

# **The Role of Stakeholder Commitment and Supply Chain Collaboration in Improving Dry Port Firm Performance in Indonesia**

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## **Abstract**

The role of dry port is very important and strategic in Indonesia, specifically in reducing dwelling time and generally reducing national logistics costs. This study aims to determine the role of stakeholder commitment and supply chain collaboration in improving the performance of dry port companies in Indonesia. This research is a causal, cross-sectional survey or quantitative study. G-form questionnaire was used to collect data in this research and processed by structural equation modeling (PLS software). In this research was also used the purposive sampling technique with sample size of 69 companies (respondents). Dry port firm's stakeholders constituted the unit of analysis and their managers, senior managers, and directors as the unit of observation. The results indicated that supply chain collaboration had important role in mediating the effect of stakeholder commitments on performance of dry port companies. In line with the results, in the study was also complemented by discussion, implication, and future research suggestions.

## **Keywords**

Stakeholder Commitment, Supply Chain Collaboration, Firm Performance, Dry Port, National Logistics Performance.

## **1. Introduction**

Numerous early studies in strategic management concludes that stakeholder orientation is the key to firms' high performance (Dill 1975; Mitroff and Emshoff 1979). Stakeholder orientation attract researchers attention from every aspects of management, such as strategic (Clarkson 1995; Freeman 1984; Frooman 1999), organization (Rowley 1997; Turban and Greening 1997; Ferro-Soto et al. 2018), supply chain (Zhu and Sarkis 2006; Meixell and Luoma 2015; Rebs et al. 2018), finance (Berman et al. 1999; Hillman and Keim 2001; Harrison et al. 2010) and marketing (Greenley et al. 2005; Ferrell et al. 2010; Maignan et al. 2011). Focusing on stakeholder orientation will increase the firm's reputation and attractiveness (Turban and Greening 1997), the number of investor to the firm (Graves and Waddock 1994), the firm's wealth by developing intangible valuable asset (Hillman and Keim 2001; Godfrey 2005) and the firm's ability to allocate its resources to satisfy stakeholders (Harrison et al. 2010). In order this stakeholder orientation to be effective, stakeholders need to have trust and commitment in supply chain triangle of service which includes

service, cost and cash (Desmet 2018). This stakeholders' commitment will then increase firm's performance as well (Zhu and Sarkis 2006; Delmas 2001; Seuring and Muller 2008). As it is essential that stakeholders need to have commitment in supply chain triangle of service, it is more relevant to discuss the firm's performance in the field of supply chain, such as dry port firm's performance. Thus, this research will use dry port firm's performance as an indirect measure of firm's performance.

Among all previous research on stakeholders' commitment and firm's performance, it is still unclear what the underlying mechanism is. It is important to know which factor that affect firm's performance directly and indirectly, so firms could improve accordingly. Thus, this research propose that supply chain collaboration as mediating factor between stakeholders' commitment and firm's performance. There are many recent research that emphasize the importance of supply chain collaboration (Doganay and Ergun 2017; Panahifar et al. 2018; Um and Kim 2019). The remaining questions that become the focus of this research is how important the role of supply chain collaboration is; could stakeholders' commitment affect dry port firm's performance directly, or should it go through supply chain collaboration; and between direct or indirect effect, which one is stronger.

## 1.1 Objectives

This research tries to answer the following question, whether stakeholders' commitment on supply chain triangle (service, cost, cash) can affects dry port firm's performance, either directly or indirectly through supply chain collaboration; and which effect is stronger.

## 2. Literature Review

Stakeholders could be categorized into internal and external. While internal stakeholders include employees, shareholders and board members, external stakeholders include users, suppliers, investors, partners, communities and government (Delmas 2001) are employees, users, suppliers and shareholders, whereas the secondary stakeholders are government, non-government organizations, community, media, competitors, trade associations and investors (Meixell and Luoma 2015) Stakeholders-driven strategy is the key to success for many companies. In addition, stakeholder-oriented organizational behaviors are proven to influence commitment (Ferro-Soto et al. 2018). Thus, it is important to focus on stakeholders and their commitment. While there are varieties definition of commitment, this research used the term of commitment where there is a belief that the relationship with another is important and thus exert maximum efforts to maintain it (Morgan and Hunt 1994). This commitment is proven to have positive effect on collaboration in supply chain (Wu et al. 2014; Mlaker-Kac et al. 2015). Although seems similar with those two the past research, this research focuses on different type of commitment, which is stakeholders' commitment on triangle supply chain service (service, cost and cash). Service is the first factor in triangle supply chain service. This is where firms decide on the measurement of their operation system according to the preset target; their improved service; and their order flexibility (Desmet 2018). Stakeholders in the supply chain need to have commitment to deliver their service effectively. Secondly, stakeholders in supply chain should have commitments to spend the cost efficiently. The costs include logistics, warehousing, manufacturing, and purchasing (Desmet 2018). Lastly, cash or working capital that is needed to keep operations running (Desmet 2018). Stakeholders need to have commitment on cash as well to be able to work effectively. As many companies are struggling to balance this triangle, this research will look at the effect separately.

H1: Stakeholders' service commitment significantly affects supply chain collaboration

H2: Stakeholders' cost commitment significantly affects supply chain collaboration.

H3: Stakeholders' cash commitment significantly affects supply chain collaboration

Stakeholders are also known to have great influence on the firm's performance, particularly its supply chain. Varied types of stakeholders could influence firms to adopt sustainable thinking in supply chain (Zhu et al. 2005). External stakeholders could influence firm's competitive advantage (Delmas 2001) and reputations by forcing the firm to monitor and control the sustainable supply chain performance (Seuring and Muller 2008). Stakeholders' analyses could also improve the organization performance (Agwu 2019). Thus, to increase the firm's performance, it is important to focus on stakeholders. When stakeholders have a high commitment on service, cost and cash, it will make

the firm's performance increased even more. Thus, this research propose that stakeholders' service, cost and cash commitment significantly affects firms' dry port performance. Formally,

H4: Stakeholders' service commitment significantly affects dry port firm performance.

H5: Stakeholders' cost commitment significantly affects dry port firm performance.

H6: Stakeholders' cash commitment significantly affects dry port firm performance.

As there is a multiple stakeholder with different goals, conflict among them is common (Alves et al. 2019). Therefore, in order to have a good performance of dry port, the company have to ensure that all the elements in the supply chain are collaborating nicely. Supply chain collaboration is where there is information sharing, trust, transparencies, joint decision making, incentive alignment, risk sharing among stakeholders (Banomyong 2018), collaborative communication, mutually created knowledge, and joint relationship efforts (Scholten and Schilder 2015). There are a lot of research that heightens the importance of supply chain collaboration. Supply chain collaboration is proven to increase the firms' supply chain performance (Doganay and Ergun 2017; Panahifar et al. 2018) and transaction cost advantage (Um and Kim 2019). It could also help to identify potential problems by collaborative communication and information sharing (Botes et al. 2017).

H7: Supply chain collaboration significantly affects dry port firm performance

### 3. Methods

This research was using quantitative analysis (questionnaires) with cross-sectional survey method (Indrawan and Yaniawati 2016; Sekaran and Bougie 2016). Data were collected using questionnaires and then processed by SEM-PLS. The sampling technique used purposive sampling with a sample size of 69 companies (respondents). The unit of analysis for this research is the organization, namely the dry port company's stakeholders (shipping lines, port operators, freight forwarders, logistics service providers, trucking firms, and shippers), while the unit of observation is the leaders of these companies (managers, senior managers, and directors).

Stakeholders' service commitment (as independent or exogenous variable) was measured using five indicators, which are quality, quantity, type, scope, and technology. Stakeholders' cost commitment (as independent or exogenous variable) was measured using four indicators, which are affordability, price-quality suitability, competitiveness, and price-benefit suitability. Stakeholders' cash commitment (as independent or exogenous variable) was measured using three indicators, which are payment terms, collection terms and payment problem. Supply chain collaboration (as mediating variable) was measured through five indicators, information sharing, trust, decision synchronization, incentive alignment, and resource sharing. Lastly, dry port firm's performance (as endogenous variable) was measured using four indicators, which are financial, operational, customers, and employees' competence.

### 4. Data Collection

In this study, data collection was carried out using questionnaires. The sample size used consist of 69 companies which are stakeholders of dry port companies, namely shipping lines, port operators, logistics service providers, freight forwarders, exporters / importers (shippers), and trucking companies. The respondents were located at West Java, DKI Jakarta, and Banten (Indonesia). The data were collected by one-shot or cross-sectional method in the period of November-December 2020 pass through the purposive sampling technique.

### 5. Results and Discussion

In the first step of data processing by using SEM-PLS indicated that some indicators had poor validity (loading factors were lower than 0.7) as shown in figure 1. In the second step, therefore, the invalid data were not involved anymore in the validity and reliability tests. The results of the second step data processing showed that all indicators have good validity and reliability as shown in figures 2 and 3. In line with that, the hypotheses test can be processed for further analysis. In general, the results showed that stakeholder commitment had a positive and significant effect on dry port company's performance pass through supply chain collaboration. Stakeholders' commitment on service, cost, and cash were able to explain the supply chain collaboration about 40%, while the remaining 60% was explained by other factors that were not researched in this study. In addition, overall stakeholder commitment (service, cost, and cash) and supply chain collaboration were able to explain the dry port company's performance amount of 44% and

the remaining 56% was explained by other factors. These results showed that the stakeholders' commitment must be coordinated first in order that able to form a suitable and conducive supply chain collaboration to have more significant impact in improving the performance of dry port companies in Indonesia. In addition, the research's results indicated that supply chain collaboration fully mediated the effect of stakeholder's commitment on the performance of dry port companies.

In line with the hypotheses test results (H1, H2, and H3), the stakeholder's commitment of service and cash had a positive and significant effect on supply chain collaboration. These results indicated that stakeholder's commitment in both aspects had good condition. Conversely stakeholder's commitment of cost had insignificant effect on the supply chain collaboration. It was showed that the stakeholders had poor commitment in this matter, therefore, the dry port companies cannot offer competitive service price for their potential customers. In line with that, there were still many exporters and importers, especially those located in the Jabodetabek area (Jakarta, Bogor, Depok, Tangerang, and Bekasi) which still using direct delivery from and to seaport (Tanjung Priok) for their export-import activities. Meanwhile, for the other results of hypotheses tests (H4, H5, and H6), the stakeholder's commitment of service, cost and cash directly had insignificant effect on the dry port company's performance. This condition showed that all stakeholder's commitments (service, cost, and cash) must be collaborated first (supply chain collaboration) in order that able to improve dry port company's performance. In addition, the results of the last hypothesis test (H7) indicated that the supply chain collaboration had a positive and significant effect on the dry port company's performance. This showed that the supply chain collaboration had very important role to improve the performance of dry port companies. The role was included in improving dry port company's ability to provide and develop their more integrated, cheaper, and more flexible services for their customers.

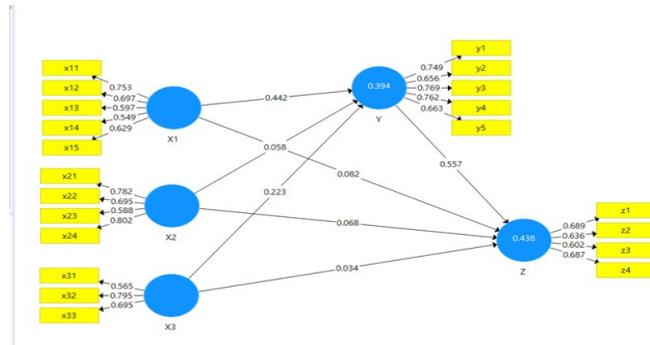
The research's implications, theoretically, the results of this study were in line with the stakeholder theory developed by Dill (1975), Mitroff and Emshoff (1979), Hill and Jones (1992), Mitchell et al. (1997), Rowley (1997), Eesley and Lenox (2006), and Darnal et al., (2010). Whereas the research's implications, practically, the dry port companies and their stakeholders should develop a solid and conducive supply chain collaboration to coordinate all stakeholder's commitments so that they were able to develop various capabilities that can strengthen the dry port company in improving their sustainable performance. The limitations of this study encompass number of variables and sample size. Other variables that can be further researched to strengthen or complement this model such as government regulations, geographic, and distribution factors.

## 5.1 Numerical Results

**Table 1. Path Coefficients**

Descriptions	Original Sample	Sample Mean	Standard Deviation	t-statistic	p-values
X1→ Y	0.301	0.317	0.133	2.258	0.024
X1→ Z	0.034	0.028	0.117	0.286	0.775
X2→ Y	0.164	0.178	0.099	1.656	0.098
X2→ Z	0.109	0.119	0.142	0.762	0.446
X3→ Y	0.295	0.283	0.126	2.343	0.020
X3→ Z	-0.214	-0.214	0.139	1.538	0.125
Y→ Z	0.618	0.617	0.094	6.594	0.000

### 5.2 Graphical Results

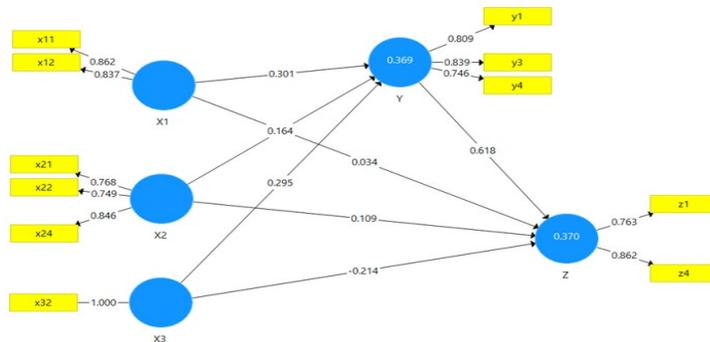


**Figure 1: PLS-Model 1 (Standardize)**

Remarks:

- X1: Stakeholder Commitment-Service
- X2: Stakeholder Commitment-Cost
- X3: Stakeholder Commitment-Cash
- Y : Supply Chain Collaboration
- Z : Dry Port Firm’s Performance

### 5.3 Proposed Improvements



**Figure 2: PLS-Model 2 (Standardize)**

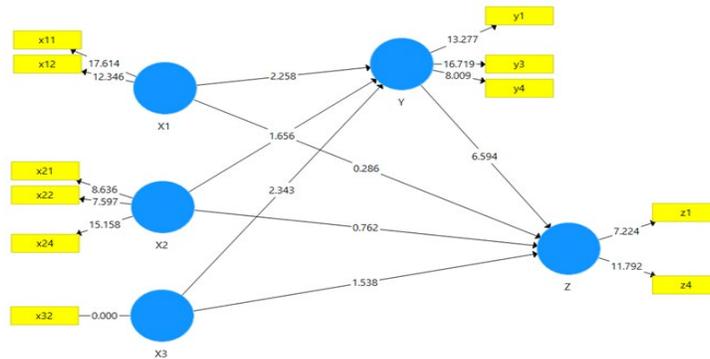


Figure 3: PLS-Model 2 (t-statistic)

### 5.4 Validation

Table 2. The First Outers Loadings (Validation)

Variables	X1	X2	X3	Y	Z
Indicators					
X1-1	0.753				
X1-2	0.697				
X1-3	0.597				
X1-4	0.549				
X1-5	0.629				
X2-1		0.782			
X2-2		0.695			
X2-3		0.588			
X2-4		0.802			
X3-1			0.565		
X3-2			0.795		
X3-3			0.695		
Y1				0.749	
Y2				0.656	
Y3				0.769	
Y4				0.762	
Y5				0.663	
Z1					0.689
Z2					0.636
Z3					0.602
Z4					0.687

**Table 3. The Second Outers Loadings (Validation)**

Variables	X1	X2	X3	Y	Z
Indicators					
X1-1	0.862				
X1-2	0.837				
X2-1		0.768			
X2-2		0.749			
X2-4		0.846			
X3-2			1.000		
y1				0.809	
y3				0.839	
y4				0.746	
Z1					0.763
Z4					0.862

Remarks:

- X1: Stakeholder Commitment-Service
- X2: Stakeholder Commitment-Cost
- X3: Stakeholder Commitment-Cash
- Y : Supply Chain Collaboration
- Z : Dry Port Firm's Performance

## 6. Conclusion

Stakeholder's commitment of service and cash had a positive and significant effect on supply chain collaboration, but in the cost commitment the effect was insignificant. Meanwhile, the partial effect of stakeholder's commitment of service, cost and cash on dry port company's performance were insignificant. In addition, the effect of supply chain collaboration on dry port company's performance was positive and significant. The supply chain collaboration had important role in fully mediated the effect of stakeholder's commitment on dry port firm's performance.

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