

**The Study of Transportation Jakarta and Their Problem**  
**(Tracing to Sustainable Transportation)**



**Dr. AchmadNurmandi, M. Sc.**

**Perwira Sultan Kelana**

**20100520019**

**INTERNATIONAL PROGRAM OF GOVERMENTAL STUDIES**

**SOCIAL AND POLITICAL SCIENCE**

**UNIVERSITY MUHAMMADIYAH YOGYAKARTA**

**2015**

# **Table of Contents:**

1. INTRODUCTION.....	5
1.1 Background.....	5
1.2 Identification.....	11
1.3 Problem.....	11
1.4 Theory.....	12
1.4.1 Travel Patterns.....	13
1.4.2 Six Indicators in Sustainable Transportation.....	16
1.4.3 Mass Rapid Transit.....	18
1.4.4 Epistemology of BRT System.....	21
1.5 Methodological.....	26
1.5.1 Step of Research.....	26
1.5.2 Type of Research.....	28
1.5.3 Data Collection.....	29
1.5.4 Benefit.....	29
1.5.5 Goals.....	2
1.5.6 Time.....	32
1.5.7 Conceptual Definition.....	32

1.5.8	Operational Definition.....	32
1.5.9	Primary & Secondary Data.....	34
2.	LITERATURE RIVIEW.....	32
2.1	Sustainable Transportation.....	36
2.2	Lower Transportation Public Users.....	43
2.3	Lowe Law Enforcement.....	46
2.4	Parking Management.....	48
2.5	Hypothesis.....	51
3.	OBJECT.....	52
3.1	DKI Jakarta.....	52
3.2	Area Condition.....	53
3.3	Social Economic Condition.....	54
3.4	Total Population.....	54
3.5	Amount of Vehicles.....	55
3.6	Length of Road.....	55
3.7	Transjakarta (Bus Rapid Transit in Jakarta).....	56
3.8	Vision and Mission.....	58
3.9	Corridor.....	59

4. ANALYSIS & RESULT.....	56
4.1 Interview Guide.....	60
4.2 Analysis.....	62
4.3 Result Data.....	71
5. CONCLUSION & SUGESTION.....	72
5.1 Conclusion.....	72
5.2 Suggestion.....	75
 BIBLIOGRAPHY.....	 78

## PART I

### INTRODUCTION

#### 1.1 BACKGROUND

Base from local Regulation in Jakarta no.1 in 2012 chapter 1 in subsection 9 said spaces is a crock which is includes to the land space, sea space, air space and also including any space on earth are one of regional unity as human and another creature leave to does activity and maintaining their life. Jakarta is a crock or places for anyone to leave and it has <sup>1</sup>the urban density in number 171 persons per Ha or 8, 2 million people whose leave in Jakarta. Jakarta has growing up to very largest population with highest urban density. Now days the urban density in Jakarta has been reach to the issue of congestion for transportation in Jakarta.

Mostly the citizens whose leave in Jakarta are not the origins of this city, Jakarta has pluralism culture because their citizens are come from various sub-urban area. They are making mobilization with purposes to working in Jakarta and surely they were brought vehicles and it will brought the impact to the Issues about congestion in Jakarta. However government has brought effort to resist this problem trough by bus

---

<sup>1</sup> Barter, P.A. (2000) Urban Transport in Asia: Problems and Prospects for High-Density Cities, *Asia-Pacific Development Monitor*, Volume 2, no. 1, April 2000 33-66.

transportation system because <sup>2</sup>Jakarta is depending to the bus system which consists to the main route, the branches route and terminal/bus station. Congestion has developing with continuity and being a main problem for this city.

Urban transport is a pressing concern in most large cities around the world. <sup>3</sup>The environmental and social impacts of urban transport are increasingly being seen as a threat to urban health, safety, economic efficiency, quality of life and even the sustainability of the global ecology itself. We should solve as soon as possible, because it will bring many disadvantageous for everyone. The possibility which will be happen is emergence in environmental problems. The energy crisis and air pollution are impacts from unsustainable transportation. The increasing of number vehicles in many places will make a big problem to national scale and also for global scale such like what will be explain in the next page.

To solve the transportation problem in a big city like Jakarta government has prepared the futuristic macro system which is following

---

<sup>2</sup> H.W. Doddy, Master Thesis: "STUDY OF SERVICE QUALITY IN THE PUBLIC BUS TRANSPORT: CUSTOMER COMPLAINT HANDLING AND SERVICE STANDARDS DESIGN. CASE STUDY: TRANSJAKARTA BUSWAY AND VÄRMLANDSTRAFIK AB BUS" (Swedish: University of Karlstad, spring 2009), 1.

<sup>3</sup> Nadis, S. and MacKenzie, J. J. (1993) in Faiz, A. (Ed.) Automotive Emissions in Developing Countries - Relative Implication for Global Warming, Acidification and Urban Air Quality. Transportation Research 167-186.

contemporary issues. <sup>4</sup>To design future transportation system in Jakarta in the framework sustainable development, some action plan is prepared in a macro comprehensive framework. Planning trends at this time are likely to predict and provide and in the future need changed to be predict and prevent. This change requires greater attention to demand management policies travel and promotion of public transport. Main issue in the short term is how to limit the use of private vehicle with campaigning and providing public transport

Sustainable transportation system is a system which considering to the environmental and for reaches the sustainability transportation system those are several measurements which is should be full. These systems always refer to the all of aspect either natural, economic, efficiency or social aspect. Sustainable transportation system is alternative solution to solving the transportation problem in Jakarta. Sustainable transportation system is a continuity system which has integration all aspect. Sustainable transportation gives so many benefits growing up the economy system without leave the natural environment. It is also keeping the natural resources because the sustainable transportation referring to the mass transportation and actually it will reduce the number of private vehicle user.

---

<sup>4</sup> Demographia. (2006) in H.W. Doddy (Ed.) Master Thesis: "STUDY OF SERVICE QUALITY IN THE PUBLIC BUS TRANSPORT: CUSTOMER COMPLAINT HANDLING AND SERVICE STANDARDS DESIGN. CASE STUDY: TRANSJAKARTA BUSWAY AND VÄRMLANDSTRAFIK AB BUS" (Swedish: University of Karlstad, spring 2009), 1.

<sup>5</sup>In the recent years the government in Jakarta has success to build the transportation mode with sustainable transportation system namely is “Transjakarta”. It is the urban transportation which includes Bus Rapid Transportation (BRT) category. The Transjakarta is an expectation to citizen in Jakarta to solve the congestion that still exist on Jakarta. Basically Transjakarta is a public transportation with large capacity as mass transportation and capable to carries a large numbers passenger. The government has recommended to citizen to use this public transportation in order to minimalism congestion in Jakarta and reduce number vehicles trough by sustainable system.

Barter, P.A (1999) <sup>6</sup>said that inappropriate transport patterns represent one of several important threats to global ecological sustainability. In another word the transportation pattern which is not arranged can threat the sustainability of ecology. Inappropriate transportation patterns in Jakarta which has various characteristic transportations also can influences the sustainable transportation. Basically in sustainable transportation system, every aspect contained in sustainable system has coloration to create the

---

<sup>5</sup> Wijaya .K (2003) in H.W. Doddy (Ed.) Master Thesis: “STUDY OF SERVICE QUALITY IN THE PUBLIC BUS TRANSPORT: CUSTOMER COMPLAINT HANDLING AND SERVICE STANDARDS DESIGN. CASE STUDY: TRANSJAKARTA BUSWAY AND VÄRMLANDSTRAFIK AB BUS” (Swedish: University of Karlstad, spring 2009), 1.

<sup>6</sup> Barter, P.A., Doctoral Dissertation: “An International Comparative Perspective on Urban Transportation and Urban Form in Pacific Asia: The Challenge of Rapid Motorization in Dense Cities” (Perth: Murdoch University, 1999), 4.



sustainability. Suthanaya and Black describe <sup>7</sup>four scales which influencing the sustainability transportation and those are: Local scale, regional scale, regional scale, and global scale. It will be explain with more detail in the next chapter.

Transportation has important role to create the sustainability in many aspect. <sup>8</sup>Inappropriate transportation pattern in regional scale will bring the impact to the national and also global scale. But the tendency in society which has chosen private vehicle better than public transportation was influenced the sustainable transportation. The urban chooses the private vehicle better than public transportation can influences national and global scale in sustainable transportation system and the impacts of this problem are fuel energy crisis and also global warming.

The sustainable transportation program can't run with very well when one of attributes is not working. Actually this research has purposes to measure the truth and how far successful process of Transjakarta who has applied the sustainable transportation system in Jakarta. Measurement of Jakarta to building the sustainability transportation system in regional scale can determine with Transjakarta as a public transportation. This study will

---

<sup>7</sup> J.A. Black, etc. 2002. Sustainable Urban Transportation: Performance Indicators and Some Analytical Approaches, Journal of Urban Planning and Development, December 2002. Page 191

<sup>8</sup> J.A. Black, etc. 2002. Sustainable Urban Transportation: Performance Indicators and Some Analytical Approaches, Journal of Urban Planning and Development, December 2002. Page 191

be using several elements that to measure the successful of Transjakarta to building the sustainable transportation system.

From literature review which author has read in book of Suthaya and Black (2002) They said thos are <sup>9</sup>six indicators in sustainable transportation, and they are: Economic efficiency, convenient road and neighborhood, Protection of environment, Equity and social inclusion, Safety, and also contribution to the economic growth and then from these indicators we will analysis how transjakarta apply the process of sustainable transportation. The explanations about measurements are described in the next chapter in more detail.

In this study the author have role as researcher that will be use field research to analysis the successful process from transjakarta which is applying the sustainable transportation system. The Author will be use six element from suthaya and black as an indicator to measure the successful of sustainable transportation has applied in transjakarta. We will learn with directly about the performance transjakarta for fulfill the requirement to be the sustainable transportation in this city.

---

<sup>9</sup> J.A. Black, etc. 2002. Sustainable Urban Transportation: Performance Indicators and Some Analytical Approaches, Journal of Urban Planning and Development, December 2002. Page 188

We will find the answer about the sustainability process from transjakarta. The verification data which has got from this research will be comparing to the indicators in sustainable transportation. Then we will know about the criteria of the transjakarta, whether they are including to the sustainable transportation or not we can know from the analysis. Any indicators which have not fulfilled the aspect in a sustainable transportation will be discussing as a material consideration. The element which has not required to the aspect in sustainable transportation should be avoided as soon as possible and the element which not to be required will be the sub-problem which will be solve.

## **1.2 IDENTIFICATION**

The developing BRT system was given a promise to solve congestion in Bogota, Columbia and actually it does not except to Transjakarta whose began to developing the sustainability transportation in their city. Those are predictions about successes in sustainable transportation which apply in Jakarta. Therefore author wants to describe how far successful process Transjakarta has applied the sustainable transportation system.

## **1.3 POBLEM**

1. How the process of Jakarta which is Implementing the sustainable transportation system to solve their problem

## 1.4 THEORY

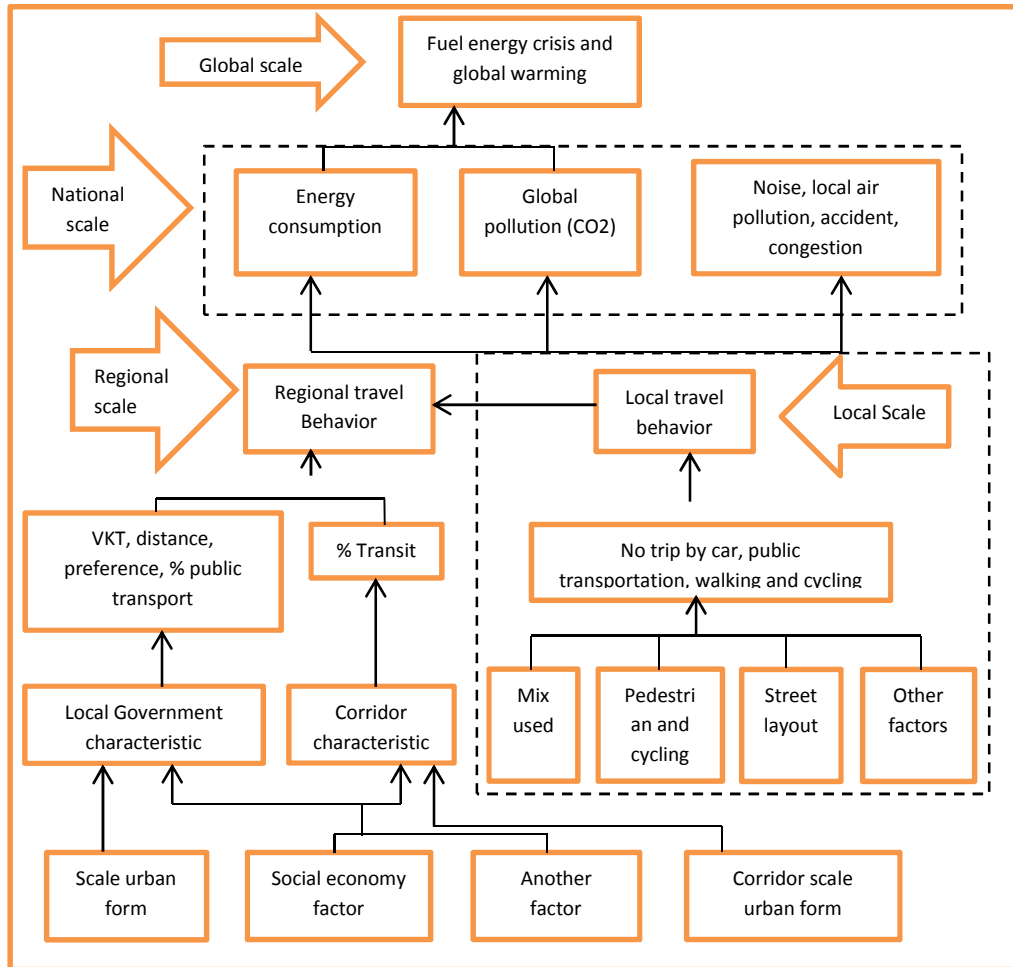
Due to the characteristic from urban transportation of many countries have different characteristics. According Barter, P.A (1999) said that <sup>10</sup>different land use arrangements encourage different transport modes to flourish. Moreover sustainable transportation system that applied in several countries, sometimes not working with very well and therefore only there are some definitions that can be declared as a sustainable transportation. Basically the definition of sustainable transportation system is a system in a field of transportation which has a sustainable purpose to the various aspects. According Josias Zietsman and Laurence R. Rilett said Sustainable transportation is <sup>11</sup>attempts to address economic development, environmental stewardship, and social equity of current and future generations. Such like what Josias Zietsman and Laurence R. Rilett, we will understand that sustainable transportation will bring the impact to the various aspects. In another words we can conclude that sustainable transportation system is a system which influence to the various aspect for the future generation.

---

<sup>10</sup> Barter, P.A., Doctoral Dissertation: "An International Comparative Perspective on Urban Transportation and Urban Form in Pacific Asia: The Challenge of Rapid Motorization in Dense Cities" (Perth: Murdoch University, 1999), 30.

<sup>11</sup>Rillet, L.R. and Josias Zietsman. "Sustainable Transportation: Conceptualization and Performance Measures". (Transportation Research Paper at University of Texas & Southwest Region University Transportation Center, Texas, 2002), 1-9.

### 1.4.1 Travel Pattern



**Pic 1.4.1 Travel Pattern**, Source: J.A. Black, etc., 2002. Sustainable Urban Transportation; Performance Indicators and Some Analytical Approaches, Journal of Urban Planning and Development, December 2002. Page 191

The picture 1.4.1 is a pattern of travel Suthanaya and Black have distinguished the travel pattern to be four scales Travel and they are Global scale, national scale, regional scale, and also local scale. They said <sup>12</sup>patterns at the regional scale need urban-form solutions at the regional scale. Similarly, solving travel patterns at the local scale needs a local solution. In

<sup>12</sup> J.A. Black, etc. 2002. Sustainable Urban Transportation: Performance Indicators and Some Analytical Approaches, Journal of Urban Planning and Development, December 2002. Page 191

the local scale, it is specific talking to the local travel behaviour and also they will talk street layout, pedestrian area, and also cycling without considering to the public transportation or private vehicle. Different with local scale, the regional scale is more talking about private vehicle, public transportation and also talk about characterise of local government whose make the policy for the traffic management. In a part of national and global scale they are discuss about the environment such like energy consumption, global air pollution, Noise, local air pollution, accident, and also congestion. Four of scale which we have to discussed had a coloration from one each other and therefore is very important to know be we continues the discussion.

In this study we are only talking about the transportation Jakarta which processing to be the sustainable transportation and it means that we are only talking about the regional scale. The several factors are cause for regional scale, but in this study the author only discuss about the public transportation and policy in public transportation that being the majority problem in regional aspect. Author choose the public transportation and their policy for this study because public transportation is a media for urban to reach sustainability in transportation. The problematic in public transportation has influences to the national scale even global scale because every scale in sustainable transportation system can influences one and others.

Decreasing of number passengers in public transportation actually<sup>13</sup> influence the national scale in attribute of energy consumption, global pollution, Noise, local air pollution, accident, and also congestion. In sustainable transportation system every problem has coloration one and each other and this is same applicable to the regional, national and also global scale. Of course the impact from national scale in aspect Energy consumption, Global pollution (CO2), Noise, local air pollution, accident, and congestion clearly will influences the global scale. Fuel energy crisis and global warming will happening in level of global scale and this is an impact from transportation problem in regional scale.

Actually in level of local scale is not difficult like in regional scale because in local scale there is not have factors to influences other scale such like regional, national, and global scale. In local scale often discuss about local travel behaviour such like No trip by car, public transportation, walking and cycling. The local travel behaviour like author said above this text explains that local behaviour is not bringing the negative impact to another aspect. Travel with bicycle and also walking by foot are not contributes to the emission problem. Therefore this study aims to the regional scale that will discuss about the transportation problem in Jakarta.

---

<sup>13</sup> J.A. Black, etc. 2002. Sustainable Urban Transportation: Performance Indicators and Some Analytical Approaches, Journal of Urban Planning and Development, December 2002. Page 191

### 1.4.2. Six Indicators in Sustainable Transportation

Those are indicators about sustainable system from some expert in sustainable transportation field which claim as the best system at the several countries. But in the fact the sustainable transportation system that applied in several countries sometimes is not match to the characteristic of regional scale in some countries. Several parts of European countries had had an experience about the sustainable transportation system. This is one of any kinds theories that describing the sustainable system in general from Suthanaya and Black (2002). They said those are <sup>14</sup>six indicators in sustainable transportation, and they are:

#### 1. Economic efficiency

Economic efficiency is a <sup>15</sup>term typically used in microeconomics when discussing product. Production of a unit of good is considered to be economically efficient when that unit of good is produced at the lowest possible cost.

#### 2. Convenient road and surrounding environments

<sup>16</sup>A “traditionally” negative aspect of public transport, as compared to the private car is the lack comfort during the trip. Although by

---

<sup>14</sup> J.A. Black, etc. 2002. Sustainable Urban Transportation: Performance Indicators and Some Analytical Approaches, Journal of Urban Planning and Development, December 2002. Page 188

<sup>15</sup> Mike Moffat, “What does Economic Efficiency mean?” open economics.about.com

([http://economics.about.com/od/productivity/f/economic\\_eff.htm](http://economics.about.com/od/productivity/f/economic_eff.htm) accessed September 1, 2015)

<sup>16</sup> Gianopoulos (1989) in H.W. Doddy (Ed.) Master Thesis: “STUDY OF SERVICE QUALITY IN THE PUBLIC BUS TRANSPORT: CUSTOMER COMPLAINT HANDLING AND SERVICE STANDARDS DESIGN. CASE STUDY: TRANSJAKARTA BUSWAY AND VÄRMLANDSTRAFIK AB BUS” (Swedish: University of Karlstad, spring 2009), 4.



definition that “mass” transit operation cannot provide the same level of comfort as that of private car, an acceptable level must be provided so as, combined with other advantages of public transport to make modal choice turn in favour of the latter and primarily include air pollution, noise levels, and vibrations, have become very important for the congested urban areas where the buses usually operate.

### **3. have secure Area**

An effort of mode transportation and have to guarantying safety of passengers.

### **4. Justify and social participation**

Additional element placed or affixes the passengers to use this mode transportation.

### **5. Safety**

<sup>17</sup>The mechanical parts of the urban bus and especially the body structure, the chassis, the suspension, the types of doors and their mechanism, the control systems (brakes and steering), the transportation system, and other characteristics of the vehicle are the elements that influence directly on safety of the operation.

### **6. Economic contribution**

The economic contribution aspect is a contribution from mode transportation to building economy trough by the result of ticketing.

---

<sup>17</sup> Gianopoulus (1989) in H.W. Doddy (Ed.) Master Thesis: “STUDY OF SERVICE QUALITY IN THE PUBLIC BUS TRANSPORT: CUSTOMER COMPLAINT HANDLING AND SERVICE STANDARDS DESIGN. CASE STUDY: TRANSJAKARTA BUSWAY AND VÄRMLANDSTRAFIK AB BUS” (Swedish: University of Karlstad, spring 2009), 4.

### 1.4.3 Mass Rapid Transit

MRT (Mass Rapid Transit) is an urban transportation system that has 3 main criteria, mass (large capacity), rapid (faster travel time and high frequency), and transit (stop at many stations in the urban main point). In another word we can conclude the Mass Rapid Transit is an urban Transportation system with large capacity which has faster travel time frequency also stops to many urban points. Basically the concept mass rapid transit has developed in many countries depends to characteristic from it. Mass rapid transit evolves to be various transportation due to they are depend to the characteristic from the urban, for the example depend to landscape, technology, and their capacity. Lloyd Wright and Karl Fjellstrom (2002) have distinguished <sup>18</sup>general form of Mass Rapid Transportation:

#### 1. MRT

Mass Rapid Transit (MRT) is including to public transportation, this transportation has a special lane along town. This transportation is transportation passenger service which operating only in local distance and not for intercity. Usually the passenger will pay the ticket with compatible distance of trip. They have large capacity to carry passengers. Mass Rapid Transit also has a schedule which matched by routes or line on several places.

---

<sup>18</sup>Wright.L. - Karl Fjellstrom. Modul 3A OpsiAngkutanMassal, TransportasiBerkelanjutan: PanduanBagiPembuatKebijakan di Kota-kotaBerkembang.(Braunschweig: TZ VerlagsgesellschaftmbH, 2002), 2.

## **2. Heavy Rail Transit**

Basically the system of heavy rail transit uses the electricity as a movement for this public transportation. They haven't an intersection or in another word this transportation has exclusive rail way for them. Heavy rail transit was designed with latest technology with acceleration system and high speed characteristic. One of the examples from this category is Shinkansen (新幹線) from Japan with maximum speed 240 – 320 Km/H.

## **3. Light Rail Transit (Monorail)**

Light Rail Transit is a public transportation with design one rail way coach, ordinary we know this system with monorail name. The operation system from light rail transit usually operates under the ground, on the street, and also hanging in the air. Ordinary the light rail transit only has smaller capacity to carry passenger. The light rail transit is different with MRT or Heavy rail transit because it's only carrying tens passenger in one capacity.

## **4. Metro (subway)**

Metro is transportation system same like ordinary train which use a rail way but operating their system under the ground. We know this system ordinary with subway name. This transportation system is more expensive better than others because they have an exclusive lane under the ground for their movement. Need big fund to build

this transportation system because they are use the underground system to be movement. Usually this transportation uses three multilevel paths under the ground.

#### **5. Commuter line**

The commuter line is a public transportation with rail way which rotating around on outskirts area. The function of commuter line is carrying suburban passenger to the city passing by their rotation. Because of they must carry the passenger outskirts of city, so that they have a long distance and also large capacity. It is Different with Light rail transit, because they have many rail way coaches. The operation system is located on outside from the central part of city.

#### **6. Bus Rapid System (BRT)**

Bus Rapid system (BRT) is a public transportation which include to several of Mass Rapid Transit (MRT) category. We also know this system with Bus way. They are variation from MRT system which orientates to the station and vehicle. This transportation using the Bus system but they have a special track as a movement, different like others. They are not use a rail way as a main system because they are using the wheels for move on the street. The inspiration of this transportation comes from MRT system which has a special lane system.

#### **1.4.4 Epistemology of BRT system**

In this section we will learn the history of Bus Rapid Transit (BRT) system is develop from USA until to Asia, Africa, and Latin America. History about the BRT of Weinstock (2011) has an empiric characteristic data and relates to every incident in every year at U.S.A. Development public transportation in U.S.A was begun on 880's many cities around the world developed networks of streetcar lines as a public transportation and moreover the streetcar replaced horse cars. In several years the street car line was developed because they are must to require for the urban characteristic. Recent developments are in the form to the BRT systems and finally developing nation like Asia, Africa, also Latin America are following this system due to very efficiently.

In the late nineteenth century horse drawn carriage was to leaved and replaced with street car lines because horse drawn carriage has some weakness for the public transportation. Horse drawn carriage is can't to carry a large capacity passenger and also horse will carry dirt long of trip. Horses littered the streets and sometimes horses got sick, ordinary the horse which is get illness will be shooting down on the spot by their owner. The carcass is left to rot in the street by the owner and it is complicating a local mayors. Finally From the turn of the century until the 1940s, streetcars were the predominant mode of transportation.

Starting in the 1920's these streetcar companies became less profitable because World War I wartime inflation drove up operating costs. Model T Ford is most favourite vehicle in their era, but due to World War I that brings impact to the inflation requires their company to drops their price from \$950 to \$290 and this is spurring mass car ownership also signalling a shift to the private transport in the U.S.<sup>19</sup>The total number of streetcars peaked nationally in 1917 at 72,911 and by 1949 had dropped to 17,911.

San Antonio, Texas became the first large U.S. city to replace its streetcar system with buses (not BRT system). When the 1920s, General Motors companies started buying up financially troubled streetcar companies and convert to the bus operations. GM joined with the Omnibus Corporation in 1926 to buy out the largest streetcar company and convert it-to the bus company. <sup>20</sup>They cut the total miles of trolley tracks in New York from 1,344 to 337 between 1919 and 1939.

From 1936 until 1950 general motors changed to be State-owned enterprises and also their name was change to be National City lines. This company is composing from any private vehicle and those are Firestone, Mack, also Standard Oil of California. The national city lines has took over any privates companies, Cleveland and Chicago which just open their companies in several years must join to national city lines in 1942 and 1947.

---

<sup>19</sup> Jackson, K. "Crabgrass frontier: The suburbanization". In Weinstock, A et al., (Ed.).Recapturing global leadership in bus rapid transit: a survey of select U.S. cities. (U.S.A: Technical report of Institute for Transportation and development Policy, 2011), 11

<sup>20</sup> Jackson, K. "Crabgrass frontier: The suburbanization". In Weinstock, A et al., (Ed.).Recapturing global leadership in bus rapid transit: a survey of select U.S. cities. (U.S.A: Technical report of Institute for Transportation and development Policy, 2011), 11

The meaning of government to recruit private companies to join the National City Lines is save their country from external intervention.<sup>21</sup> From 1945 to 1949, New York City cut its trolley fleet from 1,228 to 606, while adding more than 1,700 new buses. Chicago, also a public system, had abolished all of its streetcars by 1958, and Detroit accomplished the same achievement by 1956.

Several private companies which move in public transportation is realize that giving buses exclusive lanes would allow them to bypass traffic congestion.<sup>22</sup> The first exclusive bus lane in the United States, and perhaps in the world, opened in downtown Chicago in 1939. Chicago also had ambitious plans to convert some inner city rail lines to bus ways, but the plan was never implemented. This is happen because those are many privates companies that move in public transportation field must join to the state owned-enterprise and must to obey the rules from government.

National City Line was start get any problem such like service decline that killed a lot of private vehicles. This is due to a Standard bus a system which has not an exclusive lane such like what has been applied in BRT features now.<sup>23</sup> Public transit ridership falls to 12 billion, down from 35 billion in 1945. Then in 1950 until 1970 public take over again their

---

<sup>21</sup>Teaford, J. "The rough road to renaissance: Urban revitalization in America 1940–1985". In Weinstock, A et al., (Ed.). Recapturing global leadership in bus rapid transit: a survey of select U.S. cities. (U.S.A: Technical report of Institute for Transportation and development Policy, 2011), 11

<sup>22</sup> Weinstock, A. et al., "Recapturing global leadership in bus rapid transit: a survey of select U.S. cities". (Technical report of Institute for Transportation and development Policy, USA, 2011), 13

<sup>23</sup> Weinstock, A. et al., "Recapturing global leadership in bus rapid transit: a survey of select U.S. cities". (Technical report of Institute for Transportation and development Policy, USA, 2011), 11

companies because of this problem is more widespread. Many traffic experts were discussed about measures that are now considered as elements of Bus Rapid Transit but no one idea can solve it.

<sup>24</sup>In the 1970s, a few prescient traffic engineers aware to developments to South American cities like Curitiba, Brazil, began some early prototypes of BRT like systems in the United States. Like New York City, Curitiba also feel same problem about the streetcar and then success to development BRT system in their city. Curitiba is successful to cutting their cost in streetcar problem through the fusion system between the streetcar with exclusive lane and also their bus as vehicle. The fusion system between the streetcar and bus made efficiency economic in public transportation cost.

Government in America is realize there is a mistake during develop the bus system without the exclusive like in their town. As Soon As Possible elected officials decided to instead the South Bus way system for apply in Los Angeles. They try same system like Curitiba and Los Angeles builds El Monte Bus way, the first BRT system in America.<sup>25</sup>The 11 mile El Monte Bus way were opened in 1973 to ease transit connections to downtown Los Angeles, at first accommodating only bus traffic, then opening up to carpools in 1976.Pittsburgh following the system like Los Angel to opens

---

<sup>24</sup> Weinstock, A. et al., "Recapturing global leadership in bus rapid transit: a survey of select U.S. cities". (Technical report of Institute for Transportation and development Policy, USA, 2011), 13

<sup>25</sup>Teaford, J. "The rough road to renaissance: Urban revitalization in America 1940–1985".In Weinstock. A et al., (Ed.).Recapturing global leadership in bus rapid transit: a survey of select U.S. cities. (U.S.A: Technical report of Institute for Transportation and development Policy, 2011), 13



BRT-precursor, the South Bus way in 1977. Finally both of these cities are success to build future transit investments.

Popularity of BRT system is not stop at 1980's, this is continues to 1990 a second wave of BRT began to appear in the United States.<sup>26</sup>It was stimulated by new U.S. FTA funding. The W. Alton Jones Foundation (now Blue Moon) also played a key role, actively pushing BRT as an alternative, more cost-effective solution to mass transit problems. The foundation provided top officials from several American cities to study tours in Curitiba, Brazil due to the BRT system is more look efficiently and very attractive as a material study in for sustainable transportation. In the last fifteen years at 2000's everyone from the parts of the world such like from Latin America, Asia, and Africa are try to study and developing about the BRT system.

So we can conclude the first BRT system was applied in Curitiba, Brazil with fusion concept transportation between Train and also bus as vehicle which move into the exclusive line. America also apply a same system like Curitiba in transportation and they are make BRT system is more popular because they have efficiently and also attractive for sustainable transportation system. The developing countries is doesn't want to left at behind about sustainable transportation. This is due to the BRT system was

---

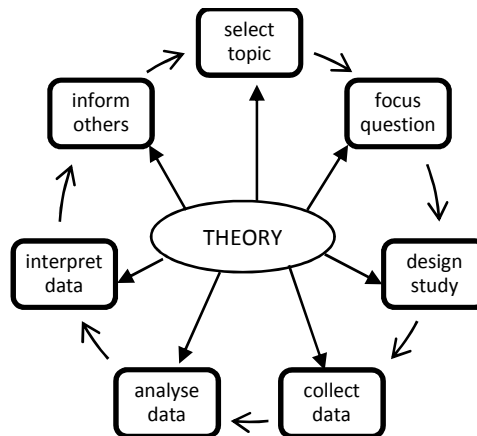
<sup>26</sup> Weinstock, A. et al., "Recapturing global leadership in bus rapid transit: a survey of select U.S. cities". (Technical report of Institute for Transportation and development Policy, USA, 2011), 15

giving contribution as a solution with a low cost for solving the transportation problem.

## 1.5 METHODOLOGICAL

So many the definitions about the methodology research in a general term. According W. L. Neuman said <sup>27</sup>in a simple term, research is a way of going about finding an answer to question. The definition of methodology research is a study about method in conceptual research”. In another word we can conclude the definition of methodology research is a study of method in conceptual research whereas the research is a way of going about finding an answer to the question.

### 1.5.1 Step of Research



**Pic 1.5.1 Step in research**, source W.L. Neuman, Social Research Methods: Qualitative and Quantitative Approaches fifth edition (U.S.A: Allyn& Bacon, 2010), 13

<sup>27</sup> W.L. Neuman, Social Research Methods: Qualitative and Quantitative Approaches fifth edition ( U.S.A: Allyn& Bacon, 2010), 2

In this research those are seven steps that have a relationship between one each other's. Basically every step is found by theory that supports the processing of research to answer the question. The starting point of this research is start in topic which selected base from theory about the sustainable transportation. Firstly, we will focus to the selecting topic about sustainability transportation. Because we are learning about the transportation of Jakarta, therefore we have object transjakarta public transportation which will be the object of this research.

Secondly we are focus to the question of sustainable transportation, surely because the object in this research is about the transjakarta, we will got about the problematic from the quality of transjakarta. For the next step we will decide forming of design study in this research. Design in this research is relating to the social research method by W.L Neuman (2010) and every step from this research did by theoretical which has existed.

In the next step of this research is data collection. It will take from two source, first the primary data which taken from key informant (Mr, Dodi Setion0) chief of traffic line program in department transportation in Jakarta. The secondary data will be taken from research (Dony hendra wijaya) and he has done the researched about the public service transportation in Jakarta there is the transjakarta.

For the analysing we will compare the data collections between Mr Dodi Setiono. Those data will be analysed with measurement from Suthanaya and J.A Black (2002) about sustainable transportation system. From these measurements we will know about the arguments and then we will take conclusion from the argument as a result.

In the interpretation data, we will interpreting or describe result from the data collection. Interpretation is a describing problem and giving solution for this problem to solve same problem in the future. After we have done we can share this study to the public as a material study in sustainable transportation study. This study could be a reference for student who will learn about the sustainable transportation.

### **1.5.2 Type of Research**

This research is post-positivism research and in another word this research using the qualitative data collection. All of data in this research is not quantitative data or numeric data, but this research is aim to the descriptive analysis as a qualitative data collection. Author will be comparing two of collecting data; those are primary data and also secondary data. The primary data will be collecting by key informant who has responsibility to the transjakarta and he is Mr, Dodi Setiono as directory program in department transportation. The secondary data will be taken from

Doddy Hendra Wijaya who has make researched about BLU (Badan Layanan Umum) as the executor of the transjakarta during the operating the system of transjakarta daily.

### **1.5.3 Data Collection**

This research is using technique collecting data from interviewing data and begins with the formulation of an idea or topic that can be changed. Furthermore, researcher chose a social group or location for examination. After the researcher have access to a group or location is as soon he adopts the role of the social setting and do research. Researchers do an observation and interaction in the social environment within a few months. Then the report of the interviewing data will be analysis with the comparing primary data and also secondary data to found the truth.

### **1.5.4 Benefit**

Basically the use of research in this research is aim to the applied research where is the use applied research is use or applications of science to practical issues, such as to answer the question of policy or social problem solving.<sup>28</sup> Applied researchers conduct a study to address a specific concern or to offer solutions to a problem of their employer, a club or organization they are affiliated with their community, or a social movement to which they

---

<sup>28</sup>Fensterbusch and Motz (1980), Lazarsfeld and Reitz (1975), Olsen and Micklin (1981), Rubin (1983) In W.L. Neuman (Ed.). Social Research Methods: Qualitative and Quantitative Approaches fifth edition (U.S.A: Allyn& Bacon, 2010), 22

are committed. In another word we will solve the problem of Transjakarta public transportation as BRT system which has applied the sustainable transportation program.

The category of this applied research is evaluation research category whereas Evaluation of research is measures the effectiveness of a policy, program or way. According W.L Neuman said the type of <sup>29</sup>this research is widely used in large bureaucratic organization (e.g., Business, schools, hospital, government, and large non-profit agencies) to find out whether program, a new way of doing something, a marketing campaign, a policy, and so forth is effective – in other word, “Does it work?”. In another word we will evaluate the program of sustainable transportation system in transjakarta BRT system for knowing whether this program is running well.

Actually those are two Typology of evaluation research and they are formative evaluation and summative evaluation.<sup>30</sup>The formative evaluation is built-in monitoring or continues feedback on program and summative evaluation looks at final program outcomes. In this study the evaluation in this research will be aim to the formative evaluation because the sustainable transportation moves with continuity. So that the utility of this study is to monitoring the sustainability transportation which has applies.

---

<sup>29</sup> W.L. Neuman, Social Research Methods: Qualitative and Quantitative Approaches fifth edition (U.S.A: Allyn& Bacon, 2010),24

<sup>30</sup> W.L. Neuman, Social Research Methods: Qualitative and Quantitative Approaches fifth edition (U.S.A: Allyn& Bacon, 2010),25

The conclusion in use of research for this study is we will solve the problem of Transjakarta public transportation as BRT system which has applied the sustainable transportation program as a material evaluation whereas the sustainability transportation program is working with very well in transjakarta BRT system. Then this evaluation will be the utilities for another research in sustainable transportation field and in another word, this research is use as material reference for development sustainable transportation.

### **1.5.5 Goals**

According W.L. Neuman the descriptive study in social research method is for <sup>31</sup>present of picture of type's people or social activities. Base from social research method the purpose of this research is aim to the descriptive research, which means this study has the purpose to present a picture of the situation or social phenomena in detail. Researcher is begins a study with a well design formulated research that aimed to describe things with clearly. The author will be describing the social phenomenon about sustainable transportation with clearly that has applied in Transjakarta and also we will know about the process of sustainable transportation in Transjakarta.

---

<sup>31</sup> W.L. Neuman, Social Research Methods: Qualitative and Quantitative Approaches fifth edition (U.S.A: Allyn& Bacon, 2010),30

### **1.5.6 Time**

This research is using the time cross- sectional research, that's mean research of this type using a snapshot approach or observations made at one particular time.<sup>32</sup>In cross- sectional research, researchers observe in one point time. This research will be applied in Jakarta start from 1 February – 1 April 2015.

### **1.5.7 Conceptual Definition**

This research is using stimulus variable in another word those are factors which influencing Transportation of Jakarta ( Transjakarta ) to build the sustainability transportation system. Transjakarta has operated and developed as a mass transportation to build the sustainability. This research will be applied in Jakarta.

### **1.5.8 Operational Definition**

Those are six indicators which must to fulfil by Transjakarta as mass transportation to create the sustainability of transportation system. The Six indicators are a quotation of Suthanaya and Black theory. We will find the truth of the Transjakarta has done to fulfil this measurement trough an interview by head of transportation program in Jakarta (Mr. Dody Setiono).

---

<sup>32</sup> W.L. Neuman, Social Research Methods: Qualitative and Quantitative Approaches fifth edition (U.S.A: Allyn& Bacon, 2010),31



From this interview we will know whether the Transjakarta has fulfilled the requirement of sustainable transportation system. Nonetheless if Transjakarta has not yet to endure the increasing level of congestion in Jakarta as sustainable transportation system, certainly those are furthermore studies about transportation issues Jakarta which will be known in next chapter in this study.

The operational definition will help us to find the correctness through measurement to help the researcher aiming to the correctness. From the literature, we have learnt the sustainable transportation system. In this study we have known about the measurement of sustainable transportation system and those are:



**Pic 1.5.8 Six Indicators in sustainable Transportation**

The un-successful of Transjakarta which has applying a sustainable transportation in Jakarta is hypothesis in this study, and then we will find the truth from an answer about sustainable transportation system which can't run well in Jakarta. We need additional information from head of transportation to program in Jakarta for finding the correctness from the transportation problem in Jakarta. The question in this research is base from hypothesises and then after we will get the coloration between hypothesises and the answer, we will can conclude the process of Jakarta which is Implementing the sustainable transportation system to solve their problem.

#### **1.5.9 PRIMARY AND SECONDARY DATA**

This research is using the primary and secondary data, differences between primary and secondary data are when the researcher taken the data. Primary data is collecting with directly by key informant as resources for take information in this research. The secondary data is data collected by another researcher who has researched another researched but in same content and used as additional data for validity of research.

#### **1. PRIMARY DATA**

The informant who has succeed to interviewed is a Head division of Traffic Program in Jakarta namely Mr, Dody setiono. He is working at the office of department transportation Jakarta in Jln. Taman Jati Baru No. I and he have an important role to controlling the stabilization of traffic jam in Jakarta.

The function from division of traffic program is managing the traffic line through by Traffic manipulation technique. It is a part of transportation and also it has related to the problem in this research. The collecting data for the interview has spent one month and it has done on Thursday 5, May 2015.

## **2. SECONDARY DATA**

This secondary data was taken by research of Doddy Hendra Wijaya from Karlstad University Faculty of Economic Sciences, Communication and IT. He has researched about service quality in transportation. He has the data about quality service transportation in his research and According Doddy Hendra Wijaya, his research is <sup>33</sup>to analyze the problem in customer complaint handling such as those complaints from the user of TransJakarta Busway and to recommend the service standards designs that need to be adjusted with the interest of users/passengers base on the complaints, so it is expected to obtain service standards that can meet the needs of users in the use of TransJakarta Bus way. Therefore from the data analysis about the service quality of the Transjakarta we can compare the result and found the truth.

---

<sup>33</sup> H.W. Doddy, Master Thesis: "STUDY OF SERVICE QUALITY IN THE PUBLIC BUS TRANSPORT: CUSTOMER COMPLAINT HANDLING AND SERVICE STANDARDS DESIGN. CASE STUDY: TRANSJAKARTA BUSWAY AND VÄRMLANDSTRAFIK AB BUS" (Swedish: University of Karlstad, spring 2009), 2.