urban passenger transport services operating on public roads in mixed traffic (traffic mix). Transport is usually owned by a private or public operators and is available in a particular group or the general public, in accordance with the relevant passenger wishes and scheduling service (Vuchic, 1981).

Table 10. Class of Public Transport in Southeast Asian Cities

Class	Capacity	Cities	Name of Public Transport
I	24 - 59 Passengers	Jakarta, Bangkok, Manila, Surabaya, Singapura, Bandung, Kuala Lumpur	Transjakarta, Patas AC, Stage Buses, Double Decker, SMRT, Trans Metro Bandung, Rapid KL
II	12 – 24 Passengers	Jakarta Manila Bangkok Kuala Lumpur	Metro Mini Jeepney Minibus, Silor Minibus
III	6 - 12 Passengers	Jakarta, Surabaya, Medan, Bandung	Angkot, Kolt, Bemo, Mikrolet
IV	2 - 6 Passengers	Jakarta Bangkok Manila Medan	Bajaj Tuk Tuk, Samlor Motor Tricycle Becak Motor
V	1 – 3 Passengers	Jakarta Medan Manila Singapura, Kuala Lumpur	Ojeg Motor Becak Calesa, Tricycle Trishaw

Source: Cervero (1990) updated (2015)

4.3 Social Issue

Based on data released by the National Commission of Women (2013) there are 279,630 cases of violence of women. A total of 40 cases of rape occurred in the period January to September 2011, and three of which occurred in public transport. In 2011 there were 2,937 cases of sexual violence in public area. Since 1998 there are around 22,284 cases of sexual abuse that occurred in public area.

The government has actually been doing this service-related improvements, among others, by being given a special chair or a special corridor for female passenger, but it still occurs cases of sexual abuse. Increasing the number of public transport mode and improving the services are a must to serve the demand of passengers, so that they do not need to jostle in the public transport

4.4 Basic Structure of Urban Public Transport Financing

As mentioned on the Government Regulation No. 38 Year 2007 regarding Delegation of Government Businesses among Central, Provincial and City/District Government transportation services is an obligation to be done by all level of government. It means there are sharing authority in regulate and manage transportation sector. In line with that, according to the new government regulation No. 74 year 2014 concerning road transport, the government has a responsibility to conduct public transport services and city types and urban area will determined which level of government who has responsibility to do that. If urban area cover only in one district or city the responsibility is in the hand of district/city

government. If urban area cover more than two administrative districts or cities but still in one province the responsibility is in the hand of provincial government. If urban area cover more than two administrative districts or cities but located in two provinces the responsibility is in the hand of central government.

Actually for sustainable public transport services at the best if all cost (capital, operational and maintenance cost) plus profit can be covered by passengers's payment. It means the tariff determination and the number of passengers' prediction is perfect. Unfortunately the best condition seldom exists. At the worst the government bear all cost but the government want to avoid. The reason is the efficiency matters of tax payers money and at the end the performance of the government. In addition if the public transport services are financed by the government it will be considered unfair because all people pay taxes but not all of them use public transport. Therefore many governments invite private sector to operate public transport services and determine tariff to be levied to the consumers. In other words the consumers is borned a certain money but not as much as the full cost. This condition is suitable to the new government regulation which can involve a private sector in conducting public transport services. Implication of this regulation is that the government has to provide a budget for the services.

It is quite long time that the public transport services in Indonesian cities are run by private sectors which pay attention primary on how to make money instead of how to deliver a good service not only for its passengers but also for societies at large. Actually there are many benefit of public transport service that can justify the government to spend tax payers money in public transport. For cities which have intense traffic jams and then heavy air pollution, public transport can provide an alternative to commute. Furthermore, it can reduce air pollution and Green House Gases (GHG) emission and also minimize the impact of climate change. For cities which its major societies donot have a mean of transport public transport can offer to fulfill their mobility necessary to perform daily activities for their life. Therefore, the magnitude of government spending on public transport depends on how the government want to balance the burden not only between consumers and the transport operator but also between the ability of the government and the whole objectives of transport policies.

Financing urban transport infrastructure in Indonesia, still largely funded by the state budget funding but this is not sufficient, it is very reasonable because the public transport sector investment in Indonesia cannot be tempting for the private sector due to high of interest rates, the length of time that needed to Return of investment (ROI), and high regulatory uncertainty.

Paratransit operators tend to operate the system because it is easier in the operation and the revenue derived from the deposit system driver, the operation of paratransit systems in cities in Indonesia, causing public transport services tend to be limited, drivers tend to look for passengers only to pay a deposit to the owner. The owner's public transportation public transportation does not require the driver to provide excellent service and reliable

Countries like Brazil require funding by 95% of the state budget, Columbia 40 -70%, France 20 - 25%, Germany 60 -90%, Mexico more than 50%, Indonesia is estimated to 53.26% in order to fulfill the needs. Infrastructure financing needs are still dependent on the state budget, allocated allocation problem has not been able to solve the problems in the field and the role of the private sector need to be improved in investing in public transport services, so that the gap needs and the availability of funding can minimize.

Table 11. Funding contribution for public transport

Country	National Budget	Minimum Private Sector Contribution	Local Budget
Brazil	95%	no minimum number	5%
Columbia	40 - 70%	10%	30%
Perancis	20 - 25%	no minimum number	no minimum number
Jerman	60 - 90%	no minimum number	no minimum number
India	15 - 90%	no minimum number	no minimum number
Mexico	> 50%	34%	Although not generally accepted, set the minimum contribution to the planning study of 50
Ingris	No maximum state funds, although local governments are advised to seek their own financing	no minimum number	no minimum number
Amerika Serikat	80%, but for a number of large-scale transportation projects, funding the state budget covers only 50%.	no minimum number	20% for the construction of road infrastructure, but in principle 50% for the construction of major transportation projects.
Indonesia ¹	53.26%	43.91%	2,82%

Source: Financing Sustainable Urban Transport 2012, ¹⁾ GIZ SUTIP 2014.

Subsidies is allocated by stated budget for Transit System / BRT service, in several cities, such as: Bogor 0.31%, Surakarta 0.40%, Bali 0.2%, IN. Yogyakarta 0,42%, and Jakarta has the largest proportion is 1.8%, the value of this subsidy is small to provide transport services in particular urban transit systems / BRT, other funding support is needed in order to provide services that meet the expectations of society, and is able to attract people to switch to using public transport .

Table 12. Subsidy's Local Budget for System Transit/BRT

City	Local Budget (APBD)	Allocation Subsidy	Allocation Subsidy (%)
Jakarta	Rp. 72 T	Rp. 1.3 T	1.8
Bogor	Rp.1.94 T	Rp. 6 M	0.31
Bali	Rp. 3.84 T	Rp. 8.4 M	0.22
D.I Yogyakarta	Rp 2 T	Rp. 8.4 M	0.42

5. IMPROVEMENT OF URBAN PUBLIC TRANSPORT SERVICES

Although the government regulation No 41 Year 1993 concerning Road Transport, just replaced recently by the government regulation No 74 Year 2014 concerning Road Transport but the efforts to improve public transport services have been done by several city leaders. They are leaders who aware that a good public transport service will improve the

prosperity of its societies. For instance, the Governor of Provincial Government of DKI JAYA introduced TransJakarta known also as Jakarta Busway in 2004. It was started by one corridor with dedicated line Blok M-Kota and now (2013) it has already serviced 11 corridors.

The introducing of the TransJakarta busway was a good and significant step to improve urban public transport services which previously was operated by paratransit system. The government through the DKI Jaya's Transport Regional Office determined business hours or service period of TransJakarta busway's schedule. For instance Corridor 1 From Blok M (start) – Kota (end) with distance 12,9 Km and 20 halte operates from 5.00 AM to 22.00 PM or 17 hours. There are two kinds of headway (time difference between bus departure), namely for peak hours and off-peak hours. The TransJakarta Busway management under the DKI Jaya's Transport Regional Office then conducted a tender to get a bus operator to serve a corridor. After a winner decided then they sign a service contract. Base on the contract and evaluating of the bus operator's performance the management of the TransJakarta busway then make a payment to the bus operator. The source of fund for the payments come from fare collection and subsidy from the Government of DKI Jaya since the fare of TransJakarta busway is determined by DKI Jaya. These information fulfill what the law mandated for in-trajectory urban public transport as mentioned earlier that the urban public transport service must have a schedule, started and ended, embark and disembark the passengers in the designated places. That is why the drivers can pay attention how to drive safely as required by the Transport Regional Office because the drivers get a salary and didnot have to submit "setoran" to the companies or owner of the vehicles.

The Ministry of Transportation through Directorate of Urban Public Transport System encourage cities to develop and improve public transport by providing vehicles. There are 17 cities that had been involved in this program as shown on Table 13 Cities Assisted by Ministry of Transportation to Improve Urban Public Transportation System.

Table 13. Cities Assisted by Ministry Transportation to Improve urban Public Transport System

No	KOTA BRT	NAMA BUS BRT	MULAI OPERASI
1	Jakarta	Trans Jakarta	2004
2	Batam	Trans Batam	2005
3	Bogor	Trans Pakuan	2008
4	Yogyakarta	Trans Jogja	2008
5	Semarang	Trans Semarang	2009
6	Pekanbaru	Trans Metro	2009
7	Bandung	Trans Metro Bandung	2009
8	Manado	Trans Kawanua	2009
9	Gorontalo	Trans Hulontalo	2010
10	Palembang	Trans Musi	2010
11	Surakarta	Batik Solo Trans	2010
12	Sarbagita	Trans Sarbagita	2011
13	Ambon	Trans Amboina	2011
14	Tangerang	Trans Jabodetabek	2011
15	Bandar Lampung	Trans Bandar Lampung	2011
16	Padang	Trans Padang	2014
17	Makassar	Trans Mamminasata	2014

The result of the improvement efforts seems not good enough. For instance in Jabodetabek the ride sharing of public transport (road base) is decline from 2002 to 2010 as finding by Jabodetabek Urban Transportation Policy Integration (JUTPI) study. The survey done during the study had showed the decline of bus ridership. In 2002 the bus was primary choice by Jabodetabek residence to commute (38.3%) but it was leaved by major Jabodetabek residents (12.9 %) in 2010. By the decline of the bus for ridership the income of public transport operator decreased so that it was not able to increase its the capacity. That was why the urban public transport fleet (bus) in Jabodetabek stagnant from 2007 to 2012 (66.311 unit buses). Moreover the traffic jam in Jabodetabek is more intense.

In trying to improve public transport services a good preparation should be done. For instance in case of Jakarta, when the city introduced TransJakarta, it did not prepare even neglected how many buses should be available to serve a desired distance. If we make a comparison between Bogota and Jakarta we will understand why the result is not as expected because the number of fleet is too small. In Bogota with shorter distance services compare to Jakarta it had more buses than Jakarta provided as shown on Table 14 Key Parameter Comparison on Bus Rapi Transit System between Bogota and Jakarta. Therefore, it isnot amasing that performance of Bus Rapid Transit (BRT) Services in Bogota is better those of BRT Services in Jakarta in term of average speed and number of passengers.

Table 14. Key Parameter Comparison on BRT System Between Bogota and Jakarta

Items	City	
	Bogota	Jakarta
Distance (km)	84	143
Fleet	1,000	426
Ratio (unit/km)	11.9	3.0
Shelter (unit)	114	142
Average Distance (km/Shelter)	0.74	1.01
Control center	Dedicated line	Dedicated line
Infrastructure	67	undecided
Feeder Route (FR)	420	undecided
Distance FR (km)	400	undecided
Bus Feeder (unit)	Yes	Yes
Control Center	dedicated line	dedicated line
Infrastructure		
Passengers per hour per direction (person)	42,000	70,906
Average speed (km/hour)	29.1	24.5

Sources: Peter cox moving people, sustainable transport development, 2010.

Surakarta one of city that successfully implement public transportation improvements, build an operating system with the name Batik Solo Trans, reform exiting “angkot”. This is only preliminary survey of 20 respondents of user of Batik Solo Trans, however this is not quiet appropriate data but we can use this data as initial measure. The Data show they tend to be satisfied with the services, passengers feel comfortable because there are bus stops in shelter not in any place, have air conditioning, and served by friendly stewardess, before this system was unregulated and poorly operated that we called angkot (paratransit mode) .



Figure 1. Batik Solo Trans (BST) fleet

The satisfaction of passengers Batik Solo Trans (BST) have classified with rank from 1 (one) represents very satisfied until 5 (five) represents very dissatisfied. The results are passengers satisfied with aspects of safety, affordability rate and distance, and also security and convenience. On the other hand passengers are quite satisfied for accessibility and operational. Satisfaction's rank of public transportation will be increased by further improvement the minimum service standard of public transportation.

Table 15. Satisfaction Index of BST

No	Aspect of Services	Rank	Description
1	Safety	2	Satisfied
2	affordability rate and distance	2	Satisfied
3	Operational	3	Quite satisfied
4	Accessibility	3	Quite satisfied
5	Security and Convenience	2.5	Satisfied

Public transportation especially paratransit issues are very complicated, and tends to be typical urban transport problems in Indonesia. To overcome this, a number of cities have taken public transportation arrangement. In the following table can be seen the outline of the implementation of the restructuring program of public transportation which most of them is *angkot*/paratransit in several cities

Table 16. Examples of Public Transport System Improvement in Some Cities in Indonesia

City	Existing	Restructuring	Regulation	Local Charateristic
Bogor	Transport services in the city of Bogor, consisting of 3,400 units minibus in 23 routes, and 4,600 urban transport (public transport	Change of ownership of private property to public transportation of legal entities, and the arrangement of the route.	West Java Provincial Law 03/2011. Bogor City Law 03/2013.	Shifting System. Improve transport route (<i>re-routing</i>). Vehicle rejuvenation. Removal of vehicles.

Solo	Palembang	Public transport service is low enough, a lot of old fleet that is not feasible and endanger passengers.	Restrictions fleet rejuvenation for more than 10 years old.	Mayor's Decree	ELF, and L300) of Bogor and between cities in the province. Load Factor public transport is very low.	Consolidation Among transport entrepreneurs and join become a consortium BST	Consolidation of transport operator
						Age restriction of public transportation.	

6. RECOMMENDATIONS

6.1 Financing

Infrastructure funding for cities in Indonesia is still not adequate funding for urban transport infrastructure financing needs. It can be obtained from the miraculous funding opportunities that the state budget, local budget, SoEs, Local SoEs, private sector, and implement creative financing involving many parties ranging from the national level, up to the private sector. Figure 2. Shows several potential funding.

The problems are very common in the cities in Indonesia due to poor of city's/regency's ability to finance urban transport infrastructure, and unfortunately public transport has not been a priority of the improvement yet. The funding limitations can be overcome with a funding mechanism that involves many sectors so as not to overburden the local government

As an example of this application is as happened in the process of funding the international airport Kualanamu which involves funding from state-owned companies and the state budget in the implementation. Another source of funding can be also by utilizing the annual motor/car vehicle tax that earmark for certain infrastructure of public transport.

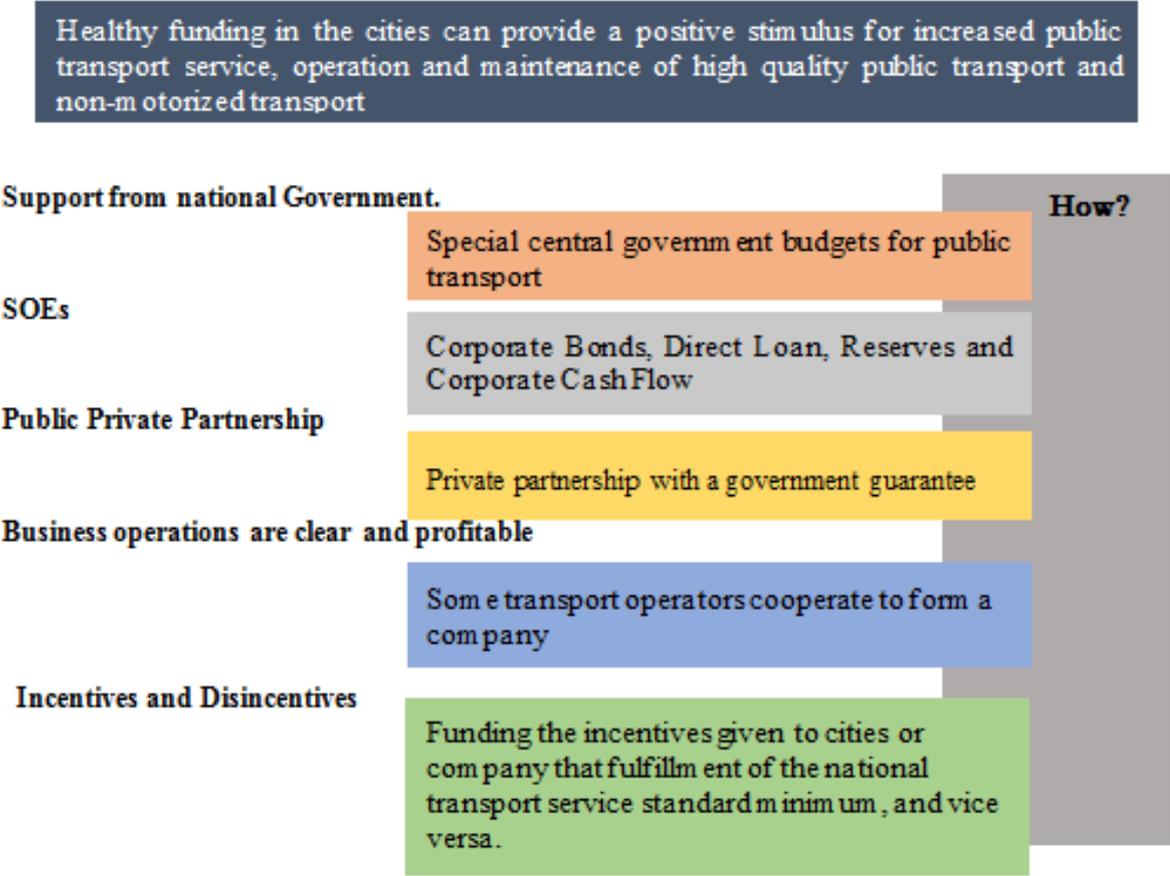


Figure 2. Potency of Public Transport Financing

6.2 Ensures Minimum Service Standard

The effort here is to supervise or control based on PM No. 98 Year 2013 concerning the Minimum Service Standards (SPM) public transport in the route, the standards cover six aspects as the following table 17 Application of SPM in public transport services provide assurance for users to obtain good service standards. This has proved effective in the implementation of the transit system in Indonesia where people who previously could get off at any place at this time can be dropped off at a certain stop, that it is reducing the level of congestion and improve the safety of passengers. Related with comfort also increase where societies get more comfortable with using the air conditioner, and guaranteed waiting time .

Table 17. The issue of public transport services

Parameter	Related Issue
Security	User security on public transport has not facilitated properly, such as theft and sexual harassment.
Safety	Safety-related safety facilities, driver, vehicle safety support.
Comfort	Transport capacity, and support facilities.
Affordability	Accessibility (distance bus stop, bus stop locations), public transport fares.
Equality	Priority service for passengers with disabilities, the senior citizen, children and pregnant and lactating mothers.

Regularity	Arrival and departure schedules, information, and operational performance
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In each route or public transport corridor, ideally there is only 1 (one) to 3 (three) company operator serving. It is associated with the control effectiveness and efficiency of services, so that on the one hand to avoid monopoly business principles, but on the other hand to avoid any unfair competition due to oversupply.

Suppose that in a city planned to open a new route or corridor with the following conditions:

The length of the route corridor	: 6 Km
Type of transport	: buses small or medium
Average speed: 12 km / h	
Headway planned	: 5 minutes
Travel time	: 30 minutes / rit, or 60 min / PP
Breaks time	: 10 minutes at each station / terminal end
The cycle time (total)	: 80 minutes
Operations Management	: 90% ready for operation, 10% reserve
The need for fleet	: 18 units of the fleet, with a composition of 16 operational and 2 backup (vehicle maintenance period)

These conditions indicate that the minimum requirement for each company transport fleet could be flexible, do not have to keep 20 (twenty) if driving conditions demand (demand) is still low and needs of the fleet on a route or corridor not reach the minimum number

6.3 Established Bus Management Company (BMC)

With increasing the number of service corridors and its bus operators in the transit system, the role of the regulator become increasingly busy. That is why, in maintaining the effectiveness of the regulatory and supervisory functions, is necessary to establish a separate institution called Bus Management Company (BMC). BMC will work professionally and at the same time representing the Transportation Authority as a regulator that regulates some bus operators are incorporated in the transit system. It is already well developed in Jakarta with the establishment of City-owned Company PT Transportasi Jakarta who took over the role of Technical Implementation Unit Transjakarta which is part of the Jakarta Transportation Agency.

Under the BMC concept, the regulator could re-focus on its main task of creating a system builder in organizing traffic and road transport. The role of the regulator that regulates the operator entirely run by the BMC.

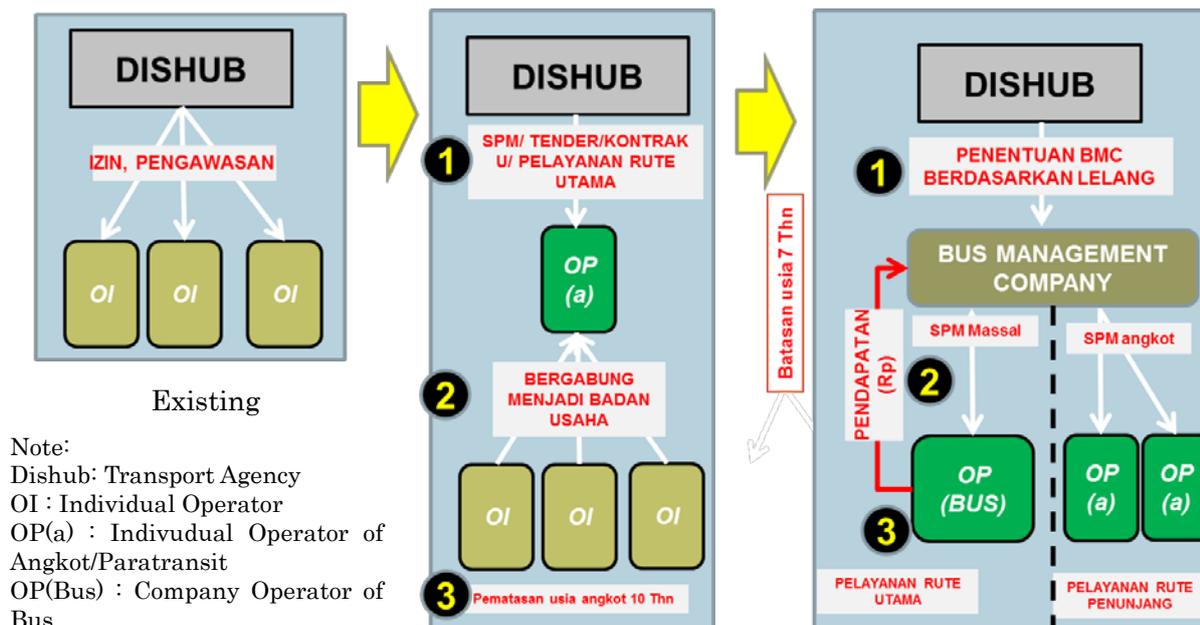


Figure 3. Concept of BMC in Indonesia

7. CONCLUSIONS

Operation of paratransit systems do not tend providing good services, because no certainty of the services provided is urged in place. New law on Road Transport has begun to encourage individual operators to merge each other and then to form a company is to create a step adequate transport services.

Cities in Indonesia, that have implemented transit system, can feel the urban transport system more convenient supported by certainty of minimum service standard, which before individually operated and unregulated and today can be more organized. For example, Solo and Bogor have successfully consolidated and restructured public transportation business system below of bus operator, further to be merged as a service by forming bus management company as which has been implemented in DKI Jakarta.

Funding is one of the problems in cities, compared to other developed countries that provide a large proportion budget in facilitating the provision of urban transport services and infrastructure. In order to solve the problems of funding in urban areas we can do creative financing by leveraging multiple sources of funding so that the burden in cities will be minimized using funding schemes of private, SoE, the implementation of the PPP, and contribution of the national budget.

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