# Determining the Impact of Supply Chain Contributors on Financial Performance: Mediating Role of Supply Chain Performance

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Abstract- With the emerging trends in supply chain management, this research aims in providing the effect of supply chain contributors including partnership, collaboration and integration on financial performance of SMEs in Thailand. It also examine the mediation impact of supply chain performance between these strategies and overall financial performance of these firms. Questionnaires were designed to obtain required information from the manager, representatives and key members of SMEs in Thailand. The sample size selected is 334. The collected information is analyzed using SPSS and AMOS. The results generated depicts that there exist a significant positive association between these three supply chain contributors adopted in this study on the financial performance of firms. It also positively signifies the impact of supply chain performance on financial performance of Thailand small and medium firms. Theoretically, this study made contributions in literature related to supply chain in the context of SMEs. Practically, it allows owners and managers of SMEs to obtain benefits by adopting supply chain contributors of partnerships and integrations in their operations in order to enhance performance by attaining competitive edge. This research is considered to be the first one in analyzing the extent to which partnership, collaboration and integration strategies in a supply chain affect the performance of firms particularly SMEs in the context of Thailand.

**Keywords:** Supply chain partnership, Supply chain collaboration, Supply chain integration, Supply chain performance, Financial performance, SMEs, Thailand

#### 1. Introduction

With the rapidly increasing trends in supply chain management (SCM), supply chain integration has played a fundamental role. [1] For this, supply chain partnerships are considered to be essential in the process of sustaining these supply chains [1]. Therefore, organizations are investing more in partnership practices in order to improve their supply chains [2]. The main purpose of such relations is not only to efficiently mitigate the risks and to remain sustainable but it also allow firms to

obtain continuous benefits from such partnerships [3, 4]. The maintenance and sustainability of partnerships between different supply chain firms is due to collaboration [5]. Collaborations has provided many services to the supply chains in the form of increasing profits, accuracy, forecasting whereas by reducing costs and controlling inventory [6-8]. Collaboration has played a significant role in encouraging firms or partners to focus more on forecasting, planning and sharing essential information, incentives and resources with one another [5, 9-11]. Such collaborations enhances the environment of integration in these firms by exchanging resources and information therefore, making an integrated supply chain system [12-15].

Studies also indicate that in order to enhance performance through supply chains, quality assurance has played a vital role. This however, not only enhances internal supply chain management but also improve external supply chain practices as well [16-21]. Performance is considered to have an imperative role in the life of any organization either it is related to supply chain performance or overall financial performance of firms. Emphasis has been given today to improve the supply chain performance of firms to attain competitive advantage and as a result to enhance financial performance [22]. In modern world, organizations are now focusing more on their supply chain practices to cope with the emerging market trends. Organizations are moving rapidly with this trend and are achieving high profits. This trend can also be seen in the Thailand large and high performance manufacturing and retail firms. However, there are few firms also including some small and medium enterprises that fail in adoption of such policies and are not competitive yet. The main reason behind this is because of the absence of such practices including coordination and collaboration with other firms [23]. Such practices can be easily maintained by linking internal supply chains with external partners so that sharing of essential information and available resources can be done [24].

Supply chain collaborations allow firms to attain unique capabilities by adopting environment full of flexibility in their processes [25]. Such integrations can help firms to efficiently control their processes related to response while maintain the quality with the emerging demands of their products by the external market [26]. The benefit of linking with firms in the form of collaborations and partnerships is because of the presence of compatibility. Evidence stated that the ability of firms' relative compatibility depends on such partnerships, coordination and integration [24]. Such relations are in accordance with the theory of relational view resource based, which proposed

compatibility is the essential component in maintaining these network relations and to finally attain competitive advantage [25]. Therefore, this research focuses on these emerging trends in supply chains and its impact on performance indicators. So, the main objectives of this study is to examine the influence of supply chain partnership, collaboration and integration on the financial performance of SMEs in Thailand through mediating role of overall supply chain performance in order to better provide competitive and financial position of such firms because of the adoption of supply chain practices .

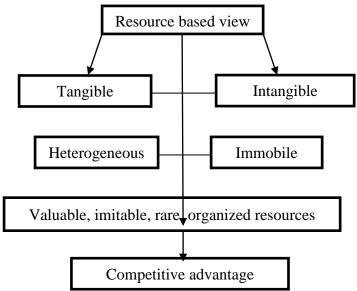


Figure 1. Relational view of resource based theory

The remaining research paper is structured as; section two focuses on critical analysis on literature related to supply chain partnership, collaboration, integration, their impact on supply chain performance and financial performance. Moreover, it also describes the framework and hypotheses developed in this study. Third section explains the research methods and measures used to study the variables of this study. Section four interpret the results generated. Finally, the last section provides detail discussions along with implications, limitations and future recommendations.

#### 2. Literature Review

## 2.1. Financial performance

Supply chain management is now becoming a source of attaining competitive edge and enhancing financial performance of firms because today organizations are competing on the basis of efficiencies in supply chains. Financial performance represents the overall financial health of a firm for a certain time period. It also tells the revenues generated by its primary operations [27]. Supply chain practices are considered to have a

direct impact on financial performance of businesses today. Few studies indicate that there exist a strong relationship between supply chains and profitability [28]. Studies also indicate that firms having close relation with the supply chain partners such as suppliers are considered to obtain more profits as a result their financial performance increases [29]. Moreover, strategic integration of supply chains particularly upstream chains has a significant positive impact on financial performance in terms of growth, share and sales [30]. Studies also indicate that with the development of competitive environment because of increasing supply chain practices, collaboration and integrated strategies by the firms' in their supply chains or developing alliances with the external partners help firms to focus on their sustainable strategies in order to benefit their supply chain members thus increasing overall supply chain performance, which also in return enhance firm ability to maintain their financial operation hence resulting in increased financial performance as well [31-33].

## 2.3. Supply chain Partnership

Supply chains have become really complicated because in recent years, business environment has extremely established. This is the reason that supply chain partnerships are considered to be important [1, 5, 34]. It allow firms to focus more on their strategies related to quality, enhancing awareness about environmental responsibility and by reducing the cost [35]. Methodological and Organizational efforts at both strategic and operational levels are playing a fundamental role in supple chain partnership [36]. Supply Chain partnerships are admired because they helps the organizations to better their supply chain performances. Studies indicate that supply chain partnership has provided various benefits to the firms in the form of numerous value addition services such as by sharing information, getting support from top management and symmetry [5]. Studies refer that in order to avail all these benefits that partnering firms should have strong trust relationship [37, 38]. In initial studies, Mohr and Spekman [39] proposed some important factors that quality of partnership depends upon the communication between the suppliers and the attitude towards the communication and useful strategies to avoid or resolve the clashes (Baran, 2018). Therefore, we hypothesized that;

**H1:** Supply Chain Partnership has significant positive impact on Financial Performance of firms.

## 2.4. Supply chain collaboration

In the past three decades, supply chain members and different firms have developed a relation of partnership [5]. Supply chain partnership refers to gain benefits over competitors. Collaborating with external partners helps you to save the costs through transferring best practices, by providing flexibility and increase in capacity. It helps in the better decision making, and company can get better revenue because of resource synergy. Benefits of synergy would not be shown in the start but it's really helpful for long term strategies [40]. Supply chain collaboration helps to improve performance of through participating members along the supply chain [31]. Firms supply chain linkage helps change in product and or service offerings through offering flexibility in response of ecological changes, it is also called customer responsiveness [41, 42]. Quality refers to which the supply chain partners provide quality products that produces high value for customers [43, 44]. It is supposed that those companies, which provide good quality products with advanced plans and respond fast to the customers are good and ultimately gain high loyalty customers and high costs benefits. With the changing of demands, supply chain collaboration

help all the members in a supply chain to maintain their responsiveness with the changing demands. Close collaborations with the supply chain partners enables to fulfil customer needs immediately [45]. Thus, we propose;

**H2:** Supply Chain Collaboration has significant positive impact on Financial Performance of firms.

#### 2.5. Supply chain integration

Supply Chain Integration is considered to be a strategy that can help organizations to obtain competitive edge [33]. It is used to get competitor advantage or competitive end and plays a obtaining fundamental part in business performance [16]. Traditional management practices such as financial inducements, sharing of best practices and giving trainings may reduce the risk [46]. In order to attain economic and environmental goals, supply chain integration is considered to have fundamental role in enhancing the business performance of firms collectively rather than individually. Performance outcomes may be affected by integration in many different ways [32, 47]. So supply chain integration is referred as the degree by which firms collaborate with its external partners in supply chain partners in order to obtain internal and external value collaborate [32]. Integration in supply chains is considered to have a competitive impact for the whole firm. It is considered as an antecedent of supply chain that helps in providing cost effective and high quality products by enhancing efficiency levels as well as competitiveness. It is indicated that integration must be in accordance with the supply chain perspective in order to be significantly meaningful for the overall performance of firms [21]. Thus, it is proposed that;

**H3:** Supply Chain Integration has significant positive impact on Financial Performance of firms.

# 2.6. Supply chain performance

Today, organizations are shifting their way from traditional practices into modern ones by focusing more to increase their product offerings in order to increases customer base by providing more choices by beating competitors [22]. These increasing trends divert the attention of experts and practitioners towards supply chain performance. [1,2] Studies indicate that in order to give response to changing situations in the market, supply chain partners have to maintain their oneness [48]. It not only help firms to maintain the sustainability of their supply chain partners but also focus on their pro-activeness abilities [49]. According to a study, it is proposed that supply chains are considered vital in generating, increasing and maintain value.

But increase in value can only be possible if supply chain performance increases. Such an increase in performance allow firms to enhance their value by collaborating and organizing inclusively to enhance their overall financial performance as well [50]. Supply chain performance is indicated as the performance performed by each functional unit in the supply chain of a firm in order to provide overall business performance [51]. It is also referred as the extent by which firms perform their

operation cost effectively by mitigating costs in order to meet the changing requirements and to increase overall business performance [52]. So, it is hypothesized that;

H4: Supply Chain Performance significantly mediates between Supply Chain Contributors (Partnership, Collaboration and Integration) and Financial Performance of firms.

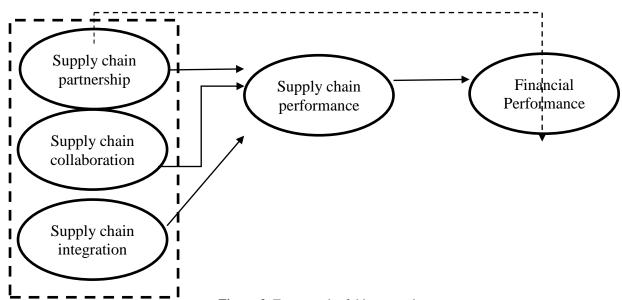


Figure 2. Framework of this research

## 3. Methodology

#### 3.1. Measures

Questionnaires has been adopted in this study to collect data from the SMEs of Thailand. The development of this questionnaire was done using various past studies and literature related to supply chain and financial performance. Two sections were considered while structuring questionnaires. In the first section, general details related to respondents and firms' information were considered including job title, employees' experience, firm's age, size, yearly revenues etc. The second one considered the items used to measure the variables adopted in this study including supply chain partnership, supply chain collaboration, supply chain integration, supply chain performance and financial performance. Apart from financial performance, the measures related to supply chain were adopted from the past studies [31, 32, 35, 53]. For financial performance, measures were adopted from the studies of various past researchers [54, 55]. These constructs were modified according to the needs of this research. All items related to variables were measured using five point Likert scale. However, in order to further enhance the reliability of the scales, few constructs were also removed [56].

## 3.2. Research Method

In order to select sample, purposing sampling technique is used by the researcher. The data has been collected from the SMEs of Thailand. List and details of these SMEs were obtained from the online sources. Prior consent were taken from the SMEs first by explaining them the purpose of this research. After this, questionnaires were mailed to these firms along with a cover letter mentioning the necessary details and time limit. Few SMEs were also contacted directly by the researcher based on feasibility. These items were to be filled by the managers, senior officers, supervisors and various other members who were associated with these supply chain practices. After this, the constructs were sent back by these SMEs. Among all the constructs there were sent, 315 came back. There questionnaires were then approved through reviewing processes by the experts. In this revising process, few constructs were eliminated to reduce biasness or any error. After this, the sample size remained to 300 constructs.

# 4. Data Analysis

This study based on manufacturing sector of Thailand, there are 350 questionnaire were distributed and the 342 questionnaires are received back and 334 are usable. So, the overall total complete and usable responses were 272. Findings shows that there were total 513 female respondents and 181 were males. Moreover, there are 108 respondents having age 21-30 years, 132 respondents having age 31 to 40 years, 79

respondents having 41-50 years age and 15 respondents having age above 50 years.

#### 4.1. Factor Analysis

To check the suitability of the data KMO test was run by using SPSS, the finding of the test showing that data is excellent and further analysis can be performed. The table 1 showing the results of KMO, where table two showing the results of rotated component matric.

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure	.927	
Bartlett's Test of Sphericity	Approx. Chi-Square	11113.750
	df	378
	Sig.	.000

Table 2. Rotated Component Matrix<sup>a</sup>

	Component					
	1	2	3	4	5	
SCP1	.845					
SCP2	.835					
SCP3	.888					
SCP4	.881					
SCP5	.891					
SCC1					.834	
SCC2					.827	
SCC3					.791	
SCC4					.818	
SCC5					.849	
SCI1		.594				
SCI2		.608				
SCI3		.791				
SCI4		.854				
SCI5		.833				
SCI6		.870				
SP1			.737			
SP2			.743			
SP3			.754			
SP4			.744			
SP5			.774			
SP6			.759			
FP1				.567		
FP2				.814		
FP3				.821		
FP4				.826		
FP5				.719		
FP6				.736		

## 4.2. Confirmatory Factor Analyses

The test of confirmatory factor analysis is used to identify other model of this study is good fit or not.

There are 4 to 5 indicators which proved the model fitness and their threshold and observed values are below:

Table 3. CFA

Indicators	CMIN/DF	GFI	IFI	CFI	RMESA
Threshold range	<3	>.80	>.90	>.90	<.08
Observed values	3.00	.808	.935	.935	.080

The finding of above table presenting that all values are under the threshold range, which means that the model of the study is good fit.

4.3. Convergent Validity and discriminant validity

The convergent validity is the reliability of the internal consistency whereas, discriminant validity is the strength of the construct more with itself rather others.

**Table 4.** Convergent and discriminant validity

	CR	AVE	MSV	SP	SCP	SCC	SCI	FP
SP	0.912	0.635	0.340	0.797				
SCP	0.984	0.926	0.383	0.503	0.962			
SCC	0.958	0.822	0.383	0.583	0.619	0.907		
SCI	0.920	0.664	0.294	0.542	0.485	0.443	0.815	
FP	0.914	0.642	0.334	0.578	0.493	0.548	0.483	0.802

The finding showing that CR for each construct is greater than .70 and AVE is greater than MSV, which prove the convergent validity, whereas, other columns prove the discriminant validity of each variable by showing more strength with itself.

4.4. Structural Equation Modeling (SEM):

SEM is the advance form of regression analysis, which can conduct the direct, indirect and total effect at the same time for entire mode.

**Table 5.** Structural Equation Modeling

Total effect	SCI	SCC	SCP	SP
SP	.369**	.302**	.112*	.000
FP	.376**	.263**	.157*	.244**
Direct effect	SCI	SCC	SCP	SP
SP	.369**	.302**	.112**	.000
FP	.286**	.190**	.130**	.244
Indirect effect	SCI	SCC	SCP	SP
SP	.000	.000	.000	.000
FP	.090**	.073*	.027*	.000

**Note:** \* p < 0.01, \*\* p < 0.05, \*\*\* p < .00.

Results of table 5 showing that supply chain partnership has positive and significant impact on financial performance, it also has indirect effect on financial performance via supply chain performance and this effect is 2.7% total effect is 15.7%. Findings also showing that supply chain collaboration has 26.3% positive and significant impact on financial performance which means that if one unit of supply chain collaboration increased

it will bring 23.6% positives influence in financial performance. Furthermore, supply chain integration also has significant positive impact on financial performance with 37.6% total effect and 9% indirectly. Below mentioned figure is the screenshot of SEM while it was running in AMOS and it is showing the standardized beta coefficient of each construct.

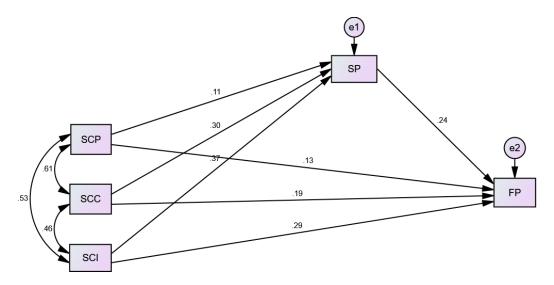


Figure 1. SEM

#### 5. Conclusion

The main purpose of this research is to examine the effect of supply chain contributors including partnership, collaboration and integration on financial performance of SMEs in Thailand. It also produces analysis regarding the mediation effect of supply chain performance on the financial performance. For this, information has been collected from the SMEs using questionnaires. Based on extensive literature on contributors of supply chain, this study adopted partnership, integration and collaboration as the major contributors and identify its impact on the supply chain as well as financial performance of the firms. Relational view of resource based theory has been adopted as a support for this study to provide theoretical foundation. Based on the literature, a framework and few hypotheses have been developed for this research. In order to prove their reliability and fairness, various tests have been conducted using tools like SPSS and AMOS. The outcomes of this study clearly indicates that all the supply chain contributors including supply chain partnership, supply chain integration and supply chain collaboration have significant and positive impact on financial performance of SMEs in Thailand. It means that small and medium firms in Thailand are continuously making efforts to adopt supply chain strategies in order to make alliances in the form of collaborated and integrated efforts with the key partners and external members to better cope with market conditions and to attain advantage. The outcomes also indicate that all these contributors enhance the overall supply chain performance which in return increases the financial position of small and medium firms.

This research is considered to be the first one to test the relationship between various supply chain contributors and performance levels on small and medium enterprises existing in Thailand. Moreover, it also provides some implications related to both theory and practice. Theoretically, it significantly contributes in the literature related to supply chain performance and its impact on financial performance. It also provides support to the literature related to relational view of resource base theory by providing analytical evidence. Whereas, practically, it highlights the importance of supply chain contributors on owners and managers of SMEs to evaluate their performance. Because now in today's emerging trends, the competition does not rely between individual firms but it has spread to their supply chains. It allows them to put direct efforts to their supply chain strategies in making collaborations and integrations in their processes to increase the value of its operations and financial performance. It also help them to add value to their chains and attain competitive edge over the world.

Despite of having strengths, this study also has some limits. This study considered Thailand context only, therefore, future studies can focus on other regions or countries or can make crossexamination between different nations. Since, it has focused the effect of three supply contributors (partnership, integrations collaboration) on the financial performance; other studies can extend this research in analyzing the impact on competitive advantage as well using variety of other variables. Given that, this research used cross sectional data, so researchers can adopt longitudinal or time series panel data to conduct research in future.

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