

A REFLECTION OF MOTORIZATION AND PUBLIC TRANSPORT IN JAKARTA METROPOLITAN AREA

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This article provides an overview of the influences of motorization trends on urban residents' travel patterns in the Jakarta Metropolitan Area (JMA) in the last decade. The performance of the first year of the Bus Rapid Transit (BRT) system implementation, as a way to suppress motorization in JMA, is also described. It is found that the trend of motorization has already become a critical issue and suppressing the rapid increase of private cars is imperative. However, the existing public transport facilities are not adequate in fulfilling the demand, both in quality and quantity. The lesson learned from Jakarta Metropolitan Area's context illustrates the need to focus on a series of substantial actions as the future innovations. These suggested future innovations are believed to be beneficial for application in the JMA area, and also other developing cities.

Key Words: Motorization, Urban transport, Developing countries, Sustainable urban-transport policy

1. INTRODUCTION

In the last three decades, motorization and urbanization have been the trend in many metropolitan areas in developing countries. Lack of job opportunities and public facilities outside major cities has initiated rapid urbanization in many metropolitan areas. In Indonesia, the urban population has significantly increased from 22.3% in 1980 to 42% in 2000¹, and it is estimated that by year 2020 urban population will reach 50%-60% of the national population². In 2006, the population density in the capital of Indonesia, Jakarta, is 13,526 inhabitants/km², which is comparable with several other major cities in the world, such as Tokyo and New York with 13,333 and 10,292 inhabitants/km², respectively^{3,4}.

In line with population and economic growth, the number of motor vehicles also shows a rapid growth. For example, the motor vehicle per thousand people in Surabaya, one of the main cities in Indonesia, has increased 455% from 70 in 1976 to 319 in 1998⁵. Indeed, it is evident that motorization is transforming cities and even rural areas of many urban areas in the world and the economic and social benefits are enormous. It provides individual flexible transportation in urban areas and reduced manual labor and improved market access in rural

areas, which is heavily needed by developing countries. In the longer term, however, motorization may stifle local development, increase pollution, and create unprecedented safety hazards⁶.

The influences of motorization and urbanization, later followed by sub-urbanization in many metropolitan areas, have been of interest to transportation and urban researchers for the last few decades^{7,8}. However, most of the studies were based on evidence in developed countries. It is unclear whether the results were also valid in developing countries, since the transportation conditions of both situations are different in many fundamental ways.

Unlike developed countries, most developing countries do not have a proper mass transportation system to suppress the increase of motorization in urban areas. Moreover, the attitude of society in developing countries is to use automobile ownership as one of the requirements for society acknowledgement. This has encouraged everyone to have their own private car and discouraged them to travel with public transport. Sprawling urban growth with a poor public transport network has also supported the trend of motorization among urban residents in developing countries. With this background, the aim of this article is to describe the trends of motor-

ization and public transport performance in Jakarta Metropolitan Area (JMA) in the last decade. Lessons from the past and the possible future implications that can be applied in Indonesia and also in other developing countries are also discussed.

The next section offers a brief description about the trends of motorization in the JMA in the last 15 years. The Bus Rapid Transit (BRT) system that has been recently implemented in the JMA, including its first year performance, is described in section three. A comprehensive discussion about the present transportation conditions and problems in Indonesia and possible future implications are provided in section four. In the last section, the article concludes with a summary section.

2. THE PROGRESS OF MOTORIZATION IN JAKARTA METROPOLITAN AREAS

Metropolitan Jakarta, the capital of the Republic of Indonesia and the largest metropolis in Southeast Asia, is perhaps as diverse as the Indonesian archipelago itself. Various people with different ethnic backgrounds, cultures, dialects, and religions reside in the city. They come from the thousand islands that comprise the archipelago, all seeking and struggling for a better life and prosperity in the city.

Jakarta expanded from 180 square kilometers in 1960 to a fully urbanized megapolis in the 2000s. Today, as a mega-city, Jakarta's nucleus area has spatially and

economically expanded beyond its original fringes and has been integrated with four other proximate cities, namely Tangerang (in the west), Bekasi (in the east), Bogor, and Depok (in the south). The metropolitan area has been called "Jabodetabek" since 1999 (in this paper, we refer to it as the Jakarta Metropolitan Area, JMA). The JMA area encompasses a total land area of 6,580 square kilometers, which has a flat configuration with an average elevation of only 5 meters above sea level. The core area of JMA (Jakarta city) itself covered 656 square kilometers and comprised 8.4 million people in 2000. The 5,924 square kilometers beyond Jakarta has an aggregate population of 13.1 million. The JMA accounts for 10% of Indonesia's population and 20% of its GDP.

The urbanization beyond the core area has progressed very rapidly. The population growth in the surrounding areas between 1990 and 2000 was 3.7 percent per annum while the growth in the core area was merely 0.2 percent per annum⁹. The map of JMA is presented in Fig.1.

2.1 Car ownership

The number of registered vehicles within the Jakarta metropolitan area (JMA) can be seen in Fig.2. From 1985 to 2002, car ownership increased approximately three times and motorcycle ownership three and a half times. During the Asian Economic Crisis period the number of registrations, especially for motorcycles, suddenly dropped. Presumably this is because during that period

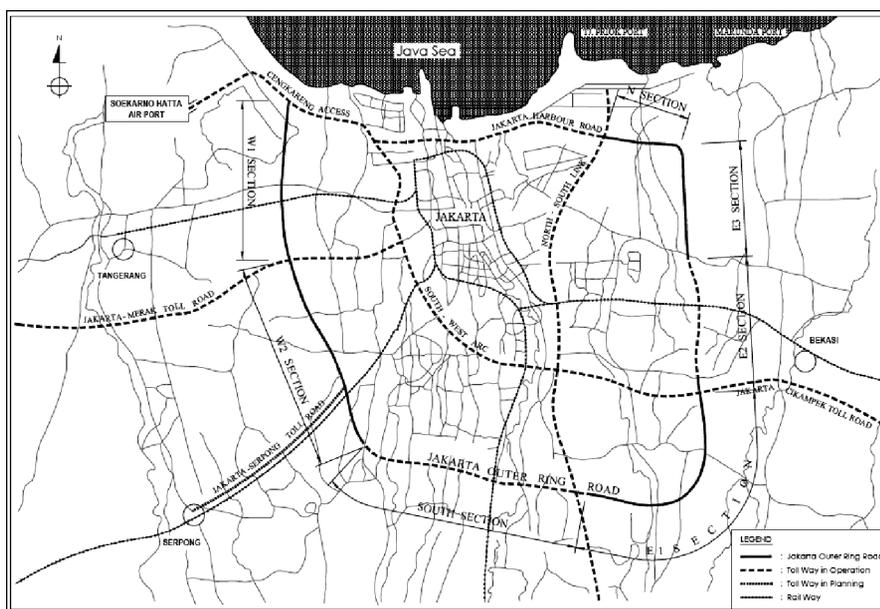


Fig. 1 Road and railway network pattern in Jakarta Metropolitan Area⁹

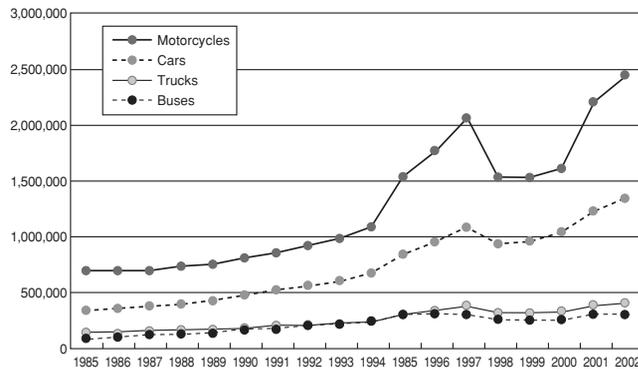


Fig. 2 Number of registered vehicles in Jakarta Metropolitan Area¹¹

many people could not afford to extend their annual car registration and also many of them either sold their car back to the seller or it was taken by the bank as a debt guarantee. However, since 2001, with the recovery of economic conditions, vehicle registration has resumed its increasing trend.

The study by JICA and BAPPENAS⁹ shows that at a household level, the average number of cars owned per 100 households is 20.7 and the average number of cars owned per car-owning household is 1.2, which is relatively the same with or even higher than developed countries. The results of the mini household visit survey by JICA and BAPPENAS¹⁰ showed that household ownership of a car in Jakarta is inline with the increase of the household monthly income.

2.2 Daily trips and trip length

From 1985 to 2000, the average number of daily trips remained relatively stable. It was 1.69 trips per per-

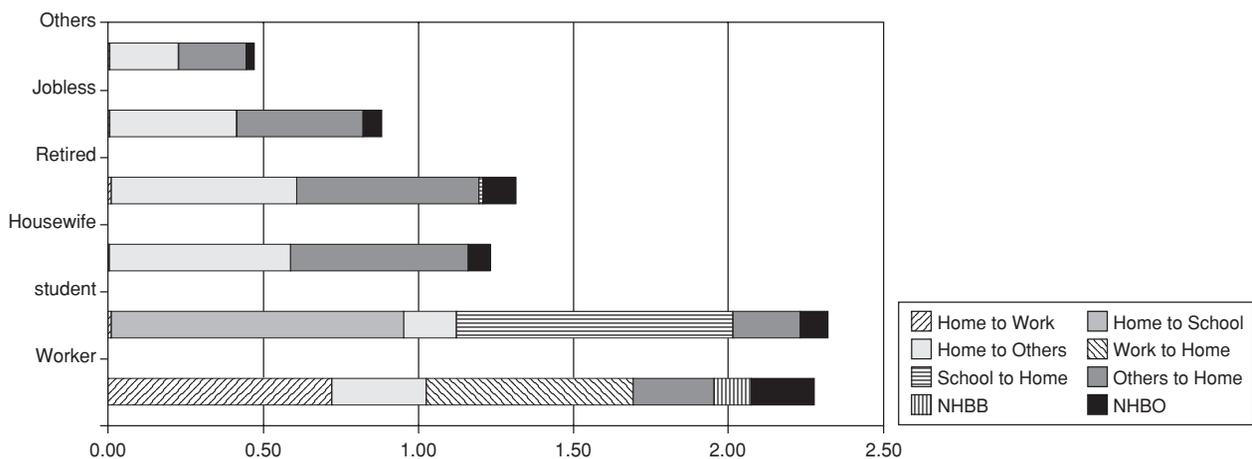
son per day in 1985 and 1.70 in 2000. The results of the mini household visit survey in the JMA showed that students and workers made more out-of-home visits than others (see Fig.3). They made 2.32 and 2.28 visits per person per day, respectively; twice as many as a housewife or retired person.

From 1985 to 2000, the average trip length for work, school, and shopping increased 43%, 104%, and 85% respectively (Fig. 4). Trips for work purposes increased from 6.7 km in 1985 to 9.6 km in 2000, while the length for school trips also increased from 2.7 km to 5.5 km. The average length for shopping trips increased from 2.6 km to 4.8 km. Related to household income, a higher income group is associated with longer average trip length and a higher number of daily trips .

For private car trips, from 1985 to 2000, the number of trips by private car increased by 32%. The occupancy rate decreased from 1.96 to 1.75, which shows that in 2000, people tended to make more solo trips than in 1985. The mode share of private car has decreased by 3.1%. However, this does not mean that people used the car less in 2000, but was solely due to the significant increased number of motorcycle users since 1985.

2.3 Modal composition and choice captivity

The composition of travel mode choice in the JMA region is presented in Table 1. Of all the person trips made by motorized modes, buses made up more than 50 percent. Even though the number of buses has decreased due to the economic crisis, the bus is still the most significant mode of transport used by the majority of citizens in the region. Private cars are used by 31 percent of people and a motorcycle by 14 percent of people.



Note: NHBB is non-home base business (work or school) trips. NHBO is non-home base other trips

Fig. 3 Trip production rate by social status and by trip purposes¹²

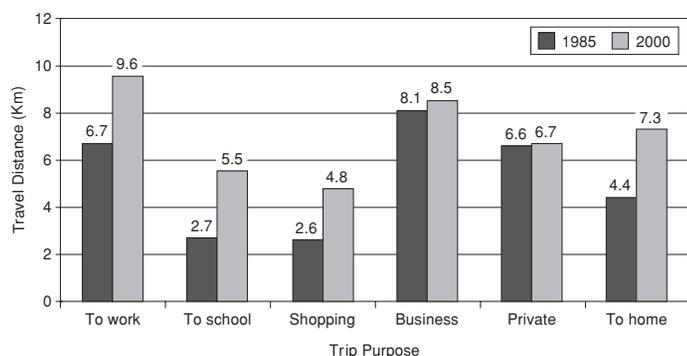


Fig. 4 Change in travel distance between 1985 and 2000^{10,13}

Table 1 Person trips by mode of transport⁹

Description	Composition	
	All modes	Motorized modes
All modes of transport	100.0 %	-
Non-motorized modes of transport	28.8 %	-
Motorized modes of transport	71.2 %	100.0 %
Motorcycle	10.1 %	14.2 %
Car	22.0 %	30.8 %
Bus (including AC Express bus)	37.5 %	52.7%
Train	1.4 %	2.0 %

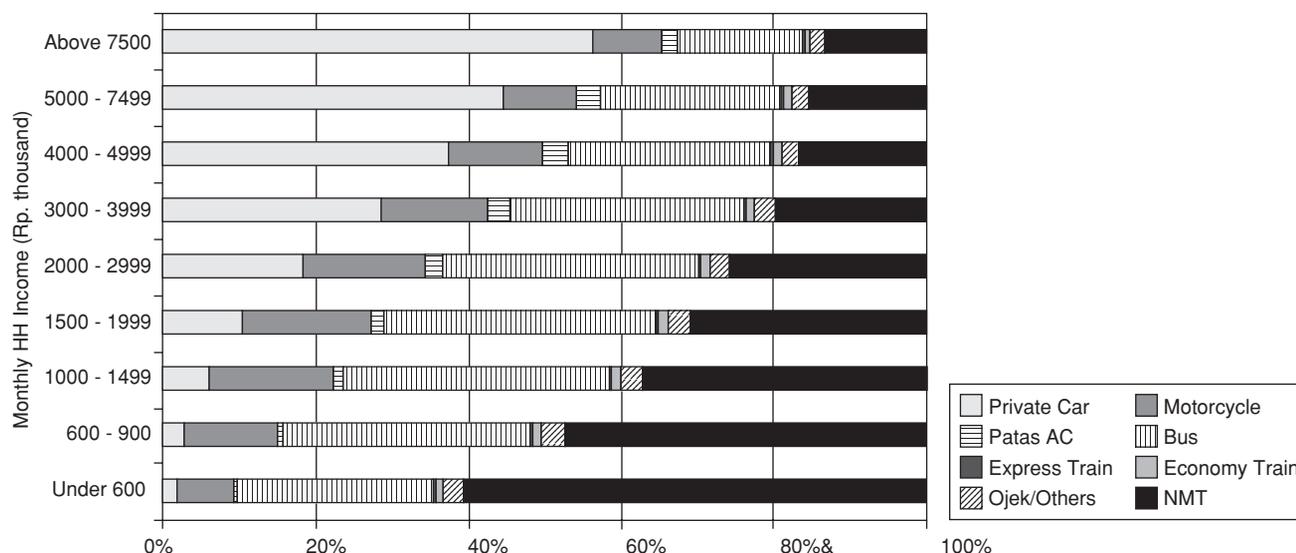


Fig. 5 Modal shares by household income¹⁰

Compared to the modal share in 1985, the share of public transport has decreased slightly from 57 percent to 52 percent. In contrast, the share of private cars has increased from 22.8 percent to 30.8 percent. The share of motorcycle has decreased from 20.2 percent to 14.2 percent. A general trend of modal shift from public transport to private has been observed over the last 15 years.

Grouping the mode choices based on income level shows very clear evidence that in Indonesia private cars are mostly used by higher income groups (Fig. 5). Interestingly, for the lowest income group the share of non-motorized transport is as high as 60 percent. This might also imply that even use of public transport is economically difficult for the lowest income group. Thus they rely heavily on non-motorized modes. Therefore, provision of transport means for the poor is one of the important issues to tackle.

2.4 The increasing trend of traffic flows

As the urbanized areas are continuously expanding, the traffic demand of the road network to and from the JMA core area has been and will continue to grow. Fortunately, the incremental rate is decreasing. Comparing the previous traffic survey study at the JMA’s cordon line¹⁴⁻¹⁶, the traffic volume from 1988 to 1993 has increased by 12.6% per annum and from 1993 to 2000 has increased by 6% per annum. However, it is a significant increase, which has significant potential in creating severe traffic congestion in the JMA in the future.

Moreover, contributing to the existing congestion in the JMA area, JICA and BAPPENAS’s study⁹ estimates that the total number of commuters from surrounding cities to Jakarta will increase from 762 thousand persons per day in 2000 to about 1.8 million in 2015. However, until now, the only connection available between the ar-

Table 2 Predicted pollution sources in JMA¹⁷

Source	NOx		SOx		TSP	
	ton/year	%	ton/year	%	ton/year	%
Industries	36,832	25.7	42,697	76.3	13,581	57.1
Households	4,962	3.4	4,220	7.5	642	2.7
Automobiles	98,738	68.8	8,142	14.6	9,563	40.2
Ships	1,960	1.4	808	1.4	-	-
Aircraft	1,026	0.7	91	0.2	-	-
Total	143,518	100.0	55,958	100.0	23,786	100.0

as is a road network that is already very congested with kilometers of private cars queuing in peak periods.

2.5 Uncontrolled motorization and degradation quality of live

The discussions above have shown that the uncontrolled motorization in the JMA has significantly affected the quality of urban resident's lives in all aspects, not only in economic and travel aspects but also in social, psychological, and health aspects. Air pollution, which was an occasional annoyance in the past, has become a critical threat to the JMA urban population's health. The study by JICA and BAPEDAL¹⁷ shows that automobiles (both private vehicle and transit) have become the main source of air pollutant emissions for NOx and the second for SOx and TSP (Total Suspended Particulate) pollution (Table 2).

3. BUS RAPID TRANSIT IN JAKARTA

Suppressing the trend for motorization, especially use of private cars, and providing a proper public transport service should become the main priority of the government to stop the degradation of the JMA residents' quality of life. However, in many cases, economic reasons and the political will of the government are major obstacles to implementing a user and environmentally friendly transportation policy in Indonesia.

The most recent break-through policy that was successfully implemented in Indonesia was a bus rapid system (BRT) in the JMA. This policy was successfully implemented due to an exceptional strong-will of the head of Jakarta's city government. Although it has only been operating since 2004, it is already considered a success in the JMA and a good example for other cities in Indonesia as well as in other developing countries.

In order to suppress the rapid motorization as well as to reduce severe traffic congestion and social and environmental impacts, several different policies have been

tried in the Jakarta metropolitan area, from traffic restraint policy (i.e. high occupation vehicle policy) to one-way traffic policy. However, since the refinement of the public transport sector has never had enough attention from the government, those policies did not provide any significant positive outcomes. However, in the last four years, there has been strong political support from the head of Jakarta's city government to create a proper and a cheap public transport system. In the end, they succeeded in implementing a Bus Rapid Transit (BRT) system in the core area of Jakarta city.

BRT is a form of customer-oriented transit (bus) combining stations, vehicles, planning, and intelligent transport system elements into an integrated system with a unique identity¹⁸. BRT typically involves bus-way corridors in segregated lanes – either at-grade or grade separated – and modernized bus technology. There have been various BRT systems operated throughout the world, e.g. Bradford, Bogotá, Boston, Adelaide, etc. One of the biggest success examples of BRT system is Bogotá's TransMilenio system, which went into operation in January 2001. By December 2001, the existing two lines already served over 600,000 passenger trips per day¹⁸. This system is considered a suitable system in developing countries, because it can be implemented at relatively lower cost and with lower technology compared to other mass rapid transit systems. Moreover, it can also be operated without a massive construction since it can be operated by using existing road corridors. However, as a consequence, it needs a dedicated line from the existing road corridors that will suddenly increase the traffic congestion (which is already present) and attract policy resistant from the road users. For further explanation about the advantages and disadvantages of the system see Wright¹⁹.

In Jakarta, the first BRT corridor was essentially planned and implemented during the 9-month period from May 2003 until January 2004²⁰. A 12.9 km initial closed-system BRT corridor began operation on January 15, 2004, which started from Blok M bus terminal and

ended at Kota Station (from north to south on the main road corridors) was operated by TransJakarta company (Koridor I in Fig. 6). For detailed characteristics of the operated bus see Ernst²⁰.

In the first year of operation (2004), 15.9 million passengers traveled by this system (approximately 44,000 passengers per day or 3,600 persons/hour/two directions). The average busway load factor during the week was 91% and during the weekend was 75%, with the highest load factor during the evening peak on weekdays, of up to 143%²¹.

The Jakarta city government provided all the initial construction costs for the infrastructure and the buses. It is considered a sunk cost because they want to support this new public transport system. In the first year of this bus-way operation, the comparison between operation - maintenance cost and the revenue showed that at the end of the first year revenue had increased more than the costs²¹.

Since the system was just initiated two years ago and the Jakarta city government is still completing the whole planned BRT routes, it might be too early to measure the impacts of the BRT system on the transport network performance and travel quality in Jakarta metropolitan area. However, some preliminary studies^{20,22} reported that the initial performance of the system is very promising. There has been a significant number of mode shifts from private car to the BRT, while BRT enables the

passenger to travel 10–20 minutes faster than regular bus users²². Due to the trend of passengers shifting from other modes to the BRT system, the NOx and PM10 emissions caused by automobiles has decreased by 202kg and 30kg per day respectively²⁰.

Continuing the development of the BRT corridors through 2004, the local government of Jakarta city constructed the next corridors of the BRT, namely the Pulo Gadung-Harmoni and Kalideres-Harmoni corridors (corridor 2 and 3). These corridors allow movement from west to east and will be combined with the Blok M - Kota corridor which serves the north and south movement, so that a balance of four axes of movement will be reached. Private companies, under supervision of the city government, have operated these corridors since January 2006. Besides these corridors, there will be another 12 corridors and feeder lines that will be developed in the Jakarta metropolitan area in the near future.

Another constructed mass transit system: Monorail

Simultaneously with the development of the BRT system, a monorail system in JMA has started in the construction phase. The monorail route planned to be integrated with the BRT corridors in the future. This advance Mass Rapid Transit (MRT) concept was begun in the 1980s when the traffic congestion reached an unacceptable level; long before the BRT system was considered. In 1996 the government of Indonesia wanted to begin the first stage of a subway system in Jakarta, however the onset of Asian Economic Crisis in 1997 delayed the project. In 1999 this project was revived with the revised basic design study aimed to reduce the capital cost. This project is expected to be the first modern public transport system in Jakarta, which will significantly increase the patronage of public transport that in turn will reduce traffic congestion¹⁰. The newest projected monorail route in JMA is projected, that in 2015, there will be more than 350,000 passengers using this monorail system per day¹⁶. It was estimated that a three-car unit was the most suitable configuration with headway of 3.5-4.6 minutes in peak period and 6.9-9.1 minutes in the off-peak period²³.

4. DISCUSSION: PROGRESS SO FAR AND FUTURE IMPLICATIONS

4.1 Reflection from existing conditions

It has been shown that motorization is progressing rapidly in Indonesia and especially in the Jakarta metropolitan area. Between 1985 and 2000, car ownership, the number of private car trips as well as the travel distance



Fig. 6 Map of Jakarta BRT line⁴²

all significantly increased. The poor quality of public transport services has encouraged travelers to shift to private vehicles once they could afford a motorcycle or a private car. It has been shown that the desire to own a car is much higher in developing countries than in developed countries. As a result, severe traffic congestion that spreads over the city areas has become a daily event and the public transport system is only used by captive users. Automobiles also have become the main pollution source in the JMA.

If the government does not take any serious action, such as increasing the fuel cost by decreasing the fuel subsidy, or introducing transportation demand management and traffic restraints such as road pricing and supporting the improvement of public transportation, the conditions will deteriorate even further. The impact of this situation is not just the loss of time, but also the environmental and social impacts, as providing transportation for the poor is also an important factor in developing countries.

Fortunately, despite huge negative reactions from car users and skeptical politicians, the government of Jakarta city has taken the initiative to encourage and to fund the first BRT system in Indonesia, followed by the development of a monorail project. Implementing BRT and monorail projects in the JMA is considered a suitable transportation policy to steer the JMA towards becoming a sustainable city. Although it is still in an early stage, so far the BRT system has given promising benefits in the JMA and has encouraged the governments of other cities to implement a similar BRT system in their cities. However, the monorail project is still struggling to get financial backing from local or central government.

4.2 Future implications

The main weakness of the present system in Indonesia is a lack of commitment and political-will in the government to take on and implement a consistent urban transport development policy in Indonesia, which in most cases is an unpopular development policy among car users. The Jakarta city government has succeeded in implementing the BRT system mostly due to a strong and consistent leadership from the local governor that has overcome all the critics and public pressure. However, this is not the case with other cities. There have been many studies for the improvement of transportation conditions in Indonesian main cities that have been funded by the World Bank, Asian Development Bank (ADB), aids or grants from foreign nations or even from local government funds (i.e. UPTP²⁴, BMARTS²⁵, SUTP²⁶).

However, unfortunately, only small numbers of them were implemented.

Based on the data described above and several other previous studies, we try to address several future implications. Unfortunately, we are not aware of any sound studies that have been undertaken in the JMA which explore the future of the JMA in the effort to suppress motorization and to promote public transportation as well. Thus, all data and several previous studies provided above were employed as the main source to understand the real condition and to reveal the root of the problems. With this condition in mind, we rigorously explored the literature to find important factors, which we believe that the factors show the potential to solve the problem. The basic motive in providing these future implications is to provide the developing cities with a series of substantial actions. Banister²⁷ argued that the challenge for sustainable urban development is the requirement of clear and substantial action, either to accommodate the scale of expected growth or to explore the means by which economic growth is not limited by substantial increases in energy and transport consumption. In addition, Schipper and Fulton²⁸ argued that to develop sensible, sustainable plans and policies in transport, it is first necessary to understand where one stands and where one is heading. Thus, it can be argued that this suggestion regarding future implication is one way to know future progress.

The implications are as follow:

1. Greater commitments from the government in public transport development

It is clear that the trend of motorization has already become a critical issue and suppression of the rapid increase of private cars is a must. However, people have to fulfill their daily mobility needs and the existing public transport facilities are not adequate, both in quality and quantity, to fulfill the demand. This fact emphasizes the need for greater attention from government to support a public transportation friendly policy. Public transport service is not a free good, which is not able to play in a pure free market¹, then the intervention of and taking sides by the government is imperative. It is pointless restraining the use of the automobile while there is no acceptable alternative mode. That will only make drivers find a way around the traffic restraint schemes rather than consider changing their mode. Moreover, greater commitment from the government is significant, as Dimitriou²⁹ argued that a major root problem is that no effective sustainable alternative to a motorized-dependent vision has been realistically introduced by governments as a ba-

sis for future urban transport policy, despite severe resource constraints.

2. Improvement of the existing public transport conditions

The real problem in developing countries is not the high use of automobiles, but the poor service quality of the public transit system³⁰. However, as in most developing countries, Indonesia has only very limited resources for developing an acceptable public transport system for the whole community, especially the poor. To cope with this problem, studies by GTZ²⁶ and UPTP^{24,31,32} offer a good solution. These studies encourage local government to improve their public transport system by empowering and improving the existing system, which in the studies' context it means empowering the bus and paratransit services. The basic idea of this suggestion is that the provision of existing public transport should be improved first, rather than trying to implement a new system that might need higher costs. For example, because the root of the public transport problems in Indonesia is in the management, regulation, supervision, and financial sectors, the refinement of the existing public transport management policy has become a priority. Then, the parties involved in the public transportation provision should show good achievement in the existing service period as a passport for further cooperation and further involvement in this market in the next service period (which will be done under a contract based tendering system). It means that there is some measure that will make the public transport service providers work efficiently and effectively. In addition, public transport improvements must be part of a larger package in which one considers ways of financing these improvements³³.

3. Initiative from government to encourage Transit-oriented Development (TOD)

To create a sustainable transportation system, integrated land use and transportation planning is essential. The question of how to develop these kinds of urban public transport systems should begin with the recognition that an evolutionary relationship exists between urban expansion and types of public transport³⁴. To prioritize a Transit-oriented Development (TOD) plan is the only way to suppress the rapid growth of motorization and to create the transit-friendly environment. Calthrope (in Dittmar and Ohland³⁵) defined TOD as a combination of regional planning, city revitalization, suburban renewal, and walkable neighborhoods. The best practices in implementing this approach can also be found in Cervero⁷ and Newman and Kenworthy³⁶. In Indonesia, it is only Jakarta and Surabaya city governments who already show

a commitment to implementing the transit-oriented development planning. Although the level of their success and the comprehensiveness of the planning are questionable, this positive step should be appreciated, encouraged, and supported.

4. Integrating and funding TOD development with the road charging schemes

Combining the implementation of TOD and the improvement of facilities and service of public transport with the implementation of road-charging schemes would enable the city's government to cover the costs of externalities from use of the automobile, finance the public transport service, and also, at the same time, restrain the use of automobile. The best practices, such as in Singapore and London, for example, can be used as an example of how to design and implement successful measures in an urban context, although an in-depth study for implementing it in developing countries context is needed.

5. Maintain the consistency of commitments, cooperation, and coordination between stakeholders

Since the relationship amongst stakeholders in an urban public transport system is very complicated and inter-dependent, the very basic requirement for all planning and implementation in urban public transport is regulation, to keep all the players on the right track. Vuchic³⁷ argues that an overall urban transportation system cannot be coordinated and upgraded until a regulation to coordinate it is introduced. However, the regulation becomes just a document if it is not acknowledged by all stakeholders and not accompanied by the appropriate law enforcement. Thus, keeping the commitment and the consistency of government and all stakeholders in implementing the policy and its law enforcement afterwards is a must.

6. Supervise the government's decision-making processes

The failure to abandon conventional-wisdom urban transport planning practices is widespread, and these practices unquestionably accommodate motor vehicle growth. This is associated with the root problem that many Asian governments perceive high rates of motorization as an indicator of economic virility²⁹. Thus, supervising the government's decision-making processes will make sure that the consistency of the government's transit-oriented development policies is as important as the policy itself. Jakarta city established such an urban transportation board in 2004, which it called the City's Transportation Board (DTK, Dewan Transportasi Kota). This board consists of 15 members including academics, experts, businessmen, NGO activities, operators, the community, the department of communication, and the

police who are responsible for supervising the city government policy in transportation development. However, until now, the board has not worked properly in line with the sustainable transportation visions. Recently, Kompas³⁸ reported that this board agreed to build new six inner city toll roads, which does not seem in line with the spirit of TOD. Keeping the board consistently serving the community rather than becoming the city government's "approval board" is the major challenge.

7. Develop a unique approach for each developing country, based on their own culture, society, and travel behavior, as well as resources

Although there have been many transportation policy studies carried out in Indonesia, only a small number of them have incorporated individual travel behaviour factors in their analysis of the proposed policy; a series study like SITRAMP^{9,10,12,16} was an exception. Disregarding travel behaviour analyses in analyzing a feasibility of transport policy can produce a policy that is unacceptable to the community and will face a possibility of strong rejection when it is implemented. As an example, Susilo³⁹ demonstrated that a similar road development in two similar rural areas on different islands with different communities in Indonesia can give a very different impact to the local economic conditions. Moreover, there is an obvious gap between the have- and the poor-community in term of social and economic capability in developing cities, as well in Indonesian cities. Thus, more attention on the equity of urban transport policy characteristic in developing countries becomes imperative, especially to the poor and minorities, since Deka⁴⁰ argues that while efficiency is certainly desirable, it does not guarantee a fair distribution. Surprisingly, as stated by Beimborn et al.⁴¹, little is known in detail about how to consider transit and automobile captive groups on the transit modelling process.

5. SUMMARY

Motorization is progressing rapidly in the JMA and also in other developing countries' metropolitan areas. Supported by poor quality of public transport services in Jakarta, motorization has caused severe problems, not only in transportation, but also in environmental, social, and economic aspects. If the stakeholders do not start to cooperate and take any serious action to suppress the motorization, the conditions will deteriorate even further from the present situation. The lesson learned from JMA's context emphasizes the need for a clear vision, commitment, consistency, and leadership in creating a sustain-

able city, which provides a means of mobility for all including a guarantee of the city's sustainability for the future. The action should be based on and confirmed by the community's needs and expectations.

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