Stakeholder Management of Jakarta's Light Rail Transit Using Stakeholder Analysis

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Abstract

Stakeholders involvement in infrastructure development c.q. Light Rail Transit (LRT) has a significant role since they affect the success of infrastructure management. This paper is primarily aimed to identify key stakeholders and responses that need to be applied to them. On the initial stage, a list of stakeholders was developed using research strategies such as case study and literature review. Sources were then chosen with certain criteria. They were assigned to score each stakeholder on the list. A stakeholder analysis was conducted to obtain a list of key stakeholders that have a significant impact on Jakarta's LRT.

Keywords: stakeholder analysis; light rail transit; infrastructure management

Abstrak

[Judul: Pengaturan Stakeholder Light Rail Transit Jakarta Menggunakan Analisa Stakeholder]
Keterlibatan stakeholder dalam pembangunan infrastruktur seperti pada Light Rail Transit (LRT) memiliki peran penting karena mempengaruhi tingkat keberhasilan manajemen infrastruktur. Artikel ini bertujuan untuk mengidentifikasi stakeholder utama berikut tindakan-tindakan yang perlu dilakukan terhadap stakeholder tersebut. Pada tahap awal, daftar stakeholder dibuat dengan menggunakan metode riset seperti studi kasus dan tinjauan literatur. Langkah ini diikuti dengan memilih sumberdaya dengan kriteria tertentu untuk memberikan penilaian atas setiap stakeholder yang telah terdaftar. Analisis stakeholder kemudian dilaksanakan untuk mendapatkan daftar stakeholder utama yang memiliki pengaruh signifikan terhadap LRT di Jakarta.

Kata kunci: analisis stakeholder; light rail transit, manajemen infrastruktur

1. Introduction

Framework scheme in transportation involves several interested parties. These parties, also called stakeholders, are the people, groups, or organizations that could impact or be impacted by a decision, activity, or the outcome of the project (Project Management Institute, 2013). The relations and interactions that emerge between these stakeholders will result in the management success level. This research limits the success level in terms of efficiency in cost, information and decision making. Jakarta's Light Rail Transit (LRT) is chosen as object research with consideration as follows: (1) the most sophisticated rail-based mass transportation in Jakarta so far (2) it will be used as official means of transportation in Asian Games 2018. In addition, the availability of rail-based mass transportation has significant impact in saturated areas with crowded population, congestion problems and space limitation (Susantono, 2013; Gray & Hoel, 1992). This condition forced the regional government to proactively accelerate the construction-operational phase of LRT which will involve new stakeholders.

LRT's Jakarta has initially planned with 7 corridors as seen in Figure 1. However, due to limitation of time and budget, the plan was revised into just 2 corridors. Total distance is 51.2 km, covering (1) Kebayoran Lama-Kelapa Gading (21.6 km) and (2) Soekarno Hatta International Airport-Pantai Indah Kapuk-Pluit-Ancol-Kemayoran-Cempaka Putih (30.5 km). PT. Jakarta Propertindo, a regional state-owned company, is assigned to act on behalf of Provincial of DKI Jakarta. This leaves the company burden to solve the financial issues and the obligation to finish the construction on time. LRT is equipped with sophisticated technology but

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the feature that makes LRT differs is the use of third rail system as electric source instead of overhead catenary system (OCS). The system has never been used before in Indonesia but in comparison one to another, it has more advantage than OCS (Table 1).
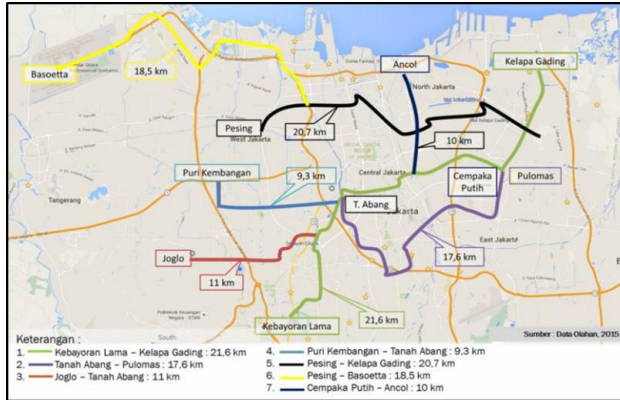

Figure 1. Jakarta's LRT Initial Route

Table 1. OCS and Third Rail System Comparison

Power System	Overhead Catenary System (OCS)	Third Rail System
Reliability	√ (less reliable)	√√√ (more reliable)
Maintenance	√ (more frequent)	√√√ (less frequent)
Efficiency	√√ (high electromagnetic interference)	√√√ (no interference, better distribution)
Safety	√√ (falling off OCS column)	√√ (anticipated with *Railing Platform* and *Emergency Tripping Switch*)
Cost	√ (high cost)	√√ (low cost)
Esthetic	√	√√√

2. Research Methods

Research starts with case study and literatures review, compiling theories, and seeking lesson learned from schemes that already established in other countries. Most of the reviewed case are success case but there is also the failed one. The purpose in using various cases is to determine the success or failure factors from each case. Research stages are described in Figure 2.

Data gathered in Stage-1 is used to compose the list of stakeholders (1st Secondary Data/ Ds-1). Next stage is to validate Ds-1 using sources, cq. 5 persons that met minimum criteria of 10 years work experience in the field of infrastructure. Ds-1 is a table consists of stakeholders and scores, range from 1 to 10. The sources then validate the data by giving tickmark for each stakeholder based on the score. The result is validated list of stakeholders with scores (1st Primary Data/ Dp-1). Stakeholder analysis (SA) is used in Stage-2 to develop

preliminary understanding of stakeholders interactions, roles, and responses (Schmeer, 1999). SA is "an approach for understanding a system and changes in it by identifying key actors or stakeholders and assessing their respective interest in that system" (Overseas Development Administration, 1995).
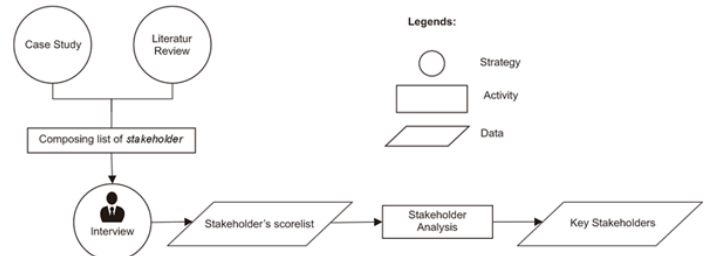

Figure 2. Research Sequential Stages

There are two types of matrix used in this research, (1) Matrix Influence-Interest to place the stakeholders by their roles and (2) Matrix Power-Interest to know the response from each stakeholder. The first matrix classified stakeholders according to their relative importance and interest in the project (Grimbl & Wellard, 1997) which can then be used to determine how stakeholders might be engaged (Reed *et al.*, 2009). The second matrix groupes the stakeholders based on their level of authority (power) and their level of concern (interest) regarding the project outcomes (Project Management Institute, 2013). Key stakeholders are stakeholders with key player roles and manage closely responses acquired from matrices in Figure 3.
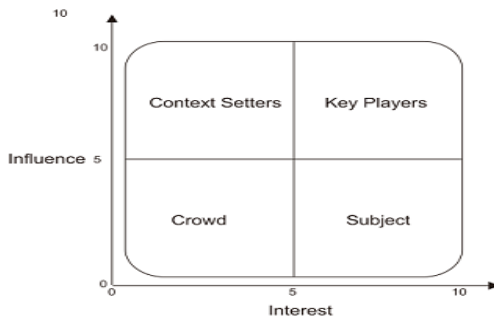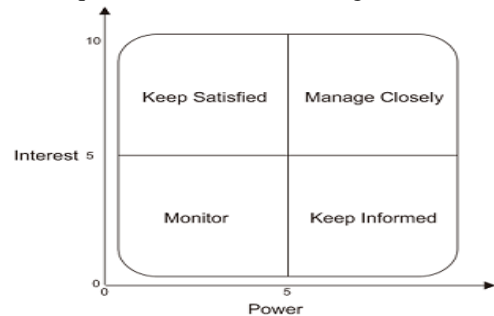

Figure 3. Stakeholder Analysis Matrices: Power-Interest (upper) and Influence-Interest (lower).

3. Results and discussion

3.1 Matrix Power-Interest

Table 2 shows responses from each stakeholder. Code N represents a number of sources, code '-' means that there are two scores with the same quantity that caused mode cannot be concluded, N/A stands for "not available" which means the score placed right in the middle of matrix (score with value 5).

Table 2. Matrix Power-Interest

No	Stakeholder	N1	N2	N3	N4	N5	Mode
1	Provincial of DKI Jakarta	MC	MC	MC	MC	MC	MC
2	Municipality of Bogor	KS	M	M	N/A	MC	M
3	Municipality of Depok	KS	M	M	N/A	MC	M
4	Municipality of Tangerang	KS	M	M	N/A	MC	M
5	Municipality of Bekasi	KS	M	M	N/A	MC	M
6	BUMD Jakarta Propertindo	MC	N/A	MC	N/A	MC	MC
7	Central Government cq. Ministry of Transportation	KS	MC	MC	MC	MC	MC
8	Lenders	MC	M	MC	MC	MC	MC
9	Operators	KS	N/A	MC	MC	MC	MC
10	House of Representatives	KS	MC	MC	MC	MC	MC
11	Investors	KI	M	MC	MC	MC	MC
12	Sponsors	KI	M	MC	MC	MC	MC
13	PT. Penjaminan Infrastruktur Indonesia (Persero)	M	M	MC	N/A	MC	MC
14	Supervision Consultant	MC	N/A	MC	N/A	MC	MC
15	PT. Adhi Karya	KS	M	KS	N/A	MC	KS
16	PT. Kereta Api Cepat Jakarta-Bandung	M	M	M	N/A	MC	M
17	PT. KRL Commuter Jabodetabek	N/A	M	M	N/A	MC	M
18	PT. MRT Jakarta	N/A	M	M	N/A	MC	M
19	PT. Transportasi Jakarta	N/A	M	M	N/A	MC	M
20	Transportation City Council of Jakarta	MC	N/A	N/A	N/A	MC	N/A
21	Metro Jaya Police Department	N/A	N/A	M	MC	MC	-

The mode varies in five values with manage closely is the most likely response (10 out of 21). Regional governments adjacent with Jakarta have monitor response since their roles only as a supplier feeder for LRT's

Jakarta. PT. Adhi Karya has high interest but low power since they have a dominant part in the construction phase of LRT's Jabodebek but not in LRT's Jakarta. The plotted response on matrix can be seen in Figure 4.
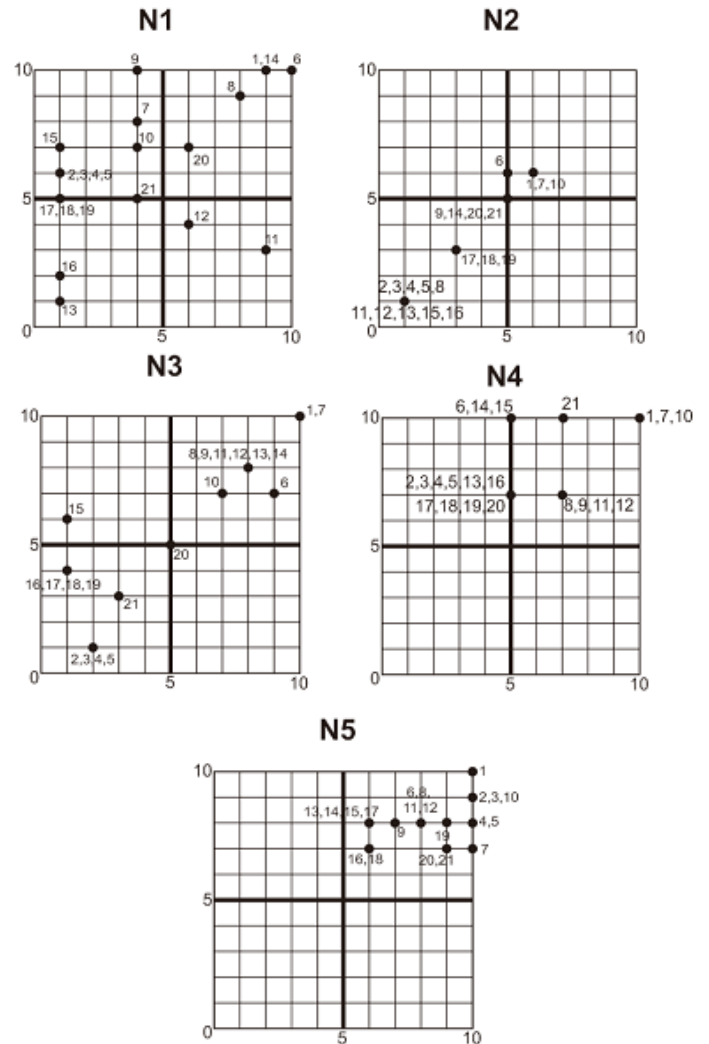

Figure 4. Power-Interest Matrix (Plotted)

3.2 Matrix Interest-Influence

Table 3 shows roles for each stakeholder. Code N represents a number of source, code '-' means that there are two scores with the same quantity that caused mode cannot be concluded, N/A stands for "not available" which means the score placed right in the middle of matrix (score with value 5).

There are 11 (out of 21) stakeholders classified as key players (KP) which means this group should be actively engaged as their involvement is essential. There is also crowd (C) group which have limited influence and little interest in the process and therefore there is little need to extensively engage with them. The plotted roles on the matrix can be seen in Figure 5.

Table 3. Matrix Interest-Influence

Stakeholder	N1	N2	N3	N4	N5	Mode
Provincial of DKI Jakarta	KP	KP	KP	KP	KP	KP
Municipality of Bogor	S	C	C	KP	KP	C
Municipality of Depok	S	C	C	KP	KP	C
Municipality of Tangerang	S	C	C	KP	KP	C
Municipality of Bekasi	S	C	C	KP	KP	C
BUMD Jakarta Propertindo	KP	N/A	KP	KP	KP	KP
Central Government cq. Ministry of Transportation	S	KP	KP	KP	KP	KP
Lenders	KP	C	KP	KP	KP	KP
Operators	S	N/A	KP	KP	KP	KP
House of Representatives	S	KP	KP	KP	KP	KP
Investors	CS	C	KP	KP	KP	KP
Sponsors	CS	C	KP	KP	KP	KP
PT. Penjaminan Infrastruktur Indonesia (Persero)	C	C	KP	KP	KP	KP
Supervision Consultant	KP	N/A	KP	KP	KP	KP
PT. Adhi Karya	S	C	S	KP	KP	-
PT. Kereta Api Cepat Jakarta-Bandung	C	C	C	KP	KP	C
PT. KRL Commuter Jabodetabek	N/A	C	C	KP	KP	-
PT. MRT Jakarta	N/A	C	C	KP	KP	-
PT. Transportasi Jakarta	N/A	C	C	KP	KP	-
Transportation City Council of Jakarta	KP	N/A	N/A	KP	KP	KP
Metro Jaya Police Department	N/A	N/A	C	KP	KP	-

Dots in Figure 4 and 5 are distributed in the same manner for each source. N1, N3 have spread distribution across the matrix while N2, N4 and N5 concentrate in a particular quadrant. This manner is a result of sources perception of power and influence which they considered as similar. By definition, power measures the resources that a stakeholder can mobilize to express their support or opposition (Archi *et al.,* 2010) while influence is the power that stakeholders have over the project-to control what decisions are made, facilitate its implementation or exert influence that affects the project negatively (Merama & Chatupote, 2013). Both are equally important in analysis and in achieving the goals.
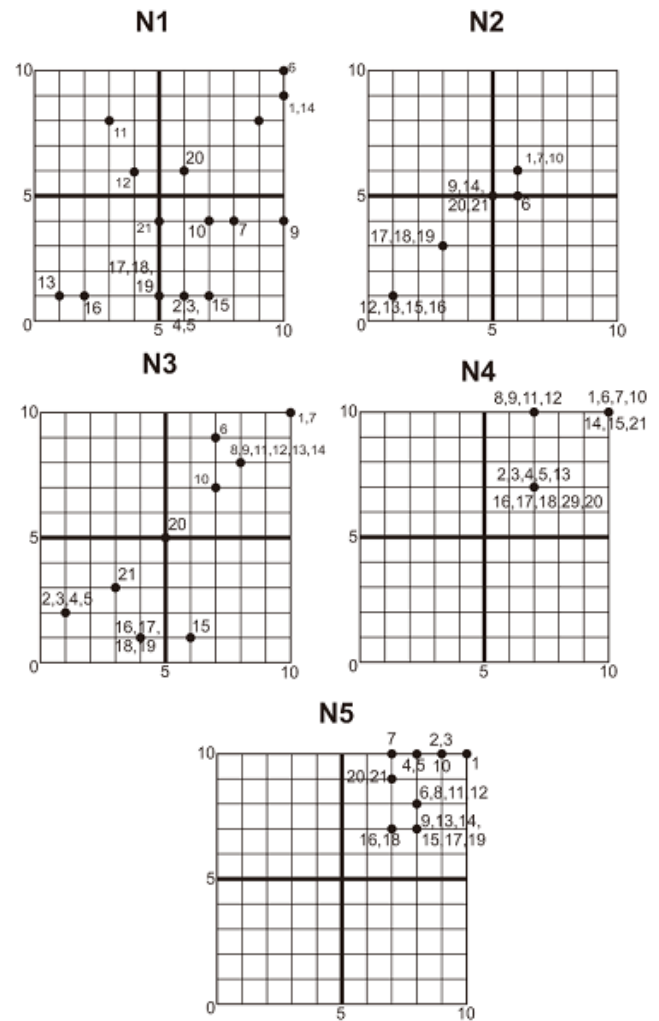

Figure 5. Interest-Influence Matrix (Plotted)

By confronting Table 2 and 3, we will have list of key stakeholders which are stakeholders with key player roles and manage closely responses as shown in Table 4.

Table 4. List of Key Stakeholders

	Key Stakeholder
a	Provincial of DKI Jakarta
b	BUMD Jakarta Propertindo
c	Central Government cq. Ministry of Transportation cq. Directorate General of Railways
d	Lenders
e	Operator
f	DKI Jakarta House of Representatives
g	Investors
h	Sponsors
i	PT. Penjaminan Infrastruktur Indonesia (Persero)
j	Supervision Consultant

These 'key stakeholders' hold significant impact on the project therefore crucial action must be taken to maintain their involvement during project cycle.

4. Conclusion

Jakarta's LRT existing condition might change in the coming years, new stakeholders involvement in the management will affect many things such as policy making, corporate action, and service delivered. In order to cover these changes, a stakeholder analysis is needed to be taken since the right treatment of key stakeholders will result in management efficiency. Power-interest and interest-influence matrix has been used in this research to find key stakeholders. The analysis is done by scoring each stakeholder based on power and influence interest by sources. The scores are then used in the matrix to find degree of involvement. Key stakeholders are stakeholders with managing closely response and key player role. They have significant impact on the process and need to manage extensively until the project ended.

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