

Role of Supply Chain-e Collaboration on Supply Chain Performance of Indonesian Service Sector

Afghan Prawira^{#1}, Uning Kuraesin^{#2}, Dede Hertina^{#3}, Zalina Zainudin^{*4}

¹ Padjadjaran University

^{2,3} Widyatama University

^{4*} Universiti Kuala Lumpur Business School

**corresponding author: zalina@unikl.edu.my*

Abstract---The study is aimed to examine the effect of SCEC on SCP on Indonesian service sector alongside the mediating role of SIS and SCC. This was done quantitatively 96 employees were selected as a sample size. Irregular inspecting technique and 5point Likert scale was used to collect the information. AMOS and SPSS has been used to analyze the information. The conclusion of this investigation revealed that Indonesian organizations can enhance their SCP through SCEC. The investigation further confirmed that the capacity of organizations to efficiently and completely share their thoughtful and critical information that can advance the enactment of an organization just as of the whole SC.

Keywords: Supply chain-e collaboration, supply chain performance, strategic information sharing, supply chain competence

1.1 Introduction

“Researchers stated that in modern times, firms have come to appreciate that SCs that have become a basic source of competition, with the end goal which recognized at the increased level real competition is never begun again between companies yet between SCs” [1]. This recognized connection among organizational performance and SC performance has encouraged administrators, experts and scholars alike to strive for a better indulgent of the performance of SC. “Some authors have gone to the point of suggesting that hierarchical success largely depends upon the performance of the SCs in which the firm capacities as a partner” [2]. Accordingly, the development in the whole SC performance might clue to the enhancements in the complete structural

performance [3]. This is because [4] described that upgraded SC performance has been related with the enhancement of the whole corporate productivities. “In identifying the growing significance of the part of

SC, organizations have over the years tried to deal with their SC practices, the nature and degree of cooperation with dealers, the nature and degree of info sharing and the whole SC capability”.

Similarly, “the quest to improve SCP has seen firms in different industries worldwide receive and implement different types of SCM practices” [5]. Concerning the SCM practices, [6] state that SCM practices integrate collaboration and formulating just as assistance in the expansion of items, procedures, buying and distribution methods with a relationship's suppliers. [7] defines that “SC practices as a set of activities undertaken in an association to promote effective management of its SC, while [8] define them as tangible activities or technologies that assume an essential role in the collaboration among the central firm, its suppliers and customers”.

Because of the expanding unpredictability of SC, there is as of now the requirement for estimating and checking the execution of those frameworks, to determine valuable bits of knowledge for SC streamlining. The issue of assessing SCP is all around bantered in writing. Scientists, specifically, call attention to that estimating the execution of SC is a mind boggling tasks, because of the way that supply chains incorporates a few performers that coordinate to accomplish both calculated and key goals. In any case, execution estimation of the whole SC is fundamental when overseeing and building up

the SC itself, and turns out to be especially vital in those settings where SC are viewed as a key factor of corporate achievement. "Moreover, performance measurement is crucial for supply chain management, i.e. the process of managing the processes of planning, coordinating and controlling the movement of materials, parts and products across the supply chain, from the suppliers to the final customer."

"Successful supply chain (henceforth, SC) performance measurement relies on the adoption of appropriate metrics, able to capture the entire essence of the SC process. In this respect, performance measurement metrics should enable evaluating and controlling the performance of the resources, provide information for internal needs and external stakeholders' purposes, as well as enable continuous performance improvement." Similarly, "among those metrics, cost has long been recognized as an important metric for assessing the efficiency of the SC, since one of the objectives of SC management is achieving the minimum total SC cost."

Increasing cooperation and more in recent times e-collaboration among purchasing organizations and dealers has been seen as one of the essential approaches to advance SCP [9]. A few experimental researchers have been showed in different situations to seek out to define the association between e-collaboration and SCP [10]. However, little remains thought about SCEC, especially with the relationship between mediators, for example, SIS, SCC with SCP.

However, SCC has also been related with an improved performing SC [11]. Organizations must encourage and defend their fundamental capabilities so as to gain every one of the reimbursements that an organization can get from them. "More critically, these core competencies are the essential ingredients of the relationships that unleash the unique and inimitable value-creating abilities of a SC known as 'SC competencies'. Such SCCs may include the capacity to effectively manage inventory, accurately forecast customer demands and take care of their orders, produce quality items and design low

contamination generation alongside delivery processes" [12].

Likewise, "over the previous decade (2005– 2015), SCM investigation has advanced and prolonged to contain a choice of perceptions, for example, supplier relationships, SC network structure and collaboration" [13]. Though some researchers have discovered the antecedents of SCP, much still desires to be discovered and assumed about this conception. The current literature on SCP has mainly emphasized on economical developed nations, for example, Australia [14], Germany [15], Taiwan [16] and the United States (US) [17]. With the omission of some developing countries, for example, Turkey and Bangladesh, one hardly comes crosswise over studies on SCP that focused on developing countries [18]. Indonesia is no exception in this regard.

This investigation, therefore, concentrated on the complete series of SCs in Indonesian firms, where fewer work is completed in the study. Hence, the point of the examination was to examine how organizations can enhance their SCP via SCEC.

1.2 Study Objectives

- To examine the effect of SCEC on SIS
- To investigate the effect of SCEC on SCC,
- To scrutinize the effect of SIS on SCP
- To examine the effect of SCC on SCP
- To inspect the mediating role of SIS among the relationship between SCEC and SCP
- To investigate the mediating role of SCC among the relationship between SCEC and SCP

2. Literature Review

2.1 "Supply chain-e collaboration (SCEC) and strategic information sharing (SIS)"

[19] stated that "the need for e-collaboration has grown in SCM as a technology-enabled systems approach that integrates and synchronizes a SC and has seen numerous organizations invest in information technology (IT) resources to improve SCP." Seeing that cooperation is alarmed, [20], [29-31] grasp that the part of active SCEC remains imperative in the current worldwide landscape, for the most part because of the developments of re-appropriating and the value-added capacities linked with outer capacities. Some prior researchers have discovered that e-collaboration between SC followers' eases data sharing [21] and advances singular firm performance, just as generating a defensible competitive lead [22], [29-34].

2.2 "Supply chain-e collaboration (SCEC) and Supply chain competence (SCC)"

SCEC according to [13] not just effects the sharing of strategic information between the working together firms, yet it likewise produces a proficiency for the entire SC. [23] exposes that the profits of e-collaboration in SCs are the reason of superior enhancements to smaller organizations than larger ones. "The rationale was that the larger the firm, the more hindrance there will be for them to effectively use technology to improve customer service in spite of their relatively larger resource base and bartering power". Further, "noteworthy is the argument advanced by [24] that without great understanding and preparation, e-collaboration can likewise damage business to the SC member firms." Similarly, "This is because e-collaboration may encourage unequal resource commitment among SC partners, which thus will create a dependency syndrome from the lesser donors and ultimately yield inefficiencies".

2.3 "Strategic information sharing (SIS) and Supply chain performance (SCP)"

An examination by [18] scrutinized the mutual effect of info and data sharing on a supplier's operating performance in supplier– buyer relationships of Bangladesh. Their examination found that info sharing with key dealers does not affect the dealer's operating performance. "What's more, the discoveries revealed that knowledge sharing with key suppliers has a weaker positive effect on the supplier's operational performance." Limited researchers have discovered that actual info sharing and SC practice are critical aspects in attaining great SCP and that info sharing might deliver a lot of benefits such as "inventory reduction and efficient inventory management, cost reduction, increasing perceive ability" (huge reduction of uncertainties), huge decrease or whole abolition of the bullwhip influence, improved source use and enhanced hierarchical efficiency [25]. SIS with dealers happens when the central organizational shares important and strategic information of the organization with its strategic suppliers.

"Researchers stated that in modern times, firms have come to appreciate that SCs that have become a basic source of competition, with the end goal which recognized at the increased level real competition is never begun again between companies yet between SCs"

"Supply chain competence (SCC) and Supply chain performance (SCP)"

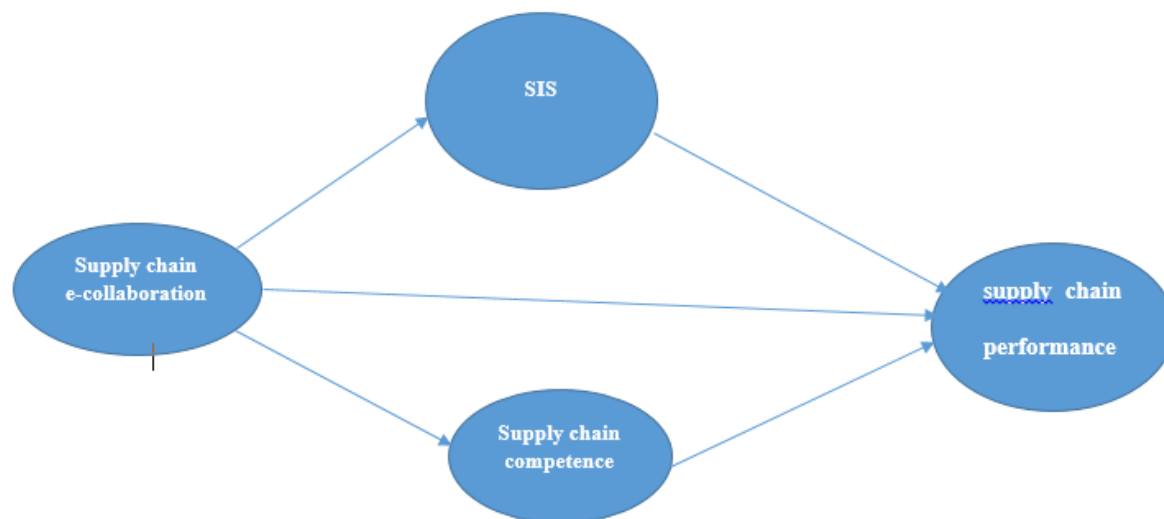
[26] Describe a competency as an insubstantial source that demonstrates the capability of the organization to achieve in a specific field. "In other words, a firm is said to have a competence in the event that it has knowledge, capabilities and the attitude required to successfully operate in a specific area. Collective learning is the source of competitive advantage for the entire SC and it stems from the correspondence, involvement and a deep commitment of the SC partners working over their organizations' boundaries" [26]. Such knowledge is aided by a SC as a structure that surrounds knowledge entities and changes the situation via the

shared knowledge of all its distinct SC partners [13]. The indication is that a SC acquires from its distinct SC working together organizations over their distribution and conveying of an individual company's fundamental proficiencies, for example, implied learning.

Researchers scrutinized the relationship among SC modules (SC practices, concerns and competences) and hierarchical performance in the US and Taiwan [27]. The examination established that SC capabilities have constructive effects on authoritative

performance in both the US and Taiwan and that SC practices and competencies are altogether connected in both the US and Taiwan. This will thusly improve the SC activities, thereby enhancing the performance of the whole SC of those working together firms. [11] Concluded that, "in spite of the fact that competence in SCM is a key to business success, the subject is questionable and an explicit need exists for more research."

Model



1.3 Research Hypothesis

- H1:** SCEC significantly affects SIS.
- H2:** SCEC significantly affects SCC.
- H3:** SIS significantly affects SCP.
- H4:** SCC significantly affects SCP.
- H5:** SIS has a significant mediating effect among the association between SCEC and SCP.
- H6:** SCC has a significant mediating effect among the association between SCEC and SCP.

3. Methodology

Research Methodology is much useful technique in "identifying and collecting information" regarding the study variables. It is actually an "organized and efficient approach used for data collection". This study will examine one type of relationship between the study variables. One type of relationship involves the testing of mediating effect of SIS between SCEC and SCP and other mediating effect of SCC between SCEC and SCP.

This study is inclined to be tested in banking industry of Indonesian service sector. Simple random sampling was used to determine the study sample. Questionnaire was developed from different empirical studies. Survey was conducted

through personal visits. Main purpose of personal visits was to receive the highest response rate. Questionnaire is developed on the likert scale ranging from 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and to 5=strongly agree. Reliability test, correlation analysis, multiple regression analysis would be run through SPSS, while mediation would be done in AMOS.

3.1 Reliability Statistics

Reliability analysis is done through using Cronbach’s Alpha in SPSS. Table-1 shows the number of items in a particular construct. While, table-2 shows that all of the study constructs fall in an acceptable range [33]. It is suggested that the reliability analysis using Cronbach’s alpha should be 0.7 or above [34-39].

Constructs	Number of Items
SCEC	9
SIS	8
SCC	5
SCP	9

Constructs	Cronbach’s Alpha
SCEC	0.823
SIS	0.814
SCC	0.870
SCP	0.798

Overall reliability for this study found to be 0.896, which is highly acceptable.

		SCEC	SIS	SCC	SCP
SCEC	Pearson Correlation	1.000			
	Sig. (2-tailed)	.			
SIS	Pearson Correlation	.7891**	1.000		
	Sig. (2-tailed)	.000	.		
SCC	Pearson Correlation	.518**	.763**	1.000	
	Sig. (2-tailed)	.000	.000	.	
SCP	Pearson Correlation	.707**	.767**	.870**	1.000

Table-6 Model summary shows that the auto-correlation does not exist between the variables as Durbin- Watson is 2.341, which lies under the acceptable range of 1.5-2.5 or 1-3 and shows that there exist independent observations. At first step, when only SCEC is entered in the analysis in predicting the SCP of employees, Adjusted R is 29%. This shows a good model fit and satisfy the prediction of dependent variable through the model. At step two, when SIS and SCC is added with the SCEC, Adjusted R² increases to 33.1 % showing a better result. This also means that a model is a good fit to large extent and tells that

“how much variability in SCEC is shared by SIS and SCC.” this also helps us to conclude that “how adequately variance is explained through the model and how reasonably a dependent variable can be predicted.”

Table-6 also shows the standard error of estimation, which means that if fitted model including the work engagement to predict the SCP, the predicted error will be .78 times at first step. At second step, if fitted model is used including the SIS and SCC along with SCEC in order to predict the SCP, the predicted error will be .74 times.

Model	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin Watson
1	.042	.035	.78	
3	.267	.244	.68555	2.334

a. Predictors: (Constant), SCEC

b. Predictors: (Constant), SIS and SCC

Table-8 shows the collinearity statistics, standardized and unstandardized coefficients and significance level of t-statistics. VIF is used to analyze the multicollinearity. Multicollinearity is actually the interdependence among predictors. The decision rule for $VIF \leq 10$. Table-7 shows that at all the three steps, VIF fall under the reasonable and acceptable range, i.e., all VIF value in all the three steps are >10 .

Table-8 also shows that SCEC significantly predict the SCP at 5% of level of significance, when only this independent variable is entered. The Unstandardized coefficient is .27, which means that with the increase of 1 unit in SCEC, SCP increase by .27 times.

With the inclusion of SIS and SCC along with SCEC, table-8 shows interesting results. SCEC and SIS are significant predictors of the SCP, while SCC is highly significant predictor in predicting the SCP at 1% level of significance along with the constant. The Unstandardized coefficients shows that SCC is .78 which means that with the increase of 1 unit in SCC leads to the increase in SCP by .78 times.

At step 3, the mediation analysis has been cleared. Table-8 shows that the mediating relationship of SCC between SCEC and SCP is significant. Since, the SCEC is a significant predictor, but SCC does not add value to the mediating relationship. Therefore, hypothesis H_7 is rejected.

While, for the mediating relationship of SIS between SCEC and SCP shows that there exists a mediating relationship of SIS in predicting the SCP along with the SCEC, because both the variable SIS and SCEC are highly significant at 5% and 1% level of significance, respectively. Therefore, the research hypothesis H_6 is accepted.

Model		B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1.	(Constant)	2.41	.38		6.324	.000		
	SCEC	.27	.11	.204	2.409	.017	1.000	1.000
2.	(Constant)	1.848	.40		4.595	.000		
	SCEC	-.210	.18	-.161	-1.180	.240	.348	2.872
	SCC	.783	.19	.56	4.034	.000	.343	2.915
3.	SIS	-.135	.087	-.150	-1.556	.122	.695	1.439
	(Constant)	1.72	.376		4.583	.000		
	SCEC	.36	.169	-.274	-2.115	.036	.335	2.982
	SCC	.39	.201	.276	1.943	.000	.279	3.580
	SIS	-.27	.086	-.298	-3.113	.000	.615	1.626

a. Dependent Variable: SCP

Table-8 Coefficients

4. Conclusion and Future Direction

The present examination looked to scrutinize in what way the Indonesian organizations could increase their SCP via SCEC. This piece of writing revised literature on the experimental develops of the examination, specifically SCP, SCEC, SIS and SCC. The hypothetical establishing of the investigation, supported by the interactive view and learning and knowledge perspective theories, was explained. "Based on the reviewed literature, the article articulated the problem, determined the research hole, and posited a conceptual framework". The examination established that teaming up firms implement SC practices to enhance their SCECs each other with and heighten the distribution of strategic information with each other. The examination likewise proven that as these organizations mature SCEC relations and share strategic information, they additionally advance their SCC via shared learning. In conclusion, the examination recognized that teaming up organizations ultimately increase their SCP through sharing strategic information with each other.

The examination established that the capacity of organizations to successfully and completely spread their strategic and vital info might increase the performance of the organization just as of the whole SC. For example, as described before, a SC strategy is a piece of the vital info that desires to be shared between working together SC companions because it holds info that will monitor all cooperative SC procedures so as to optimize the whole SC and advance SCP. The discoveries recommend that SIS has a subsidiary effect on SCP. Along these lines, it requires other determinants of SCP, for example, SCEC, SC practice, trust and balanced bartering influence to firmly increase SCP.

It is likewise vital for organizations to evaluate and embrace the radical cooperation skills to keep well-informed with their important SC companions just as with rivalry. "The type of technologies that these organizations invest in can hinder their capacity to capture benefits from utilizing advanced information sharing structures". At a strategy level, improving SCP through e-collaboration means that government ought to confirm that the info and correspondence

technology (ICT) charges are not all that extraordinary as to discourage little firms from investing in chain e-collaboration technologies. "Parameter of the ICT business and settling rivalry are some of the methods that representatives might resume in leveling the playing field, so to speak, and creating a conducive environment for firms to use relevant technologies for collaboration and information sharing."

The negation of H6 suggests that future studies ought to investigate the nature and elements that working together firms need to receive so as to improve their SCP through SCC. "In other words, researchers would now be able to attempt to investigate the possible factors linearly related with SCP through SCC." The results of this investigation additionally showed a weak positive influence of SIS on SCC and performance. The suggestions suggested that it could be a question of the e-collaboration technologies used just as the type of information sharing structures. "Future studies would thus be able to concentrate on the nature of e-collaboration technologies, the information sharing structures used and their influence on the quality and effectiveness of SIS."

While the empirical investigation succeeded in seeking answers to some of the interesting questions in the arena of SC practices, e-collaboration, SIS, SCC and SCP, it additionally has a few restrictions. The collected information (from a single respondent per firm) may not be representative of the genuine picture. Albeit empirical tests employing factual tests to examine and ensure the absence of regular method predisposition were used, these measurable tests are not without weaknesses. Hence future studies should attempt to gather perceptual responses from multiple respondents per firm. A second impediment is the way that the discoveries of the examination can't really be generalized, attributable to the way that a non-likelihood testing method was employed. Hence future studies ought to empirically test the proposed model more widely.

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