CONSTELLATION ACTOR IN THE DEVELOPMENT OF REGIONAL FREIGHT TRANSPORTATION INFRASTRUCTURE TO SUPPORT EXPORT ACTIVITIES IN TANJUNG PERAK PORT OF SURABAYA

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Abstract

The provision of freight infrastructure linking the hinterland to the port requires agreement between actors. However, in reality there is a policy conflict in the development of a regional freight infrastructure, such as in the case of the Aloha Perak Toll Road construction in Surabaya. This study aims to discuss actor relationship in the freight transport infrastructure development strategy to support export activities in Tanjung Perak Port of Surabaya, using Dynamic Actor Network Analysis. It is found that there is an action conflict in achieving smooth flow of goods coming from the hinterland to the port, particularly between the city of Surabaya Planning Board and the East Java Province Planning Board. The conflict can be minimized by the existence of jujitsu negotiation and BATNA, because the Surabaya City Government, as the owner of the land, has greater power than the Provincial Government.

Keywords: regional freight infrastructure, Dynamic Actor Network Analysis, action conflict, conflict management technique

Abstrak

Penyediaan infrastruktur angkutan menghubungkan antara daerah yang dilayani ke suatu pelabuhan membutuhkan kesepakatan di antara para pelaku yang terkait. Namun pada kenyataannya terdapat konflik kebijakan dalam pengembangan infrastruktur angkutan regional, seperti yang terjadi pada kasus pembangunan Jalan Tol Aloha Perak di Surabaya. Penelitian ini bertujuan untuk membahas hubungan antara aktor-aktor dalam membuat suatu strategi pengembangan infrastruktur transportasi barang untuk mendukung kegiatan ekspor di Pelabuhan Tanjung Perak Surabaya menggunakan *Dynamic Actor Network Analysis.* Hasil kajian ini menunjukkan bahwa terdapat konflik tindakan dalam melancarkan arus barang yang berasal dari daerah yang dilayani ke pelabuhan, khususnya konflik antara Badan Perencanaan Pembangunan Kota Surabaya dengan Badan Perencanaan Pembangunan Daerah Provinsi Jawa Timur. Konflik ini dapat diminimumkan dengan adanya negosiasi jujitsu dan BATNA, karena pemerintah Surabaya sebagai pemilik lahan memiliki otoritas yang lebih besar.

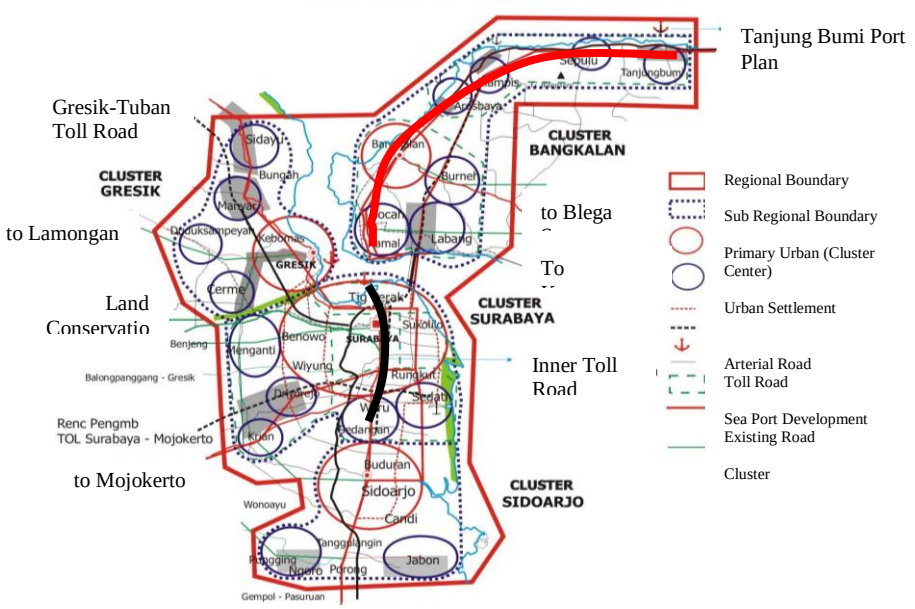
Kata-kata Kunci: infrastruktur angkutan regional, *Dynamic Actor Network Analysis,* konflik tindakan, teknik manajemen konflik

INTRODUCTION

Transportation infrastructure needed to support the smooth transportation of goods. However, agreement among the actors in their supply is also needed. This is considering a

plan that is generated from within the organization and almost all the proposals are implemented through the planning or controlled by the organization. Therefore, organization is very important in planning (Minnery, 1985). According to Fisher and Ury (1983), so a plan can be implemented, it would require agreement among the actors to minimize the adverse conflict. In addition, the research on intermodal transportation policy decisions that involve multi-stakeholder finds ambiguity plan to stimulate intermodal transport at various levels of policy making, namely the European level, national, and regional levels. There are different goals at every level of the basic intermodal transport policy makers. Integration of planning and concern for the stakeholders seem to be forgotten, so chaotic in its implementation (van Duin, van Twist, & Bots, 1998).

Surabaya City Government is actually trying to provide regional freight infrastructure. This is demonstrated by consistent government of Surabaya on the ring road development plan that has been planned since 1978 in Surabaya Master Plan 2000. The ring road is integrated with Suramadu Bridge, Port of Tanjung Bumi Plan, and Container Port of Tanjung Bulupandan, Bangkalan. Port of Tanjung Bulupandan and Tanjung Bumi will be built in anticipation of the density of the Port of Tanjung Perak and will be operated by 2020 (Ministry of Transportation, August 2010). The plan contained in the East Java provincial spatial plan 2009-2029 as shown in Figure 1 of the Spatial Structure of Surabaya Metropolitan Areas.



Source: East Java Province Spatial Master Plan 2009-2029

Figure 1 Spatial Structure in Surabaya Mertopolitan Area

On the other hand, the East Java Provincial Government plans to build a toll road is set out in the middle of the city of East Java Province RTRW years 2009-2029 revised results. Toll Road or Aloha-Wonokromo-Tanjung Perak inner Toll Road planned to connect the Tanjung Perak Port with the outside of the southern city of Surabaya. Inner toll

road is considered still relevant, because in fact the Port of Tanjung Perak is still in one system with the Tanjung Bumi Port (East Java Province), namely the International Port (National Spatial Master Plan 2008). Besides the development of multi-purpose terminal in the direction of the Teluk Lamong approximately 50 Ha in year 2013 by the Pelindo III, also will raise the capacity of the Tanjung Perak Port. Terminal development is intended to handle the increased flow of goods from the hinterland to the Tanjung Perak Port. Surabaya's Inner Toll Road investment cost around 12 billion/kilometer to 70 billion/ kilometer is supposed to be on the land acquisition stage in 2007. Land area requirement is waived for the construction of this infrastructure is 630,264 km^2 (Toll Road Regulatory Board, 2006). But there is conflict of interest between the municipality and the provincial government in the construction of the Surabaya Inner Toll Road.

City government rejected plans to build the toll road because the city already has a ring road development plan that is integrated with the new port will be developed. In the era of regional autonomy, land acquisition for development of national infrastructure such as toll roads charged on the central government over local government approval. Therefore, the acquisition of land for highway construction downtown can't be done. This is because there are action conflicts between the municipality and the provincial government based on the difference in the frame of mind of each actor. While the goal of their actions is same, namely the smooth flow of freight transports.

This study aims to identify the relationship between actors in the transport infrastructure development strategy of regional goods exports to the Tanjung Perak Port. Recommendation from this study is minimizing conflict with the techniques of conflict management with jujitsu negotiation and BATNA (Best Alternative to a Negotiated Agreement).

DANA is a concept model using approaches such as the perception of the actor and linkage in a form suitable for research, analysis and design (Bots, 2000). DANA understanding gained from the network in the assumption of a relationship between actors. Network also indicates the position and influence of one actor to another actor (Bots, 2000). In a network, each actor can decide how to influence decisions to use the existing resources and to behave in accordance with their respective decisions. An actor may be willing to give up an important means to reach a solution. This makes the dynamics condition.

Relations between actors are identified from analysis of relevance and centrality, conflict analysis, analysis of perceived similarity of causality, resource dependency analysis, and analysis strategies inferred. Here is an explanation of the shape analysis of the relationship, indicators, and definition (Table 1).

Conflict management techniques have compliance with the conditions in situations where such techniques can be applied. The following table (Table 2) is a conflict management technique based on multiple sources.

Table 1 Inter-Actor Relationship, Indicator, and Definition

Analysis	Indicator	Definition
Relevance	Frequency (x)	Number occurrences of factor x
Centrality	Links IN (x)	Addition of all *P* perception number of incoming links to factor x.
	Links OUT (x)	Addition of all *P* perception number of out coming links to factor x.
Goal Conflict	µ goal conflict	There is disagreement about the desired changes in the factors.
Action Conflict	µ action conflict	There is different assumption inter actor in system behavior.
Resource Dependency	Satisfaction and frustration	The extent to which actor A depends on the actions of the actor B to achieve their objectives.
Similarity of Perceived Causality Analysis	% shared factors	Percentage similarity of perception between two actor on factor.
Inferred Strategies Analysis	Utility	The extent to which a strategy give advantage to them according to actor in system.
	Satisfaction and Frustration	The extent to which a strategy give satisfaction and potential conflict to actor.

Inter-Actor Relationship

Overall there is no conflict of goals between actors, but there is an action conflict between the Surabaya Planning Board with the East Java Planning Board, Toll Road Regulatory Board, East Java Public Works Agency, and East Java Land Transport Organization. Table 3 describes the analysis of relationships between actors are defined by each indicator.

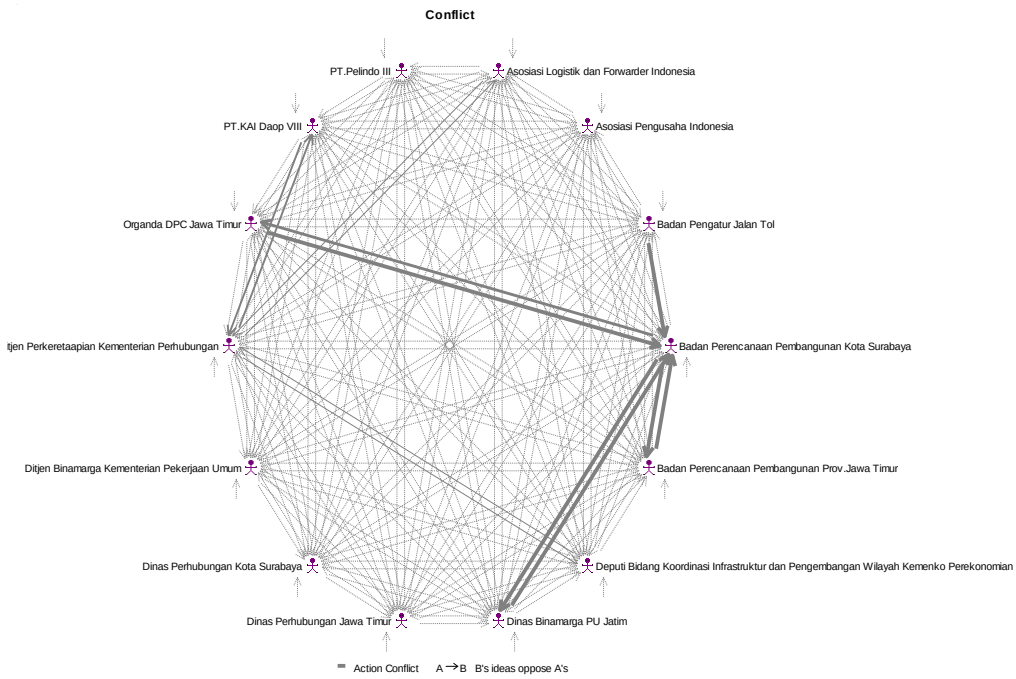


Figure 2 Action Conflict

Thus, the highest utility value obtained if the policy also pay attention to the user interest, then the Provincial Government Interest. That is, if using the strategy according to

user interest, indirectly, the priority infrastructure is aimed to the integration of freight intermodal network. One form of the integration of intermodal network is the dry port availability. Similarly, when considering the strategy according to the Provincial Government Interest is directed to perform synergy highways and rail road intermodal network integration.

Table 2 Conflict Management Techniques and Appropriate Conditions

Source	Conflict Management Techniques	Appropriate Conditions
Boulding (1962 dalam Minnery, 1985)	Reconciliation	System value changed, so that conflict condition is changed to be common choice.
	Compromise	System values are not identic, so that the parties involved a difference in optimum position.
	Award	Settlement reached because both of the parties agree to accept the outside party decision.
(Minnery, 1985)	Ignoring conflict	If the existence of conflict isn't realized.
	Agreement to continue	If the conflict have positive impact.
	Avoidance and Evasion	If the parties in the conflict choose to avoid each other and prevent conflict in the future.
	Conquest:	Zero Sum Conflicts
	Suppression	Latent Conflict
	Conciliation	Conflict structure built the rule of conflict inside.
	Mediation	The third parties are allowed to intervene
	Bargaining	The conflicted parties have the same strength, recognizing that there are obstacles that prevent reached an agreement, and accept that the new position should be sought.
	Persuasion	If each party trying to fight the others views.
	Coercion	When the power is not balanced, and the most powerful party seeks to impose a solution in its favor through threats.
	Advocacy	When the power is not balanced, but involve the third party that have power in adjust the parties which are in conflict and have a desire to balance the existing conditions by acting for or with the weaker.
	Arbitration	The parties agreed to involve third parties who have more knowledge or the important role.
	Exacerbation	There is no desire to solve conflicts, the conflict exactly deepened.
Fisher & Ury (1983)	BATNA (Best Alternative to a Negotiated Agreement)	When faced with the more power party.
	Jujitsu Negotiation	When the faced party decided to continue the bargaining, it should focus on what they might do to counter the bargaining position in a way that directs their attention on the merits. If those way are not success, then involve the third party through '*the one-text mediation procedure'*.

Table 3 Synthesis of Inter-Actor Relationship Analysis

No.	Analysis	Indicator	Result
1	Relevance and Centrality Analysis		
•	Relevance Analysis	Frequency	o Total cost and time factor Total cost and time factor are factors with the highest frequency of occurrence that is mentioned by different actors. It's mean, the total cost and time factor are factors which can be changed by the actors to achieve the goal. o Congestion reduction is a goal with the highest frequency of occurrence that is mentioned by different actors. It's mean, although the reduction of congestion is not the ultimate goal, but by reducing congestion larger goal is the smooth flow of regional goods that drive the development of the region can be achieved.
•	Centrality Analysis	Links IN(x) and links OUT(x)	o Total cost factor is the factor that received the most links in. That is, the total cost factor is a factor that becomes a major problem in the freight transport between the hinterland and the port. o The time factor is the factor that sent the most links out. That is, the time factor is a factor which is the main cause of the problem. This is consistent with reality, where the presence of traffic congestion due to the lack of provision of freight infrastructure will cause the length of time and the rising cost of freight transport. o The technology factor and system reliability factor are the factors that sent links (links out) more than accepted links (links in). That is, the technology and system reliability are the constraints faced in the smooth freight transport between the hinterland and the port.
2	Conflict Analysis		
•	Goal conflict	µGoal Conflict	µ Goal Conflict=0 (There is no Goal Conflict)
•	Action conflict	µAction Conflict 0 to 2	µ Action Conflict=0,985 (There are Action Conflict) (see Figure 2) • Surabaya Planning Board- East Java Province Planning Board Surabaya Planning Board has a policy of ring road development, and does not require the development of the toll road network. Surabaya Planning Board since 1978 has had Surabaya Masterplan 2000, which plans to construct a ring road. The ring road is integrated with the Suramadu Bridge Plan and Socah Port in Bangkalan. On the other hand, the Regional Planning Board of East Java Province included the development of the highway network in the East Java provincial spatial plan. • Surabaya Planning Board-Toll Road Regulatory Board. Action conflict is associated with highway construction plan of the city. Toll Road Regulatory Board (*BPJT)* is the party who involved in the procurement of highway investment. • Surabaya Planning Board-Highway, Public Works Agency, East Java. The action conflict is also associated with the planning of inner toll road. East Java Highway-Public Works Agency is a party who involved in proposed the development of the toll road network. • Surabaya Planning Board-East Java Land Transport Organization Land Transport Organization East Java wants the policies that are implemented as soon as possible to facilitate the freight transport from the hinterland to the port. Therefore, in the conflicts between Land Transport Organization and Surabaya Planning Board are identified as the parties in conflict.
3	Resource Dependency	Satisfaction and Frustration	City Government will cause the same amount of frustration in the Provincial Government, User, Operator, and the Central Government. This is because the City has more power in the form of land resources (see Figure 3).

Table 3 Synthesis of Inter actor Relationship Analysis (Continue)

No.	Analysis	Indicator	Result
4	Similarity of Perceived Causality Analysis	% shared factor	• The actor who has a similarity of perception or proximity to Surabaya Planning Board is Highway, East Java Public Works Agency (shared factor: 60%). While the actor has the most difference of perception with Surabaya Planning Board is PT.KAI DAOP VIII (shared factor: 7%). • The actors who have the similarity of perception or proximity with the East Java Planning Board are the Department of Transportation and East Java Land Transport Organization (shared factor: 50%). While the actor who has the most difference of perceptions with East Java Planning Board is the Association of Entrepreneur Indonesia (shared factor: 12%).
5	Inferred Strategies Analysis	Utility	• The highest utility strategy means that the changes in the factors due to the action will result in an optimum change towards the achievement. In this case the strategy is based on user interest.
		Satisfaction and Frustration	• Satisfaction user interest 100% imply that the change could not be better, while satisfaction 0% means that there is no chance for a positive utility. • Frustration 100% imply that the changes could not be worse, while the frustration 0% means that there is a 0% chance of a negative utility. • The number of tactic combinations that reflects how the inclusion of an actor by another actor. In this case, most actors are taken into account the central government. This could indicate a dependency of financially in case of procurement of goods transportation infrastructure to the central government. Furthermore the city also became an actor to be reckoned. It is indicated for the control of land resources by the city. But if there is no grouping of actors, actors are taken into account by the other actors are East Java Province Planning Board.

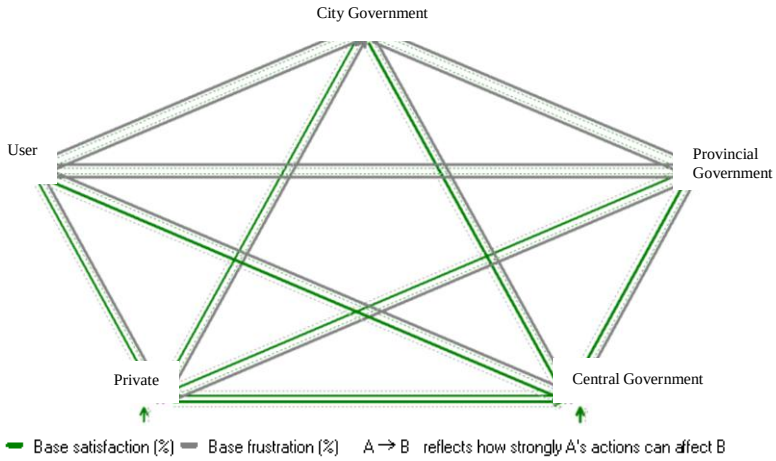


Figure 3 Satisfactions and Frustration

Conflict Management

Table 4 describes the existing condition and conflict management technique which suitable for the existing condition. A conflict management technique which appropriate for the study case is BATNA and Jujitsu Negotiation. There is an actor who has more power

(land resources) and that actor has a consistent action. However, that needs to be underlined in developing a strategy in the infrastructure development based on the DANA result does not indicate a priority of the development of toll roads or highways, but also development of railway. In addition, the railway has the potential to address the causes of major problems (time) as to avoid congestion road.

Table 4 Existing Condition and Appropriate Conflict Management Technique

Existing Condition	Conflict Management Technique
• Surabaya government has land resource that has become a key resource in the provision of infrastructure (*resource dependency analysis result*). • Surabaya provost doesn't have political will to develop toll road. • Infrastructure provision that connecting the h*interland* with Tanjung Perak Port is urgently needed.	Jujitsu Negotiation and BATNA Beginning with a focus on value need to be achieved. If not successful, then do bargaining and direct value to be achieved and realized the position of other actors. Surabaya Planning Board and East Java Province Planning Board are met, must be alternatives which offered by East Java Province Planning Board (already met). Explanation of the importance and the benefits of Aloha-Perak toll road development for the hinterland economic development need to be done. If unsuccessful, the next step is to involve a third party as mediator. This is done when both sides are difficult to unite opinion. If they've decided to involve a third party, then one must follow the procedure text. Third party to accommodate the aspirations of the parties to the conflict and provide alternative solutions that will be decided to be accepted or rejected by the parties to the conflict. If rejected, then the process is repeated until there is agreement.

Source: DANA Result collaborated with Table 2

In correlation with the utilization of BATNA, both of the parties who are in conflict must realize the position of other actors on their position. In general, DANA result indicated that East Java Province Planning Board is an influential actor. Thus, if East Java Province Planning Board wants to get the support of actors, then they have to:

1. East Java Province Planning Board can coordinate to develop rail road integrated with industrial area and port, synchronized access to port and also do the lobby to the actors in order to give a pressure to Surabaya Planning Board (correlation with APINDO, East Java Land Transport Organization, PT. Pelindo III, PT. KAI Daop VIII, Toll Road Regulatory Board, Directorate General of Highways-Ministry of Public Works, Directorate General of Railways-Ministry of Transportation, East Java Highways-Public Works Agency, East Java Transport Agency).
2. East Java Province Planning Board can utilize the media socialization of policies relating to the logistics infrastructure of East Java, thus forming forwarder thoughts on the importance of inner toll road construction (correlation with Indonesian Logistics and Forwarders Association).

3. East Java Province Planning Board coordinates to develop an integrated rail, port, and industrial area, as well as the synergy between the development of rail and highway (correlation with Coordinating Ministry of Economy).

CONCLUSION

Based on this study, it was concluded that there is a conflict among actions with the Surabaya Planning Board, East Java Land Transport Organization, Toll Road Regulatory Board, and Highway, East Java Public Works Agency. East Java Land Transport Organization has the perception that is different from other actors of different actions with Surabaya Planning Board. East Java Land Transport Organization essentially wants smooth flow of goods from the hinterland to the port. Thus East Java Land Transport Organization supports all forms of freight transport infrastructure provision. However, if due to conflict of interest in the development of freight transport infrastructure will disrupt the smooth flow of goods, East Java Land Transport Organization becomes the opposition of Surabaya Planning Board. Surabaya Planning Board in this case is a party who has the land resources. Thus, an appropriate conflict management technique is the BATNA. In this study also note that there is an obscurity on which ministry that responsible with the logistic/forwarder/shipping problems. It make logistic/forwarder/shipping company's aspirations are not accommodated in the policies.

Based on the findings of these studies, it is recommended for each actor to realize their position so as to perform their bargaining position and provide an optimal solution (with the smallest conflict). Thus, it is recommended for further study of the development strategy of the development of freight transport infrastructure that can be done by each actor in the constellation of relationships between actors.

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