Faculty of Economic Sciences, Communication and IT

Balanced Scorecard (BSC) For Public Transport Performance Measurement Based on Service Dominant Logic (S-D logic) Framework

(Case study: Jakarta public transport authority and Värmlandstraffik AB)

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ABSTRACT

One of the main problems in Jakarta transportation is that people are more interested in using private vehicles rather than public transport causing the traffic jam in the high level situation. The growth of the private vehicles especially motorcycles grows rapidly each year and give negative impact not only for the traffic jam itself but also to other effects such as pollution, safety, and quality of life for the residents. There is lack of service logic in the policy of public transport in Jakarta and lack of thinking to give excellence service to the customers. The focus in this research is to analyze the performance of public transport in Jakarta by using the Balanced Scorecard (BSC) method and answering how Balance Scorecard (BSC) and Service Dominant logic (S-D logic) can improve the performance of public transport in Jakarta, as well as to know the difference between Jakarta public transports compared to Värmlands public transport.

This thesis used a case study research with triangulation of qualitative and quantitative method for the data research. A case study research methodology relies on the multiple sources of evidence to add the breadth and depth to the data collection in order to assist in bringing a richness of data, and to contribute to the validity of the research. This thesis used four sources of data; they were documentation and archival record as the secondary data, and direct observations and interviews as the primary data. In the documentation, the data were collected from the official website of the related institution, and news from the trusted sources, etc. In archival record, the data collections consisted of the institution records, survey data, as well as maps and chart, etc. In the direct observation, the researcher observed directly as the user of the public transport. In the interview, the researcher interviewed the representatives of the related institution, they were Dishub DKI Jakarta and Värmlandstrafik AB and conducted questionnaire survey to 403 respondent of the Jakarta resident.

The results from the analysis was that the performance of Jakarta public transport based on four perspectives (Fiduciary, Resident, Internal Process and Learning and growth) still had poor performance. The indication can be seen from the lagging indicator (outcome), Fiduciary and Resident Perspective. Jakarta transportation had high level of traffic jam (congestion), traffic accident and pollution. The Jakarta residents prefer to use private vehicle than public transport because most of people (Jakarta resident) said that they were unsatisfied (95.29% of respondent) and assessed poor value for the performance of the public transport. From scale 1 to 10, the performance of Transjakarta was 6.21, all Large Size Bus Operator was 4.67, all Middle Size Bus Operator was 3.79 and All Small Size Bus operator was 4.31. The poor quality in public transport performance made the public transport user also rated poor for the performance of Dishub Jakarta in general which was only 4.94. There were many ways to solve the problem in Jakarta transportation. However, the most important thing was to put service S-D logic rather than G-D logic as the fundamental thinking to solve the problem, and used BSC as the performance measurement in comprehensive and balanced ways. BSC was not just as the performance measurement but also as the tool and key for the success of the institution (Dishub) to achieve their objective and vision and mission. Evaluation of the performance was not the ending of the process, but it was the beginning of the process to create a better value.

Keyword: Performance measurement, Balanced Scorecard (BSC), Fiduciary, Resident, Internal Process and Learning and growth perspective, Service Dominant Logic (S-D logic), Service Quality
CHAPTER I
INTRODUCTION

A. Background

Jakarta transportation nowadays has many problems. One of the problems is there are more private cars than public transports on the road; this means that people prefer using cars to public transport. This situation puts Jakarta in the high level of congestion. As the capital city and centre of business, Jakarta has an area of 662 km$^2$. On the other hand, the length of roads in Jakarta is only 6.28%. Jakarta is connected with the surrounding cities such as Bogor, Depok, Tangerang and Bekasi (Jabotabek). Many residents from those cities work in Jakarta. Based on the Jakarta demographic and civil record service, Jakarta Population is 8,523,127 people. Meanwhile the population of Jabotabek, based on the Indonesia 2000 census by the Indonesian government, was officially counted to 23.3 million people. The mobility of residents in Jakarta is very high, every day; there are approximately more than 17 million trips with private vehicles and public transports in Jakarta. They are not only from the Jakarta areas but also from the cities surrounding Jakarta whose inhabitants worked in Jakarta. The number of public transport is only about 2% of the total vehicles in Jakarta, which is reached 7.7 million. This situation makes congestion on the road worse because more people use private cars than public transports.

There are many researches that study the reason why people prefer using private cars than public transports. One of the reasons is that they are not satisfied with the quality service of the public transport. The problem is that the operators
have poor management in running the business for organization and giving poor quality service to the customers. There is lack of thinking to give excellence service to the customer. They don’t have enough responsibility and give excellent service guarantee to the customers, but nowadays people in Jakarta become more critical to public transport service. The service becomes an important issue for passengers. They want to have a better public transportation service; otherwise they will still use private vehicles rather than public transport to do their daily activity. If this happens, Jakarta transportation in the future will stuck and getting worse. Based on JICA (Japan International Corporation Agency) research, if there is no significant changing in developing the road construction in Jakarta, it will face total traffic congestion (permanent gridlock) in 2014, unless the government should takes serious steps to improve public transportation. The road construction in Jakarta, which grows at a rate of around 0.01 percent a year, is unable to keep up with the number of vehicles in the capital. The vehicles grow at an average of 11 percent per year. Each day, over 9 million cars and motorcycles fulfil Jakarta's road.

Government should make progressive improvement on this situation. There are many ways to solve this problem. The most important step is to put service logic in the policy, which means using Service Dominant Logic (S-D logic) than Good Dominant Logic (G-D logic) as the fundamental thinking to solve the problem. One of thinking to solve the problem is by using the performance measurement of Service Dominant Logic (S-D logic) as the basic to measure and evaluate public transport. This measurement can be conducted in Balanced Scorecard (BSC). The Performance measurement is very important to help in
assessing the adequacy and performance of the current service. The basic question is, *How do we know if the service is good and the reform is needed?* The result from the measurement can be used by some stakeholders who need those data. The data measures and evaluates performance related to the public transport that can be used by some stakeholders. The performance measurement also provides direction on how to use limited resources effectively and efficiently in the design and operation of services that reflect the government policies and community needs. Policy which issued by the government should have the basic thinking of the Service Dominant logic (S-D logic).

The logic of the public transport stakeholder (especially for the policy makers) should be changed from G-D logic to S-D logic. G-D logic is a view to make something (transporting somebody from a starting point to a destination and providing transportation capacities only) to a process of S-D logic, which means assisting public transport user to create their own value creation process (Enquist et al, 2009). Public transport stakeholders (especially for the policy makers) should also change the logic or mindset from the thinking of the value as something produced and sold to the thinking of value as something that is co-created with the customers and other value creation partners (Enquist et al, 2009). The policy of public transport should have logic to integrate public transport modes, services, and ticketing system; travelling information that becomes resources for the public transport users’ to create their own value creation process. With this logic, value creation in public transport also changes from the single transportation operator only to a collaborative process of co-creation with the public transport user (Enquist et al, 2009).
B. **Aim and Research Questions**

The aim of this research is to understand and describe the new approach Key Performance Indicator, the Balanced Scorecard to be applied as the measurement for public transport, and the Service Dominant Logic (S-D logic) as the fundamental thinking to improve the service quality and to solve the problem in Jakarta public transport. Therefore, the following research questions are designed:

a. How is the performance of public transport in Jakarta measured by using the Balanced Scorecard (BSC) method?

b. How is the Balance Scorecard (BSC) and Service Dominant logic (S-D logic) can improve the performance of public transport service quality in Jakarta?

c. How is the difference between Jakarta public transports compared with Värmlands public transports?

C. **The Purpose of The Research**

The overall aim of the thesis is, first, to evaluate and analyze Jakarta public transport’s performances by using Balanced Scorecard (BSC) based on four perspectives: Fiduciary, Customer (Resident), Internal Process and Learning and Growth perspective to make improvements service quality in the future; Second, to understand and analyze the cause and effect linkage perspective in Balanced Scorecard Strategy Map, in order to achieve the objective as well as vision and mission; Third, to understand and analyze the Service Dominant Logic (S-D logic) in public transport as fundamental thinking to improve the service quality and to solve the problem in Jakarta public transport; Finally, to compare the
Jakarta public transport with Värmlands public transport. In this research, we should clarify the purpose is the Balanced Scorecard as a management system, and relation of cause of effect strategy and it is not as the specific scorecard measurement.

D. Research Limitation

There are many public transports and operators in Jakarta. This thesis only focuses on the public transport of Transjakarta Bus Rapid Transit (BRT) and Conventional Bus/Non Transjakarta (Non-BRT). For the Non-BRT one, the categorization of the bus was conducted by dividing the size of the bus into large, medium and small. The case study was held in Jakarta Indonesia and Värmlands public transport in Sweden. In Sweden, the study was taken in Värmlandstraffic AB from the previous studies, literature review, interview with the related authority, and field observation. The comparison between Jakarta and Värmlands public transport only viewed as the public transport system. The focus of the research problem viewed from the side of the Jakarta public transport authority (PTA). Meanwhile, there were some problems like accessing literature, collecting data and research database as well as problems in language as the information and data source from VTAB was in Swedish language. In relation to the researcher limitation, there might be different interpretation.
E. Thesis Structure

Chapter 1, consists of the problems background from the research, research question, aim and purpose, research methodology and data collection.

Chapter 2 is the theoretical framework which consists of literature review and the background theory as the research base analysis. These theoretical references have connection each other and trustworthiness to the research.

Chapter 3 is the research methodology which consist of the method which was used in the research, research design, data collection, reliability and Validity

Chapter 4 is the data collection and result. This chapter described the condition of public transport in Jakarta using the Balanced Scorecard in four perspectives; they are Fiduciary, Citizen, Internal Process and Learning and Growth. There is also an explanation about the strategy of Dinas Perhubungan (Dishub) Jakarta and the condition of Värmland public transport

Chapter 5 is the discussion, which consist of the Strategy Map of Dinas Perhubungan Jakarta, the connection between Balanced Scorecard and Service Dominant Logic (S-D logic), the evaluation of the Jakarta public transport and the comparison of the Jakarta public transport and Värmlands public transport.

Chapter 6 is the conclusion answers of research question and suggestion for the problem solving. Furthermore this chapter also give recommendation for the future research.
CHAPTER II
THEORETICAL FRAMEWORK

A. Performance Measurement

“Measurements are the key ...”

- If you can’t measure it, you can’t control it...
- If you can’t control it, you can’t manage it...
- If you can’t manage it, you can’t improve it!!

– (Peter Drucker)

Institution is a complex human community which is composed by many people inside with a complex system, cultures, values, behaviours and goals. The challenge for leader in every institution is to manage them strategically, synergistically and with appropriate alignment and synchronicity to attain the desired results. But the key to establish for its success is begin by using the use of performance measurement.

In recent years, performance measurement has become an important issue for organizations/institutions. Many institutions spend a lot of money to get a good result in measurement. A good performance measurement and clear definition can help managers to go in the right direction and focus on what really matters to achieve the goals. According to Moullin (2004, p.181), performance measurement is defined as evaluating the organization performance, how well institution are managed and how the value of the institution can be delivered to customers and other stakeholders. This definition gives a clear guidance and encourages institutions to deliver their institution values to their customers and it also covers the main aspects of how performance is managed. Meanwhile the World Bank
Institute defined performance measurement as the continuous process of institutions in ascertaining how well, or how poor, a government program is being provided.

All institutions, whether public or private institutions, are interested in developing an effective performance measurement and performance management systems to achieve their goals, since it is the only way for them to achieve a high performance. However, the problem with the measurement is that the performance measurement is like a loaded gun. It will be dangerous if it is misused, and at least it is threatening if it is pointed to the wrong direction (O'Leary, 1995: p.354).

B. Balanced Scorecard (BSC)

The Balanced Scorecard is one of the performance measurements and it is also as a performance management system to achieve organization/institution goals. The Balanced Scorecard was first introduced in the early 1990s by Robert Kaplan and David Norton of the Harvard Business School. The concept has become popular and well known and then widely adopted by institution across the world. Before Balanced Scorecard developed by Kaplan and Norton, most companies measure their performance measurement that focuses on financial performance only. Meanwhile, the financial performance itself only has influence to the short term measurement; it is also insufficient because it is not focuses on other perspective of performance such as customer, internal business process and learning, and growth perspective. On the other hand, the attention in these perspectives actually can influence financial perspective, such as investing and
managing the intangibles assets the same ass in learning and growth perspective can provide foundation for future financial success itself.

Kaplan and Norton (1992, 1996) attempted to do this with the Balanced Scorecard. The Balance Scorecard is a comprehensive and holistic performance measurement. It measures not only financial perspective, but also measures customer, internal process, and learning and growth perspective. Kaplan and Norton (1996, p.7) argue that their scorecard is not a replacement for financial measurement; it is a complement for financial measurement.

If the Balanced Scorecard is understood thoroughly and implemented appropriately in an organization/institution operation, it will have a potential contribution to the success of the organization/institution; however, the measurement of performance is fundamental in organization success (Murby and Gould, 2005: p.3). The Balanced Scorecard translates vision and strategy into four quadrants. In the original offering for the first time, these quadrants reflected the following perspectives and implicated in the strategy: Financial; Customer; Internal business processes; and organizational learning and growth. The Balanced Scorecard offers an alternative to the traditional financial indicators. It describes and explains what has to be measured in order to assess the effectiveness of strategies. The Balanced Scorecard can be used both for public sector and the private sector, particularly for the reason that it does not focus on the financial data such as profit, which are not relevant in governmental institutions (Kaplan and Norton, 2004: p.52). Government institution is more concern and focus on the resident as the tax payer.
When the Balanced Scorecard was developed for the first time by Kaplan and Norton, the Balance Scorecard was positioned as the performance measurement framework only. This measurement could provide useful information relating to financial performance, internal processes, customer, and internal learning and growth for achieving the institution success. Kaplan and Norton in their original finding was not realized how the Balanced Scorecard might improve the performance of the institution. In their first paper, Kaplan and Norton (1992) said a little about how a Balance Scorecard could be developed in practice. The design was only putting vision and strategy at the centre of the measurement system.

Balanced Scorecard has been developed and improved; Kaplan and Norton replaced the original finding by developing the concept of ‘strategic objectives’. The improvement of the Balanced Scorecard was to suggest that there should be a direct mapping between each of “strategic objectives” in each perspective (Cobbold and Lawrie, 2004). The Improvement of Balanced Scorecard concerned

**Figure 1** The Balance Scorecard with four perspectives
about causality in each perspective which becomes linkages. The idea of strategic linkage itself became an increasingly important element of the Balanced Scorecard design. The diagrams showing linkages between objectives in each perspective were called “strategic linkage models”. Nowadays they are called “Strategy Maps” (Cobbold and Lawrie, 2004: p.4).

The improvement in the Balanced Scorecard Strategy Maps has an impact that were characterised by Kaplan and Norton as enabling the Balanced Scorecard to evolve from an improved measurement system to a core management system (Kaplan and Norton, 1996). Kaplan and Norton further described the use of this development and improvement of the Balanced Scorecard as the central of “a strategic management system” (Cobbold and Lawrie, 2004). Balanced Scorecard was intended to support the implementation of the management of strategy.

According to Kaplan and Norton (1996), the strategic and objective Balanced Scorecard is determined by the management decisions which have an impact in order to implement and realize the strategy. To achieve the institution’s mission successfully, the Balanced Scorecard must be able to effectively interpret the strategy into the operational terms in the relationships between actions and their impacts (Murby and Gould, 2005: p.3). By measuring these impacts, there will be information to create decision making.

Kaplan and Norton argued that the ability to execute strategy was more important than the quality of strategy itself. This management system had three distinct dimensions namely Strategy, Focus and Organization (2001: p.7) that will be discussed below:
1. **Strategy**

   The organization in order to achieve their vision and mission should put the strategy as a central organizational agenda. The strategy objectives put in Balanced Scorecard four perspectives which have linkages. The Balanced Scorecard itself allowed organization to describe and communicate their strategy that could be understood and acted in organization operation.

2. **Focus**

   The organization should have remarkable focus to their strategy, objective and their daily job and duties activity. With the Balanced Scorecard as ‘navigation’ to control and maintain management performance system, every resource, unit, asset and activity in the organization should be aligned to the strategy.

3. **Organization**

   Employee is one of the resources of the organization that should be mobilized to do their job for conducting the organization strategy. The Balances Scorecard provide connection to organization linkages across business units, shared services and individual employees.

Meanwhile, to execute the strategy itself, it needs direction. According to Kaplan and Norton (2001: p.9-11) there are 5 principles of a strategy-focused organization; they are:

1. Translate the strategy to operational terms

2. Align the institutional to the strategy
3. Make strategy everyone’s everyday job
4. Make strategy a continual process
5. Mobilize change through executive leadership

![Figure 2 Principles of a strategy-focused organization](image)

### 1. Strategy Map

Strategy map is a cause-and-effect linkage in a diagram which is derived from a company’s strategy. The cause and effect linkage of strategy contains critical success factor of the institution itself. Strategy map provides an opportunity to explain clearly the key strategies that management intends to adopt. It provides a consistent and comprehensive way to represent the strategy, so that objectives and
measurements can be established and managed (Kaplan and Norton, 2004). Kaplan and Norton connect the strategy map to the Balanced Scorecard framework. The scorecard itself is not a tool for strategy formulation; rather it is a description and interpretation of the strategy (Kaplan and Norton, 2004 in Murby and Gould, 2005: p.7).

By using the strategy map in the institution, there are many benefits that can be obtained such as (i) Strategy maps can be used to align business units and focus the management processes (Kaplan and Norton, 2004) (ii) it provides the missing link between strategy formulation and strategy execution (Kaplan and Norton, 2004) (iii) The strategy map clarifies the path from non-financial success factors to financial results and facilitates the implementation of a performance measurement system (Laitinen, 2003). According to Kaplan and Norton (2004: p.xiii), successful execution of the strategy requires three components:

{Breakthrough results} = {Describe the strategy} + {Measure the strategy} + {Manage the strategy}

This formula has a philosophy in three components which is, “you can’t manage” the institution (third component) if “you can’t measure” the performance of institution (second component), “you can’t measure” the performance if “you can’t describe” the strategy of institution (first component). So it is important to describe strategy into strategy map before managing and to measuring the performance of institution.
It is important to understand that a Balanced Scorecard represents a chain of cause and effect linkage between each scorecard perspective, in the form of strategy map. Building the strategy map involves the following steps (Murby and Gould, 2005: p.4):

a. Clarifying the mission and strategic vision.

b. Specifying objectives in the scorecard areas necessary to realise this vision.

According to Kaplan and Norton, an institution’s strategy describes how it intends to create value for its shareholders, customers, and residents. The Balanced Scorecard framework has several important factors (Kaplan and Norton, 2004: p.7):

a. Financial perspective as a lagging indicator which provides definition of an institution’s success. Strategy describes how an institution intends to create sustainable growth in shareholder value in order to achieve vision and mission.

b. Success in financial performance is determined by the success with the targeted customers. This success with the targeted customers is determined by customer value proposition. Choosing the customer value proposition is the central element of strategy. The improvement in the customer value proposition can improve the customer satisfaction, retention and growth. In addition for public institution, customer perspective (resident) is as a lagging indicator as well.
c. Internal processes perspective creates and delivers the value proposition for customers. The performance of the internal processes is a leading indicator of the improvements in the customer and financial outcomes. In this perspective, there are four group processes; they are operational management, customer management, innovation, and regulatory social process.

d. Learning and growth objectives describe how the people, technology, and institution culture are combined to support the strategy. Improvements in learning and growth measures are the lead indicators for internal process, customer, and financial performance. This perspective is the main resource of the intangible assets which contribute to the sustainable value creation.

According to Kaplan and Norton (2004: p.10-13), there are several principles for strategy map:

a. Strategy balances contradictory forces
b. Strategy is based on differentiated customer value proposition
c. Value is created through internal business process
d. Strategy consists of simultaneous, complementary themes
e. Strategy alignment determines the value of intangible assets

2. Balance Scorecard for Public Sector

Recently, performance management in Balanced Scorecard has been used in the public sector. Governments around the world nowadays take this extremely serious and many have introduced the legislations and frameworks for this specific purpose in the institutions as a report to them. Many of them prefer using
Balanced Scorecard as a tool to measure their performance based on their own strategy. According to Murby and Gould (2005: p.3), the key to the popularity of the scorecard may lie in its *flexibility and adaptability*. The Executive (management) of an organization in all sectors both private and public sector institution all over the world are facing the challenges how to improved their institution to new strategies, which is determined and driven by informed and selective customers who want an outstanding performance from the institution. However, the deep problem that all institutions encountered is their inability to execute successfully on their new strategies (Kaplan and Norton, 2004: p.x).

According to Kaplan and Norton (2004: p.7), basically the framework for value creation in public sector institution is similar to the private sector framework, but with several important distinctions, such as the definition of success for public institution is different from private institution. Private sector institution is more concern with the financial perspective; the objective for the institution is to have maximum profit in order to increase the shareholder value. On the other hand, the public sector institution more concerns the social impact. According to public sector, the definition of the ‘customers’ is different from private institution since public sector institutions have many stakeholders such as politician, service users, resident, donator, etc. (Murby and Gould, 2005: p.9). There is a *fiduciary* perspective rather than financial perspective in the public institution. The objective wanted to be achieved is for constituency (resident), the taxpayers or donors who supply the funding.
C. Public Transport

Based on the definition of the *International Association of Public Transport*, public transport/public transit/mass transit comprises all transport systems in which the passengers do not travel in their own vehicles. Public transport is made and regulated by rule for a public residents and it has fixed routes and scheduled service. The majority of public resident usually use the transport for travelling for working, shopping, or schools. According to Velde (1999), public transport is a service provided on a market, which has supply, demand and a price for using the service of the public transport. Similarly to other markets for goods or services, there are decisions that have to be made before the transport service passengers
buy the price. These decisions, in the form of planning and control systems, are divided into 3 hierarchical level, they are strategic, tactical and operational level (Velde, 1999: p.147-157)

<table>
<thead>
<tr>
<th>Decision level</th>
<th>General description</th>
<th>Decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic</td>
<td>Long term (5 years)</td>
<td>“Software”</td>
</tr>
<tr>
<td></td>
<td>What do we want to achieve?</td>
<td>General Aims</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Transport policy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Market share</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Profitability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>General service characteristics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Target groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>intermodality</td>
</tr>
<tr>
<td>Tactical</td>
<td>Medium term (1-2 years)</td>
<td>Detailed service characteristics</td>
</tr>
<tr>
<td></td>
<td>Which services can help to achieve these aims?</td>
<td>Fares</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Image</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Additional services</td>
</tr>
<tr>
<td>Operational</td>
<td>Short term (1-6 months)</td>
<td>How to produce these services?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sales</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Selling activities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Information to the public</td>
</tr>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1 Levels of planning and control in public transport (Velde, 1999)

In public transport, according to Enquist, et al (2005), there are four parties who influence the public transport development in a country or region. They are principals or politicians as the owner or the authority who have the responsibility and act as the representives in the political level; the executive management of a regional public transport company as the Public Transport Authority (PTA); the
operators of the public transport including the employees; and the customers as
the passengers of the public transport and the residents. Each of these stakeholders
has different interests in the network, such as principals/politicians think about the
common good; PTA think about the external efficiencies, and the customer think
about the service satisfaction and external efficiencies of the operator. The
relationship among these actors can be seen below:

![Transport Relationship Model](image)

**Figure 4** Transport Relationship Model (Enquist, 1999)

In the perspective of public transport users, there are factors that influence the
decision of the travel. According to Button (1993), there are four factors which
influence the travellers in choosing the mode of transport. There are trips time,
financial cost, frequency, and quality of service.

![Factors Decision of Travel](image)

**Figure 5** Factors Decision of Travel (Button, 1993)
Public transport itself is a service which is available to be used by the general public. Service is provided as the solutions to the customer problems such as time and space for working, shopping and school. Customers define service on the basis of value-in-use and the resulting customer experiences (Bo Edvardsson, 2007). Services are intangible and therefore difficult to explain and assess. Parasuraman et al (1990: p.253) summarized the characteristics of service into four:

1. **Intangibility**, service is intangible which is different to physical products. Services are about performances and experiences when using it rather than objects only. They cannot be seen, felt, tasted or touched like a physical product.

2. **Heterogeneity**, services are non-standardized because the needs of customers vary. The more people involved the more variations.

3. **Inseparability**, a service is generally consumed directly while it performed; production and consumption cannot be separated.

4. **Perishability**, services cannot be stored.

**D. Service Quality**

A firm, including the public transport institution; in order to compete successfully must have an understanding of consumer perception of the quality and the way service quality is influenced. Managing perceived service quality means that the institution has to match the expected service and perceived service to each other so that consumer satisfaction is achieved. Parasuraman et al. (1985)
define service quality in terms of customer satisfaction; that is the degree of fit between customers’ expectation and perceptions of service. Service quality is about a measurement; how well the institution delivered service level matches to the customer expectations. Delivering quality service means conforming to customer expectations on a consistent basis.

Parasuraman et al. (1985, 1988) proposed that the service quality is a function of the differences between the expectation and performance of the quality dimensions. These differences can be seen in their service quality model (gap analysis). This model can be seen below:
Gap 1 ---- The differences between management’s perceptions of expectations and consumers’ expectation

Gap 2 ---- The differences between management’s perceptions of consumer’s expectations and service quality specifications.

Gap 3 --- The differences between service quality specifications and service actually delivered.

Gap 4 --- The differences between service delivery and the communication to consumers about service delivery.

Gap 5 --- The differences between consumer’s expectation and perceived service.

This finding research was improved with their subsequent scale named SERVQUAL (Service Quality) for measuring customers’ perceptions of service quality (Parasuraman et al., 1988). The original ten dimensions of service quality reduced into five dimensions: reliability, responsiveness, tangibles, assurance (communication, credibility, competence, courtesy, and security) and empathy.

<table>
<thead>
<tr>
<th>Items of Service Quality</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangibles</td>
<td>Physical facilities, equipment, and appearance of personnel</td>
</tr>
<tr>
<td>Reliability</td>
<td>Ability to perform the promised service dependably and accurately</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>Willingness to help customers and provide prompt service</td>
</tr>
<tr>
<td>Assurance</td>
<td>Knowledge and courtesy of employees and their ability to inspire trust and confidence</td>
</tr>
<tr>
<td>Empathy</td>
<td>Caring, individualized attention the firm provides its customers</td>
</tr>
</tbody>
</table>

Table 2 The items of service quality (Parasuraman et. al. 1988)
Later SERVQUAL was revised with synthesised model of service quality. This model attempts to integrate traditional managerial framework, service offering, and marketing activities. The purpose of this model is to identify the dimensions of service quality in a traditional managerial framework of planning, implementation and control. There are three factors that should be considered in this model; they are company image, external influences and traditional marketing activities as the factors influencing technical and functional quality expectations (Brogowicz et al. 1990). This service quality model is developed and taken from Groonros and Parasuraman Model.

![Figure 7 Synthesised model of service quality](image)
E. **Service Dominant Logic (S-D logic)**

Service-Dominant (S-D) Logic is a logic or mindset which views service as the focus of the economic and social exchange; Service is exchanged for another service, all firms are service firms, all markets are centred on the exchange of service, and all economies and societies are service based (Vargo and Lusch, 2006, 2008). Service-Dominant (S-D) Logic replaces Goods Dominant (G-D) logic which focuses goods as centre of economics and thinks firms exist are only to make and sell goods. According to Bo Edvarsson (2007), G-D logic focuses on what companies make (goods), not what goods do for people. S-D logic considers goods as appliances, vehicles, or distribution mechanisms for service provision. Whereas G-D logic sees services as units of output meanwhile S-D logic sees service as the process of doing something for and with another party (Vargo and Lusch, 2006: p.40).

According to Vargo and Lusch (2006: p.413), the emerging S-D logic is focused on the interaction of the producer and the consumer and other supply and value network partners as they co-create value through collaborative processes. In S-D logic, service is defined as the application of competences (knowledge and skills) for the benefit of another party. S-D logic suggests that companies promise value through service experiences and relationships, especially in the co-creation and sharing of resources with customers, partners and suppliers, including skills and knowledge (Vargo and Lusch, 2004; Lusch et al., 2007). S-D logic embraces concepts of the value in use and the co-creation of value rather than the value in exchange and embedded value concepts of G-D logic. A service-centered
dominant logic implies that value is defined by and co-created with the consumer rather than embedded in output (Vargo and Lusch, 2004: p.47).

In S-D logic, the purpose of economic exchange is the service provision for and with another party to obtain reciprocal service where the service is exchanged for another service. Whereas goods are sometimes involved in this process, they are appliances for service provision and ‘vehicle’ of competences. In other word, service is provided directly or in the form of goods. It is actually the knowledge and skills (competences) of the providers and beneficiaries that represent the essential source of value creation. According to Vargo and Lusch (2007: p.7), there are ten foundational premises (FP1-FP10) of S-D Logic:

<table>
<thead>
<tr>
<th>Premise</th>
<th>Explanation/Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP1</td>
<td>Service is the fundamental basis of exchange.</td>
</tr>
<tr>
<td></td>
<td>The application of operant resources (knowledge and skills), “service,” is the basis for all exchange. Service is exchanged for service.</td>
</tr>
<tr>
<td>FP2</td>
<td>Indirect exchange masks the fundamental basis of exchange.</td>
</tr>
<tr>
<td></td>
<td>Goods, money, and institutions mask the service-for-service nature of exchange.</td>
</tr>
<tr>
<td>FP3</td>
<td>Goods are distribution mechanisms for service provision.</td>
</tr>
<tr>
<td></td>
<td>Goods (both durable and non-durable) derive their value through use – the service they provide.</td>
</tr>
<tr>
<td>FP4</td>
<td>Operant resources are the fundamental source of competitive advantage</td>
</tr>
<tr>
<td></td>
<td>The comparative ability to cause desired change drives competition.</td>
</tr>
<tr>
<td>FP5</td>
<td>All economies are service economies.</td>
</tr>
<tr>
<td></td>
<td>Service (singular) is only now becoming more apparent with increased specialization and outsourcing.</td>
</tr>
<tr>
<td>FP6</td>
<td>The customer is always a co-creator of value</td>
</tr>
<tr>
<td></td>
<td>Implies value creation is interactional.</td>
</tr>
<tr>
<td>FP7</td>
<td>The enterprise cannot deliver value, but only offer value propositions</td>
</tr>
<tr>
<td></td>
<td>The firm can offer its applied resources and collaboratively (interactively) create value following acceptance, but cannot create/deliver value alone.</td>
</tr>
<tr>
<td>FP8</td>
<td>A service-centered view is inherently customer oriented and relational.</td>
</tr>
<tr>
<td></td>
<td>Service is customer-determined and co-created; thus, it is inherently customer oriented and relational.</td>
</tr>
</tbody>
</table>
Table 3 Ten foundational premises

<table>
<thead>
<tr>
<th>Premise</th>
<th>Explanation/Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP9 All economic and social actors are resource integrators</td>
<td>Implies the context of value creation is networks of networks (resource-integrators).</td>
</tr>
<tr>
<td>FP10 Value is always uniquely and phenomenological determined by the beneficiary</td>
<td>Value is idiosyncratic, experiential, contextual, and meaning laden.</td>
</tr>
</tbody>
</table>

(Source: Bo Edvardsson)

**FP1:** *Service is the fundamental basis of exchange*

According to Vargo and Lusch (2004: p.10), people have two basic operant resources; they are physical and mental skills. These types of skills are distributed unequally in a population. Each person’s skills are not optimal to fulfil their need and well being. Therefore it needs specialization for the society and individual members of the society, in particular skills. This specialization requires exchange for other specialization. Exchange is needed in particular skills to fulfil their need and well being. Vargo and lusch (2004: p.12) give the example. One individual in society may specialize in farming knowledge and another in fishing knowledge, so when vegetables are exchanged for fish, what is really being exchanged is farming knowledge for fishing knowledge. So then, in modern world when a customer buys a computer or phone cellular, actually they are buying specialized knowledge. S-D Logic defines service as the applications of specific competences (knowledge and skill) for benefit of a party. Thus, service is the fundamental basis of exchange (Spohrer et al, 2008 : p.9).
FP2: *Indirect exchange masks the fundamental unit of exchange*

Basically people do exchange to fulfil their need and well-being. In the beginning, this exchange is directly to exchange the specialized skills they have to other’s party specialized skills, for instance bartering fish (Fisherman) with vegetable (farmer). But nowadays, the exchange moved from one trading to other trading of specialized skills in the form of indirect exchange of skills in the systems. Barter of goods for goods has been replaced by and purchasing (money for goods and actions) and jobs (actions for money). Money and goods are vehicles to enhance the efficiency of exchange, but they mask the fundamental service for service basis of exchange. Consequently, the focus on the customer as a direct trading partner gradually disappeared (Spohrer et al, 2008 : p.10).

FP3: *Goods are distribution mechanisms for service provision*

Goods as a type of resource are appliances that assist in providing benefits for the customer. The high quality of goods may be the accumulation of the knowledge and skills in many years. Goods can be as a vehicle for knowledge and skill to solve the problem faced by people more efficient in time of service provision. For example computer, car or cellular phones are the products (Goods) as the vehicle of application of knowledge and skill to solve the people’s problem. These products actually replace the direct service (application of knowledge and skill) from the provider or the product maker (Spohrer et al, 2008 : p.10).
FP4: *Operant resources are the fundamental source of competitive advantage*

Operant resource cannot be easily transferred or copied. It will have advantage for competitive advantage. Knowledge and skill embedded in people and institution is the most fundamental type of operant resource and it is more difficult to copy and transfer. On the other hand, knowledge in the form of information or technology can be copied and transferred. Resources that have rights are difficult to copy and transfer, while resources which do not have rights are easier to be copied and transferred. Establishing relationships and value-propositions between parties in service system is also a type of resource that is not easy to copy or transfer, and thus service system networks offer competitive advantage as well (Spohrer et al, 2008 : p.10).

FP5: *All economies are services economies*

In S-D logic, all economies are the centre of service economic. Each individual such as the farmer, fisherman, manufacturer, the teacher, and the engineer has specialized knowledge and skill which are applied in the form of service to create benefit based on the economic motive. The service exchanged for other service is masked by the indirect exchange such goods, jobs, and money. Services and the operant resources they represent have always characterized the essence of the economic activity (Spohrer et al, 2008 : p.10).
FP6: *The customer is always a co-creator of value*

Customers and providers (product maker) are part of the service system. Each party in the service system entity is interdependent to each other. Specialization in knowledge, and skill and exchange is as the cause. Together, the customer and provider interact to co-create the value (Spohrer et al, 2008, p:11). According to Prahalad and Ramaswamy (2000), nowadays, the market needs customer involvement in the value creation process. The customer becomes the operant resource (co-producer) rather than an operand resource that is only the target of product. Besides, customer can be involved in making the value.

FP7: *The enterprise cannot deliver value, but only offer value propositions*

According to Spohrer, et al (2008, p:11), value-propositions are at the heart of value-co-creation interactions. Together both the customer and the provider co-create value. There are involvements and willingness to create value. The value cannot be created if there is no involvement and willingness from the customer. Meanwhile the desire and willingness of the customer is from the heart. The enterprise cannot deliver value, but only offer value-propositions. Both of them should agree with the value proposition and see the mutual benefit as well as the mutual responsibility.

FP8: *A service centred view is inherently customer oriented and relational*

According to Vargo and Lusch (2004: p.19), a service centred view and its inherence focus on the customer and the relationship in the form of
interactivity, integration, customization, and co-production. It is not just for the customer but also with the customer. In this concept, the idea is all activities of the firm that are integrated in their market responsiveness. The idea is also that profits come from the customer satisfaction, rather than units of goods sold the service provider can offer (Spohrer et al, 2008: p.11).

FP9:  *All economic and social actors are resource integrators*

Service system entities are economic and social actors, which configure (or integrate), resources, in order to co-create-value with other service system entities (Spohrer et al, 2008: p.12).

FP10: *Value is always uniquely and phenomenological determined by the beneficiary*

When customers use the product, it has different experience and satisfaction assessment for each customer. Value is unique and phenomenological for each service system entities determined by the beneficiary. (Spohrer et al, 2008: p.12).
CHAPTER III
RESEARCH METHODOLOGY

A. Research Design

This thesis in general uses case study research with triangulation using qualitative and quantitative method for the research. Case study research methodology relies on the multiple sources of evidence to add the breadth and depth to data collection, to assist in bringing a richness of data together in an apex of understanding through triangulation, and to contribute the validity of the research (Yin, 2003: p.83). The purpose of triangulation in qualitative research is to increase the credibility and validity of the results. Triangulation is a powerful technique that makes validation of data through cross data verification from more than two sources. Triangulation gives a more detailed and balanced picture of the situation and the same phenomenon. This research will be based on document, literature reviews, field observation, and interview including customer survey, archival record and physical artefact. The flow process is to gather the primary and secondary data to be analyzed in order to make conclusion and recommendation. The comparator for the Jakarta public transport is Värmlandstrafik AB which is the PTA of Värmlands County, one of the counties in Sweden. The research in Värmlandstrafik AB consists the subject of how Värmlandstrafik AB can deliver service quality to the citizens. The result of data analysis and findings was analyzed into how to implement Värmlandstrafik AB system in Jakarta PTA.
In addition to achieve the objectives, there are some stages which should be conducted as can be seen below:

1. Qualitative Research Approach

According to Patton (2002) in Yüksel (2010), qualitative research method uses a naturalistic approach to understand phenomena in context specific settings, such as real world setting where the researcher does not attempt to manipulate the phenomenon of interest. This means that qualitative researchers study things in
their natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them. In other words, qualitative research can be broadly defined as "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" (Strauss & Corbin, 1990 in Yüksel, 2010). The researcher builds a complex and holistic picture, analyzes words, reports detailed views of informants, and conducts the study in a natural setting.

Qualitative research involves the study of the use and collection of a variety of empirical materials case study, personal experience, introspective, life story interview, observational, historical, interactional, and visual texts-that describe routine and problematic moments and meaning in individuals' lives (Denzin and Lincoln, 1994 : p.5). While Cresswell (1994: p.1) defines qualitative research as an inquiry process of understanding based on the distinct methodological traditions of inquiry that explore a social or human problem. Cresswell (1994: p.18) divides qualitative research into five main qualitative research types.

1. Narratives
2. Phenomenology
3. Grounded Theory
4. Ethnography
5. Case Study

This research used case study research for methodological discussion and analysis of empirical study. The research used data from the interviews, surveys, field observation, and data database. The aim of qualitative approach is to explore
phenomena, customer thought, feelings or interpretations of meaning and process in Jakarta public transport performance. The analysis of data is conducted in organization and structure working. The result were translated to work as an illustration and to get a holistic view on Jakarta public transport performances.

2. Case Study Research

According to Yin (2003, p.13), a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. Following this definition, case study research is often said to be mainly suitable for research seeking to answer “how” and “why” questions (Yin, 2003: p.5-7). It is important to note, however, that case study research does not imply the use of a particular type of evidence. In addition, case study research can be accomplished using the quantitative and/or qualitative methodologies. A common misconception is that case studies are only from ethnographies or participant observation. Case study research can be employed on various data collection processes such as participant observation, document analysis, surveys, questionnaires, interviews, Delphi processes, and others. The power of case study research is the ability to use all methodologies within the data-collection process and to compare within case and across case for research validity.

The case study inquiry according to Yin (2003: p.5-9) consists of three characteristic. First, case study should cope with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result. Second, it relies on multiple sources of evidence, with data
needing to converge in a triangulating fashion. Third, as other result, the case study gives benefit from the prior development of theoretical propositions to guide the data collection and analysis. According to Yin (2003: p.5), case study can be single or multiple cases. Within the multiple-case study there are two divisions which are holistic design and embedded design. As researcher see the three main concern of this research as embedded part in PTA as studied organization, therefore the research design of this thesis is multiple-case embedded design. This techniques in Yin (2000: p.133) stated as a cross case synthesis. Yin (2000) describes cross case analysis as technique which treats each individual case study as a separate study. This technique using the “word table” that display the data to make analysis process easier in comparing to each other, and off course, on the same pattern. From this word table the conclusion can be made.

The case study in this thesis is to analyze and evaluate public transport performance using some indicators. Using and evaluating these indicators, policy makers can start planning their program in the future from obtaining the data form, analysis and evaluation. The pilot case study was implemented in Jakarta area with consideration of each characteristic between Jakarta area and Värmlands region. The data and analysis used qualitative and quantitative methods which form triangulating approach. This thesis took Värmlandstrafik AB, PTA of Värmland County, as PTA for comparison. By comparing the performance of the public transport, it was expected to know how to improve the service quality in
public transport and which one was the better indicator to be used for measuring the performance.

**B. Data Collection**

According to Yin (2003: p.83), in case study methods there are six sources of evidence. The six sources of evidence are Documentation, Archival records, Interviews, Direct observations, Participant observation, and Physical Artefacts.
This thesis used four sources of data; they were documentation and archival record as the secondary data, direct observations and interviews as the primary data. In documentation, the data researcher collected from official website of the related organization, community mailing list, electronic literature that related to the subject of research, news from trusted sources, studies, and letters from related organization. In archival record, the data collections consisted of the organization records, survey data, also maps and chart from both of the organizations, etc. In the direct observation, researcher lives in Jakarta and as the user of public transport. In the interview, researcher interviewed the representatives of the related organization; they are Dishub DKI Jakarta and Värmlandstraffik AB and conducting survey. For conducting the survey, data respondent was obtained from the questionnaires of the Jakarta citizens who used Jakarta public transport.

According to Israel (1992: p.3), there are several approaches to determine the sample size, such as using a census for small populations, imitating a sample size of a similar study, using published tables and calculating formulas to determine a sample size. Based on the published table (Israel, 1992), a sample size for the size of population more than 100,000 for precision level ± 5 %, level confidence 95 % and p 0.5, the sample is 400. This research has been conducted by questionnaire survey to 403 respondents (Jakarta Citizen) who used Jakarta public transport.
C. **Reliability and Validity**

Case study research, like all other forms of research, must be concerned with issues such as methodological rigor, validity, and reliability. This is accomplished through the six elements below (Dooley, 2002: p.338-339):

1. Determine and define the research questions
2. Select the cases and determine data-gathering and analysis techniques
3. Prepare to collect data
4. Collect data in the field
5. Evaluate and analyze the data
6. Prepare the report

According to Yin (2003, p.33-34), developing criteria for evaluating a case study methodology requires logical tests of the validity and reliability of the research tactics that have been used or are planned. The reliability and validity is used to establish the quality of the research. Reliability requires the investigator to follow the same process when repeating (not replicating) the same case process. The reliability measurement of sources is primarily characterized by the differences between each categories of official document and qualified experts. The validity can be seen in the relationship between the method and theory. The validity of this thesis covers 3 types of validity; construct validity to establish the correct operational measure, internal validity to establish a causal relationship, and external validity to establish the domain of the findings (Yin, 2003: p.34). The triangulation for materials is rationale strategy for using multiple sources of evidences (Yin, 2003). Triangulation view things from more than one perspective.
This means the use of different methods, different sources of data or even different researchers within the study.

For this thesis, the triangulation implemented for the data and analysis used the combination of the qualitative and quantitative method. The findings from each method are complemented. The use of triangulation focuses on the validation of the findings in terms of their accuracy and authenticity. It also produces complementary data that enhances the completeness of the findings. The many resources findings and the chance to see things from a different perspective can enhance the validity of data. In this research there were quantitative data which become part of the study. Both the study and analysis were used together to get the conclusion and recommendation. This research using customer survey and the result was analyzed and combined with other supported data such as documentation and archival record from other data. The triangulation in this research was aimed to have complete and deeper analyses which lead to analyze the findings. Triangulation is typically a strategy (test) for improving the validity and reliability of the research or evaluation of the findings.
CHAPTER IV
DATA COLLECTION

A. Jakarta Transportation Strategy

_Dinas Perhubungan (Dishub) _DKI Jakarta or Jakarta transportation agency is an executive element of local government who has responsibility for Jakarta transportation. Its responsibility is not only for land transportation but also sea and air transportation. _Dishub _is led by a Head Office who is under and responsible to the governor through the regional secretary. _Dishub _DKI Jakarta has task to organize, develope, manage, control and coordinate the activities in the fields of land, sea and air transport in Jakarta. _Dishub _DKI Jakarta has vision to “become city which has integrated transport system and equal with other big cities in the developed countries”. For mission, _Dishub _DKI Jakarta wants to:

1. Realizing land transportation that is safe, orderly, integrated, affordable, competitive and accepted by the community
2. Realizing sea transport with international standards by utilizing the benefits of technology and as a means for regional development;
3. Realizing air transportation with international standards as well as for regional development

_Dinas Perhubungan (Dishub) _became autonomy and established since the inception of regional autonomy with the issuance of law (Undang-undang) No. 22 year 1999 about the local government and last amended by law (Undang-undang) No. 32 year 2004. The law gave the region a broad authority to manage its own
household. In doing its job function, DKI Affair not only regulate the public transport, but also other functions. The following are some of job functions of Dishub (source: Dishub.jakarta.go.id):

1. Formulating technical policy in the fields of land, sea and air transportation
2. Collecting and processing the data, program planning, evaluation and development of transportation systems of land, sea and air
3. Supervision and controlling of execution of tasks in the fields of land, sea and air transportation
4. Granting permission or recommendations in the fields of land, sea and air transportation
5. Providing technical and administrative support in the fields of land, sea and air transportation
6. Coordination with the relevant agencies within the framework of operational tasks in the fields of land, sea and air transportation
7. Provision and maintenance of facilities and infrastructure in the fields of land, sea and air transportation
8. Determining the location of parking on the road and outside the road
9. Organizing, developing, supervising, regulating and determining management guidelines for SAR province of the fields of land, sea and air transportation
10. Operating the motor vehicle testing and inspection of body quality of the vehicle
11. Determining the economic tariff for land, sea and air transportation,
12. Forming, determining and planning the road transport networks

13. Providing guidance and counselling in the fields of land, sea and air transportation

14. Collecting the service retribution in the fields of land, sea and air transportation

15. Developing the technical implementation of agency activity

Figure 10 Organization Structure of Dishub

To achieve their vision and mission, Dishub DKI Jakarta has objectives to:
1. Optimizing the level of service of transport through the development of infrastructure and transportation facilities;

2. Increasing the public transportation service and public transport facilities and infrastructure

Meanwhile for doing their duties, Dishub DKI Jakarta has specific goals as follow:

1. To improve the access and accelerate the transportation flow from one area to another;

2. To reduce the level of traffic congestion on the arterial road sections;

3. To improve traffic safety;

4. To reduce air pollution caused by motor vehicle emissions;

5. To improve public transport service;

6. To improve public transport facilities and infrastructure

Based on the Jakarta Macro Transportation Pattern, the planning covered in the Governor Regulation (PERGUB) No.103/2007, DKI Jakarta Provincial Government has the direction to develop the transportation system (article 3). They are:

1. Optimizing the use of public transport as the backbone of the system and implement the demand management policies (Transport Demand Management / TDM) as well as provision of the road network as the support

2. Improving the accessibility and mobility in the region, and rearranging the integrated transportation modes in an integrated manner

3. Socializing the mass public transport system
4. Improving the road network

5. Promoting the use of public transport

6. Reducing the use of private vehicles

The objective of the development of mass public transport is to change the behaviour of the private transport users to public transport; thereby it can reduce the operation of private vehicles. This policy can also be supported by private vehicle operation reduction policies such as the policy of "three in one", road pricing, and others. The planning of the transport system development within Jakarta Macro Transportation Pattern strategy (PTM) based on the PERGUB Jakarta No.103/2007 has been developed as follows:

1. **The development of bus public transport system**
   
   a. **Rearrange route**;
      
      1) Restructuring route as a result of busway development
      2) Developing feeder transport (feeder services) to support the busway
   
   b. **The rationalization of bus public transport**
      
      Rationalizing the number of bus public transport operating in the region (Jakarta)

2. **The development of mass public transport system**,

   Mass Rapid Transit (MRT) system that will be developed is a network of priority bus or Busway, Monorail and the Mass Rapid Transit that should be available during 2004 to 2020
a. **Bus Priority Network (Busway):**

Based on the planning of the Macro Transportation Patterns (PTM) in Jakarta, one of the strategies is by optimizing the mass public transport buses which uses the Bus Priority or Bus Rapid Transit (BRT). BRT has already been established since 2004 based on PERGUB No.103/2007. The following is the busway corridor development plan from corridor 1-15:

1) Corridor 1 Blok M—Kota;
2) Corridor 2 Pulogadung - Harmoni;
3) Corridor 3 Kalideres - Harmoni;
4) Corridor 4 Pulogadung - Dukuh Atas;
5) Corridor 5 Kampung Melayu - Ancol;
6) Corridor 6 Ragunan - Kuningan;
7) Corridor 7 Kampung Rambutan - Kampung Melayu;
8) Corridor 8 Lebak Bulus - Harmoni;
9) Corridor 9 Pinang Ranti - Grogol - Pluit;
10) Corridor 10 Cililitan - Tanjung Priok;
11) Corridor 11 Pulo Gebang - Kampung Melayu;
12) Corridor 12 Pluit - Tanjung Priok;
13) Corridor 13 Pondok Kelapa - Blok M;
14) Corridor 14 Ul - Pasar Minggu - Manggarai;
15) Corridor 15 Ciledug - Blok M
b. **Light Rapid Transit (LRT)**

Light Rapid Transit planned to be developed in Jakarta is the Monorail. Monorail is a Mass Transit system which uses single rail train with the elevated track currently going under construction in Jakarta.

![Figure 11 A picture of monorail (illustrated)](image)

The project is planned for three phases, with the priority for the passengers of Bekasi / Cikarang and Tangerang / Karawaci. The planning phases are as follows:

1) **Phase I: Corridor Jakarta (27 km)**

   Stage I: The Green line (14 km) is a loop line serving Semanggi-Casablanca-Kuningan-Sudirman-Karet-Semanggi

   Stage II: Blue line (13km) serving Kampung Melayu-Casablanca-Karet-Tanah Abang-Roxy-Mall Taman Anggrek.

2) **Phase II: Jakarta to Bekasi and Cikarang (18-30km)**

3) **Phase III: Jakarta to Tangerang and Karawaci (16-25km)**

The project construction of pylons started in 2004. The project of Monorail suffered from many financial problems, frequent technology partner changes, and legal disputes. In March 2008, the developers, PT Jakarta Monorail,
officially abandoned the project. Currently, the city administration continues to find for a new partner, but no firm decision has been made.

![Supporting pillars for the stalled monorail project](image)

**Figure 12** The supporting pillars for the stalled monorail project

c. Mass Rapid Transit (MRT)

The Jakarta MRT of rail-based network, as planned, will be established approximately ±110.3 km that consists of the South – North route (Lebak Bulus to Kampung Bandan) stretched along ± 23,3 km and the East - West route of approximately ± 87 km.

![Jakarta MRT Map route](image)

(a) Without link with the railway (b) link with the railways

**Figure 13** Jakarta MRT Map route
The first Corridor which will be built is the South - North route from Lebak Bulus to Bundaran HI, stretched along ± 15.2 km, with 13 stations (7 elevated stations and 6 underground stations) which will be targeted to start operating in the late 2016.

The construction of the extension of MRT route (± 7.2 km) will be developed to the North-South route from Bundaran HI to Kampung Bandan (extension corridor) with the route stretched along 8.1 km (8 underground stations). The target for operation is in 2018 (accelerated from 2020 as the original plan). Meanwhile, the East-West corridor is currently in pre-feasibility study phase. This line has a target to operate in 2024. This Jakarta MRT project feature can be seen below:
### South – North Corridor

**Total Length of Track:** 23.3 Km

<table>
<thead>
<tr>
<th>Phase</th>
<th>Length of track</th>
<th>Station</th>
<th>Travel Time</th>
<th>Distance between station</th>
<th>Headway</th>
<th>Target passenger/day</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Phase</td>
<td>15.2 Km (9.2 Km Elevated, 6 Km Underground)</td>
<td>13 (7 elevated, 6 undergrounds)</td>
<td>30 minutes</td>
<td>0.8 – 2.2 km</td>
<td>5 minutes (2016)</td>
<td>412,000 (2020/after 3 years operation) With Traffic Demand Management (TDM) and Transit Oriented Development (TOD)</td>
<td>November 2016</td>
</tr>
<tr>
<td>2nd Phase</td>
<td>8.1 Km</td>
<td>+8 undergrounds between Bundaran HI – Kampung Bandan</td>
<td>22.5 minutes (Lebak Bulus – Kampung Bandan: 52.5 minutes)</td>
<td>0.8 – 2.2 km</td>
<td>5 minutes (2018)</td>
<td>630,000 (2037) With Traffic Demand Management (TDM) and Transit Oriented Development (TOD)</td>
<td>2018</td>
</tr>
</tbody>
</table>

**East – West Corridor**

**Total Length Of Tracks:** 87 Km

- Under Pre-Feasibility Study

<table>
<thead>
<tr>
<th>Length of track</th>
<th>Station</th>
<th>Travel Time</th>
<th>Distance between station</th>
<th>Headway</th>
<th>Target passenger/day</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Phase</td>
<td>15.2 Km (9.2 Km Elevated, 6 Km Underground)</td>
<td>+8 undergrounds between Bundaran HI – Kampung Bandan</td>
<td>22.5 minutes (Lebak Bulus – Kampung Bandan: 52.5 minutes)</td>
<td>0.8 – 2.2 km</td>
<td>5 minutes (2018)</td>
<td>630,000 (2037) With Traffic Demand Management (TDM) and Transit Oriented Development (TOD)</td>
</tr>
</tbody>
</table>

(source: JakartaMRT.com)

**Table 4 Jakarta MRT Feature**

The MRT project is a national project organized by the Provincial Government of DKI Jakarta. The project funding is mostly from JICA (Japan International Corporation Agency) which is financed with loans and it is guarantted by the central government. In October 2005, there is decree (SK) issued by Minister of Economy No.057/2005 which set the loan payments jointly paid by the Central Government and the Provincial Government of DKI Jakarta with
the composition of 42%: 58%. After the release of the decree, in 2005, there was an agreement on the project structure and financing concept agreed by the National Planning Board (Bappenas), Ministry of Transportation, Ministry of Finance, Provincial Government of DKI Jakarta and JICA (source: jakartamrt.com)

The support from the central government in funding was 42% agreed as the on-granting to the Jakarta Government, while the remaining 58% became the responsibility of the Provincial Government of DKI to continue the payment of the loans. In November 2006 Loan Agreement phase 1 was signed (1.869 billion yen) which was used for the engineering services. The first loan package of 1.869 billion yen was used to develop the basic engineering design at the Ministry of Transport (1.8 billion yen), to pay the management consultant hired by the city administration (567 million yen) as well as the tender consultant hired by MRTJ (171 million yen) to prepare the construction tender (source: jakartamrt.com). The total project costed to 144.322 billion yen, which came from the loans from JICA for 120 billion yen and assistance from the local budget funds (APBD) and state budget (APBN). The total loan of phase 2 amounted to 48.150 billion yen was signed on March 31, 2009 (source: jakartamrt.com)

Although the loan payments might be shared by the Central Government and the Provincial Government of DKI Jakarta, the agreement emphasized that to ensure the sustainability of the project, then the project will be conducted by the Provincial Government of DKI Jakarta. Jakarta Government
who will bear the subsidy on the operation of the MRT. For the purposes of construction and operation of the Jakarta MRT system, PT MRT was formed with the shares fully owned by the Jakarta Government. On June 17, 2008, after first obtaining the approval from the DKI Jakarta Regional Parliamentary (DPRD) in the form of Regional Regulation (PERDA) No. 3/2008 about the establishment of PT MRT Jakarta enterprises, and then added by the Regional Regulation (PERDA) No. 4/2008 about Regional Investment in PT MRT Jakarta, PT MRT Jakarta run the business activities that consisted of the conduct of public infrastructure and urban train transport which included the construction, operation, maintenance and operation of the MRT infrastructure, facilities and train, including developing as well as managing properties and businesses in the station and the surrounding area and depot and surrounding area along Jakarta MRT lines (source: jakartamrt.com).

3. **The development of road network system;** Target from 2004 to 2020

   **a. Adding and improving road capacity**

   1) The improvement of the road with the developing road priorities from east to west of Jakarta

   2) Developing the road networks to support the development of new commercial areas and improving accessibility to transport goods and services;

   **b. Increasing the capacity of the intersection (kapasitas simpang)**
c. Constructing and completing the toll road located in DKI Jakarta Province

1) Outer ring road toll;
2) Toll roads in the city;
3) Priok access road toll;
4) Other toll roads.

4. The development of rail transport systems; from 2004 to 2020

a. The development of Jabodetabek railway system;

b. The development of railway infrastructure by increasing capacity on double tracking;

c. The development of rail trajectory which is crossing with the highway

5. The development of alternative transportation systems;

The River transport development by utilizing the canal / river in to 2020

6. The development of supporting policy; from 2004 to 2020

a. The application of Traffic Demand Management (TDM)

b. The development of information systems and traffic control (traffic restrictions)

c. The development of pedestrian facilities.
Figure 15 Strategy of Jakarta Macro Transportation Pattern
B. Jakarta Public Transport Performance

According to Kaplan and Norton (2004) to assess the performance (public sector) based on Balanced Scorecard can be viewed from four perspectives; they are Fiduciary, Customer (Resident), Internal Process, and Learning and Growth. While from the results of collecting the data from secondary and primary data (survey) the following results were obtained:

1. Fiduciary Perspective

Fiduciary performance, in Strategy Maps and Balanced Scorecard, describes the outcomes or as a lag indicator. It provides the definition of Dishub’s objectives which want to be achieved and succeeded. Strategy describes how an institution intends to create a sustainable growth in the public transport value. The objectives of Dishub are to improve the access and accelerate the transportation flow from one area to another and to reduce the level of traffic congestion. In this case, the purpose for Dishub originally should be increased in the market share of public transport users than private cars, thus it has impact for reducing congestion and improving the transportation flow. The best way to achieve those objectives is by planning and implementing the strategy of Transportation Macro Pattern (PTM) in the form of Governor Regulation (PERGUB) No. 84 year 2004 and No. 103 year 2007. Dishub formulated the transportation system development directives and strategies to reduce the traffic congestion in Jakarta by offering such value-added services in public transport. Those strategies are in the form of developing bus public transport system, developing rail transport system,
developing alternative transport system, and developing mass public transport system. In this research, the object of the research was conducted on the regular bus as the conventional bus system (Non-BRT) and Bus Rapid Transport (BRT) system only. It was not conducted in the railways system. Meanwhile, for other public transport mode such as Mass Rapid Transit (MRT) and Light Rapid Transit (LRT) has not been built yet and for waterway bus (alternative) has not been operated again.

In Jakarta public transport, in 2004, Dishub established Bus Rapid Transport (BRT) to solve the transportation problems in Jakarta especially the traffic jams. Bus Rapid Transit takes part of its name from "rapid transit" which describes a high-capacity transport system with its own way (bus way). Its alignment often being elevated or running through tunnels, typically using long, high capacity vehicles at short headways of a few minutes. The particular way lanes of BRT systems allow them an increased average vehicle speed, to provide more passengers than conventional bus services. A smoother ride can also be expected, because the BRT is not immersed in stop-and-go traffic.

BLU Transjakarta Busway is an institution established by the Government of DKI Jakarta. TransJakarta is a Bus Rapid Transit system which started on January 15, 2004. Currently, it has 8 corridors (or lines) in operation with a total length 123.35 km, 2 corridors at inactive status, and 5 corridors planned to be built in the future. The Construction of BRT is one of the strategies belong to Macro Transportation Pattern in order to improve services and the provision of transportation services that are safe, integrated, orderly, smooth, comfortable,
economical, efficient, effective and affordable used by the community. TransJakarta was designed to provide the residents of Jakarta in a fast public transportation system to help reducing the rush hour traffic. The government provides TransJakarta buses with their own private lanes and Transjakarta's ticket prices are subsidized by the government.

![Figure 16 Transjakarta Bus and Busway](image)

There are 8 corridors (or lines) operated by 6 operators.

1. **Corridor I;** The bus route from Blok M to Jakarta Kota operated by PT. Jakarta Express Trans (JET)
2. **Corridor II;** The bus route from Pulogadung to Harmoni operated by PT. Trans Batavia
3. **Corridor III;** The bus route from Kalideres to Harmoni operated by PT. Trans Batavia
4. **Corridor IV,** The bus route from Pulo Gadung to Dukuh Atas operated by PT. Jakarta Trans Metropolitan and PT. Primajasa Perdanaraya Utama
5. **Corridor V,** The bus route from Kp. Melayu to Ancol, operated by PT. Jakarta Mega Trans and PT. Eka Sari Lorena Transpor
6. **Corridor VI,** The bus route from Ragunan to Kuningan, operated by PT. Jakarta Trans Metropolitan

8. **Corridor VIII**, The bus route from Lebak Bulus to Harmoni operated by PT. Eka Sari Lorena Transport and PT. Primajasa Perdanaraya Utama

**Figure 17** Transjakarta Route Map

BLU Transjakarta, in the beginning, is a non-structurally institution from the Provincial Government of DKI Jakarta namely **Badan Pengelola** (BP) Transjakarta Busway, as regulated in Decree Governor of DKI Jakarta Number 110/2003. Then, the Jakarta Government issued a regulation of DKI Jakarta Governor Number 48/2006; BP. Transjakarta Busway transformed into the structural organization and became the Technical Implementation Unit (UPT) of **Dinas perhubungan** DKI Jakarta that has authority in the financial base PPK-BLUD. It has main task of providing busway services to public users in Jakarta (source: Transjakarta.co.id).
Based on its performance during the operation, Transjakarta obtained an increase in the number of passengers and revenue earned. One of the reasons in the increase is because of the additions of the corridor (route) busway operations. Here are some data of the number of passengers of the transjakarta based on the trip below:

<table>
<thead>
<tr>
<th>Year</th>
<th>A Number of Passenger Trip</th>
<th>Growth</th>
<th>Cost Recovery</th>
<th>Information (Corridor/Cord Operation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>15,942,423</td>
<td>30,46%</td>
<td>95,68%</td>
<td>Cord 1 (Start 15-01-04)</td>
</tr>
<tr>
<td>2005</td>
<td>20,798,196</td>
<td>30,46%</td>
<td>75,18%</td>
<td>Cord 1 + Cord 2 (15-01-06) + Cord 3 (10-02-06)</td>
</tr>
<tr>
<td>2006</td>
<td>38,811,133</td>
<td>58,24%</td>
<td>64,20%</td>
<td>Cord 1,2,3 + Cord 4,5,6,7 (28-01-07)</td>
</tr>
<tr>
<td>2007</td>
<td>61,446,336</td>
<td>21,45%</td>
<td>67,21%</td>
<td>Cord 1,2,3,4,5,6,7</td>
</tr>
<tr>
<td>2008</td>
<td>74,619,995</td>
<td>21,45%</td>
<td>67,21%</td>
<td>Cord 1,2,3,4,5,6,7</td>
</tr>
<tr>
<td>2009</td>
<td>62,989 (until Nov)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Dishub.jakarta.go.id

Source: INSTRAN (cited from BLU Jakarta in Investor Daily)

Table 5 Number of Transjakarta Passenger
The presence of Transjakarta bus put some of Jakarta resident in the curiosity. There are increased numbers in the data of the resident who use Transjakarta each year. Based on data from the Dishub DKI Jakarta, in 2004, there are 15,942,423 passengers trip, in 2005 increase to 20,798,196 passengers, 38,811,133 passengers in 2006, in 2007 increased to 61,446,336 passengers, and in 2008 rose again to 74,619,995 passengers. However, this increase in the passenger does not automatically reduce the congestion. The reason is most of the bus passengers actually from Non-Transjakarta passengers who prefer to use Transjakarta bus rather than private vehicle owners.

During in the operation, the revenue of Transjakarta has been increased. The following data from the Dinas Perhubungan DKI Jakarta during the Transjakarta operation since 2004 can be seen below:

<table>
<thead>
<tr>
<th>No.</th>
<th>CORRIDOR</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Corridor 1</td>
<td>39,063,108.475</td>
<td>55,831,672.900</td>
<td>79,700,892.000</td>
<td>83,436,270.500</td>
<td>88,184,560.500</td>
</tr>
<tr>
<td>2</td>
<td>Corridor 2</td>
<td>27,441,742.000</td>
<td>29,483,858.500</td>
<td>33,321,077.500</td>
<td>33,821,077.500</td>
<td>31,403,844.500</td>
</tr>
<tr>
<td>3</td>
<td>Corridor 3</td>
<td>23,641,039.000</td>
<td>25,125,180.000</td>
<td>31,403,844.500</td>
<td>31,403,844.500</td>
<td>31,403,844.500</td>
</tr>
<tr>
<td>4</td>
<td>Corridor 4</td>
<td>17,402,912.000</td>
<td>20,798,196.000</td>
<td>22,054,815.000</td>
<td>22,054,815.000</td>
<td>22,054,815.000</td>
</tr>
<tr>
<td>5</td>
<td>Corridor 5</td>
<td>12,902,270.500</td>
<td>16,027,806.000</td>
<td>16,027,806.000</td>
<td>16,027,806.000</td>
<td>16,027,806.000</td>
</tr>
<tr>
<td>6</td>
<td>Corridor 6</td>
<td>14,906,138.000</td>
<td>19,027,806.000</td>
<td>22,054,815.000</td>
<td>24,457,134.500</td>
<td>24,457,134.500</td>
</tr>
<tr>
<td>7</td>
<td>Corridor 7</td>
<td>12,902,270.500</td>
<td>16,027,806.000</td>
<td>16,027,806.000</td>
<td>16,027,806.000</td>
<td>16,027,806.000</td>
</tr>
<tr>
<td>TOTAL</td>
<td>39,063,108.475</td>
<td>55,831,672.900</td>
<td>130,783,673.000</td>
<td>206,895,330.000</td>
<td>248,339,552.000</td>
<td></td>
</tr>
</tbody>
</table>

Source: Dishus DKI Jakarta

Table 6 Transjakarta Revenue Based on Number of Passenger

However, unfortunately, despite Dishub has been implementing by BRT system in form of Transjakarta as the new system to reduce congestion, the current condition in Jakarta transportation is still very apprehensive and poor. The
traffic jam always happens every day especially at the rush hour in the morning and afternoon when people start and finish from their daily work. The main problem of congestion in Jakarta is the volume of vehicles is not comparable with the capacity of the road for vehicles. In addition, most people prefer using private vehicles rather than public transport causing the congestion worse. There are repeated observations and evidence collection from various sources such as the mass media related to the performance of traffic transport in Jakarta.

a. “Severe Congestion, Palmerah-Kuningan 1,5 hour!”

“Heavy rain which flushed Jakarta area, resulted traffic jams everywhere. Palmerah–kuningan route needs 1.5 hours using the using the motorcycle. Starting from the Pejompongan to Karet, the long lines had been started. There were many cars and motorcycles drivers impatiently precede each other. The worst congestion point was located at the traffic light of Karet intersection. (source: detiknews.com, 14/05/2010).

b. “Jakarta transport stuck everywhere, passengers of TransJakarta is exhausted”

“Jakarta faced severe congestion. It was started from Mampang Prapatan towards Ragunan until the direction to TB Simatupang Street. Many motorcycles and cars entered the busway lane. Because of the congestion, TransJakarta bus passengers who stood up, feel exhausted and sat in the floor because it was too long waiting and they felt angry. The congestion was also observed at Lebak Bulus to TB Simatupang Street. Traffic congestion was triggered by the presence of the cable excavation project. This congestion
impacted on the density of the traffic from the direction of Warung Buncit and Pejaten. In addition, the traffic lights was out and made the congestion worse” (source: detiknews.com, 8/3/2010)

c. “Heavy Rain, a number of point area in Jakarta run into severe traffic jam”

“After the rain began to subside, puddle of water on some roads in Jakarta was resulting imbroglio in traffic. Severe congestion happened such as at Tugu Tani roundabout, MH Thamrin Street, Hotel Indonesia roundabout, Sudirman, Kampung Melayu, Casablanca, and Ambassador. Then, there was also severe congestion on Kebon Sirih Street and the road to Pulo Mas direction. This imbroglio in traffic flow also occurred at Pasar Minggu toward Tanjung Barat and Ragunan Street” (source: Tvone.com, 1/03/2010).

d. “Traffic congested after rain”

“Hundreds of cars and public buses were trapped in traffic congestion on the artery road of Jl. MT. Haryono that leads to Cawang interchange in East Jakarta following heavy downpour on Friday evening. An officer on duty said the congestion was caused by dozens of motorbike riders who flocked under the Cawang tunnel to protect themselves from the rain” (Source: The Jakarta Post.com, 09/25/2009)
In Jakarta, the growth of private vehicle is quite phenomenal especially in the number of motorcycles. This growth does not equal to the growth of the road capacity. As the consequence, it makes the traffic jams in Jakarta increasing and getting worse. Based on JICA (Japan International Corporation Agency) research, if there is no significant changing on the road construction in Jakarta, Jakarta will see total traffic congestion (permanent gridlock) in 2014, unless the government takes serious attempt to improve the public transportation. Road construction in Jakarta, which grows only around 0.01 percent a year, is unable to balance the growth of number of private vehicles, which grows at an average of 11 percent per year. Each day, over 9 million cars and motorcycles roam Jakarta's roads.

The problem of traffic jam has been effecting into the other variety of problems such as the quality of life for the Jakarta’s residents who are always stressful and polluted by the air pollution. The quality of health decreases, the impact of air pollution turn into global warming, and the economic impacts such as the productivity of work time reduced and expenses on more fuel for travelling by using vehicle. Study from Yayasan Pelangi Indonesia, an environmental NGO, concluded that cost for traffic delays in Jakarta was $3.5 billion a year, meaning lost in productivity and extra fuel costs. The number of vehicles on the road in Jakarta doubled in the next 10 years while roads only grew 10%. If nothing is done to improve the situation, the study predicts, traffic will grind to a completely halt in 2014.
2. Customer (Resident) Perspective

a. Public Transport User Satisfaction

In the customer (resident) perspective, it is important to satisfied public transport user to improve the market share of public transport user. Success with the targeted public transport user satisfaction provides a principal component for improving fiduciary performance, which is the growth of the market share of public transport. The increasing number of resident using public transport can reduce congestion. The customer (resident) perspective itself defines the value proposition for targeted public transport user. Choosing the resident and public transport user as the value proposition is the central element of strategy. So it is important to analyze the public transport user value proposition by analysing the service quality and public transport policy such as the price of the ticket. In this perspective, value propositions explain why people want to use public transport. Based on the research survey conducted to 403 respondent of public transport user; 95.29% unsatisfied with the general performance of public transport in Jakarta. On the other hand, for the price policy of Transjakarta made by Dishub, 65.26% satisfied and 34.74% unsatisfied, meanwhile the price policy of non-transjakarta 51.36 % satisfied and 48.64% unsatisfied.

<table>
<thead>
<tr>
<th></th>
<th>Unsatisfied</th>
<th>Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Transport Performance</td>
<td>95.29 %</td>
<td>4.71 %</td>
</tr>
<tr>
<td>Price Policy of Transjakarta</td>
<td>34.74 %</td>
<td>65.26 %</td>
</tr>
<tr>
<td>Price Policy of Non-Transjakarta</td>
<td>48.64 %</td>
<td>51.36 %</td>
</tr>
</tbody>
</table>

Table 7 Public Transport and Price Policy Perfomance
In the same survey, there are some performance results on Dishub and all operator of the bus which assessed from the scale 1 to 10 based on the public transport user perspective that can be seen as follows:

<table>
<thead>
<tr>
<th>Organization</th>
<th>Rating / Assessment (scale 1 – 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Transjakarta (BRT)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.99%</td>
</tr>
<tr>
<td>Non-Transjakarta (Non-BRT)</td>
<td></td>
</tr>
<tr>
<td>All Large Size Bus Operator</td>
<td>0.50%</td>
</tr>
<tr>
<td>All Middle Size Bus Operator</td>
<td>2.23%</td>
</tr>
<tr>
<td>All Small Size Bus operator</td>
<td>0.50%</td>
</tr>
<tr>
<td>Dishub</td>
<td>2.48%</td>
</tr>
</tbody>
</table>

**Table 8** Performance of Dishub, Transjakarta and Non-Transjakarta

From the table, it can be seen that the performance of Dishub based on the public transport users (resident) perspective was still very poor (4.94). Meanwhile for the performance of Non-Transjakarta, the worst score performance was obtained by All Middle Size Bus Operator (3.79) and the highest value is for the All-Large Size Bus Operators (4.67). The performance of Transjakarta in general, based on public transport users perspective, got the better score (6.21) than all Non-Transjakarta operator and Dishub itself. Based on the survey for Non-Transjakarta, the most and priority factor of the service quality which should be improved is safety and security (84.86%) and comfortability (62.78%), meanwhile for Transjakarta
is punctuality (66.25%) and comfortability (30.77%). For Non-Transjakarta, safety and security become the most attribute that should be improved. Because the passengers concern with these attributes, they consider how the drivers are careless when operating their vehicle which make many accident happened frequently, and considering there is unsecure condition in the vehicle (bus), such as a threat of the criminal act of the pickpocket. Meanwhile, for Transjakarta, the passenger mostly concerns with the punctuality because they expect higher in Transjakarta than Non-Transjakarta. Besides, the headway of the Transjakarta bus becomes longer, because the busway lane is unsterile from the other vehicles and lack of buses fleet compared with the demand and quantity of passengers. It makes the queue to the bus getting longer, so there is an uncertain condition on how long the travel time to reach the destination is. Consequently, it makes uncomfortable the condition in Transjakarta bus and the shelter uncomfortable.

<table>
<thead>
<tr>
<th></th>
<th>Non-Transjakarta</th>
<th>Transjakarta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety and Security</td>
<td>84.86 %</td>
<td>27.05 %</td>
</tr>
<tr>
<td>Information</td>
<td>12.16 %</td>
<td>6.45 %</td>
</tr>
<tr>
<td>Quality of bus facilities</td>
<td>39.21 %</td>
<td>15.63 %</td>
</tr>
<tr>
<td>punctuality (on time)</td>
<td>21.84 %</td>
<td>66.25 %</td>
</tr>
<tr>
<td>Comfort ability</td>
<td>62.78 %</td>
<td>30.77 %</td>
</tr>
<tr>
<td>Fare</td>
<td>11.91 %</td>
<td>7.20 %</td>
</tr>
<tr>
<td>Employees skill and attitude</td>
<td>25.56 %</td>
<td>19.35 %</td>
</tr>
</tbody>
</table>

**Table 9** The most attribute should be improved
The result was in line with the direct observation from the experience as the public transport user. The service quality of public transport is still poor. In Non-Transjakarta bus operator system, there was not yet contract to give excellent service to the public transport users. The contract is only in the form of the route permitting within a certain period. The operator drivers do not get salary each month. The system is still using "chased deposit", where the drivers of public transport have no regular income (salary) and only depend on the amount of money over predetermined "chased deposit" which was given to the owner of the bus, except for PPD operator. In addition, there is overlapped route among operators on the same route. As the consequence, public transport drivers begin looking for ways to survive in the competition. In this condition, the drivers of the operator in performing their work must be as fast as possible in driving and get as many passengers as possible. If there are no or less passengers unlike what they expected, the bus will stop for a long time to get passengers until the bus is full. This, of course, led to the insecurity and discomfort for the passengers when using the public transport.

Figure 20 The service quality of Non-Transjakarta
Services quality offered by Transjakarta has not been optimized. Many people still use private vehicle than Transjakarta bus. In fact, when viewed from the side of the management, the efforts to create public transport Transjakarta as humanistic, comfortable, safe, and environmentally friendly are still far from expectations. This happened because there is an inconsistency on the Transjakarta itself and Dinas Perhubungan (Dishub) DKI Jakarta in implementing their policies. From the results of a survey conducted by Instran (Institut Study Transportasi) in 2009, to identify the customer complaints in Transjakarta bus, the most frequent complaint from users is the waiting time of the bus that is long and the bus is always full and crowded especially in the rush hours.

<table>
<thead>
<tr>
<th>The Problem Categories</th>
<th>Amount</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The time for waiting bus is too long</td>
<td>73</td>
<td>45 %</td>
</tr>
<tr>
<td>Distance between bus and shelter are too wide</td>
<td>3</td>
<td>2 %</td>
</tr>
<tr>
<td>Condition of buses &amp; Shelter are dirty &amp; not well maintained</td>
<td>1</td>
<td>1 %</td>
</tr>
<tr>
<td>The bus is full and crowded</td>
<td>73</td>
<td>45 %</td>
</tr>
<tr>
<td>The information Voice messages are often die in bus</td>
<td>1</td>
<td>1 %</td>
</tr>
<tr>
<td>Lower tariffs</td>
<td>2</td>
<td>1 %</td>
</tr>
<tr>
<td>JPO Stair of damaged</td>
<td>2</td>
<td>1 %</td>
</tr>
<tr>
<td>Transit extension</td>
<td>3</td>
<td>2 %</td>
</tr>
<tr>
<td>No Toilet</td>
<td>1</td>
<td>1 %</td>
</tr>
<tr>
<td>There is no signpost</td>
<td>1</td>
<td>1 %</td>
</tr>
<tr>
<td>Muddy bus stop/shelter when raining</td>
<td>1</td>
<td>1 %</td>
</tr>
<tr>
<td>None</td>
<td>3</td>
<td>2 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>164</strong></td>
<td><strong>100 %</strong></td>
</tr>
</tbody>
</table>

*Table 10 The service quality of Transjakarta*
Based on this survey, in the corridor I (Blok M-Kota) the capacity of the corridor was approaching to saturation because there is often passenger stagnation especially in the rush hours. Similarly, in shelter Dukuh Atas in the corridor IV (Pulogadung-Dukuh Atas), based on the *Instran* survey, the shelter is not feasible for long queues up to 100 meters. In addition, this corridor also has a risk from the pickpocket threat. This criminal act is often occurred in the Matraman shelter. A long queue also occured in the corridor V (Kampung Melayu-Ancol), because the bus fleet is still less than the demand. While in the corridor VI (Ragunan-Halimun) and VII (Kampung Melayu-Kampung Rambutan), there is frequent absence of information in operation and the assurance for waiting the bus. The BLU Transjakarta also has not been able to sterilise Transjakarta busway line from other vehicles which resulting in traffic conflicts, particularly occurred in the corridor II (Harmoni-Pulogadung). For instance, this conflict especially happened in many intersections with U-turn. Meanwhile, based on the same research, the most passenger expectation from the service of Transjakarta is the addition in number of the vehicles which should be augmented. The following data resulted from a survey:
b. Safety

The numbers of road-traffic accidents continue to increase in DKI Jakarta. An increasing number of the private vehicles become one of the main causes of the increasing number of accidents, especially in Jakarta. Motorcycles are the largest contributors to accidents on the highways. Traffic accidents by motorcycle in 2005 was reached 3.499 cases, in 2006 increased to 3.814 cases, in 2007 reached 4.933 cases, in 2008 increased to 5.898 cases, and in 2009 reached 6.608 cases (Source: vivanews.com). The number of private vehicles in Jakarta is very high. Based on the data from Jakarta Metro Police, in 2002 to 2007, there was indication of growth in the number of motorcycles in Jakarta on average 327.540 units per year or 897 units per
day. The number was four times more than the growth of the private cars in Jakarta. The growth of private cars in Jakarta in the same period has average number of 80,267 units per year or 220 units per day (source: vivanews.com). Ironically, the increasing number of the private vehicles was also followed by the increasing number of violations and traffic accidents. The following is traffic accidents data in Jakarta during the period of 2008 and 2009 (source: kompas.com)

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of traffic accident</td>
<td>6,393 cases</td>
<td>6,896 cases</td>
</tr>
<tr>
<td>Number of Dead</td>
<td>1,169 people</td>
<td>1,016 people</td>
</tr>
<tr>
<td>Number of Severe injuriers</td>
<td>2,597 people</td>
<td>3,154 people</td>
</tr>
<tr>
<td>Number of minor injuries</td>
<td>4,317 people</td>
<td>4,737 people</td>
</tr>
<tr>
<td>Number of material losses</td>
<td>12.24 Billion Rupiah</td>
<td>12.32 Billion Rupiah</td>
</tr>
</tbody>
</table>

Table 12 Traffic Accident

c. Pollution

Green house gases such as CO2, CH4, N2O, and SF6 have been increased, especially for CO2. One of the distributors of greenhouse emissions in the atmosphere has been increased drastically in Jakarta for the last decades. The main cause is the using of fossil fuels in high level such as fuel consumption for motor vehicles that placed CO2 Gas as the highest contributors in encouraging the global warming. Motorized vehicles produce hazardous substances that can cause negative impacts both to the human health and the environment, such as lead (Pb), suspended particulate matter
(SPM), Nitrogen Oxides (NOx), hydrocarbons (HC), Carbon Monoxide (CO), and photochemical oxides. According to World Bank's data in 2009, Jakarta has become the third worst city of the world which has the highest air pollution after Mexico and Thailand. World Bank also places Jakarta as one of the city with high levels of solute/particulate after Beijing, New Delhi and Mexico City. The biggest contributor of pollution is the transport pollutants that reached 70% produced by the emissions of motorized vehicles, which has high growth at 10.9% each year causing traffic jam every day (source: mediaindonesia.com)

![Figure 21 Jakarta Pollution](image)

The high levels of air pollution in Jakarta, causes many social problems for its residents. The main problem of course is the health problem. The Impact on the health caused by air pollution will accumulate from day to day. Accumulation in long periods will result in a variety of health disorders, such as bronchitis, emphysema, and lung cancer. The health impacts caused by air pollution are varying among individuals. The most vulnerable population is the group of elderly individuals and young children. According to data from Cipto Mangunkusumo Hospital, 46% of the Jakarta diseases are caused by the air pollution, which generally are infection of the respiratory tract, asthma,
and lung cancer. In addition to these diseases, the pollution is also a potential cause of the physiological changes in humans, such as debilitating lung function and affect the blood pressure (source: kabarIndonesia.com).

A continued impact of the declining quality of public health is the increasing cost for treatment. If the residents (society) are unhealthy, of course, there will be a social burden on society that will affect of GDP (Gross Domestic Product). As an illustration, the cost to overcome the health problems caused by air pollution in 1998 reached Rp 1.8 trillion. If the levels of pollution cannot be prevented, this cost will continue to rise and could reach USD 4.3 trillion in 2015 (source: Kabar Indonesia.com). Another problem besides the health problems is the noise pollution. Moreover, pollution also affect to the aesthetics of the city such as uncomfortable seeing the city's air almost continuously polluted by haze of pollution from vehicles and industry.

3. **Internal Process Perspective**

The internal process perspective has the greatest impact on public transport user value proposition. In this perspective, it describes how the organization will implement its strategy to improve successfully in the resident and fiduciary perspective. The strategy in the internal process creates and delivers the value proposition for resident/public transport user. The strategy used by *Dishub* in this process basically is for developing the public transport which has better service quality, better in the operational customer management, innovation and safety and environmental process.
a. Operational and Customer Management

In the era of autonomy, a city transportation authority is the governor and mayor. With this pattern, the transmission of policy which is taken by the central government can not necessarily be realized in the field. There is a process that must be passed, which also involves the Transport Agency (Dishub) and consensus between the operators and Organda, as an organization that facilitate the operator. The management of the city transport is done by several companies, with the cooperation from thousands of individuals who operate various types of buses, minibuses, and other types of public transportation.

Figure 22 Non-Transjakarta bus vehicles

For the large buses, they are operated by the state-owned bus company, PPD, and private companies such as PT Mayasari Bhakti and PT Steady Safe. These large buses serve long distance trips, usually from one large station to another one, through the main streets and major arteries, including along the inner ring road. These buses are usually not only stopped at the shelter but also at a point on call by passengers outside the shelter.
The operator Providers are granted with the route licenses valid for five years (PP No. 41/1993; Kepmen No. 68/1993; Kepmen No. 15/1996) and are allowed to sublet them to individual bus owners. For small buses such as Microlet and Angkot, they are mostly owned by individuals. Route licenses are valid for five years and it can be proposed by state-owned, private, cooperatives and individual companies. Requirements for a route permit as permission to become the operator itself is not too difficult. There is no tender process in granting these licenses which prompting an uncontrolled service quality and overlapping routes by each operator. Based on the Ministry of Transport decision (KM) No. 35/2003, the proposal letter to obtain a permit to become an operator should be addressed to the governor or mayor with attachments:

1) Tax Payer Registration Number (N.P.W.P.);
2) Certificate of the company establishment / Cooperative / signs of individual identity;
3) Company Domicile Certificate;
4) Permit of Business Place (SITU)
5) Statement letter in competence to have or to control vehicles;
6) Statement letter in competence to provide vehicle storage facility.

Competition that occurred for the operators to obtain permission route (competition for the market) does not accompanied by the standards of service quality that should be given to the customers. The route permit is granted to the operator is only in the form of route permits to a certain period of time with no contractual service standards that should be given to the
Based on KM No.35/2003, the endorsement letter to be approved as the operator of the service is issued after submitting the application letter and approved by the governor or mayor. Here are the obligations:

1) Business operation should begin no later than within 6 (six) months from the business license is issued.

2) License holders must provide storage space for the vehicles (car pool).

3) Location of the garage is within the limits of rooilijn (front line).

4) License holders must provide fire extinguishers that can be used every time if there is fire.

5) Business permit holders must always maintain cleanliness in the garage yard.

6) Should be comply with the laws and regulations related to transport business.

The official, who gave the permission, is entitled to review, modify or revoke licenses prematurely, if the information which is given by the applicant later proved incorrect and violates the rules. With this system and weakness in supervision of operational activities, it causes an open opportunity to deviations such as collusion or corruption, for both the Dishub as the government and the company/individual as the operator.

With route permit system only, the performance of Non-Transjakarta becomes poor and uncontrolled. There are many operators overlapping in the same route, plus there are some illegal operators compete to look for passengers. This problem led to the phenomenon of market failure. Unfair competition among operators and overlapping routes causes a load factor of
the bus decreasing. As the consequence, the operators begin looking for ways to survive in the midst of unhealthy competition. In addition, there is "chased deposit" system where the drivers of public transport have no regular income (salary) and only depend on the amount of money over predetermined deposit (except PPD operator). It makes the drivers of operator must be as fast as possible in using time of driving and attract as many passengers as possible. The bus will stop for a long to get passenger until full. This, of course, led to the insecurity and discomfort for the passengers when using the public transport. Another case, some of the operators do not take a good maintenance for their vehicles, and even sometimes, some operators use the second hand spare parts. In that condition, it is not surprising when people find public transport performance is poor and unworthy in operations.

Meanwhile for the operational of the Transjakarta during the operation since its establishment until now has been highly criticized and opposed by the road users. This because the TransJakarta bus lane reduces road spaces which already narrow in Jakarta. The system's goal for increasing the traffic efficiency in Jakarta road has been failed. The majority of the Jakarta's roads are too narrow to accommodate the regular lane, consequently, there are many vehicles enter to the busway line. Nowadays, busway lane has been no longer sterile from Non-Transjakarta vehicles. This increases the traffic congestion in all parts of the TransJakarta routes. As a result, passengers no longer have a feeling of comfort and advantage when using Transjakarta,
which originally should be comfortable and fast, more than the regular bus public transport.

![Figure 23 other vehicle using Transjakarta Busway line](image)

During six years operations, there are 268 units Transjakarta single buses, 16 articulated buses, 120 shelters/bus stops and 97.35 miles special buslines (busway). Since it launched in January 2004, Transjakarta services quality actually become decreasing. The services which are already excellent, when it was started in single corridor, could not be maintained when there were increasing numbers of corridors. One by one, passengers complained about the length of time for waiting the bus at each stop. This makes the total travel time for passengers become increasing. Technically, this problem is caused by the headway (time interval) between the buses. There are obstacles for the bus speed during the trip when other vehicles entered to the busway line which should be sterilised from the other vehicles. In fact, it causes the decreasing in the travel time of Transjakarta bus. There was survey of headway from Instran in 2009 to calculate the headway bus. It can be seen in this chart below:
One of the other causes of the delay of the bus headway is the lack of gas refueling stations (SPBBG). The infrastructure station for transjakarta itself provides only three stations (SPBBG), which are located at Jl Perintis Kemerdekaan, Rawabuaya, dan Jl Pemuda. Three SPBBGs certainly are not enough to serve hundreds of the bus fleets. As a result, the bus fleet of Transjakarta, which want to fill the fuel, has to travel in quite a long time and consequently, this makes the fuel waste and the bus late in their arrival time (headway).

During the operation, BLU Transjakarta has been reported by many media, especially with the decreasing of the service quality. In 2009

<table>
<thead>
<tr>
<th>Survey Time</th>
<th>Corridor</th>
<th>Average Headway</th>
<th>The longest Headway</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 2007</td>
<td>5</td>
<td>8:31</td>
<td>22 minute, at hour 7:23</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>9:00</td>
<td>24 minute, at hour 8:12</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>11:20</td>
<td>40 minute, at hour 6:40</td>
</tr>
<tr>
<td>January 2008</td>
<td>3</td>
<td>8:20</td>
<td>23 minute, at hour 17:30</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>7:23</td>
<td>27 minute, at hour 8:32</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>12:21</td>
<td>23 minute, at hour 6:16</td>
</tr>
<tr>
<td>February 2008</td>
<td>2</td>
<td>10:21</td>
<td>41 minute, at hour 16:11</td>
</tr>
<tr>
<td>June 2008</td>
<td>3</td>
<td>9:21</td>
<td>23 minute, at hour 15:31</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>7:09</td>
<td>27 minute, at hour 14:31</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>8:45</td>
<td>25 minute, at hour 14:00</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>8:10</td>
<td>23 minute, at hour 17:48</td>
</tr>
<tr>
<td>November 2008</td>
<td>2</td>
<td>5:31</td>
<td>9 minute, at hour 6:12</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>5:12</td>
<td>13 minute, at hour 8:31</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>10:01</td>
<td>27 minute, at hour 6:23</td>
</tr>
<tr>
<td>January 2009</td>
<td>3</td>
<td>9:12</td>
<td>13 minute, at hour 11:59</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>9:34</td>
<td>13 minute, at hour 15:43</td>
</tr>
<tr>
<td>March 2009</td>
<td>8</td>
<td>13:29</td>
<td>42 minute, at hour 18:27</td>
</tr>
</tbody>
</table>

Source: Instran, processed data

Table 13 Data Fluctuation in Headway Busway
according to a survey by Instran, many mass media both electronic and non-electronic media monitored Transjakarta performance. There was 901 news such as issues related to the density of the crowded passengers reached 160 news (18%), while the news about the service was 134 news (15%). The issue of mass media on Transjakarta Busway can be seen in the table below:

<table>
<thead>
<tr>
<th>No</th>
<th>Problem Issue</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Passenger Density</td>
<td>160</td>
<td>18%</td>
</tr>
<tr>
<td>2</td>
<td>Service management</td>
<td>134</td>
<td>15%</td>
</tr>
<tr>
<td>3</td>
<td>A number of Buses</td>
<td>88</td>
<td>10%</td>
</tr>
<tr>
<td>4</td>
<td>Infrastructure</td>
<td>88</td>
<td>10%</td>
</tr>
<tr>
<td>5</td>
<td>Fare</td>
<td>67</td>
<td>7%</td>
</tr>
<tr>
<td>6</td>
<td>Sterilization</td>
<td>36</td>
<td>4%</td>
</tr>
<tr>
<td>7</td>
<td>Traffic and Congestion</td>
<td>83</td>
<td>9%</td>
</tr>
<tr>
<td>8</td>
<td>Accident</td>
<td>64</td>
<td>7%</td>
</tr>
<tr>
<td>9</td>
<td>Crime</td>
<td>38</td>
<td>4%</td>
</tr>
<tr>
<td>10</td>
<td>Gas Fuel</td>
<td>51</td>
<td>6%</td>
</tr>
<tr>
<td>11</td>
<td>Budget and revenue</td>
<td>92</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>901</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Source: processed data Instran*

**Table 14** Mass media issues in Transjakarta Busway

b. Innovation Process

There is almost no innovation in the operation of Non-Transjakarta. Meanwhile, BLU Transjakarta in running their operation continues to make improvements and innovations to improve the service for the customers/users of Transjakarta, such as since 11 April 2010, the public users can use JakCard Transjakarta. JakCard is an electronic payment card which issued by Bank DKI to provide convenience in conducting transactions without using cash. In
operation, it can be implemented currently in Corridor 1 (Blok M - Kota), Corridor 2 (Pulogadung-Harmoni), Corridor 3 (Kalideres-Harmony), and Corridor 6 (Ragunan-Dukuh Top). When using the card, the users of JakCard put the card into a card reader (an electronic reader engine) which is provided at the counter of the ticket purchase. In the future, this card is not only for the payment card of Transjakarta, but it also can be used for a shopping card. This system is expected to facilitate the passengers to buy tickets for the busway without using the cash. Initial purchase and replenishment of the Jakcard card can be done in 32 busway corridors 1,2,3 and 6 and in Bank DKI (source: Transjakarta).

Figure 24 JakCard (Transjakarta Card)

In addition, BLU Transjakarta launched another innovation in service for the users of transjakarta, namely HalteCam service. The purpose for this service is to provide more complete information, so that people are able to know the true condition of the passengers at each bus stop. The service can be used by passengers who want to see the current situation in the shelter by using the internet. This Halte Cam service can be accessed by users through
This service can be accessed not only in the shelter of Corridor 1 but also in Corridor 2, 4, 5, 6, and 7.

![Figure 25 Halte Cam](image)

### c. Safety Public Transport Process

During operating the vehicles, many drivers of Non-Transjakarta give less attention to the safety of the public transport. The "chased deposit" payment and non-standard system in operating the vehicle, make the drivers try to get as much money as possible by driving faster and do not pay more attention to the safety, so the accidents which involved Non-Transjakarta always happens. Based on the data from the Jakarta Metro Police, public transport in Jakarta has become the largest contributor of violations and accidents during 2009 besides the motorcycles. In addition, there were around 2,687 cases involving public transport vehicles; involving trucks 1,058 cases, and then buses with 429 cases, followed by *Mikrolet* 322 cases and *metromini* buses 91 cases. The following articles were quoted from the mass media related to the safety and security in the Non-Transjakarta performance:
1. “Reckless with the high speed on the road, Metromini 640 hit a motorcycle” (source: Berita8.com, 16/06/2009).

2. “Metromini crashed with Toyota Kijang at the Ciledug traffic jams”. The accident occurred due to slippery roads after the rain. This accident caused two passengers of Metromini seriously injured” (source: Vivanews.com, 16/02/2009)

3. “Deathly accident, the victims were still under the vehicle of Metromini". Deadly accident occurred at Dewi Sartika Street. The accident sufferers involved Metromini 53 and an RX King motorcycle (source: Suara Merdeka.com, 16/02/2010).

4. “On December 8th, 2009 two people died hit by a bus in Jakarta. A motorcyclist was killed when it was hit by a city bus of 'Mayasari Bhakti'. The accident occurred because the bus driver was not careful and reckless in driving the bus” (source: Media Indonesia.com 10/12/2009)

5. “Commuter train from Jakarta to the Bekasi hit Mikrolet at railways crossing of New Pisangan, East Jakarta. Mikrolet driver in that accident was seriously injured and unconscious because he was stuck in his vehicle. In addition, this accident injured two passengers seriously” (source: Tempo.com, 28/10/2009)
The issue of safety is also faced by Transjakarta. Transjakarta noted, at the beginning of the operation of the busway in 2004, transport accidents involving a bus rapid transit (BRT) was only five cases without causing any death casualties because it was only a single corridor, the Corridor I (Blok M-Kota). Sterilizing the busway line was made very tight, so the corridor was sterile around 95 percent from the other vehicles (non-busway). However, since there was increasing in the number of the Transjakarta bus corridors, the case of an accident on the busway route increased substantially. In 2006, since the operation of the Corridor II, the cases of accidents on the two corridors were 31 cases. Since the operation of the Corridor III, IV, V, and VI, the case of accidents increased from year to year. As in 2007, BLU Transjakarta also recorded 66 cases of accidents had been occurred. The sharp increasing in the cases occurred in 2008 which reached 167 cases. From these accidents, 13 people died, 42 people were injured and 112 other cases just causing the material losses. Meanwhile in 2009, there were at least 268 accidents with 12 people died and 36 people injured.
Table 15 Number of Transjakarta accident cases

<table>
<thead>
<tr>
<th>Year</th>
<th>Accident</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 (jan-April)</td>
<td>109</td>
<td>3 people died, 6 People severe injury, 28 minor injury</td>
</tr>
<tr>
<td>2009</td>
<td>264</td>
<td>12 people died, 36 people injury</td>
</tr>
<tr>
<td>2008</td>
<td>167</td>
<td>13 people died, 42 people injury</td>
</tr>
<tr>
<td>2007</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

(Source: beritajakarta and Koran Jakarta)

There are many factors that caused the high number of the accidents. However, one main cause can be identified due to the low of awareness in the traffic discipline, such as the private vehicles enter into the busway lane, which should be sterile from the private vehicles. In addition, there are still many pedestrian who are reluctant to use the pedestrian bridges and 'zebra cross' to cross the road.

Figure 27 Transjakarta Safety Problems

Besides the cases of accidents between Transjakarta buses with other vehicles or pedestrians, there was an incident when a bus burned out at Patung Tani, Jakarta Pusat. This bus was fueled with gas (CNG) operated in
the corridor II (Harmoni-Pulogadung). There was no death casualty because the passengers could break the window and glass door and they were out from the bus. The bus was equipped with eight pieces of glass-breaking hammer on a frame window and emergency door, which can be opened manually for quick evacuation in an emergency, and two fire extinguishers in the front and rear. However, the result the incident, caused traffic jams for other road users. Indication of the cause of the problem was short-circuiting burned out and there was negligence of the TransJakarta bus operator in routinely checking the bus.

![Transjakarta Incident](image)

**Figure 28** Transjakarta Incident

d. Environment Process

The quality of the Non-Transjakarta bus nowadays is still unfriendly to the environment. The bus still uses conventional energy such as petrol fuel oil and diesel fuel for its energy. As it is known that the use of this fuel has a major impact on the environment, for instance, the use of patrol fuel oil in motor engine will always release compounds such as CO (Carbon Monoxide), THC (Total Hydro Carbon), TSP (dust), NOx (Nitrogen Oxides) and SOx (Sulfur Oxides). Premium fuel will issue the lead and diesel fuel will
spend several additional compounds, which are mainly organic fractions such as aldehydes, PAH (Poly Hydrocarbon Aliphatic compound), which have greater health effects (carcinogenic), compared to other compounds. This fuel can produce pollutant contribution to 60-70% in Jakarta air pollution.

Figure 29 Pollutan from Non-Transjakarta Bus

In order to create an environment which is free from pollution, applied environmentally friendly fuel by using gas fuel (CNG) for the Transjakarta bus. Compressed Natural Gas (CNG) is a fossil fuel substituting gasoline, diesel, or propane fuel. It is environmentally cleaner alternative to those fuels, and it is much safer than other fuels (natural gas is lighter than water, and disperses quickly when released).

4. Learning and Growth Perspective

In the learning and growth perspectives, there are two areas emerged, they are human capital and organizational capital Improvements. In this learning and growth measures are the lead indicators for the internal process, resident/public transport users, and fiduciary performance.
a. Human Capital

The various activities under the learning and growth perspective assist to achieve an efficient internal process that delivers services to the public transport users. The quality of the service depends on the employee especially who faces directly the users in delivering the services. The Skill quality of the operator employee is very important to deliver the service. Despite as the operator employee, the impact of image from the quality of public transport has great impact to Dishub performance.

Based on the observation, the quality of the employee operators especially Non-Transjakarta has poor performance. Those employees don’t have fixed salary each month and only depends on the "chased deposit" target every day. To recruit them as the employee, there is no specific standard test. It is only an informal recruitment. They don’t have a job contract to make excellence service to the users.

![Operator’s employee of Non-Transjakarta](image)

**Figure 30** Operator’s employee of Non-Transjakarta

Meanwhile for BRT employees (Transjakarta), they have better condition and life, such as fixed salary and uniform based on each specific job. However, since Transjakarta was built in 2004, employees of Transjakarta,
especially the fronliners such as drivers, security officers, and ticket counter staffs in the Transjakarta shelters, are not filtered and prepared with special standardization. It is true that in carrying out the operational activities of Transjakarta, the employees use special uniforms and have monthly income compared to the employees or the drivers from Non-Transjakarta, however seen from the service point of view, they do not have an excellence standard of service that they should have. Therefore, it makes sense that sometimes there are many complaints from the Transjakarta users when using the service. They are supposed to pass the requirements, excellent training and all the tests, so they entitled to decent wages according to the standardized professional.

However, sometimes the salary only is not sufficient to fulfill the needs of the employees. It should also be seen from the required standard of living needs to provide the "minimum” living need. One reason to improve the excellent service quality is the employee satisfaction. Some factors which are influenced the employee satisfaction are the salaries and allowances. In the case of Transjakarta, there are some cases from the Transjakarta operator. Employees expressed dissatisfaction in the work. They went on strike that occurred on 11 September 2007 in the Corridor 1. There were 40 drivers doing strike from their job demanding increases of 40% for their salary (source: detik.com). Another case, there were employees went on strike on 1 September 2008, in which 106 of 114 drivers in the corridor 2 and 3 went on strike from their job. This was the cause of the buses that did not operate as
usual make the passengers became stranded. The reason for the strike was that they demanded the management to increase their salaries and allowances which the management had promised last year and rejected the 30% pay cut policy if the employees do not come to the work for no apparent reason. In addition, they rejected and refused the management to cut their salary in case of accidents happened (source: kompas.com)

Employees of Transjakarta feel, they have great responsibility in driving the bus. In the case of an accident, the drivers sometimes have experience with accident. This happened because Transjakarta busway line is unsterile from the other vehicles and pedestrians. Based on the interviews conducted by Kompas on 3 September 2008 with 3 drivers, it was reported that they were complaints about their salaries which were not proportional comparing from the risk of accidents when doing their job. In addition, when there is an accident, their salary will be cut down 30% and there is a risk to be jailed by the police and courts, so that the drivers sometimes feel scared in doing their work. There were miscommunication between the management and employees. The high cost of living and inconsistent policy enhance a lot of pressure to the employees in doing their work. Thus, it needs synergy communication between the employees and management without sacrificing the quality of the service for Transjakarta users.
b. Organization Capital

1) Culture

The culture of the organization is one of the organization capitals. It is important to influence the ethos and work behavior. In the case of Dishub, the culture of organization is not only in Dishub but also the operator culture. The operator employees are the one who directly faces the users, especially frontliner employees such as drivers and securities. The quality of service depends on their work and most of the people aware about it. One factor of the service quality is about the empathy of the employees, how they treat and handle the users. If the users are happy with the treatment and employee service delivery, the users definitely will be satisfied with the service quality of the public transport. The culture itself can be implemented in the form of smile, punctuality, skill or empathy, and neatness in dressing. However, unfortunately, the culture for the public transport in Jakarta is far from enough, especially for the operators of Non-Transjakarta.
2) Team work

Team work is one of the other organization capitals. In the Public transport case, the team work is not only talked about employees, but it also included the team work and relationship between institution (Dishub and operators). The quality of the performance depends on this relationship. The objectives from Dishub are in order to create value for the residents and other stakeholders including the operators. The best way to create this value is to co-create among them in providing the services.

Currently, the team work between Dishub and Non-Transjakarta operators is only in the term of the giver and the receiver of the route permits. There is no contract which notes the operators to give an excellence service and there is no standard and formal way for Dishub to evaluate the operator performance. Meanwhile, for Transjakarta, the relations and teamwork is clearer because it is stated in the contract. Transjakarta has clear contract with the operators.

C. Value Creation with Public Transport Users

To solve the public transport problems, it is impossible to depend only at Dishub performance. In the public transport, it needs involvement from other stakeholders such as public transport users and operators to create value. The public transport users as one of the stakeholders, who received the service, should be involved to create an excellent service in order to achieve the objective of
Dishub. This involvement, for instance, is the willingness to accept and implement “Buying the Service” policy issued by Dishub. The residents can choose the mode to be used, whether it is a private vehicle or public transport. The consequences in using the private vehicle is the resident should pay more expensive than using the public transport, for instance in the form of taxes, gasoline and parking ticket. The reason is simple. Using road by the private vehicle has consequences to the cost of the road (loading road), to the transportation users (such as congestion), and private vehicle has “external cost” such as pollution which has influence to the environment and health of the other resident. With the understanding and willingness to accept the policy which supports the public transport, it is easier to solve the problem of the public transport.

The other involvements of public transport users in order to create an excellent service in creating the value of the public transport, is the willingness to use the ticket machine and internet to buy the ticket, agree to maintain public transport facilities, safety and security. The result from the research survey conducted to 403 respondent of public transport users can be seen below:

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Williness to use Ticket machine and Internet for buying the ticket</td>
<td>95.04 %</td>
<td>4.96 %</td>
</tr>
<tr>
<td>Agree every user maintain public transport facilities</td>
<td>99.50 %</td>
<td>0.50 %</td>
</tr>
<tr>
<td>Agree every users maintain public transport safety and security</td>
<td>99.26 %</td>
<td>0.74 %</td>
</tr>
</tbody>
</table>

*Table 16 Customer Involved in Value Creation*
Based on the Service Dominant Logic (S-D logic), the value can be co-created with the customers (user). The customers can be involved to create the value, such as self-service for buying the ticket using the ticket machine and internet. This facility is not yet implemented in the Jakarta public transport but in the future, there is a possibility to implement it. Another co-creation is by involving the users to maintain the service quality in the public transport such as maintaining the facility by not doing the vandalism and littering to the facility and together maintain the security and safety in the public transport with the public transport employees and other passengers. Based on this survey, 95.04 % agree and 4.96 % disagree to buy the ticket from the machine and internet, 99.50 % agree and 0.50 % disagree to maintain the public transport facilities, 99.26 % agree and 0.74 % disagree to maintain the public transport safety and security.

D. Värmland (Sweden) Public Transport

Värmland is a county in Sweden that has total area 17,583 km2 and population of about 276,600 people. Värmlandstrafik AB (VTAB), the Public Transport Authority (PTA), is a regional principal service under the laws and agreements between municipalities and county council in Värmland County (Värmlandstrafik AB, 2009). It has the responsibility to conduct the public transport by road and rail, in the county, to, and from the county (Värmlandstrafik AB, 2009). Furthermore, the company is responsible for the planning, procurement and management of the separated school traffic, according to a mandate from the municipalities. Värmlandstrafik AB is responsible under the contract with municipalities for the welfare assessment.
The establishment of Värmlandstatik AB (VTAB) started from the governmental proposition in 1978 to reform the local and regional bus services, from an open market, where private parties can participate in transportation services. Transportation services, particularly bus, is arranged and run by a department that belong to the county and the municipalities’ councils. This regulation implementation was in 1980, which is in Värmland, this department/organization was called Värmlandstrafik AB.

![Värmlands Location in Sweden Map](image)

**Figure 32** Värmlands Location in Sweden Map

![Värmland Organization](image)

**Figure 33** Värmland Organization
Värmlandstrafik AB is a public transportation company which responsible for the planning of a public transportation in Värmland. Besides planning the public transportation services to residents/ customers, it also has to coordinate with the stakeholders’ interest. Varmlandstrafik’s policies should have an agreement from the board principal/politicians. Actually, PTA is not the real public transportation service’s vendor. It delegates the authority to the selected operator by a tender. PTA only gives guidance and coordinates operator in serving the residents. Värmlandstrafik AB purchases the services from the private parties. The operators are private companies, which provide the public transportation needed. PTA chooses the operator through tender. In doing the job, the operator has to obey the guidance that PTA released.

Värmlandstrafik AB normally have no own buses but as a traffic buyer from 80 entrepreneurs. In the procurement, it has requirements for a comfortable service and for the environment. Värmlandstrafik AB demands that the vehicles run on diesel environmental class 1 and are fitted with the catalytic converters, particulate trap and stainless exhaust. Värmlandstrafik AB was the first county company in the country that introduced all buses and trains. Värmlandstrafik AB does this now, gradually in all taxis run and it has already in its own cars. Värmlandstrafik AB is not the operator of the actual services. The company only orders and coordinates interests in the stakeholder network. Värmlandstrafik AB is responsible for the traffic planning and experts. Värmlandstrafik AB does not run buses, trains or cars transport services itself. There are various contractors, large and small companies who serve the Värmlandstrafik AB procurement. There
are operator drivers who drive for Värmlandstrafik AB. In the contract, Värmlandstrafik AB also require for the on-time schedule, other road safety, comfort and environment.

![Värmland Traffik Route](image)

**Figure 34** Värmland Traffik Route

Värmland is divided into a large number of zones that are used when the price for the trip is calculated. The customer pay for the number of zones they travel through. Sometimes they have to go detours to get from point A to point B and then count yet the price for the most expensive route between points. The Värmlandstrafik AB Bus covers 8 zones which consist of 83 routes (Appendix D). 8 operators of bus have been operating at Värmlandstrafiks AB Bus. There are Swebus, Orusttrafiken, Förenade buss (2 different contract), Charterbuss, Skillingmarksbuss, Blomsjönsbuss and Nysätersbuss. The customers of Värmlandstrafik AB Bus are interested with the transportation service that
provided and served by the PTA and the operators. The government subsidizes 50% from the transportation fee per person. As estimation, each resident pays about 750 SEK per year for the transportation. Residents have a right to vote a politician as their representative in the governmental. Värmlandstrafik AB operates buses everyday. The normal daily operating hours of Värmlandstrafik AB Bus is from 05.00-24.00. On Friday, there is a night bus that operates.

![Värmlandstrafik Public Transport](image)

**Figure 35** Värmlandstrafik Public Transport

Värmlandstrafik AB reduces operational time on Saturday to check the schedule. This frequency is different in each municipality because of the market needs. Värmlandstrafik AB has further plan in making the double condition in the number of public transportation users in Värmland County. In Värmlandstrafik AB bus, the customer can also send goods, but the bus cargo handled now by the SmartPak company. The customers may also include a pair of skis, folded wheelchair without motor or pram without charge, if there is a place for them. This also applies to the cycling, but here Värmlandstrafik AB take a cost of 20 crowns per cycle.

Värmlandstrafik buses run on the ordinary road, but only in Karlstad-Hamaro route they run on the motor way. Värmlandstrafik uses low floor buses, so they
use an ordinary shelter. Some places only signed by post with timetable. The law
in Sweden gives mandatory to the public transport authority to provide facilities to
ease elderly people and people with disabilities in accessing the service.
Värmlandstrafik bus uses low floor buses to ease people with wheel chair so that
they can easily enter the bus. Vehicles should be environmentally friendly,
although it uses diesel. The emission should meet Euro II regulation.
Värmlandstrafik has 20 different prices for the different types of passengers and
locations. They are available for children, youth, adult, student, elderly people,
people with disabilities and combination both buses and train, and obviously
different locations will have different fare. Passengers can buy adult single ticket
for a month with cheaper price than buy it every single day. As an example, ticket
price for bus within county is 855 Kr for 30 days; compare to a single ticket that
cost 96 kr per trip (Värmlandstrafik AB 2009).

Until now, Värmlandstrafik does not use global position system (GPS) for the
real time monitoring. To get Time integration with other routes, each bus is
equipped with a special phone to call the Traffic Management System (TMC). If
the bus will come late to a certain bus station or meeting point, the driver will call
TMC and TMC will contact other bus that will meet in the same meeting point. If
it is possible, other bus will adjust their timetable or wait for the bus, so that the
passengers do not have to worry to miss the other bus. The Värmlandstrafik’s
further plan is to double the number of the public transportation users in
Värmland County. Värmlandstrafik is owned by County Council of Värmland and
Municipalities Councils in Värmland. Obviously, the subsidy comes from the
Municipalities and County Councils. The subsidy for Värmlandstrafik AB is 50% from the total operational cost. Then, the subsidy would be divided to the County and Municipalities. Fifty percent is borne by the County Council and the rest is borne by the Municipality Councils. The subsidy proportion, which should be borne by the municipalities based on the number of inhabitants, the distance of the route and the frequency of the bus.
CHAPTER V
RESULT AND DISCUSSION

A. Strategy Map

As the public organization, Dishub DKI Jakarta has strategy in order to achieve its vision and mission. The organization’s vision paints a picture of the future that clarifies the organization’s direction. It should describe how it intends to create value for its residents. To analyze and evaluate the performance in Jakarta's public transport based on the Balanced Scorecard should be started by making the organization Strategy Maps. To make the Strategy Map itself, first, it needs to define the vision and mission of the organization in general. Meanwhile, to achieve this vision and mission, the organization needs to translate the vision and mission into more specific objective and goals. This Vision and Mission and the specific objective of Dishub DKI Jakarta can be seen in the table below:

<table>
<thead>
<tr>
<th>Vision</th>
<th>Become a city which has integrated transport system and equal to other big cities in the developed countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mission</td>
<td>1. Realizing land transportation to be safe, orderly, integrated, affordable, competitive and accepted by the community</td>
</tr>
<tr>
<td></td>
<td>2. Realizing sea transport with international standards by utilizing the benefits of technology and as a mean for regional development</td>
</tr>
<tr>
<td></td>
<td>3. Realizing air transportation with international standards as well as for regional development</td>
</tr>
<tr>
<td>Objectives</td>
<td>1. To Improve the access and accelerate the transportation flow from one area to another</td>
</tr>
<tr>
<td></td>
<td>2. To Reduce the level of traffic congestion on the artificial road sections</td>
</tr>
<tr>
<td></td>
<td>3. To Improve traffic safety</td>
</tr>
<tr>
<td></td>
<td>4. To Reduce air pollution caused by motor vehicle emissions</td>
</tr>
<tr>
<td></td>
<td>5. To Improve public transport service</td>
</tr>
<tr>
<td></td>
<td>6. To Improve public transport facilities and infrastructure</td>
</tr>
</tbody>
</table>

Table 17 Vision, Mission and Objective of Dishub Jakarta
According to Kaplan and Norton (2004: p.xiii), the successful execution of strategy requires three components:

\[ \text{Breakthrough results} = \text{Describe the strategy} + \text{Measure the strategy} + \text{Manage the strategy} \]

This formula has a philosophy in three components which is, “you can’t manage” the organization, if “you can’t measure” the performance of organization. “You can’t measure” the performance, if “you can’t describe” the strategy of organization. So it is important to describe strategy into strategy map before managing and measuring the performance of organization.

It is important to understand that the Balanced Scorecard represents a chain of assumed cause and effect links between and within each scorecard perspective. For each performance measure, it must be clear what the key performance indicator is, and how each is achieved. Building the strategy map involves the following steps (Murby and Gould, 2005: p.4):

1. Clarifying the mission and strategic vision.
2. Specifying objectives in the scorecard areas necessary to realise this vision.

Evaluating the performance of public transport started by describing the Dishub strategy in the public transport and then it is arranged into the Strategy Map. The strategy has been begun since 2004 when the Governor of DKI Jakarta through Dishub issued regulations which have strategy for developing Jakarta transportation in the future. This regulation implemented in the Governor Regulation (PERGUB) No. 84 in 2004 and No. 103 in 2007 about Jakarta
Transportation Macro Pattern (PTM.) Dishub formulated the Transportation System Development directives and strategies to reduce the traffic congestion in Jakarta by offering such value-added services in the public transport. The plan and strategy development to be carried out by Dishub in realizing the objectives and vision and mission are as follows:

1. The development of bus public transport system
   a. *Rearrange Route*;
   b. *Rationalisation of public transport buses*.

2. The development of mass public transport system,
   a. *Bus Priority Network (Busway)*;
   b. *Light Rapid Transit (LRT)*
   c. *Mass Rapid Transit (MRT)*

3. The development of road network system;
   a. *Add and improve road capacity*
   b. *Increase the capacity of the intersection*
   c. *Construct and complete the Jakarta toll road*

4. The development of rail transport systems;
   a. The development of Jabodetabek railways system;
   b. The development of railway infrastructure by increasing capacity (double tracking);
   c. The development of rail trajectory which is crossing with the highway

5. The development of alternative transportation systems;
   *The river transport development by utilizing canal / river*
6. The development of supporting policy;
   
   a. The application of Traffic Demand Management (TDM)
   
   b. The development of information systems and traffic control (traffic restrictions)
   
   c. The development of pedestrian facilities

   From those six development strategies, four of them, directly related to the public transport, while the other two, the development of road transport systems and development of supporting policy, do not directly related to the public transport. For all those strategies have been planned gradually in stages as follows:

   a. The first stage from 2004 to 2007
   
   b. The second stage from 2007 to 2010
   
   c. The third stage from 2010 to 2020

   Based on the Jakarta transportation macro pattern (PTM) strategy plan implemented by Dishub DKI Jakarta and the Dishub objectives in order to achieve the vision and mission of public transport strategy can be translated into strategy maps as follows:
Figure 36 Strategy Map

This strategy map explains about the strategy in four perspectives which has linkages among them. These linkages are cause-and-effect linkages in the four Balanced Scorecard Perspectives; they are fiduciary, customers (residents), internal process, and learning and growth perspective. The strategy map provides
a uniform and consistent way to describe that strategy, so that the objectives and measures can be established and managed. Objectives and goals should be linked in the cause and effect relationships. The deep problem that Dishub encountered was their inability to understand deeply this cause-and-effect linkages and how to execute successfully on their strategies. Many employees perhaps could hear the word of vision and mission and strategy objective statements, but they didn’t understand really what the words meant to them. Without a comprehensive description of the strategy, Dishub management cannot easily communicate the strategy among themselves or to their employees. Without shared understanding of the strategy, management cannot create alignment and focus around it. Furthermore, without alignment and focus the management cannot implement their strategies successfully in order to achieve their objectives (Kaplan and Norton, 2004 : p.5)

With these cause-and-effect linkages, management teams of Dishub can use the strategy to discuss the direction and priorities of their organization. They can view their strategic measures, not as performance indicators in four independent perspectives, but as a series of cause-and-effect linkages. Dishub DKI Jakarta has currently not implemented the balanced scorecard yet, even though perhaps in the future it will be implemented to measure the performance as a holistic view and balance. Nonetheless, the customers (residents) perspective and fiduciary perspective are the aim goal that plays significant role in assessing the organizational strategic performance. Considering the customers (residents) and
fiduciary perspectives will give a balanced view and a true organizational performance and long term sustainability to achieve the goals.

Dishub’s strategies basically describe how it intends to create value for its stakeholders (residents, operator and Ministry of Transport). Measurement system should focus on the entity’s strategy on how it expects to create future and sustainable value (Kaplan and Norton; 2004: p.5). In designing the Balanced Scorecard, therefore, an organization must measure the critical few parameters that represent its strategy for the long term value creation. The Balanced Scorecard strategy map provides a framework to illustrate how strategy links intangible assets to value creating processes (Kaplan and Norton; 2004)

1. Fiduciary Perspective

Fiduciary performance in Strategy Maps and Balanced Scorecard describes the outcomes or as a lag indicator. It provides the definition of a Dishub’s objectives which want to be achieved and succeeded. Strategy describes how an organization intends to create sustainable growth in the Jakarta resident value. The fiduciary perspectives describe the tangible outcomes of the strategy. Fiduciary perspective is one of the lag indicators that show whether the organization’s strategy is succeeding or failing (Kaplan and Norton; 2004: p.30). The measures based on the Dishub’s objectives are intended to improve the access and accelerate the transportation flow from one area to another and reducing the level of traffic congestion. This objective has linkages between each other. One of the successes in the flow of transport is because the transport succeeds in reducing in the congestion. One source of the congestion is that there are many people prefer
to use private cars to public transports. Therefore, the purpose of *Dishub* should be increased in the market share of public transport users than private cars, to reduce the congestion and improve the transportation flow.

2. **Customer (Resident) Perspective**

The improvement in the market share of the public transport users is because there is satisfaction when the users use the public transport for residents or public transport users. In the strategy maps, the objectives in the four perspectives are linked together by cause and effect relationships. Success with the targeted public transport user satisfaction provides a principal component for the improvement of the fiduciary performance in the form of the growth of the market share of public transport. The number of residents using public transport can reduce the congestion which effect to the traffic flow and decreasing the use of private vehicles. By decreasing the number of private vehicle use can effect to the decreasing in number of the accidents, especially for the motorcycle, and reducing the pollution which is caused by the private vehicle emission. This linkage directly and indirectly influences each other, not only in the customer (resident) perspective, but also to the fiduciary perspective.

The customer (resident) resident perspective itself defines the value proposition for targeted public transport users. Choosing the residents and public transport users as the value proposition is the central element of the strategy. As the same as the fiduciary perspective, the resident perspective is also a lagging outcome. This outcome basically comes from the intangible assets. The value
proposition provides the context for the intangible assets to create value (Kaplan and Norton; 2004). Value consists of the service quality, relationship, image, then the skills of the employee, systems and process that produce and deliver quality services which highly valuable to the organization (Dishub). In this perspective, public transport value proposition makes people want to use the public transport. This value proposition basically from the service quality of public transport, relationship between Dishub and stakeholders (operator, Ministry of Transport and customers) and image from public transport itself. According to Kaplan and Norton (2004), this value proposition can be explained as follow:

![Figure 37 Public Transport user value proposition](image)

3. **Internal Process Perspective**

The internal process perspective identifies the critical few processes that are expected to have greatest impact on the strategy (Kaplan and Norton; 2004: p.379). Processes in the internal perspective drive the strategy; they describe how the organization will implement its strategy. Effective and aligned internal processes determine how value gets created and sustained (Kaplan and Norton; 2004). This strategy creates and delivers the value proposition for residents/public transport users. The performance of internal processes is a leading indicator of the
subsequent improvements in resident/public transport and fiduciary outcomes. The public transport value proposition above describes how to generate residents to use public transport and make public transport users satisfied and loyal to use public transport. The internals process creates and delivers the public transport user value propositions. These factors should be improved to attract people to use the public transport. The strategy used by Dishub in this process basically develops Mass Public Transport which has better service quality; better in the operational, customer management, innovation and safety and environmental process.

4. Learning and Growth Perspective

Like the internal processs, learning and growth perspective also drive the strategy. Learning and growth objectives describe how the people, technology, and organization climate combine to support the strategy (Kaplan and Norton; 2004: p.7). Improvements in learning and growth measures are the lead indicators for internal process, residents/public transport users, and fiduciary performance. This perspective basically is as the source of intangible asset, meanwhile Intangible assets itself are the source of the sustainable value creation. Intangible assets that support the internal process provide the foundation for the strategy. Aligning objectives in these four perspectives is the key to value creation and hence to focused and internally consistent strategy (Kaplan and Norton; 2004: p.32).

Under the learning and growth perspective, there are two areas emerged; they are human capital, information system and organizational capital. The framework
is aimed at creating the right strategic alignment between employee goals both from Dishub and operator employee in the organizational capital to achieve the objective by creating the right synergies to enable the employee deliver superior service to the customers. The key measures here that are relevant to the Dishub as the organization are employee satisfaction, knowledge and skill, staff development and teamwork among employees not only in Dishub organization but also in operator organization employee. This idea is as the basic foundation in the main strategic to train and retain human capital and organization capital with good teamwork to give best input for internal process and whole strategy.

The various activities under the learning and growth perspective assist to achieve an efficient internal process that delivers services to the public transport users. This delivers services given by employees who face directly the users. The quality of the service itself depends on this employee. Even they are not Dishub employees, the operator employees have impact to the image of the quality of the public transport which mean indirectly to the Dishub performance.

The condition in Jakarta public transport currently, the quality of employees’ operator has poor condition. The operator, especially the Non-Transjakarta bus, doesn’t have contracted to give the best excellence service to the users. The contract which has been done right now is only in the form of license route permit in one period. The contract doesn’t put responsibility to give the best excellence service to the users. It makes delivering the best quality run in the wrong way. In the end, it makes the public transport users unsatisfied with the quality of public
transport and change into the private vehicles as the source of the congestion. If this happened, the objectives of the target are not achieved and failed.

The user’s perception of the public transport’s service delivery culture on its core services is also very important in determining the extent to which the public transport is able to penetrate the private vehicle users. If the users are not satisfied with the public transport service delivery, that user may definitely turn to private vehicles for better services. Therefore customer satisfaction and retention are relevant measures under this perspective. The objectives from Dishub itself are in order to create value for the residents and other stakeholders. The relevant measures to determine if Dishub is creating value for its residents and stakeholders are to create the best transport in Jakarta which integrates the safety and good environment.

A Dishub's strategy describes how it intends to create value for its residents and stakeholders. Dishub strategy should begin from creating sustainable value from leveraging all intangible assets they have such as human capital, knowledge and skill, high-quality processes, information system, leadership, teamwork and culture. Because Dishub’s intangible assets may be able to give bigger support for creating the best value to achieve their goals, then its strategy formulation should be to be executed and mobilized with the alignment and focus.
Balanced Scorecard strategies map describes how an organization wants to create sustained value for its residents and stakeholders. The Balanced scorecard based on this research, basically has principles of Service Dominant logic (S-D logic). With S-D logic, the basic abstraction is the service system; a configuration of people, technologies, and other resources that interact with other service systems to create mutual value (Spohrer et al. 2008: P.1). Many systems can be viewed as service systems, including families, cities, and companies, public transport, and many others. Service systems are configurations of resources that can create value with other service systems through shared information (Spohrer et al. 2008: P.6). In creating strategy maps in Dishub, it should be related to the operator and public transport users, because the quality of the service itself given by the operator employees. The best way to make excellence value to the service
is by the entire component in public transport, such as Dishub, operator, public transport user and Ministry of Transport should co-create together the excellence value for the public transport. Based on this thesis, at least there are four things; the researcher argues that S-D logic relevant and related to the Balanced Scorecard as follow:

1. **The operant resources are the fundamental source of the competitive advantage**

Both Balanced Scorecard and S-D logic put operant resources as the main source for giving excellence service. In Balanced scorecard and S-D logic, operant resources such as competences (knowledge and skills), will be implicated and has influence to the service and gives benefit to another party. In this case Dishub and operator employee competences can influence to the service and impact to all public transport performance. Meanwhile based on the Balanced Scorecard, improvements in the intangible assets affect financial outcomes (fiduciary) through chains and effect relationships. For example, employee training can directly improve process quality. Such improvement can be expected to lead to improve the public transport satisfaction, which in turn give impact to public transport loyalty and change the growth of the market share of the public transport. Finally it can improve the market share of public transport and reduce congestion in the long term.

Intangible assets are the ultimate source of the sustainable value creation. Learning and growth objectives describe how the people, technology, and organization climate combine to support the strategy. Improvements in learning
and growth measures are the lead indicators for the internal process, customer (resident), and financial (fiduciary) performance

2. Co-creation among Dishub and Stakeholders to create value

In public transport, at least there are four components involved in this relation; they are politician, Dishub, users and operator. To create excellence value based on their objective, it is impossible to separate each of them. Dishub cannot work by itself to create this value. It should be co-create among them. For instance, in the politician perspective, it needs ‘political will’ to provide excellence service to the resident (public transport user) which implemented in the regulation. In operator perspective, it needs best employee who has best knowledge and skill to deliver excellence service to the public transport user and in a customer perspective, it need their willingness to use public transport and change their mind to use the public transport rather than private vehicle, and perhaps it needs involvement with the user to self-service buying the ticket from the internet and ticket machine.

3. Public transport user value proposition

S-D logic treats the customer/resident perspective (public transport user) as endogenous to the development of the innovative offerings. One of the lagging outcomes in Balanced Scorecard is resident/public transport perspective. S-D logic put customer value proposition as the outcome from the service, not only put the price and selling. It contains how customer /public transport user has excellence experience to use public transport, to make them satisfied and keep
their loyalty to use the service. It needs an excellence service quality, relationship and image in public transport. It is the same way when Balanced Scorecard explains how to achieve the public transport user (resident) perspective in order to achieve the objectives.

4. Value creation network constellation

In Balanced Scorecard there are four perspectives explained by the strategy map. The strategy map itself is a value creation network constellation. For each strategy in each perspective explains how to create value and has a cause-and-effect linkage among them. This linkage has special meaning to explain where the source of the value and where it will impact another value. In perspective of S-D logic, organization value in each of the four perspectives created by this relationships, especially in the co-creation and sharing of resources among Dishub and operator relationship in learning and growth, and Dishub and public transport user in the resident perspective. S-D logic implies that the value in each perspective is defined by and co-created with the all stakeholders rather than embedded in output. The teamwork among stakeholders can co-create the best value in the performance of public transport in the future to achieve the objective and vision and mission.

C. Evaluation of Jakarta Public Transport

The four perspectives of the Balanced Scorecard are the fiduciary perspective, customer (resident) perspective, internal processes perspective, and learning and growth perspective. The fiduciary perspective deals with how the organization
appears to its stakeholder. The customer (resident) perspective focuses on how the resident sees the organization; internal business processes perspective has to do with the kind of processes the business in public transport must excel at; and the learning and growth perspective deals with how the business in public transport can continue to improve and create value for all its stakeholders.

Through these measures, Dishub is able to assess its performance and determine whether it is on the track in relation to achieve its strategic goals. Through the appraisal system, management is able to identify their high flyers and reward them appropriately. It also helps the management to focus their energies on their best people in order to drive results and manage non-performance by identifying gaps in staff skills both in Dishub and operator and take appropriate actions to address them. The Dishub’s appraisal system is lined to its reward and punishment system in order to achieve their goal. Linking the scorecard’s dimensions and measures with the organization’s strategy is a key characteristic of the Balanced Scorecard.

There are so many duties and job function of Dishub Jakarta in order to achieve the vision, mission and objective to be analysed. The work performed by Dishub Jakarta as the transportation agencies do not only focus on the public transport, but also other tasks that are not related directly and indirectly to public transport, such as freight, road, parking, vehicle testing, etc, thus affecting into the organization structure itself. In this case, it can be said, Dishub does not focus on doing work to achieve the targets, and the vision and mission in general. From those duties and job functions of Dishub Jakarta as transportation agencies, the
task that Dishub carry out, can be seen in several core areas of work performed to achieve the vision, mission and objectives as follows:

**Figure 39** Duties and job functions of Dishub Jakarta

Based on Enquist et. al (2005) there is four components actors in public transport relationship; they are politician, PTA, operator and user (resident)

**Figure 40** Public Transport Relationship Model
In this model, the position of Dishub itself, is not clear and focus, doing the public transport or other function. The system needs focus to connected each other and to align with the strategy. If we analyze the general performance of based on their duties and function, there will be a lot of performance indicators that should be measured. It is not only about public transport, but also other sectors that are not directly related to the public transport. According Kaplan and Norton (2004), to achieve successful measurement performance, it needs balanced and focus in measuring, beginning with describing the strategy, measuring the strategy and then managing that strategy.

Jakarta public transport performance based on this research still has many problems. Dishub still has much homework to do. Dishub should concern about the increasing traffic jam; the congestion increase not only in quantity, but also in quality. The numbers of users of private vehicles tend to increase from year to year while the total capacity is not comparable with the growth of private vehicles. Many things that make people use private vehicles instead of using public transport; the main factor is the low in quality of the public transport service. Service quality which provided to public transport users does not deliver ‘added value’ for the public transport user. The most service quality public transport which Dishub should be concerned is about safety, security and comfort ability especially for the Non-Transjakarta. The poor quality in service quality make the users are reluctant to use public transport which causes other problem such as safety, environmental and healthy for welfare of Jakarta resident. Meanwhile for Transjakarta, the operation should be improved immediately. It
needs consistency in policy which has good impact for operation such as Busway should sterile from the other vehicles. The consistency in this policy is important for improvement in service quality. Based on the research, the most service quality which public transport user considered is punctuality (the bus headway). The performance from this attribute service is still poor. It is not in line with the purpose from the spirit of the development of Bus Rapid Transit which mean it should has rapid in headway of the bus to give and offer the best travel time in order to satisfy the public transport user.

Another cause of the problem that a public transport system does not work properly and satisfactorily is that Dishub and operators have poor management in running the business for organization and giving poor quality public transport service to the user. Basically there is no thinking of S-D logic to give excellence service to the public transport user. Most operators do not have a contract to control, do not have responsibility and give excellent customer service and guarantee to the government. At this point, this becomes more complex situation because there is no holistic and comprehensive evaluation, and analyzes system activity related to daily service of the operator to give excellence service to the public transport users.

Based on the survey results, it can be seen that 95.29% unsatisfied with the performance of public transport and assess poor value for the performance of public transport. From scale 1 to 10, the performance of Transjakarta is 6.21, meanwhile for All Large Size Bus operator is 4.67, all Middle Size Bus operator is 3.79 and all Small Size Bus operator is 4.31. The poor quality in public
transport performance makes public transport user also rate poor for the performance of Dishub Jakarta in general which is only 4.94. Based on the survey for Non-Transjakarta, the most priority factor of the service quality which should be improved is safety and security (84.86%), meanwhile for Transjakarta is punctuality (66.25%). For the Non-Transjakarta, safety and security is the most attribute that should be improved. The passengers more concern with this attribute because the drivers are very unsafe in operating their vehicle where there are many accidents always happened and there is unsecure condition in the vehicle. There is a threat of criminal act such as pickpocket. Meanwhile for Transjakarta, the passenger most concern on the punctuality because they are expecting higher in Transjakarta than Non-Transjakarta. However the headway of the bus Transjakarta becomes longer, because the busway lane become unsterile from other vehicle, plus there is a small number of buses that cannot balance with the demand and passenger capacity. It makes the queue getting longer to the bus, so there is no certainty on how long the travel time to reach destination.

This result is in line with the survey conducted by Institut Studi Transportasi (Instran) in 2009. To identify customer complaints in Transjakarta bus that is the most frequent complaint from users is a waiting bus time that is long and the bus is full and crowded. Based on this survey, in the corridor I (Blok M-Kota), the capacity of the corridor was approaching saturation because passenger stagnation is often occurs frequently especially in the rush hour when there was accumulation of passengers in the shelters. Similarly, this happens in shelter Dukuh Atas in the corridor IV (Pulogadung and Dukuh Atas). Based on this
survey, the shelter is not feasible because of the long queues up to 100 meters. In addition, this corridor is also risky from the pickpocket threat. The pickpocket threat often occurred in the Matraman shelters too. Long queues also occurred in the corridor V (Kampung Melayu-Ancol) because the bus fleet is still lesser than the demand. While in the corridor VI (Ragunan-Halimun) and VII (Kampung Melayu-Kampung Rambutan), there is a frequent absence of information in operation and assurance for the waiting bus time. In addition, during this time, The BLU Transjakarta also has not been able to sterile Transjakarta busway line from other vehicle, resulting in traffic conflicts, particularly occurred in the corridor II (Harmoni-Pulogadung). For example, this conflict especially happened in many intersection of U-turn. Meanwhile, based on the same research, the most passenger expectation from the service of Transjakarta is to add the number of vehicles that should be augmented.

The poor quality of public transport is one of the biggest factors that affected to congestion, quality of transportation in general, the quality of welfare for Jakarta residents (safety, environment and health). Study from Yayasan Pelangi Indonesia, an environmental NGO, concluded that cost for traffic delays in Jakarta was $3.5 billion a year, meaning lost in productivity and extra fuel costs. The number of vehicles on the road in Jakarta doubled in the next 10 years while roads only grew 10%. If nothing is done to improve the situation, the study predicts, traffic will grind to a completely halt in 2014 (Source: time.com)

An increasing number of the private vehicles become one of the main causes of the increasing number of accidents, especially in Jakarta. Motorcycles are the
largest contributors to accidents on the highways. Traffic accidents by motorcycle in 2005 was reached 3.499 cases, in 2006 increased to 3.814 cases, in 2007 reached 4.933 cases, in 2008 increased to 5.898 cases, and in 2009 reached 6.608 cases (Source: vivanews.com)

According to World Banks data in 2009, Jakarta has become the third worst city of the world which has the highest air pollution after Mexico and Thailand. World Bank also places Jakarta as one of the city with high levels of solute/particulate after Beijing, New Delhi and Mexico City. The biggest contributor of pollution is the transport pollutants that reached 70% produced by the emissions of motorized vehicles, which has high growth at 10.9% each year causing traffic jam every day (source: mediaindonesia.com). In addition to these diseases, the pollution is also a potential cause of the physiological changes in humans, such as debilitating lung function and affect the blood pressure (source: kabarIndonesia.com)

Dishub as the organization which has main responsible for the public transport system must be able to break and solve the existing problems. However the responsibility of public transport system imposed not only on Dishub but also for other stakeholder which involved in public transport system to create excellence transportation system value.

D. Comparison Public Transport System

Jakarta public transport and Värmland public transport, based on this research, have different system where there is plus and minus for each public
transport system. For instance, there is a positive side owned by Jakarta public transport that is to developed BRT systems which has philosophy to accommodate a number of passengers in a large number and much faster, even though the current conditions are far from that philosophy. While in Värmland public transport, the bus system based on the timetables and headway of buses will depend on the time and each place has different time headway. However, the level of the service quality in Jakarta public transport is still far from the level of service quality which is owned by Värmland public transport. There are several things that can be learned by Dishub from Värmland public transport. The most recommended factor is developing the Public Transport Authority (PTA) as the organization which is responsible for the public transport, that focus on the management of public transport in a professional manner to integrate the public transport into a system and orientation to the improvement of service quality and customer satisfaction. In addition, the development of public transport service must have a thinking of S-D logic and puts the resident as the main priorities. With this paradigm, the operation of public transport should base on the contract for service users. This PTA should try to instil into the mindset of each stakeholder to put public transport as the main priority that can help for solving other problems such as congestion, safety and environment. PTA should make public transport more attractive and make people use it by creating the policy which oriented in service the quality and customer satisfaction.

PTA should become the motor of the S-D logic. With this paradigm, the PTA puts service as the main centre of the business and activities and together with all
stakeholders trying to create public transport which is better and has added value. For instance, involving the public transport user in creating the value together with PTA. Värmland public transport user has their own initiative and willingness to use public transport. Public transport users can be anyone; there is no boundary in social status. Public transport users could be a student, teacher, rector, housewives, employees and entrepreneur, etc. There are no feelings of shame and reluctance to use the public transport. Another example involved users in creating value is self-service, for example public transport user can buy the ticket in the ticket machine and the internet. The foundation of S-D logic is one of the keys to the success of public transportation in Värmland. Following are the differences of the Jakarta and Värmland public transport:

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Värmlands Public Transport System</th>
<th>Jakarta Public Transport System</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PTA</td>
<td>• As PTA Värmlandstrafik is responsible for all public transport (local buses, school buses, common medical transportation (except emergency treatment transport) and local trains</td>
<td>• Dishub as the Organization who responsibility on all Jakarta public transportation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• BLU Transjakarta as the organization who organize Bus Rapid Transit only (BRT) but structural responsible to Dishub</td>
</tr>
</tbody>
</table>
|    | Public transport      | • Värmlandstrafik AB  
  ❖ Bus  
  ❖ Local Train  
  ❖ Special public transport (i.e, hospital, disable user)  
  ❖ Rural call-service  
  • Karlstad Bus (run by Karlstad municipality)  
  ❖ City bus  
  ❖ Water Bus  
  ❖ Special public transport (i.e, hospital, disable user) | • Bus Rapid Transit (BRT) / Transjakarta Bus  |
<p>|    |                       |                                                                                                    | • Non-BRT/conventional bus  |
|    |                       |                                                                                                    | • Large Size Bus (i.e Mayasari Bakti, PPD, steady safe)  |
|    |                       |                                                                                                    | • Medium Size Bus (i.e Metro mini, Kopaja,)  |
|    |                       |                                                                                                    | • small Size Bus (i.e Mikrolet, angkot)  |
|    |                       |                                                                                                    | • Train Commuter (KRL Jabodetabek area)  |</p>
<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Värmlands Public Transport System</th>
<th>Jakarta Public Transport System</th>
</tr>
</thead>
</table>
| 3  | Operator Contract with Tendering | - All traffic is contracted mostly by an opened tendering in a both transparent and just competition.  
|    |                           | - In exceptional cases a direct procurement can be carrying through.                                 | - Transjakarta (BRT) operator should follow tendering to get the contract to operate, based on Kepres 80/2003  
|    |                           |                                                                                                    | - Non-BRT operator doesn’t have follow tendering to get the contract, it is only route permit only     |
| 4  | Deliver punctuality service | - All our operators work according to a timetable and must deliver the traffic on time. The operator will be pay a fine if the delay is not reasonable or absent. Delays will ones in a while be investigated to discover poor patterns in the operators operations.  
|    |                           | - Complaint about punctuality is responded by compensating the financial loss or other kind of compensations if proven. | - Transjakarta (BRT) doesn’t have timetable punctuality  
|    |                           | - The schedule is published and distributed as a book, on the internet and in mobile phone services. |   
|    |                           |                                                                                                    | It based on plan headway around 5-10 minutes. Non-BRT system doesn’t have timetable punctuality, there is no plan headway  
|    |                           |                                                                                                    | Transjakarta (BRT) and Non-BRT system doesn’t have the financial loss or other kind of compensations if there are delays in time and other problem caused not by user.  
|    |                           |                                                                                                    | Transjakarta (BRT) and Non-BRT doesn’t have bus’ schedule published and distributed as a book, on the internet and in mobile phone services.  |
| 5  | Employee                 | - Värmlands traffic AB operator’s employees have fixed monthly salary, access to labour unions membership and related benefits like uniform. | - Transjakarta (BRT) operator’s employees have fixed monthly, access to labour unions membership and related benefits like uniform. some Non-BRT operator’s employees doesn’t have fixed monthly salary, access to labour unions membership and uniforms  |
| 6  | Customer Support         | - VTAB has a developed website for customer support and complaints, Complaint that need feedback will be replied by VTAB  
|    |                           | - VTAB also have a call centre for customer support and complaints  
|    |                           | - Feedback will often followed by compensation to the complainers (if it is asked for).              | - Only Transjakarta (BRT) has a developed website for customer support and complaints but sometime complaint Most complaint is responded (receives complaints and gives feedback only)  
|    |                           |                                                                                                    | Transjakarta BRT and Non BRT operator doesn’t have call centre for Customer Service  
|    |                           |                                                                                                    | Both BRT and non BRT, feedback of complaining will often followed by compensation to the complainers (if it is asked for).  |
Table 18 Jakarta and Värmland public Transport

E. S-D Logic and Balanced Scorecard (BSC) in Jakarta Public Transport

The logic of Dishub, public transport operators and stakeholder (especially for policy maker) should be changed from G-D logic, which is thinking to make something (transporting somebody from origin to destination and providing transportation capacities only) to a process of S-D logic, which is assisting public transport user to create their own value creation process. Public transport stakeholders (especially for policy maker) can change also the logic or mindset from thinking about value as something produced and sold to thinking about value
as something co-created with the customer and other value creation partners (Enquist et. al, 2009). The policy of public transport should have logic to integrate public transport modes, services, ticketing system; travelling information that becomes resources for the public transport user’s to create their value creation process. With this logic, value creation in public transport also change from the single transportation operator only to a collaborative process of co-creation with the public transport user (Enquist et. Al, 2009)

The central government and government of Jakarta should develop organization that controlled public transport to a “value in use perspective” with focus on duties, service quality, policy, accessibility, time efficiency, efficiency, comfort, safety, trust among stakeholder, etc. The Central government and of government of Jakarta should developed an organization that emerge public transport operators and built the trust, dialogue and good relations among the parties/stakeholders (owner, operator and user). The organization that can unite them and organize them based on the service dominant logic. This organization is what is called as the Public Transport Authority (PTA) that focuses only in the public transport management. This organization can be from Dishub itself or Dishub developed the new organization which has the professional management team, high skillful, independent and the important thing has thinking of service dominant logic to create excellence service to public transport user. This organization can connect to the operator based on the customer oriented, contract system and based on the agreement in business to business relationship. With this PTA as the professional organization which focuses on management of public
transport, it can control and evaluate the instrument of public transport performance in holistic and balanced to give excellence value for the users and other stakeholders. In the end of this analysis, the researcher recommended the framework model in public transport system. These linkages in public transport system can be seen below:
Figure 41 Public Transport System Framework Model
In this framework model, S-D logic is the fundamental paradigm to make the strategy. This strategy should be described and looked in a comprehensive and balanced perspective; they are fiduciary, resident, internal process and learning and growth perspective. Strategy is not a standalone management process; it is one step in logical continuum that moves an organization from a high level mission statement to the work performed by all employees. Internal process and learning and growth as the place for the intangible asset become the leading factor to create value for the Public Transport Authority (PTA). In the learning and growth perspective as the basic foundation, there are human capital such as knowledge and skill; information system such as internet and integrated fare system; and organization capital such as leadership, culture, alignment and teamwork. In this perspective, there are some factors that contribute to high performance, such as workplace climate, employee morale, skill alignment, professional development strategies and effective use of technology. The service logic should be implanted in the employee mind and paradigm. All employees should understand about the objective and vision and mission of the organization. The organization vision paints picture of the future that clarifies the organization’s direction and helps individuals understand why and how they should support the organization. These components perspective should be co-created with the operator as the organization to operate the service directly to the public transport user. So it needs contract to make sure the operator has delivered excellence service to the public user. The contract should be implemented in a competitive
tendering and basic relationship to build commitment and trust for providing the better service in the service quality.

Meanwhile, in the internal process perspective, PTA can create better process in operation, customer management, innovation, safety and environment process to create value proposition. However, the involvement of public transport user is still needed to create better value such as willingness to use public transport, buying the service, self service in buying the ticket and self selection of public transport to use. This value besides from PTA, operator and Customer, it needs other support from other stakeholder such as politician, Ministry of Transport and Police. The PTA should manage the strategy and this collective value in professional way, then evaluate and measure this performance of value result in comprehensive and balanced in four perspectives. After PTA has the result value, it is not the end of the process but it is a beginning for another process to create sustainable business in order to achieve the objective and vision and mission.

In this public transport framework model, in order to create a new Public Transport Authority (PTA) as an organization, which is more focuses, professional and control public transport from a ‘value in use’ perspective and emerge of all public transport in an integrated system. The most important part must begin from the ‘political will’ of the central government and provincial governments to join together with a strong and deep willingness to want and more focus on the overcoming the transportation problems in Jakarta by creating, executing and implementing policies oriented to integrate mass public transport that puts excellence service quality in providing the services.
CHAPTER VI

CONCLUSION AND SUGGESTION

A. Conclusion

The purpose of this thesis is to evaluate and to analyze Jakarta public transport’s performances by using Balanced Scorecard (BSC) based on four perspectives: fiduciary, customer (resident), internal process and learning and growth perspective to make improvements on the service quality in the future, to understand and to analyze cause and effect linkage perspective in Balanced Scorecard Strategy Map in order to achieve objective and vision and mission, to understand and to analyze Service Dominant Logic (S-D logic) in public transport, and to know how the performance of Jakarta public transport comparing with Varmlandtraffic AB. Based on the previous chapter we can conclude:

1. The performance of Jakarta public transport based on four perspectives (fiduciary, resident, internal process and learning and growth) still has poor performance. The indication can be seen in the lagging indicator (outcome), fiduciary and resident Perspective, that Jakarta transportation has high quality of traffic jam (congestion) and high traffic accident and pollution. The Jakarta resident prefers using private vehicle than public transport because most of people (Jakarta resident) said unsatisfied (95.29%) and assess poor value for the performance of the public transport. The poor quality in public transport performance makes public transport user also rate poor (4.94) for the
performance of *Dishub* Jakarta in general. Despite Dishub has been developed BRT System (Transjakarta) since 2004, however the Transjakarta service quality has been decreased. Even though, based on this research, public transport user still considers that the performance of Transjakarta is much better than the performance of Non-Transjakarta. But this good assessment is not enough to change Jakarta resident who use private vehicle to use Transjakarta. Increasing in number of Transjakarta passengers actually is from Non-Transjakarta passenger bus to get a better service. Unfortunately Transjakarta has less impact to attract private vehicle user, as the cause of congestion, to use Transjakarta. So there is much homework to do by *Dishub* to attract people to use public transport.

2. The performance of Non-Transjakarta based on this research, the most and priority factor of service quality which should be improved is safety and security (84.86% of respondent); and comfortability (62.78%). Meanwhile for Transjakarta is punctuality (66.25%) and comfortability (30.77%). For Non-Transjakarta, safety and security is the most attribute that should be improved. The passengers is concern more on this attribute because the drivers are very unsafe when operating the vehicle, so there are many accident that always happened. There is also unsecure condition in the vehicle, such as threat of criminal of a pickpocket. In most of Non-Transjakarta bus (except Patas AC), there is no Air Conditioner (AC) facility making the condition in the bus when it is full is uncomfortable. Meanwhile for Transjakarta, the most passenger concern on its punctuality because they
are expecting higher in Transjakarta to travel faster in busway lane than Non-Transjakarta. However, the headway of the bus Transjakarta becomes longer, because the busway lane is unsterile from the other vehicles. In addition, there are lesser buses compared with the demand and quantity of the passengers; it makes the queue getting longer to the bus, so there is uncertainty time on how long the travel time is to reach destination, which makes passengers feel uncomfortable condition for Transjakarta.

3. Balanced Scorecard (BSC) as the holistic and comprehensive measurement can be implemented in the Jakarta public transport to help finding the solution to overcome or solving the problem. It is not just as the performance measurement but also as the tool and key for success of the institution (Dishub) to achieve their objective and vision and mission.

4. The strategy of Dishub, at least, already put the strategy to established mass public transport in the long term to improve the service quality by developing Mass Rapid Transit (MRT), Bus Rapid Transit (BRT) and Light Rapid Transit (LRT). However, this strategy should be understood deeply and comprehensively with the relation to the four perspectives Balanced Scorecard in the framework of the strategy map. By understanding deeply the strategy map, it can help many ways to understand the connection strategy in four perspectives as cause and effect linkages. The lagging outcome is not an independent result influenced by other perspectives. Decreasing in performance of one perspective can also make another perspective decreasing. Moreover, in the end make the objective and vision and mission
failed to be achieved. The basic foundation from the strategy map is learning and growth perspective. In this perspective there is intangible asset and operant resources which should be considered, such as knowledge and skill, culture, teamwork, information system and leadership. Investing in this perspective has great impact for another perspective in the future to make sustainable business development.

5. The duties and job function of Dishub Jakarta are vary; it can influence the strategy and policy of the public transport itself. Without focus, Dishub can get difficulties in describing and understanding the basic strategy to measure the strategy (performance) and the most important is to manage the strategy by aligning and focusing on the strategy.

6. For solving the public transport problem, it is impossible depending only in Dishub performance. In public transport, there are stakeholders whom should be involved to create value. With thinking about S-D logic in policy and strategy, it can help in many ways. For instance, the excellence value in service quality put the operator in the involvement. The operator employee is the most people who directly faced the public transport users. The delivered service to create excellence value depends on their performance. So Dishub by S-D logic should co-create the value with the operator based on a good contract, competitive tendering, and basic relationship to build commitment and trust for providing better service in the service quality. Meanwhile public transport users should be involved in co-creating the value in the service quality of public transport by giving understanding, commitment and
teamwork to create value through education (operant resources) and socialization for willingness and behaviour to use public transport. Investing in this factor can be implemented since childhood in the school and it will have great effect in the long term for the business. Another way for creating the value involved the people (Jakarta resident) are by willingness of the resident in “buying service” policy. The resident can choose which mode they want to use, private vehicle or public transport. The consequence in using private vehicle is more expensive than using public transport because using road by private vehicle has impact and consequences to infrastructure (cost of the road), traffic jam, and external cost such as pollution that influence to the environment and health of the other residents. With understanding and willingness by resident to accept the policy, it is easier to solve the problem.

7. Balanced Scorecard Strategy Map measure performance in a comprehensive and balanced way and Balanced Scorecard has the same spirit with Service Dominant logic (S-D logic) to create the value. Dishub should implement it by describing the strategy, and then manage that strategy as a key to achieve the institution objective and finally measure that strategy as the basic foundation to another process. Evaluation of the performance is not the ending of the process, but it is a beginning of the process. With all the data which obtained from the evaluation of the public transport performance, each public transport stakeholders can plan their program to make the improvement in quality of service for society in the future and realizing their vision and mission.
B. Suggestion

1. *Dishub* can implement the Strategy Map BSC and Service Dominant Logic (S-D logic) as the key to help finding the solution to overcome the Jakarta public transport problem.

2. Central government and provincial governments should develop a institution of Public Transport Authority (PTA) as the new institution that:
   a. Focused, highly skilful, independent, professional and controlled public transport from a “value in use perspective” with focus on the duties, service quality, public transport accessibility, time efficiency, cost efficiency, comfort, safety, trust among stakeholder, etc,
   b. Emerge all public transport mode to be integrated in a system such as integrating conventional bus (Non-BRT), BRT, LRT, MRT and other public transport in the future with the professional and skilful management.
   c. Emerge public transport operators and built the trust, dialogue and good relations between the parties/stakeholders (owner, operator and user). The institution should be able to unite them and organize them based on S-D logic

3. Public transport system framework model as one of the result from this thesis can be used in Jakarta public transport system, such as involving and co-creating with the operator a good contract to make sure that the operator has been delivering the excellence service to the public user. The contract should be
implemented in a competitive tendering and basic relationship to build commitment and trust for providing better service in the service quality. Furthermore, it needs involvement from the public transport user to create better value such as willingness to use public transport, “buying the service” policy, self service in buying the ticket and self selection to use public transport. This value, besides coming from PTA, operator and public transport user, still needs other support from other stakeholders such as the politician, Ministry of Transport and police.

4. In order to create a new Public Transport Authority (PTA) as an institution which is a professional management team, high skilful, independent, and control the public transport from a "value in use perspective and emerge of all public transport in an integrated system, however the most important thing must begin from the seriousness and strong ‘political will’ of the central government and provincial governments to join together with a strong and deep willingness to focus to overcome the transportation problems in Jakarta by creating, executing and implementing policies that oriented in the integration of the mass public transport which puts excellence service quality in providing the services. This PTA can be controlled and evaluated in its performance each period by stakeholders including the public (resident) in a spirit of transparent, professional, and full of accountabilities to give excellence value for the users and other stakeholders.
5. This research conducted in Jakarta area. Therefore the result cannot represent the same problem in another area. Each region has specific and different problem from other region. The evaluation and suggestion will not have the same result. As the recommendation for further studies, the research also needs to be conducted in other region and use BSC with a comprehensive and holistic data and doing the research periodically and there are score for the benchmarking for each perspective to know the improvement and progress in the performance of the public transport and deeper analysis in the intangible asset and operant resources. The S-D logic in the public transport is interesting subjects to be analyzed and discussed deeply not only in the business but also in the transportation area. As the result, it can be implemented in the policy and can give benefit for the management and actors involved in the system.
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APPENDIX 1

KUESIONER

MAKSD DAN TUJUAN

1. Kuesioner ini adalah sebagai alat untuk pengumpulan data dalam rangka penyusunan tesis pada program Magister Sistem dan Teknik Transportasi Universitas Gadjah Mada (MSTT-UGM) dan Karlstads University guna mengevaluasi kinerja pelayanan angkutan umum

2. Informasi yang sesuai dengan keadaan yang sebenarnya sangat diharapkan dan membantu kebenaran kesimpulan penelitian yang akan diambil. Data dan informasi yang diberikan hanya bertujuan untuk kepentingan thesis ini saja.

3. Mohon bantuan dan kesediaan Anda untuk menjawab seluruh pertanyaan yang ada

Hari, Tanggal : ................, ......./......./ 2010           Lokasi : ....................................................

(isilah jawaban Anda dengan mengisi titik-titik yang kosong dan memberi tanda “X atau V” pada kotak yang tersedia sesuai pilihan anda. Jawaban yang Anda berikan sesuai dengan hati nurani Anda. Tidak ada penilaian Benar dan Salah dalam jawaban Anda.

A. DATA KORESPONDEN

1. Jenis Kelamin : [ ] Laki-laki [ ] wanita
2. Umur : ................ tahun
3. Pendidikan : [ ] SD [ ] SLTP [ ] SLTA [ ] Diploma
   [ ] S1 [ ] S2 [ ] S3 [ ] Lainnya (sebutkan)....................
4. Pekerjaan : [ ] Pelajar/Mahasiswa [ ] PNS/TNI/Polri [ ] Guru
   [ ] Karyawan Swasta [ ] Wiraswasta [ ] Ibu Rumah Tangga
   [ ] Belum Bekerja [ ] Lainnya, (sebutkan)..........................
5. Tujuan Perjalanan Menggunakan angkutan umum setiap hari :
   [ ] Bekerja [ ] Belanja [ ] Sekolah/Universitas
   [ ] Berdagang [ ] Berkunjung [ ] lainnya (sebutkan)....................
6. Penghasilan per bulan (dalam rupiah):
   [ ] Tidak ada penghasilan (Belum Bekerja atau Ibu Rumah Tangga)
   [ ] < 500.000 [ ] 500.000 – 2.000.000 [ ] 2.000.001 – 5.000.000
   [ ] 5.000.001 – 10.000.000 [ ] 10.000.001 – 30.000.000 [ ] > 30.000.000

B. KUESIONER

1. Pada Saat kapan Anda menggunakan Angkutan umum?
   [ ] Hampir setiap hari [ ] Setiap minggu
   [ ] Terkadang (1-2bulan sekali) [ ] Beberapa kali (setahun 1-6 kali)
   [ ] Sangat Jarang (setahun sekali) [ ] Hanya dimasa lalu (1-5 tahun yg lalu)
   [ ] (Lainnya, sebutkan)..........................
2. Jenis Angkutan Umum apa yang sering Anda gunakan?

[ ] Transjakarta
[ ] Bus besar (Patas/Mayasari/Steady safe)
[ ] Bus sedang (Metro Mini/Kopaja)
[ ] Bus kecil (Mikrolet/angkot)
[ ] KRL
[ ] Lainnya, sebutkan ............................................

3. Jenis Angkutan Umum apa yang menjadi favorite Anda dalam menjalankan Aktivitas sehari hari?

[ ] Patas/Mayasari/Steady safe)
[ ] Metro Mini/Kopaja
[ ] Mikrolet/angkot
[ ] Transjakarta/busway
[ ] Waterway Bus
[ ] Monorail
[ ] KRL
[ ] Subway (MRT)
[ ] Tram


[ ] 1  [ ] 2  [ ] 3  [ ] 4  [ ] 5  [ ] 6  [ ] 7  [ ] 8  [ ] 9  [ ] 10


[ ] 1  [ ] 2  [ ] 3  [ ] 4  [ ] 5  [ ] 6  [ ] 7  [ ] 8  [ ] 9  [ ] 10


[ ] 1  [ ] 2  [ ] 3  [ ] 4  [ ] 5  [ ] 6  [ ] 7  [ ] 8  [ ] 9  [ ] 10


[ ] 1  [ ] 2  [ ] 3  [ ] 4  [ ] 5  [ ] 6  [ ] 7  [ ] 8  [ ] 9  [ ] 10


[ ] 1  [ ] 2  [ ] 3  [ ] 4  [ ] 5  [ ] 6  [ ] 7  [ ] 8  [ ] 9  [ ] 10

9. Menurut Anda pelayanan Angkutan Umum apa (selain Transjakarta) yang paling perlu diperbaiki kualitasnya, dalam memberikan pelayanan kepada masyarakat?

[ ] keamanan dan keselamatan  [ ] Informasi  [ ] Ketepatan waktu
[ ] Kemampuan & sikap pegawai  [ ] Kenyamanan bus  [ ] Harga Tarif
[ ] Lainnya, sebutkan ..........................
10. Menurut Anda pelayanan Transjakarta/Busway yang paling perlu diperbaiki kualitasnya, dalam memberikan pelayanan kepada masyarakat?

[ ] keamanan dan keselamatan  [ ] informasi  [ ] Ketepatan waktu
[ ] Kehandalan bus (fasilitas)  [ ] Kenyamanan bus  [ ] Harga Tarif
[ ] Kemampuan & sikap pegawai  [ ] Lainnya, sebutkan ..............................................

11. Secara umum, apakah Anda PUAS dengan pelayanan Angkutan umum di Jakarta?

[ ] Ya  [ ] Tidak
Mengapa? Berikan Alasan Anda secara singkat berdasarkan jawaban yang Anda berikan?
........................................................................................................................................................
......................................................................................................................................................

12. Apakah sekarang Anda masih menggunakan Angkutan umum (Bus semua ukuran termasuk angkot kecuali transjakarta) dalam aktivitas sehari hari?

[ ] Ya  [ ] Tidak
Mengapa? Berikan Alasan Anda secara singkat berdasarkan jawaban yang Anda berikan?
........................................................................................................................................................
......................................................................................................................................................

13. Apakah Anda PUAS dengan harga tarif Angkutan umum (Bus semua ukuran termasuk angkot, kecuali Transjakarta) dalam aktivitas sehari hari?

[ ] Ya  [ ] Tidak
Mengapa? Berikan Alasan Anda secara singkat berdasarkan jawaban yang Anda berikan?
........................................................................................................................................................
......................................................................................................................................................

14. Apakah Anda saat ini menggunakan Transjakarta Bus (Busway) dalam aktivitas sehari hari?

[ ] Ya  [ ] Tidak
Mengapa? Berikan Alasan Anda secara singkat berdasarkan jawaban yang Anda berikan?
........................................................................................................................................................
......................................................................................................................................................

15. Apakah Anda PUAS dengan harga tarif Transjakarta Bus (Busway)?

[ ] Ya  [ ] Tidak
Mengapa? Berikan Alasan Anda secara singkat berdasarkan jawaban yang Anda berikan?
........................................................................................................................................................
......................................................................................................................................................

148
16. Apakah Anda setuju dengan adanya jalur busway?

[ ] Ya  [ ] Tidak

Mengapa? Berikan Alasan Anda secara singkat berdasarkan jawaban yang Anda berikan?

........................................................................................................................................................
............................................................................................................................................

17. Apakah Anda saat ini menggunakan mobil/motor dalam aktivitas sehari hari?

[ ] Ya  [ ] Tidak

Mengapa? Berikan Alasan Anda secara singkat berdasarkan jawaban yang Anda berikan?

........................................................................................................................................................
............................................................................................................................................

18. Apakah Anda setuju apabila Tiket dapat dibeli secara lebih mudah seperti dengan menggunakan internet dan mesin tiket?

[ ] Ya  [ ] tidak

19. Apabila Angkutan umum telah memiliki kualitas yang baik sesuai dengan harapan dan keinginan Anda apakah Anda bersedia menggunakan angkutan umum daripada menggunakan kendaraan pribadi?

[ ] Yes  [ ] No

20. Apakah Anda setuju pengguna angkutan umum seharusnya ikut menjaga fasilitas angkutan umum?

[ ] Ya  [ ] Tidak

21. Apakah Anda setuju pengguna angkutan umum seharusnya menjaga dan memelihara keselamatan dan keamanan mereka sendiri dan orang lain dalam menggunakan angkutan umum?

[ ] Ya  [ ] Tidak

22. Menurut pendapat Anda, apa yang menjadi sumber permasalahan transportasi angkutan umum di Jakarta?

[ ] Kualitas pelayanan Angkutan umum  [ ] Sistem Angkutan umum
[ ] Kualitas kinerja & kebijakan Dishub  [ ] Kualitas hukum dan peraturan transportasi
[ ] Perilaku masyarakat sendiri  [ ] Kurangnya sinergi Polri, Dishub, Dephub
[ ] Lainnya, sebutkan....................... & Operator

Kotak Saran (Tambahann) : ........................................................................................................
............................................................................................................................................
............................................................................................................................................

----- TERIMA KASIH ----
### APPENDIX 2

#### DEMOGRAPHIC CHARACTERISTICS OF RESPONDENT

<table>
<thead>
<tr>
<th>Characteristics Correspondent</th>
<th>Percentage</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>51%</td>
<td>207</td>
</tr>
<tr>
<td>Female</td>
<td>49%</td>
<td>196</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SLTP</td>
<td>0.99%</td>
<td>4</td>
</tr>
<tr>
<td>SLTA</td>
<td>11.17%</td>
<td>45</td>
</tr>
<tr>
<td>Diploma</td>
<td>5.21%</td>
<td>21</td>
</tr>
<tr>
<td>S1</td>
<td>74.44%</td>
<td>300</td>
</tr>
<tr>
<td>S2</td>
<td>8.19%</td>
<td>33</td>
</tr>
<tr>
<td>S3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td>5.96%</td>
<td>24</td>
</tr>
<tr>
<td>PNS/Polri/TNI</td>
<td>49.13%</td>
<td>198</td>
</tr>
<tr>
<td>Teacher</td>
<td>3.97%</td>
<td>16</td>
</tr>
<tr>
<td>Private Employee</td>
<td>26.55%</td>
<td>107</td>
</tr>
<tr>
<td>Entrepreneur</td>
<td>6.20%</td>
<td>25</td>
</tr>
<tr>
<td>Housewife</td>
<td>6.95%</td>
<td>28</td>
</tr>
<tr>
<td>No Working</td>
<td>0.99%</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>0.25%</td>
<td>1</td>
</tr>
<tr>
<td>Salary per Month</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Salary</td>
<td>13.90%</td>
<td>56</td>
</tr>
<tr>
<td>&lt; Rp. 500.000</td>
<td>0.00%</td>
<td>0</td>
</tr>
<tr>
<td>Rp. 500.000 – 1.000.000</td>
<td>19.60%</td>
<td>79</td>
</tr>
<tr>
<td>Rp. 2.000.001 – 5.000.000</td>
<td>48.64%</td>
<td>196</td>
</tr>
<tr>
<td>Rp. 5.000.001 – 10.000.000</td>
<td>16.87%</td>
<td>68</td>
</tr>
<tr>
<td>Rp. 10.000.001 – 30.000.000</td>
<td>0.99%</td>
<td>4</td>
</tr>
<tr>
<td>&gt;Rp. 30.000.0001</td>
<td>0.00%</td>
<td>0</td>
</tr>
</tbody>
</table>
Determining Sample Size

Glenn D. Israel

Perhaps the most frequently asked question concerning sampling is, "What size sample do I need?" The answer to this question is influenced by a number of factors, including the purpose of the study, population size, the risk of selecting a "bad" sample, and the allowable sampling error. Interested readers may obtain a more detailed discussion of the purpose of the study and population size in Sampling The Evidence Of Extension Program Impact, PEOD-5 (Israel, 1992). This paper reviews criteria for specifying a sample size and presents several strategies for determining the sample size.

SAMPLE SIZE CRITERIA

In addition to the purpose of the study and population size, three criteria usually will need to be specified to determine the appropriate sample size: the level of precision, the level of confidence or risk, and the degree of variability in the attributes being measured (Miaoulis and Michener, 1976). Each of these is reviewed below.

The Level Of Precision

The level of precision, sometimes called sampling error, is the range in which the true value of the population is estimated to be. This range is often expressed in percentage points, (e.g., ±5 percent), in the same way that results for political campaign polls are reported by the media. Thus, if a researcher finds that 60% of farmers in the sample have adopted a recommended practice with a precision rate of ±5%, then he or she can conclude that between 55% and 65% of farmers in the population have adopted the practice.

The Confidence Level

The confidence or risk level is based on ideas encompassed under the Central Limit Theorem. The key idea encompassed in the Central Limit Theorem is that when a population is repeatedly sampled, the average value of the attribute obtained by those samples is equal to the true population value. Furthermore, the values obtained by these samples are distributed normally about the true value, with some samples having a higher value and some obtaining a lower score than the true population value. In a normal distribution, approximately 95% of the sample values are within two standard deviations of the true population value (e.g., mean).

In other words, this means that, if a 95% confidence level is selected, 95 out of 100 samples will have the true population value within the range of precision specified earlier (Figure 1). There is always a chance that the sample you obtain does not represent the true population value. Such samples with extreme values are represented by the shaded areas in Figure 1. This risk is reduced for 99% confidence levels and increased for 90% (or lower) confidence levels.
Determining Sample Size

Figure 1. Distribution of Means for Repeated Samples.

Degree Of Variability

The third criterion, the *degree of variability* in the attributes being measured refers to the distribution of attributes in the population. The more heterogeneous a population, the larger the sample size required to obtain a given level of precision. The less variable (more homogeneous) a population, the smaller the sample size. Note that a proportion of 50% indicates a greater level of variability than either 20% or 80%. This is because 20% and 80% indicate that a large majority do not or do, respectively, have the attribute of interest. Because a proportion of .5 indicates the maximum variability in a population, it is often used in determining a more conservative sample size, that is, the sample size may be larger than if the true variability of the population attribute were used.

STRATEGIES FOR DETERMINING SAMPLE SIZE

There are several approaches to determining the sample size. These include using a census for small populations, imitating a sample size of similar studies, using published tables, and applying formulas to calculate a sample size. Each strategy is discussed below.

Using A Census For Small Populations

One approach is to use the entire population as the sample. Although cost considerations make this impossible for large populations, a census is attractive for small populations (e.g., 200 or less). A census eliminates sampling error and provides data on all the individuals in the population. In addition, some costs such as questionnaire design and developing the sampling frame are "fixed," that is, they will be the same for samples of 50 or 200. Finally, virtually the entire population would have to be sampled in small populations to achieve a desirable level of precision.

Using A Sample Size Of A Similar Study

Another approach is to use the same sample size as those of studies similar to the one you plan. Without reviewing the procedures employed in these studies you may run the risk of repeating errors that were made in determining the sample size for another study. However, a review of the literature in your discipline can provide guidance about "typical" sample sizes which are used.

Using Published Tables

A third way to determine sample size is to rely on published tables which provide the sample size for a given set of criteria. Table 1 and Table 2 present sample sizes that would be necessary for given combinations of precision, confidence levels, and variability. Please note two things. First, these sample sizes reflect the number of obtained responses, and not necessarily the number of surveys mailed or interviews planned (this number is often increased to compensate for nonresponse). Second, the sample sizes in Table 2 presume that the attributes being measured are distributed normally or nearly so. If this assumption cannot be met, then the entire population may need to be surveyed.

Using Formulas To Calculate A Sample Size

Although tables can provide a useful guide for determining the sample size, you may need to calculate the necessary sample size for a different combination of levels of precision, confidence, and variability. The fourth approach to determining sample size is the application of one of several formulas (Equation 5 was used to calculate the sample sizes in Table 1 and Table 2).
Determining Sample Size

<table>
<thead>
<tr>
<th>Table 1. Sample size for ±3%, ±5%, ±7% and ±10% Precision Levels Where Confidence Level is 95% and P=.5.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of Population</td>
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a = Assumption of normal population is poor (Yamane, 1967). The entire population should be sampled.

<table>
<thead>
<tr>
<th>Table 2. Sample size for ±5%, ±7% and ±10% Precision Levels Where Confidence Level is 95% and P=.5.</th>
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<tbody>
<tr>
<td>Size of Population</td>
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</tbody>
</table>

Formula For Calculating A Sample For Proportions

For populations that are large, Cochran (1963:75) developed the Equation 1 to yield a representative sample for proportions.

\[ n_0 = \frac{Z^2pq}{e^2} \]

Which is valid where \( n_0 \) is the sample size, \( Z^2 \) is the abscissa of the normal curve that cuts off an area \( \alpha \) at the tails (1 - \( \alpha \) equals the desired confidence level, e.g., 95%)\(^1\), \( e \) is the desired level of precision, \( p \) is the estimated proportion of an attribute that is present in the population, and \( q \) is 1-\( p \). The value for \( Z \) is found in statistical tables which contain the area under the normal curve.

Finite Population Correction For Proportions

If the population is small then the sample size can be reduced slightly. This is because a given sample size provides proportionately more information for a small population than for a large population. The sample size \( (n_0) \) can be adjusted using Equation 3.

\[ n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}} \]

Where \( n \) is the sample size and \( N \) is the population size.

To illustrate, suppose we wish to evaluate a statewide Extension program in which farmers were encouraged to adopt a new practice. Assume there is a large population but that we do not know the variability in the proportion that will adopt the practice; therefore, assume \( p=.5 \) (maximum variability). Furthermore, suppose we desire a 95% confidence level and ±5% precision. The resulting sample size is demonstrated in Equation 2.

\[ n_0 = \frac{Z^2pq}{e^2} = \frac{(1.96)^2(.5)(.5)}{(.05)^2} = 385 \text{ farmers} \]

\(^1\) Approximately 95% confidence level.
Suppose our evaluation of farmers’ adoption of the new practice only affected 2,000 farmers. The sample size that would now be necessary is shown in Equation 4.

\[
n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}} = \frac{385}{1 + \frac{(385 - 1)}{2000}} = 323 \text{ farmers}
\]

As you can see, this adjustment (called the finite population correction) can substantially reduce the necessary sample size for small populations.

**A Simplified Formula For Proportions**

Yamane (1967:886) provides a simplified formula to calculate sample sizes. This formula was used to calculate the sample sizes in Tables 2 and 3 and is shown below. A 95% confidence level and \( P = .5 \) are assumed for Equation 5.

\[
n = \frac{N}{1 + N(e)^2}
\]

Where \( n \) is the sample size, \( N \) is the population size, and \( e \) is the level of precision. When this formula is applied to the above sample, we get Equation 6.

\[
n = \frac{2000}{1 + 2000(0.05)^2} = 333 \text{ farmers}
\]

**Formula For Sample Size For The Mean**

The use of tables and formulas to determine sample size in the above discussion employed proportions that assume a dichotomous response for the attributes being measured. There are two methods to determine sample size for variables that are polytomous or continuous. One method is to combine responses into two categories and then use a sample size based on proportion (Smith, 1983). The second method is to use the formula for the sample size for the mean. The formula of the sample size for the mean is similar to that of the proportion, except for the measure of variability. The formula for the mean employs \( \sigma^2 \) instead of \( (p \times q) \), as shown in Equation 7.

\[
n_0 = \frac{Z^2 \sigma^2}{e^2}
\]

Where \( n_0 \) is the sample size, \( z \) is the abscissa of the normal curve that cuts off an area \( \alpha \) at the tails, \( e \) is the desired level of precision (in the same unit of measure as the variance), and \( \sigma^2 \) is the variance of an attribute in the population.

The disadvantage of the sample size based on the mean is that a "good" estimate of the population variance is necessary. Often, an estimate is not available. Furthermore, the sample size can vary widely from one attribute to another because each is likely to have a different variance. Because of these problems, the sample size for the proportion is frequently preferred².

**OTHER CONSIDERATIONS**

In completing this discussion of determining sample size, there are three additional issues. First, the above approaches to determining sample size have assumed that a simple random sample is the sampling design. More complex designs, e.g., stratified random samples, must take into account the variances of subpopulations, strata, or clusters before an estimate of the variability in the population as a whole can be made.

Another consideration with sample size is the number needed for the data analysis. If descriptive statistics are to be used, e.g., mean, frequencies, then nearly any sample size will suffice. On the other hand, a good size sample, e.g., 200-500, is needed for multiple regression, analysis of covariance, or log-linear analysis, which might be performed for more rigorous state impact evaluations. The sample size should be appropriate for the analysis that is planned.

In addition, an adjustment in the sample size may be needed to accommodate a comparative analysis of subgroups (e.g., such as an evaluation of program participants with nonparticipants). Sudman (1976) suggests that a minimum of 100 elements is needed for each major group or subgroup in the sample and for each minor subgroup, a sample of 20 to 50 elements is necessary. Similarly, Kish (1965) says that 30 to 200 elements are sufficient when the attribute is present 20 to 80 percent of the time (i.e., the distribution approaches normality). On the other hand, skewed distributions can result in serious departures from normality even for moderate size samples (Kish, 1965:17). Then a larger sample or a census is required.

Finally, the sample size formulas provide the number of responses that need to be obtained. Many researchers commonly add 10% to the sample size to compensate for persons that the researcher is unable
Determining Sample Size

to contact. The sample size also is often increased by 30% to compensate for nonresponse. Thus, the number of mailed surveys or planned interviews can be substantially larger than the number required for a desired level of confidence and precision.

ENDNOTES

1. The area $\alpha$ corresponds to the shaded areas in the sampling distribution shown in Figure 1.

2. The use of the level of maximum variability ($P=.5$) in the calculation of the sample size for the proportion generally will produce a more conservative sample size (i.e., a larger one) than will be calculated by the sample size of the mean.

REFERENCES


KEPUTUSAN GUBERNUR PROPINSI DAERAH KHUSUS
IBUKOTA JAKARTA

NOMOR 84 TAHUN 2004

TENTANG

PENETAPAN POLA TRANSPORTASI MAKRO
DI PROPINSI DAERAH KHUSUS IBUKOTA JAKARTA

GUBERNUR PROPINSI DAERAH KHUSUS IBUKOTA JAKARTA,


b. bahwa sehubungan dengan hal tersebut pada huruf a, dan dalam rangka penataan sistem transportasi, perlu menetapkan Pola Transportasi Makro di Propinsi Daerah Khusus Ibukota Jakarta dengan keputusan Gubernur.

Mengingat :  1. Undang-undang Nomor 13 Tahun 1980 tentang Jalan;

2. Undang-undang Nomor 13 Tahun 1992 tentang Perkeretaapian;

3. Undang-undang Nomor 14 Tahun 1992 tentang Lalu Lintas dan Angkutan Jalan;

4. Undang-undang Nomor 21 Tahun 1992 tentang Pelayaran;

5. Undang-undang Nomor 22 Tahun 1999 tentang Pemerintahan Daerah;
6. Undang-undang Nomor 34 Tahun 1999 tentang Pemerintahan Propinsi Daerah Khusus Ibukota Negara Republik Indonesia Jakarta;

7. Peraturan Pemerintah Nomor 41 Tahun 1993 tentang Angkutan Jalan;


10. Peraturan Pemerintah Nomor 44 Tahun 1993 tentang Kendaraan dan Pengemudi;


12. Peraturan Pemerintah Nomor 82 Tahun 1999 tentang Angkutan di Perairan;


**MEMUTUSKAN**

Menetapkan : KEPUTUSAN GUBERNUR PROPINSI DAERAH KHUSUS IBUKOTA JAKARTA TENTANG PENETAPAN POLA TRANSPORTASI MAKRO DI PROPINSI DAERAH KHUSUS IBUKOTA JAKARTA
BAB I
KETENTUAN UMUM

Pasal 1

Dalam keputusan ini yang dimaksud dengan:

1. Daerah adalah Propinsi Daerah Khusus Ibukota Jakarta.
4. Badan Perencanaan Daerah adalah Badan Perencanaan Daerah Propinsi Daerah Khusus Ibukota Jakarta;
5. Dinas Perhubungan adalah Dinas Perhubungan Propinsi Daerah Khusus Ibukota Jakarta;
7. Jaringan Pengumpan adalah kumpulan dari trayek-trayek yang menjadi satu kesatuan jaringan pelayanan angkutan orang yang mendukung jaringan angkutan umum massal.
8. Bus Priority adalah sistem angkutan bus yang diberikan prioritas untuk operasionalnya
9. Kereta Api adalah kendaraan dengan tenaga gerak, baik sendiri maupun dirangkaikan dengan kendaraan lainnya yang akan atau sedang bergerak di jalan rel.

BAB II
MAKSUD DAN TUJUAN

Pasal 2

(1) Maksud penetapan Pola Transportasi Makro adalah untuk meningkatkan pelayanan dan penyediaan jasa transportasi yang terpadu, tertib, lancar, aman, nyaman dan efisien.


BAB III
ARAHAN PENGEMBANGAN SISTEM TRANSPORTASI

Pasal 3

Arahan pengembangan sistem transportasi, untuk:
b. Memasyarakatkan sistem angkutan umum massal.
c. Menggalakkan penggunaan angkutan umum dan kereta api.
d. Mengurangi penggunaan kendaraan pribadi yang berlebihan.
e. Menambah jaringan Jalan Primer, Bus Priority, Light Rail Transit (LRT) dan Mass Rapid Transit (MRT).
f. Meningkatkan jaringan jalan non tol dan membangun jalan baru.

BAB IV
SKENARIO PENGEMBANGAN SISTEM TRANSPORTASI TAHUN 2007

Pasal 4


(2) Skenario pengembangan sistem transportasi tahun 2007, 2010, dan 2020 sebagaimana dimaksud pada ayat (1) terdiri dari :
   a. Pengembangan sistem angkutan umum bus.
   b. Pengembangan sistem angkutan umum massal.
   c. Pengembangan sistem jaringan jalan.
   d. Pengembangan sistem angkutan jalan rel.
   e. Pengembangan sistem transportasi alternatif.
   f. Pengembangan pembatasan lalu lintas.

Sebagaimana dimuat dalam Dokumen Pola Transportasi Makro.

BAB V
KETENTUAN LAIN-LAIN

Pasal 5

(1) Pelaksanaan program pola transportasi makro harus didukung oleh instansi terkait dilingkungan Pemerintah Propinsi Daerah Khusus Ibukota Jakarta.

(2) Pelaksanaan sebagaimana dimaksud pada ayat (1), secara administratif dikoordinasikan oleh Badan Perencanaan Daerah.

(3) Pelaksanaan sebagaimana dimaksud pada ayat (1), secara teknik operasional dikoordinasikan oleh Dinas Perhubungan.

BAB VI
KETENTUAN PENUTUP

Pasal 6

Keputusan ini mulai berlaku pada tanggal diundangkan.
Agar setiap orang dapat mengetahuinya memerintahkan pengundangan keputusan ini dengan penempatannya dalam Lembaran Daerah Propinsi Daerah Khusus Ibukota Jakarta.

Ditetapkan di Jakarta pada tanggal 2 Juli 2004

GUBERNUR PROPINSI DAERAH KHUSUS IBUKOTA JAKARTA,

   ttd

   S U T I Y O S O

Diundangkan di Jakarta pada tanggal 15 Juli 2004

SEKRETARIS DAERAH PROPINSI DAERAH KHUSUS IBUKOTA JAKARTA,

   ttd

   H. RITOLA TASMAYA
   NIP. 140091657

LEMBARAN DAERAH PROPINSI DAERAH KHUSUS IBUKOTA JAKARTA

TAHUN 2004 NOMOR 56
PERATURAN GUBERNUR PROVINSI DAERAH KHUSUS

IBUKOTA JAKARTA

NOMOR 103 TAHUN 2007

TENTANG

POLA TRANSPORTASI MAKRO

DENGAN RAHMAT TUHAN YANG MAHA ESA

GUBERNUR PROVINSI DAERAH KHUSUS IBUKOTA JAKARTA,

Menimbang


b. bahwa dalam rangka mewujudkan Pola Transportasi Makro secara menyeluruh, keberadaan Keputusan Gubernur Nomor 84 Tahun 2004 sebagaimana tersebut pada huruf a sudah tidak sesuai lagi dengan kondisi saat ini, sehingga perlu dilakukan penyempurnaan;

c. bahwa berdasarkan pertimbangan sebagaimana dimaksud pada huruf a dan huruf b, serta untuk kelancaran pelaksanaanya di lapangan, perlu menetapkan peraturan Gubernur tentang Pola Transportasi Makro.

Mengingat

1. Undang-Undang Nomor 23 Tahun 2007 tentang Perkeretaapian;
2. Undang-Undang Nomor 14 Tahun 1992 tentang Lalu Lintas dan Angkutan Jalan;
3. Undang-Undang Nomor 21 Tahun 1992 tentang Pelayaran;
4. Undang-Undang Nomor 34 Tahun 1999 tentang Pemerintahan Propinsi Daerah Khusus Ibukota Negara Republik Indonesia Jakarta;
5. Undang-Undang Nomor 17 Tahun 2003 tentang Keuangan Negara;
6. Undang-Undang Nomor 1 Tahun 2004 tentang Perbendaharaan Negara;
7. Undang-Undang Nomor 15 Tahun 2004 tentang Pemeriksaan dan Pengelolaan Tanggung Jawab Keuangan Negara;
8. Undang-Undang Nomor 10 Tahun 2004 tentang Pembentukan Peraturan Perundang-undangan;
9. Undang-Undang Nomor 32 Tahun 2004 tentang Pemerintahan Daerah;
10. Undang-Undang Nomor 38 Tahun 2004 tentang Jalan;
11. Peraturan Pemerintah Nomor 41 Tahun 1993 tentang Angkutan Jalan;
13. Peraturan Pemerintah Nomor 44 Tahun 1993 tentang Kendaraan dan Pengemudi;
15. Peraturan Pemerintah Nomor 82 Tahun 1999 tentang Angkutan di Perairan;
17. Peraturan Pemerintah Nomor 6 Tahun 2006 tentang Pengelolaan Barang Milik Negara/Daerah;
18. Peraturan Pemerintah Nomor 15 Tahun 2005 tentang Jalan Tol;
19. Peraturan Pemerintah Nomor 34 Tahun 2006 tentang Jalan;
23. Peraturan Daerah Nomor 6 Tahun 1999 tentang Rencana Tata Ruang Wilayah Daerah Khusus Ibukota Jakarta;
26. Peraturan Daerah Nomor 5 Tahun 2007 tentang Pokok-pokok Pengeluaran Daerah;

MEMUTUSKAN :

Menetapkan : PERATURAN GUBERNUR TENTANG POLA TRANSPORTASI MAKRO.

BAB I

KETENTUAN UMUM

Pasal 1
Dalam Peraturan Gubernur ini yang dimaksud dengan :

5. Pemerintah Daerah Sekitar adalah Pemerintah Daerah Bodetabek yang terkait dengan perencanaan pengembangan Sistem Transportasi Daerah.
6. Angkutan Umum Bus adalah pemindahan orang dari satu tempat ke tempat lain dengan menggunakan kendaraan bermotor berbentuk mobil bus yang dipergunakan oleh umum dengan dipungut bayaran.
7. Angkutan Umum Massal adalah angkutan umum dengan karakteristik pelayanan cepat dan berkapasitas tinggi.
8. Jaringan Jalan adalah seluruh jalan yang diperuntukkan bagi lalu-lintas umum dan terkait satu sama lain yang menghubungkan berbagai tempat sehingga merupakan satu sistem.
9. Angkutan Jalan Rel adalah pemindahan orang dan/atau barang dari satu tempat ke tempat lain dengan menggunakan kereta api, baik berjalan sendiri maupun dirangkaikan dengan kendaraan lainnya yang akan atau sedang bergerak di jalan rel.
10. Transportasi alternatif adalah pemindahan orang dan/atau barang dari satu tempat ke tempat lain dengan menggunakan moda angkutan sungai.
11. Kebijakan pendukung adalah kebijakan dan/atau pengaturan yang dilaksanakan dalam mendukung sistem transportasi.
12. Jaringan Pengumpan yang selanjutnya disebut Feeder Service adalah kumpulan dari trayek-trayek yang menjadi satu kesatuan jaringan pelayanan angkutan orang yang mendukung jaringan angkutan umum massal.
14. Light Rail Transit yang seianjutnya disingkat LRT adalah angkutan umum massal cepat dengan menggunakan kereta ringan.
15. Mass Rapid Transit yang seianjutnya disingkat MRT adalah angkutan umum massal cepat dengan menggunakan kereta berat.
16. Kereta Api adalah kendaraan dengan tenaga gerak, baik sendiri maupun dirangkaikan dengan kendaraan lainnya yang akan atau sedang bergerak di jalan rel.
17. Jalan Umum adalah jalan yang diperuntukkan bagi lalu-lintas umum.
18. Jalan Tol adalah jalan umum yang merupakan bagian sistem jaringan jalan dan sebagai jalan nasional yang penggunanya diwajibkan membayar tol.

BAB II
MAKSUD DAN TUJUAN
Pasal 2
Maksud disusunnya pengaturan Pola Transportasi Makro adalah untuk meningkatkan pelayanan dan penyediaan jasa transportasi yang aman, terpadu, tertib, lancar, nyaman, ekonomis, efisien, efektif, dan terjangkau oleh masyarakat, yang bertujuan untuk menetapkan Rencana Induk Sistem Jaringan Transportasi di Provinsi Daerah Khusus Ibukota Jakarta sebagai perwujudan Tatanan Transportasi Wilayah.

BAB III
ARAHAN PENGEMBANGAN SISTEM TRANSPORTASI

Pasal 3

Arahan Pengembangan Sistem Transportasi adalah :

a. Mengoptimalkan penggunaan angkutan umum sebagai tulang punggung sistem dan menerapkan kebijakan manajemen permintaan (Transport Demand Management/TDM) serta penyediaan jaringan jalan sebagai pendukungnya;

b. Meningkatkan aksesibilitas dan mobilitas di daerah dan sekitarnya, serta menata ulang moda transportasi secara terpadu;

c. Memasyarakatkan sistem angkutan umum massal;

d. Meningkatkan jaringan jalan;

e. Menggalakkan penggunaan angkutan umum;

f. Mengurangi penggunaan kendaraan pribadi.

BAB IV
PENGEMBANGAN SISTEM TRANSPORTASI

Bagian Kesatu
Perencanaan

Pasal 4

(1) Perencanaan Pengembangan sistem transportasi terdiri dari :

a. pengembangan sistem angkutan umum bus
b. pengembangan sistem angkutan umum massal;
c. pengembangan sistem jaringan jalan;
d. pengembangan sistem angkutan jalan rel;
e. pengembangan sistem transportasi alternatif;
f. pengembangan kebijakan pendukung.

(2) Perencanaan Pengembangan Sistem Transportasi sebagaimana dimaksud pada ayat (1) dilakukan secara bertahap dengan tahapan sebagai berikut :

a. tahun 2004 sampai dengan tahun 2007
b. tahun 2007 sampai dengan tahun 2010
c. tahun 2010 sampai dengan tahun 2020

Bagian Kedua
Pelaksanaan

Pasal 5
(1). Pengembangan sistem angkutan umum bus sebagaimana dimaksud dalam Pasal 4 ayat (1) huruf a terdiri dari:
   a. penataan trayek;
   b. rasionalisasi angkutan umum bus.

(2). Penataan trayek sebagaimana dimaksud pada ayat (1) huruf a meliputi:
   a. restrukturisasi trayek akibat pembangunan Busway;
   b. pengembangan angkutan pengumpan (feeder service) untuk menunjang Busway.

(3). Rasionalisasi angkutan umum bus sebagaimana dimaksud pada ayat (1) huruf b merupakan rasionalisasi terhadap jumlah angkutan umum yang beroperasi di Daerah.

Pasal 6

(1) Untuk pelaksanaan pengembangan sistem angkutan umum massal sebagaimana dimaksud dalam pasal 4 ayat (1) huruf b terdiri dari:
   a. Jaringan Bus Priority;
   b. LRT;
   c. MRT.

(2) Pengembangan sistem angkutan umum massal sebagaimana dimaksud ayat (1) dilakukan secara bertahap mulai dari tahun 2004 s.d tahun 2020.

Pasal 7

(1). Pengembangan sistem angkutan umum massal Jaringan Bus Priority sebagaimana dimaksud dalam Pasal 6 ayat (1) huruf a terdiri dari:
   a. Koridor Blok M—Kota;
   b. Koridor Pulogadung - Harmoni;
   c. Koridor Kalideres - Harmoni;
   d. Koridor Pulogadung - Dukuh Atas;
   e. Koridor Kampung Melayu - Ancol;
   f. Koridor Ragunan - Kuningan;
   g. Koridor Kampung Rambutan - Kampung Melayu;
   h. Koridor Lebak Bulus - Harmoni;
   i. Koridor Pinang Ranti - Grogol - Pluit;
   j. Koridor Ciliwung - Tanjung Priok;
   k. Koridor Pulo Gebang - Kampung Melayu;
   l. Koridor Pluit - Tanjung Priok;
   m. Koridor Pondok Kelapa - Blok M;
   n. Koridor UI - Pasar Minggu - Manggarai;
   o. Koridor Ciledug - Blok M.

(2) Untuk pelaksanaan pengembangan sistem angkutan Bus Priority (Busway) sebagaimana dimaksud pada ayat (1) dilakukan secara bertahap yaitu :
   a. tahun 2004 sampai dengan tahun 2007, pembangunan dengan koridor sebagaimana dimaksud pada ayat (1) huruf a sampai dengan huruf g.
   b. tahun 2007 sampai dengan tahun 2010, pembangunan dengan koridor sebagaimana dimaksud pada ayat (1) huruf h sampai dengan huruf o.

(3) Ketentuan lebih lanjut mengenai pembangunan koridor setiap tahun bagi pelaksanaan pengembangan sistem angkutan Bus Priority (Busway) akan diatur dengan Peraturan Gubernur.

(4) Gubernur berwenang untuk menetapkan kembali, apabila terjadi perubahan terhadap salah satu atau lebih koridor sebagaimana dimaksud pada ayat (1).

(5) Pertimbangan dilakukan perubahan koridor sebagaimana dimaksud pada ayat (4) antara lain didasarkan atas :
   a. kebutuhan masyarakat yang dituangkan dalam kajian teknis;
   b. dinamika di lapangan;
c. kemampuan keuangan daerah.

(6) Ketentuan lebih lanjut mengenai kewenangan penetapan koridor sebagaimana dimaksud pada ayat (4), akan ditetapkan dengan Keputusan Gubernur.

Pasal 8

(1) Pengembangan sistem angkutan Umum Massal LRT sebagaimana dimaksud dalam Pasal 6 ayat (1) huruf b terdiri dari:
   a. jaringan LRT Monorail Green Line;
   b. jaringan LRT Monorail Blue Line.

(2) Ketentuan lebih lanjut mengenai pelaksanaan pengembangan sistem angkutan umum Massal LRT sebagaimana dimaksud pada ayat (1), akan diatur dengan Peraturan Gubernur.

Pasal 9

(1) Pengembangan sistem Angkutan Massal MRT sebagaimana dimaksud dalam Pasal 6 ayat (1) huruf c terdiri dari:
   a. tahap 1 Jaringan MRT Lebak Bulus - Dukuh Atas;
   b. tahap 2 Jaringan MRT Dukuh Atas - Kampung Bandan.

(2) Ketentuan lebih lanjut mengenai pelaksanaan pengembangan sistem angkutan umum Massal MRT sebagaimana dimaksud pada ayat (1), akan diatur dengan Peraturan Gubernur.

Pasal 10

Peta Pengembangan Sistem Angkutan Umum Massal sebagaimana dimaksud dalam Pasal 7 sampai dengan Pasal 9, sesuai dengan gambar yang tercantum pada Lampiran I Peraturan Gubernur ini.

Pasal 11

(1) Untuk pelaksanaan pengembangan sistem jaringan jalan sebagaimana dimaksud dalam Pasal 4 ayat (1) huruf c dilakukan dengan cara :
   a. menambah dan meningkatkan kapasitas ruas jalan;
   b. meningkatkan kapasitas simpang;
   c. membangun dan menyelesaikan jalan tol yang berada di wilayah Provinsi DKI Jakarta.

(2) Pelaksanaan pengembangan sistem jaringan jalan sebagaimana dimaksud pada ayat (1) dilakukan secara bertahap dari tahun 2004 sampai dengan tahun 2020.

(3) Ketentuan lebih lanjut mengenai pelaksanaan pengembangan sistem jaringan jalan sebagaimana dimaksud pada ayat (1) akan diatur dengan Peraturan Gubernur.

Pasal 12

(1) Penambahan dan Peningkatan kapasitas ruas jalan sebagaimana dimaksud pada Pasal 11 ayat (1) huruf a dilakukan dalam bentuk :
   a. peningkatan jalan dengan prioritas pengembangan Timur-Barat
   b. pengembangan jaringan jalan untuk mendukung pengembangan kawasan komersial baru dan peningkatan aksesibilitas angkutan barang dan jasa.

(2) Peningkatan kapasitas ruas jalan sebagaimana dimaksud pada ayat (1) dapat dilakukan oleh Pemerintah dan/atau Pemerintah Daerah.

(3) Dalam hal peningkatan kapasitas ruas jalan sebagaimana dimaksud pada ayat (1) dilakukan oleh Pemerintah maka keikutsertaan Pemerintah Daerah hanya sebatas kewenangan yang dimiliki oleh Pemerintah Daerah.
Pasal 13
(1) Peningkatan kapasitas simpang sebagaimana dimaksud dalam Pasal 11 ayat (1) huruf b dilaksanakan dengan pembangunan simpang tak sebidang dan peningkatan kapasitas simpang lainnya.

(2) Peningkatan kapasitas simpang sebagaimana dimaksud pada ayat (1) dapat dilakukan oleh Pemerintah dan/atau Pemerintah Daerah.

(3) Dalam hal peningkatan kapasitas simpang dilakukan oleh Pemerintah sebagaimana dimaksud pada ayat (2), maka keikutsertaan Pemerintah Daerah hanya sebatas kewenangan yang dimiliki oleh Pemerintah Daerah.

Pasal 14
(1) Pembangunan dan Penyelesaian jalan tol sebagaimana dimaksud dalam Pasal 11 ayat (1) huruf c dilakukan antara lain terhadap:
   a. jalan tol Lingkar Luar;
   b. jalan tol Dalam Kota;
   c. jalan tol Akses Priok;
   d. jalan tol lainnya.

(2) Pembangunan dan Penyelesaian jalan tol sebagaimana dimaksud pada ayat (1) dapat dilakukan oleh Pemerintah dan/atau Pemerintah Daerah.

(3) Dalam hal pembangunan dan penyelesaian jalan tol sebagaimana dimaksud pada ayat (2) dilakukan oleh Pemerintah, maka keikutsertaan Pemerintah Daerah hanya sebatas kewenangan yang dimiliki oleh Pemerintah Daerah.

Pasal 15
Peta Pengembangan Sistem Jaringan Jalan sebagaimana dimaksud dalam Pasal 12 sampai dengan Pasal 14 sesuai dengan gambar yang tercantum pada lampiran II dan III peraturan Gubernur ini.

Pasal 16
(1) Untuk pelaksanaan pengembangan sistem jaringan rel sebagaimana dimaksud dalam Pasal 4 ayat (1) huruf d terdiri dari:
   a. pengembangan kereta rel Jabodetabek;
   b. pengembangan infrastruktur kereta api berupa peningkatan kapasitas dengan double tracking;
   c. pembangunan lintasan tidak sebidang pada persilangan dengan jalan raya.

(2) Pelaksanaan pengembangan sistem angkutan jalan rel sebagaimana dimaksud pada ayat (1) dilakukan secara bertahap mulai tahun 2004 sampai dengan tahun 2020.

Pasal 17
Peta Pengembangan Sistem Jaringan Rel sebagaimana dimaksud dalam Pasal 16 sesuai dengan gambar yang tercantum pada lampiran IV peraturan Gubernur ini.

Pasal 18
(1) Untuk pelaksanaan pengembangan sistem transportasi alternative sebagaimana dimaksud dalam Pasal 4 ayat (1) huruf e merupakan pengembangan angkutan sungai dengan memanfaatkan kanal/sungai.

(2) Pelaksanaan pengembangan sistem transportasi alternatif sebagaimana dimaksud pada ayat (1) dilakukan secara bertahap mulai tahun 2004 sampai dengan tahun 2020.
Pasal 19
Peta Pengembangan Sistem Transportasi Alternatif sebagaimana dimaksud dalam Pasal 18 sesuai dengan gambar yang tercantum pada lampiran I Peraturan Gubernur ini.

Pasal 20
(1) Untuk pelaksanaan pengembangan kebijakan pendukung sebagaimana dimaksud dalam Pasal 4 ayat (1) huruf f dilakukan kegiatan yang terdiri dari:
   a. penerapan Transportation Demand Management (manajemen permintaan Lalu Lintas);
   b. pengembangan sistem informasi dan kendali lalu lintas (pembatasan lalu lintas);
   c. pengembangan fasilitas pejalan kaki (pedestrianisasi).
(3) Ketentuan lebih lanjut mengenai pelaksanaan pengembangan kebijakan pendukung sebagaimana dimaksud pada ayat (1) akan diatur dengan Peraturan Gubernur.

Pasal 21
Peta Pengembangan Kebijakan Pendukung sebagaimana dimaksud dalam Pasal 20 sesuai gambar yang tercantum pada lampiran V peraturan Gubernur ini.

BAB V
PELAKSANA
Pasal 22
(1) Pelaksanaan program Pola Transportasi Makro dilaksanakan oleh Satuan Kerja Perangkat Daerah sesuai dengan tugas pokok dan fungsinya masing-masing.
(2) Pelaksanaan Tugas pokok dan fungsi dalam program Pola Transportasi Makro sebagaimana dimaksud pada ayat (1) meliputi perencanaan, implementasi dan pengendalian.

BAB VI
KERJA SAMA
Pasal 23
(1) Dalam melaksanakan Pengembangan Sistem Transportasi sebagaimana dimaksud dalam Pasal 4, Pemerintah Daerah dapat bekerja sama dengan Pemerintah dan/atau Pemerintah Daerah sekitar dan Pihak Ketiga.
(2) Kerja sama dengan Pemerintah, Pemerintah Daerah sekitar dan/atau Pihak Ketiga sebagaimana dimaksud pada ayat (1) dilakukan sesuai ketentuan peraturan perundang-undangan.

BAB VII
KOORDINASI
Pasal 24
Koordinasi pelaksanaan program Pola Transportasi Makro dilakukan oleh Asisten yang membidangi masalah transportasi.
BAB VI

PEMBIAYAAN

Pasal 25

Biaya yang diperlukan untuk pelaksanaan program Pola Transportasi Makro dibebankan pada APBD Provinsi DKI Jakarta dan sumber pembiayaan lain yang sah sesuai ketentuan peraturan perundang-undangan.

BAB IX

PENGENDALIAN, EVALUASI DAN PELAPORAN

Pasal 26

(1) Pengendalian terhadap pelaksanaan program Pola Transportasi Makro dilakukan oleh masing-masing Kepala Satuan Kerja Perangkat Daerah sesuai dengan tugas pokok dan fungsinya.

(2) Terhadap hasil pengendalian sebagaimana dimaksud pada ayat (1) dilakukan evaluasi setiap 6 bulan sekali atau sewaktu-waktu sesuai kebutuhan.

(3) Evaluasi sebagaimana dimaksud pada ayat (2) selanjutnya dilaporkan kepada Gubernur melalui Sekretaris Daerah.

BAB X

KETENTUAN PERALIHAN

Pasal 27

Terhadap peraturan pelaksanaan yang sudah ada, dinyatakan masih tetap berlaku sepanjang tidak bertentangan dengan peraturan Gubernur ini.

BAB XI

KETENTUAN PENUTUP

Pasal 28

Pasal 29

Peraturan Gubernur ini mulai berlaku pada tanggal diundangkan.

Agar setiap orang mengetahuinya, memerintahkan pengundangan peraturan Gubernur ini dengan penempatannya dalam Berita Daerah Provinsi Daerah Khusus Ibukota Jakarta.

Ditetapkan di Jakarta
pada tanggal 26 Juli 2007

GUBERNUR PROVINSI DAERAH KHUSUS
IBUKOTA JAKARTA,

[Signature]

SUTIYOSO

Diundangkan di Jakarta
pada tanggal 14 Agustus 2007

SEKRETARIS DAERAH PROVINSI DAERAH KHUSUS
IBUKOTA JAKARTA,

[Signature]

RITOLA TAMSAYA
NIP 140091657

BERITA DAERAH PROVINSI DAERAH KHUSUS IBUKOTA JAKARTA
TAHUN 2007 NOMOR 105.
Lampiran II : Peraturan Gubernur Provinsi Daerah Khusus Ibukota Jakarta

Nomor 103 TAHUN 2007
Tanggal 26 Juli 2007

PETA ARAH PENGEMBANGAN SISTEM JARINGAN JALAN
TAHUN 2004 SAMPAI DENGAN TAHUN 2020

GUBERNUR PROVINSI DAERAH KHUSUS
IBUKOTA JAKARTA

SUTIYOSO
PETA PENGEMBANGAN SISTEM JARINGAN JALAN TOL TAHUN 2004 SAMPAI DENGAN TAHUN 2020
Lampiran IV : Peraturan Gubernur Provinsi Daerah Khusus Ibukota Jakarta
Nomor 103 TAHUN 2007
Tanggal 26 Juli 2007

PETA PENGEMBANGAN SISTEM JARINGAN REL
TAHUN 2004 SAMPAI DENGAN TAHUN 2020

GUBERNUR PROVINSI DAERAH KHUSUS
IBUKOTA JAKARTA

SUTIYOSO

174
Lampiran V : Peraturan Gubernur Provinsi Daerah Khusus Ibukota Jakarta
Nomor 103 TAHUN 2007
Tanggal 26 Juli 2007

PETA PENGEMBANGAN KEBIJAKAN PENDUKUNG TAHUN 2004 SAMPAI DENGAN TAHUN 2020

GUBERNUR PROVINSI DAERAH K Husus
IBUKOTA JAKARTA

SUTIYOSO