

The Influence of Supply Chain Risk Criteria on Firm Performance Through Supply Chain Collaboration

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Abstract – Previous research and practitioners are recognizing the common understanding business doing collaboration; they lack on certain capabilities to be successful in a certain area, cover the weakness and strengthen their competitive advantage, and also reduce transaction costs. This research will enhance the understanding of the effective supply chain collaboration resource on firm performance by the information from the logistic service provider (LSP) company using resource complimentary, supply chain risk, and relational stability and its impact on enhance the collaborative advantage. Structural Equation Model (SEM) was utilized to examine the data analysis 157 with export and import service providers' logistic companies in Indonesia. The result indicates that partner selection has an important effect on the formation of supply chain collaboration, while the supply chain risk partner did not affect the firm performance and was not a selection criterion among logistic service providers. Relational stability has the highest influence to supply chain collaboration. Additionally, supply chain collaboration has a dominant influence on the collaborative advantage when compared to non-financial company performance.

Keywords: Partner Selection, Supply Chain Risk, Supply Chain Collaboration, Collaboration Advantage

Introduction

Collaboration throughout the supply chain is intended to increase competitive advantage by providing high-efficiencies businesses to exchange information, develop alliances for improved performance, reduce overall costs and inventory (L. Chan et al., 2017; Soyba, Omp, Turkey, Fujita, & Asakura, 2006). The organization's capacity to anticipate and regulate the behavior of its supply chain partners is hampered by expanding globalization, rapid technical advancement, and developing competitive advantages (Shakeel, Jajja, Ali, & Farooq, 2018; Tang & Musa, 2011). Strategically, businesses have realized the value of supply chain collaboration (SCC) since it involves a set of operations that will pursuit of greater efficiency in sourcing, planning, production, and distribution (Socary & Hyland, 2015). As firm rapidly shifting competitive landscape, they brainstorm the determinants of their performance to be more cost effective and responsive dynamic environments (Vanpoucke, Vereecke, & Wetzela, 2014). In a similar vein in the year 2011, the earthquake, tsunami, and nuclear tragedy in Japan caused Toyota's output to plummet by 40,000 vehicles, costing the company \$72 million each day (Pettit et al., 2013). Consequently, fierce competition has also required for firms to consider about various competencies and value generation methods for their customers, require more collaborative efforts.

Due to Indonesia's ongoing economic expansion by persistent domestic demand, the logistics sector in Indonesia is experiencing significant double-digit growth. The logistic sector in Indonesia should continue to thrive as a result of strong private consumption growth, higher trade growth, lower external finance costs, and infrastructure development (Global Business Guide Indonesia, 2016). However, stated by the Coordinating Ministry for Economic Affairs, logistic cost in Indonesia has reached 23.5 percent of the gross domestic product (GDP) in 2019, and it is still considered as the highest compared with the global average of 13 percent of the GDP (Rahsyu, 2021), this terms caused by country's extensive geography and its long logistical

flow (Ambarawati & Yuma, 2022). Furthermore, the World Bank Logistic Performance Index (LPI) of Indonesia ranks 46th up from 63rd in the preceding edition that released in the year of 2018 (Indonesia Investments, 2018). The last indicator is the service gap is the incompatibility between expectations and perceptions of users of logistics services in Indonesia is still high. Three indications are strongly influenced by the quality of logistics service providers that can improve cost efficiency, customer service, business performance, market share, and the development of business networks through supply chain collaboration (Sridharan & Sunstupang, 2013). Maintaining competitive advantage in complex and changing marketplaces is highly challenging unless firms can adjust resources to market circumstances.

Referring to the definitions of Iyer et al. (2019) supply chain collaboration is a process of risk sharing and essential aspect for developing supply chain capabilities for businesses may effectively react to market conditions. Therefore, this research focuses on supply chain collaboration where risk sharing occurs, the partner supply chain risks become the critical success factors of collaboration. While supply chain risk criteria are a measure and frequency of disturbance in the flow and distribution of goods and information between the collaboration partners both from the demand side, supply side, regulation, forecasting capability, and labor issues and firm size (Shakeel et al., 2018).

This study will focus on the stages of formation, where the key to successful collaboration is determined by three selected partner characters resource complementary, relational stability, and supply chain risk. Resource complementary is characterized by the ability of partners to complement each other's resource requirements and capabilities (Das & Ha, 2006; Shah & Swaminathan, 2008). Relational stability is organizational fit such as partner strategy, work patterns, and work culture through trust, past collaboration experience, reputation, and communication of partners (Bierly III & Gallagher, 2007; Das & Ha, 2006). And supply chain risk is the level of possibility of disturbance and constraints owned by partners and affects the flow of goods and information resulting in the emergence of supply chain operational risk (Wagner & Bode, 2008). Furthermore, Partner selection evaluation indicators simply take into account the abilities of the potential partners. The viewpoint from previous research of partner selection as a critical success factor of collaboration (Kale, Singh, & Raman, 2009; Lv & Qi, 2019; Wuyts & Geyskens, 2005), the cross-functional business process by the selection of appropriate partnership (Charvet, 2008; Leuschner, Rogers, & Charvet, 2013; Mackelprang, Robinson, Bernardes, & Webb, 2014; Rai, Patnayakmi, & Seth, 2006; Sanders, Locke, Moore, & Antry, 2007), and the risk criteria of the prospective partner (Ahmad, de Brito, Renna, & Tavasszy, 2017; J. Chen, Sohal, & Prajogo, 2013; Shakeel et al., 2018). Piddock (2006) also indicated that factors such as resource complementarity, cooperative partner, and willingness and flexibility to collaborate should all be considered when choosing supply chain partners. In light of such positioning, object of this research is transportation, warehousing, forwarding, and depot container companies in providing logistics services to producers and end users who collaborate in export-import activities for at least 3 years and have a distribution network in several major cities.

1.1 Selection of Collaboration Partner

Building a successful partnership utilize a process by defining the meaning of the selection criteria to determine appropriate collaboration partners (Chen & Tseng, 2005; Elmuti

& Kathawala, 2001); and it is done by identification and evaluating several criteria that reflect the requirement of the company to become partner candidates (Nijssen, 1999). The partner selection evaluation approach typically takes into account how important a partner is to the supply chain's overall goals, but it seldom under consideration how scarce a partner is in relation to those goals (Bejtko, Bilge, & Ulusoy, 2015). Since first introduced by Tomlinson in 1970, partner selection criteria have evolved well in the selection of the number and type of partners. Since then, the selection criteria have developed and divided into two large sets of criteria; notion of task-related (Geringer, 1991), resource complementary (Shah & Swaminathan, 2008), partner-related (Glaister & Buckley, 1996) and relational stability (Aulsinger & Jenk, 2004). These criteria are widely used simultaneously for determining the right collaboration partners (Lee, 2014). Despite being legally separate, supply chain participants are economically interdependent and a supply chain's structure will stay stable only if all parties benefit, at least over the long term (Städtler, 2014). In addition, when the company implement systematic and analytical method in the process of selecting potential partner, the success of the collaboration will enhance both alliances performance and strengthen the competitive advantages (Cummings & Holmberg, 2012).

1.2 Criteria of Collaboration Partner

The previous section have explain the selection criteria of collaborative partners, task-related and partner-related (Geringer, 1991; Glaister & Buckley, 1996). First, task-related criteria refer to the specific tasks that are established and must be worked out in collaboration. In a successful collaboration, one of the expectations of each partner is the acquisition of the resources and capabilities of each complementary partner. Therefore, these complementary capabilities make collaboration work better and achieve the goals of each company involved in collaboration (Inkpen & Ross, 2001). It is a fact that resource complementary is an important aspect in the partner selection as the parent firms must work with potential partner that utilize competitive resources (assets) to maximizing their capabilities (Shah & Swaminathan, 2008). The greater the ability of complementary between partners, the greater the likelihood of success of a collaboration (Kale et al., 2009). According to Rothaemel and Deeds (2006), complimentary partner criteria are divided into; complimentary and logistic operational capability.

Second, partner-related aspect is a set to enhance broad sense with the aim of increasing a supply chain's overall competitiveness (Städtler, 2014). During this process, parent firms must acknowledge appropriate criteria for selecting local partner related to: (i) operation that relate to their core competencies; (ii) commonplace goods and services that are readily available on the market and have no chance of differentiation in the eyes of the customers; (iii) the process by looking for an aspect of make-or-buy decision (Schneider, Baur, & Hopfmann, 1994; Städtler, 2014). These strategic traits would affect both operational ability and resources needed for the alliance competitive success and will refers more to the suitability of relational stability (Kale et al., 2009). Das and Ha (2006) also indicates the partner-related criteria is considered as organizational conformity and complimentary objectives.

The risk criteria of prospective partner are determining factor in the supply chain collaboration selection of partners, defined as the level of possibility disturbance and constraints

owned by partners and affect the flow of goods and information. The process of forming partner collaboration is faced with two of risks, related to future conditions (performance risk) and risks associated with relational risk (Dai & Teng, 1996). Although, the previous study has highlighted the positive impacts of relationship stability (Lai, Cheng, & Yeung, 2005), but it also analyzed any potential negative impacts, such as relational risk, that could represent any unexpected negative consequences from collaborative relationship (Miller, 1992). There are also several reasons why a healthy relationship or inquiries into what certain characteristics might affect relational risk. Therefore, it is crucial to pay close attention to the cause of uncertainty and risk perception (Lin, Li, Tao, & Wang, 2008; March & Shapira, 1987).

2.3 Supply Chain Collaboration

Supply chain collaboration has been thought of as a commercial process where two or more supply chain partners cooperate to achieve a common objective (Cao & Zhang, 2015; Shea, Rebecca Yen, & Chae, 2006). Basically, supply chain firm seeks opportunities beyond organizational boundaries to collaborate with others, enhance the efficiency and responsiveness of supply chain by utilize the resource and knowledge from all the parties (Cao & Zhang, 2015), as collaboration degree to which an organization has organized its internal processes, methods, and behaviors to promote cooperation and synchronization for meeting customer requirements. Some authors claim that achieving internal collaboration lays the groundwork for achieving higher-level supply chain integration methods (Cheng, Chaudhry, & Farooq, 2016; Zhao, Huo, Selet, & Yeung, 2011). Furthermore, the collaboration between supply chain firms will gain several benefits such as improving communication, streamline processes and eliminate waste by adjusting operations which resulting in gain a greater profits and build competitive advantage (Cao & Zhang, 2015; Simatupang & Sridharan, 2005). **Furthermore, this study will examine several components that** consists of three endogenous latent variables of partner selection criteria, three exogenous latent variable of supply chain collaboration that affect finance and non-finance corporate performance both directly and indirectly through collaborative advantage.

2.4 Relationship between Partner Selection Criteria and Supply Chain Collaboration

This phase of supply chain collaboration will focus only to the two aspects: resource complementary and relational stability. The process of selecting partners is an early stage of collaboration formation using the criteria of supply chain collaboration partners (Kale et al., 2009). The collaborative advantage comes from relational rent Lurie (2006) which is assessed the form process of efficiency, flexibility in delivering products and services, quality and innovation.

The most notable motivation for collaboration in complex external environments are accessing, obtaining, and combining complementary resources (Ali & Shukran, 2016). Previous studies have proposed the impact of supply chain collaboration on the company's competitive advantage through the acquisition of the resources, allowing companies to implement more efficient collaboration and effective strategy (Barney, 1991; Lv & Qi, 2019). Resource complementary as a key collaboration factor (Shah & Swaminathan, 2008) occurs when a company has the unique resource which are, information exchange, coordinated decision-making, resource sharing, cooperative communication, goal and incentive congruence (Ali &

Shukran, 2016). These precise supply chain collaboration partners will also influence development capabilities as well as resource allocation that can strengthen the company's ability to achieve their strategic goals as a combination of resource-sharing processes to improve the economic scales of each company (Crujssen, Coolt, & Dullaert, 2007). Furthermore, the resource-based view (RBV) explains about the collaborative advantage of a company depends on partners available resources and the ability to integrate the resource for operational and logistic capabilities. RBV emphasis logic demands that a company functioning in a dynamic environment and dealing with supply chain uncertainties needs to build capabilities that improve coordination and collaborative actions in terms of differentiate their capabilities by utilize their resource that cannot easily be duplicated (Shakeel et al., 2018). The greater the ability of complementarity, the greater the likelihood success of a collaboration (Kale et al., 2009). Regarding the relationship mentioned above, to classify the importance partner selection criteria in supply chain collaboration, this study proposes the following hypothesis:

H1: Partner Resource Complementary have a positive relationship with Supply chain collaboration.

Nowadays, logistics service providers understand how to reduce the level of uncertainty in supply chain field. At this phase, supply chain design and management initiatives have a great potential to make operations more efficient in a dynamic environment and also simultaneously increase disruptions to supply chain vulnerabilities (Shakeel et al., 2018; Wagner & Bode, 2008). In addition, several studies find organization that deal with supply chain risk need to perform more agilely than their competitors, positioning agility performance as a remedy for supply chain risk (Abrahamsson, Christopher, & Stenason, 2015; Ghgor, Holcomb, & Farsabadi, 2016; Shakeel et al., 2018). The different laws and regulatory frameworks by domestic government are a barrier to supply chain performance as it will cause compliance-related risks (Hendricks & Singhal, 2005) and cause a changes in supply chain operational requirements and lowering companies competitive advantages (Ahmad et al., 2017). From the discussion on the above, the impact of supply chain risk towards partners will greatly influence the failure of supply chain collaboration. The degree and frequency of disruption to activity throughout the supply chain will increase the operational risk and risk caused by environmental disaster, terrorism, and political instability of the supply chain and ultimately lead to the possibility of supply chain collaboration. In accordance with the scientific literature review supply chain risk partners as the criteria in the selection of partners, this study proposes research hypotheses as follows:

H2: Supply chain Risk have a positive relationship with supply chain collaboration.

Compatibility is one of the firm's stimulations in deciding partner to collaborate by awareness of the changes towards external environment, and it is important to know the potential partners that have the same characteristics and maintaining their positive long-term relationship. Suppliers' attitudes about continuing to invest in evolving relationships with

specific suppliers are referred to as their relationship-based attitudes. In this case, the relational attitude only takes into account the attitudes of the suppliers and leaves out the attitudes of the purchasers (Yeh, Pai, & Wu, 2020). Due to its impact on the suitability of relationship, compatibility is proved as a beneficial factor for supply chain operations (Shamdasani & Sheth, 1995), as this activities would maintain relationship stability to determine the components of successful collaboration, further decrease the controlling cost, improving coordination and cooperation among both parties, gaining competitive advantage and the performance for both partners (Yeh et al., 2020). Collaborative routines are made possible by these relational cross-firm resources, skills, and structures, which help businesses become more market-responsive (Brusset, 2016). Therefore, this perspective, it is proposed the following hypotheses:

H3: Relational stability have a positive relationship with supply chain collaboration.

Sharing resources between supply chain partner as a complementary resource will provide great added value (Taurivendi, 2006), as it can bring together a collaborative advantage in the form of sharing relevant, accurate, complete and confidential (Sheu et al., 2006). By using sharing resources, information, communication, decision-making synchronization activities or joint strategy development to improve product and process delivery, supply chain collaboration will give an impact on efficiency and strategic long-term issues benefits that help the value chain respond to market competition and satisfy customers (Wengarten, Pagell, Ahmed, & Gimenez, 2014). The task of both supply chain parties when they can perform a collaboration activities in order to enhance their ability by adapting the current market needs are seen as the collaborative advantage (Stadtler, 2014). According to the literature review, the research hypotheses to be tested are as follow:

H4: Supply chain collaboration have a positive impact with collaborative advantage.

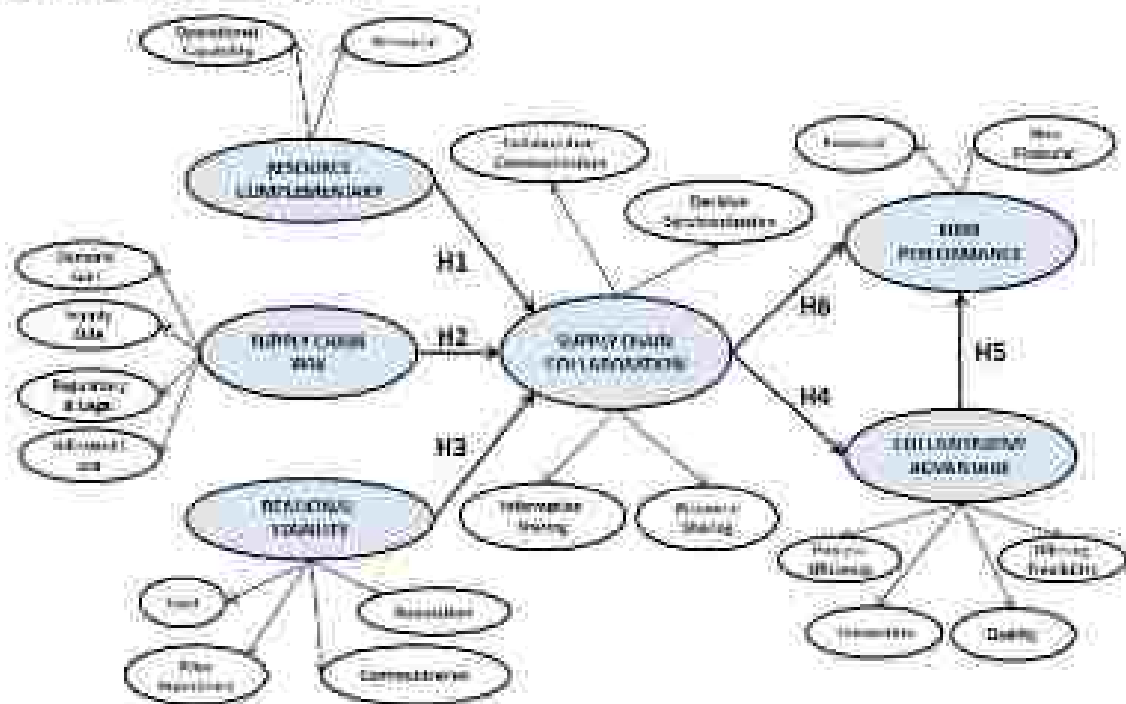
According to several studies, the collaborative advantage is an inter-organizational competitive advantage that increase their capacity for market responsiveness. With tight supply chain partners, cooperative operational information exchange, planning, and forecasting give enhanced cost-efficiency capabilities (Iyer et al., 2019). Previous research also indicates the collaborative advantage of partnership that will minimize firm transaction cost, improve firm profit performance that reach higher sales and returns on their investment (Nagehan, Çemberci, Orvelek, & Yilmaz, 2017). Therefore, it would giving a great relationship as both firms undertake rapid modification (innovation), rapid response to market demands, flexibility, and serving a high standard for the customers (Yeh et al., 2020). Since there are several techniques for measuring performance, choosing the right one for supply chains is a significant difficulty due to their complex and interconnected aspect. It is regarded on how businesses function internally, which may break down departmental barriers and allow information and resources to efficiently flow between them, enhancing processes and products while also lowering costs and raising quality. By understanding the arguments based on the indicators proposed, the research hypothesis is as follows:

H5: Collaborative advantages have a positive relationship with firm's performances.

Recent studies by several scholars found a positive relationship between supply chain collaboration and firm's performance. The chance to learn about relationships and uncertainties may be provided by early and effective participation of knowledgeable internal stakeholders in production planning and execution, which can assist develop more stronger and responsive strategies (Shakeel et al., 2018). Collaboration also improves operational efficiencies, enables accurate forecasting from real-time Point Of Sales (POS) data sharing, increases customer responsiveness, and lowers costs (Iyer et al., 2019). Companies must create an environment where members may (1) access resources from a common "resource pool," (2) share losses and risks, and (3) make decisions together in order to achieve high performance (Lecoeuvre, 2017; Um & Kim, 2019). By having compatible resource, assets and having core competencies and superior capabilities, company would likely to achieve market profits, reduce purchasing costs, enhance technical cooperation and obtain sustainable competitive advantage. Referring to the above argument, we propose:

H5: Supply chain collaboration has a positive relationship with firm's performance.

Figure 1. Theoretical framework



Research Methodology

3.1 Measurement development and data collection

This research utilized a quantitative method with a self-administered survey that was properly developed. All of the study variable components were measured using a variety of items on a six-point Likert scale with a range of (1) represent the highest value (strongly disagree) to (6) extremely agree. Electronic and paper-based survey are used to distribute the

list of statements to the respondents directly or indirectly where the respondents of this research were Logistic Service Provider (LSP), transportation, warehousing, forwarding, and container depo companies, focused on export and import activity in Indonesia. The survey was pretested using 15 LSPs and the results were used to improve the final survey and applicable as an instrument for data collection. Data were distributed to 982 LPS, and 163 questionnaires were returned (approx. 18% rate). These returned questionnaires were examined, screened, and resulted from 151 LSPs which will be this research's sample size.

3.1 Data Analysis

Descriptive data analysis described the respondent profile (Gender, Age, Education, Tenure of Work, and Position), and profile of the LSP (type of services, length of operation, number of employees, city served, number of partners, and duration of partnership). This descriptive statistic will be analyzed using SPSS that consist of mean, standard deviation, and Analysis of Variance (ANOVA). The Partial Least Square-Structural Equation Model (PLS-SEM) approach will be used to evaluate the data analysis. SEM is a highly cross-sectional, linear, and all-purpose statistical modeling technique that can finish an investigation with a single approximation (Hair, Hultin, Ringle, & Sarstedt, 2017). The structural model (inner model) study may be achieved by using PLS-SEM to display the approximate intensity between latent variables to show the measurement model assessment (outer model) by represent the latent variable described by the manifest variable (indicators) (Hair et al., 2017).

Results and Discussions

Based on Table 1, the average of all research indicators is between scores 4 and 5. It can be concluded that the average response from the respondent's statement in the questionnaires is between slightly agree and agree. Using the 'two-stage approach', these simplified measurement models are combined with a structural model of research variables to establish a simplified full SEM model.

Table 1. Analysis of Descriptive Statistics

	Mean	SD	ResComp	SCRisk	RelStabi	SSCollab	CollaAdv	FirmPerf
ResComp	4.46	0.95	1					
SCRisk	2.95	0.94	-0.036	1				
RelStabi	4.48	0.89	0.719**	-0.017	1			
SSCollab	4.39	1.00	0.669**	0.030	0.803**	1		
CollaAdv	4.02	1.00	0.573**	0.001	0.579**	0.786**	1	
FirmPerf	4.36	0.84	0.521**	-0.153	0.526**	0.581**	0.573**	1

As of this study, there are six paths among variables with 6 hypotheses. Five out of six hypotheses indicated a significant result as the T-value is greater than 1.96 and the P-value is less than 0.05 for each constructs (Hair et al., 2017). This study found the construct of supply chain risk has no significant influence on supply chain collaboration ($\beta = -1.37, p < 0.05$), thus $H1$ are rejected. Nevertheless, the construct of resource complementary and relational stability has positively and significantly affected supply chain collaboration in support of $H2$ and $H3$. Further, supply chain collaboration has a significant influence towards both collaborative

advantage and firm performance, hence both *H4* and *H5* are supported. Lastly, collaborative advantage also has a positive effect on firm performance, thus *H5* is also supported.

Table 2. Summary of Hypotheses Test Results

Hypotheses	Independent Variables	Dependent Variables	t-value (Absolute)	Coefficient	Hypotheses' test
H1	Resource Complementary	Supply Chain Collaboration	4.43	0.3	Accepted
H2	Supply Chain Risk	Supply Chain Collaboration	-1.27	-0.08	Rejected
H3	Relational Stability	Supply Chain Collaboration	8.17	0.08	Accepted
H4	Supply Chain Collaborative Advantage	Collaborative Advantage	14.17	0.79	Accepted
H5	Collaborative Advantage	Firm Performance	3.01	0.04	Accepted
H6	Supply Chain Collaboration	Firm Performance	1.98	0.03	Accepted

Discussion

Based on theoretical framework, this study expands the importance of several supply chain partner selection criteria as a tool to analyze the factor that influence supply chain collaboration to enhance collaborative advantage and firm's performance. The result indicates that out of six hypotheses, five were accepted, while one was rejected.

The findings of this research showed that Resource Complementary have a significant influence towards supply chain collaboration in Indonesia export and import service providers logistic companies. It is proving that the sharing of complementary resources is the main motivation for the collaboration of most companies is the desire to access and obtain unique resources. This is in line with Lu and Qi (2019) argued in order to design a normative procedure and efficient technique of partner selection for supply chain collaborative product creation, it was necessary to take into account all relevant factors, including the necessity and scarcity of the inventive resource as well as partner compatibility. More specifically, Indonesian export-import activities require speed and precision, making a partner's logistical operational capabilities a key consideration. Because import-export activities at airports are tasks with very tight deadlines, logistic service providers in Indonesia claim that operational logistic capacity is a crucial factor. When compared to resource dimensions of possible supply chain cooperation partners, logistics service providers consider this logistic operational competence to be a major factor and priority of complementing partner requirements.

Furthermore, this study also found that the relationship of supply chain risk was not significantly influenced supply chain collaboration in Indonesia export and import service providers logistic companies. Despite the findings from previous research which found out that supply chain risk plays a significant role in collaboration, our respondents did not find this correlation. Supply chain risk is measured by supply chain risk using the context of risk sources (not risk management is not a criterion that has a negative influence on the selection of supply chain collaboration partners. Regulatory and legal an indicator that is considered the biggest source of risk that can disrupt or inhibit the distribution of goods and information according to logistics service providers in Indonesia. Changes assessed are too frequent and have major impacts ranging from Irwa, and policies to strategic regulations. Therefore, the source of import

supply chain risk in Indonesia above is largely determined by performance risk or external risk. This performance risk category shows that supply chain partners in Indonesia have a high tendency to take risks or risk takers to collaboration performance that is not on target, although the relationship between partners during collaboration is still going well. This condition is carried out by most logistics service providers with consideration of the level of competition which is getting tighter although it has an impact on increasing the cost of control and supervision of export-import cooperation chains.

These empirical results support the propositions regarding the formation and selection of collaborative partners Yeh et al., (2020) which state that relational stability is a criterion that refers to the suitability of work culture among collaboration partners. This statistical test is also in line with the research of (Yeh et al., 2020) states that relational stability or strategic fit is one of the company's motivations for collaborating. The results of this study also place relational stability at the first rank of the main determinants of successful collaboration because the suitability of the relationship between organizations will make the implementation of strategies be realized. Because collaboration is governance through relational means the results of this study explain that relational stability between partners can also determine the performance of supply chain collaboration (Yeh et al., 2020).

The result of this research proves that the sharing of complementary resources is the main motivation for the collaboration of most companies is the desire to access and obtain unique resources (Wiengarten et al., 2014), these results prove the opinion that the greater the ability of complementarity between partners (complementarity), the greater the likelihood of success of a collaboration (Kale et al., 2009). More precisely, the need for speed and accuracy in export-import activities in Indonesia makes logistic operational capability a decisive factor for attractive partners. Operational logistic capability is an important indicator according to logistics service providers in Indonesia because import-export activities at seaports are activities with very short deadlines. Logistics service providers assess this logistics operational capability to be a key dimension and priority of complementary partner criteria versus resource dimensions of potential supply chain collaboration partners. These findings attest to earlier empirical studies suggesting that collaboration failures are more prevalent if firms choose partners with low capabilities or collaborative experiences not too long.

Decision synchronization is the most important indicator of the effectiveness and efficiency of supply chain collaboration of export and import activities in Indonesia. Although business operators of logistic service providers already use technology in accessing, processing, and distributing information in supply chain collaboration but decision-making is still done jointly. Therefore, supply chain collaboration in this industry where there is a process of sharing information, resources, and risks as well as relationships, the alignment of decisions among collaboration partners becomes a major prerequisite for collaboration to work effectively and efficiently. It can be concluded that supply chain collaboration among logistics service providers in Indonesia characterized by the synchronization of decisions through deliberation and consensus has also become part of the national culture and corporate culture. Based on the explanation above, it can be summarized that the creation of collaborative advantages or CAD as a strategic advantage obtained through supply chain partnerships through synergistic

collaborative activities is strongly influenced by the success of supply chain collaboration.

It can be summarized that the creation of collaborative advantages or CAD as a strategic advantage obtained through supply chain partnerships through synergistic collaborative activities (Cao & Zhang, 2013) strongly determines firm performance (Iyer et al., 2019; Lecocqva, 2017; Uri & Kim, 2019). The collaborative advantage is more observed with offering flexibility (OFF) dimensions, namely the level at which companies involved in supply chain collaboration can provide changes in logistics service offerings to industry standards. Offering flexibility is the most important indicator considered by the import logistics service provider in Indonesia. Due to the rapidly changing operation of imported exports in Indonesia today, both customers and regulators require companies to adapt through the offering of new, more efficient logistics services (Yeh et al., 2020). The collaborative advantages of flexible offerings can be gained through complementary logistics capabilities, competencies in maximizing information and communication technologies, supply chain member commitment to providing competent personnel, and common strategy and work culture through previous collaborative experiences to address supply chain risks originating from regulatory, legal, and bureaucratic changes.

This empirical study shows that the company's financial performance becomes the second priority dimension in observing company performance. This is inseparable from the context of the export-import logistics industry which has uncertainty both from the aspects of regulation, infrastructure, technology, and quality of personnel (Sridharan & Simatupang, 2015). Non-financial performance is the most important indicator in measuring the success of the collaboration of logistics service providers. This finding is in line with concerns about the risk of a relationship with relational risk or internal risk rather than performance risk or external risk. In other words, logistic service provider companies prioritize relational stability by maintaining closer relationships between companies compared to the achievement of performance due to external factors. This finding is related to the dominant criterion of partner selection in this study which is relational stability, where the conformity of strategy, culture, and corporate style ensures the sustainability of the relations of collaboration relation. So financial performance has not been a top priority because of the additional cost due to weak law enforcement by the government in ensuring the implementation of the law.

Conclusions and Recommendations

It can be concluded that this research provided empirical data that the selection of partners has an important effect on the formation of supply chain collaboration. Relational stability has contributed to the selection of collaboration partners where relational stability criteria have the highest influence to supply chain collaboration. On the other hand, supply chain risk partners are not the selection criteria among logistics service providers. It can be also concluded that supply chain collaboration has a dominant influence on collaborative advantage. In addition, the firm performance shown in the form of non-financial performance is directly influenced by collaborative advantage through flexibility offering indicator. But overall supply chain

collaboration still has a very dominant influence on company performance.

The managerial implication of this research on logistics service providers is that business operators must first apply the concept of less-asset-based through partnerships such as vendor management and economic sharing. Secondly, third-party logistics consistently implement appropriate information and communication technologies. The last is compliance in following the rules, regulations and applicable laws will greatly determine reputation and legitimacy such as the application of conflict of interest, culture, and work system through agreements or contracts that are transparent, accountable, and auditable.

Afterwards, there are some limits in the study that the first study is still cross-sectional and would be better if continued longitudinal. The second is that in the supply chain collaboration process of risk and information sharing, it is advisable to carry out a further investigation by including criteria appropriate to the context of collaboration. These studies are still conducted on horizontal collaboration so it is considered necessary to test lateral collaboration. Fourth, due to the influence of institutional context such as institutional pressure, further research can also be learned from institutional theory.

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