

# Moderating Effect of Supply Chain Dynamic Capabilities on the Relationship of Sustainable Supply Chain Management Practices and Organizational Sustainable Performance: A Study on the Restaurant Industry in Indonesia

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**Abstract-** The sustainable supply chain management (SSCM) is a fairly new topic that has become a superior attention for the researchers recently. The current study is investigated empirically moderating effect of Supply chain dynamic capabilities (SCDC) on the relationship of SSCM practices and organizational sustainable performance (OSP) indicators namely; “economic performance, environmental performance, social performance” in the restaurant industry of Indonesia. For this purpose, data was collected from the 210 supply chain managers by using the simple random sampling technique which yield a 78% response rate. For data analysis Smart PLS 3 software and PLS Structural Equation Modeling (SEM) approach was employed. The SEM analysis has shown, SSCM practices has a significant association with the OSP indicators. Moreover, the findings of the current study also shown that SCDC is significantly moderates on the relationship of SSCM practices and OSP in the restaurant industry of Indonesia. This shows that SCDC is considered to be an important contribution of the study. The current research also contributes a body of knowledge in the way of theoretical and practical implications. The study limitations and future directions are also discussed at last of the study.

**Keywords;** *supply chain dynamic capabilities, sustainable supply chain management, organizational sustainable performance, Indonesia*

## 1. Introduction

In the contemporary environment, supply chain management (SCM) has become one of the main source for the firms to increase their performance, and even their cost when the firms face more competition from the market. Nevertheless, with the several emerging issues, like, transparency of the firms, benefits of the employees, environmental protection and concern with the security.

To handle all of these issues, there is a need of time for the firms to transforms a better supply chain (SC) model. Moreover, firms also need to build a friendly environmental SC model to achieve or reach the harmony with the nature. The firms which gain a competitive advantage and lead in the international markets have good level SC practices in their systems. For instance, Unilever that is multinational company implemented a project which name was The Unilever Sustainable Living Plan in 2020 which entirely provide help to improve the health condition of the people. It also impacts the environment and achieve the 100 percent agricultural sustainable packages and raw material [1].

The sustainable supply chain management (SSCM) is entirely based on the combination of the SCM and sustainable theory [2, 3]. In the same vein, the digitization and globalization has posted a most challenges for the modern SCM with respect to dynamicity which could require a dynamic capabilities (DC) which are higher in the supply chain management (SCM). The linkage of the SSCM and SC has concerned with a parallel environmental condition and creating the concept of the DC in field of SSCM is considered a reasonable optimal [4, 5]. At last, the research based on how to improve the DC of SC to achieve the competitive advantage of the firms and sustainable performance based on after deep understanding of SC is considered to be high valuable topic. Most of the research on the SSCM has been conducted on developed countries [6-8].

Whereas, the research on the developing countries has a limited attention as a SSCM practices in the under developed countries [8, 9], especially in the restaurant industry in Indonesia [10]. In this regards, the improvement in the SSCM within the developing country (Indonesia) is bearded a significant value within more developing countries. In addition, most of the previous studies have been conducted a direct effect of SSCM practices and organization sustainable performance, that shows inconsistent findings. Whereas as per the best researcher knowledge, the indirect moderating of SCDC

in the association of SSCM practices and organization performance is limited.

Therefore, this current paper has a main concern on the moderating effect of SCDC on the relationship of SSCM practices and organizational sustainable performance in the restaurant industry of Indonesia because the Indonesia is entirely considered to be a fastest developing country in the current environment. The Indonesia economy is considered to be severe condition of transformation, and without any ambiguity is become a one to hottest topic in the Indonesia in these days. The objective of this is to be changed the excessive status supply, wastage of the resources and unreasonable structure, low value adding and low quality products [10]. With respective to a micro level, for the Indonesia firms to survive and also established a new direction for the sustainable development of restaurant industry. Moreover, the society sustainable development is considered to be good point for the supply side reform. The focus of the current empirical research is how SSCM could affect the sustainable performance of the Indonesia restaurant industry in a sustainable way beneath the various circumstances of the various market economic reforms. In the meantime, the integration model of the coupling SSCM and DC theory [4], this paper has embedded the SC dynamics within the frameworks and also examined whether the SC dynamic capabilities is might to be moderated within the relationship of SSCM and sustainable performance of the restaurant industry of Indonesia.

In the rest of this paper, a background which is theoretically has been discussed and hypothesis for research are also developed. In addition, sections are also described about methodology, findings which are based empirically, and discussions are as follows. At last, implication, limitations and future direction has been also discussed.

## 2. Literature Review

### 2.1. Sustainability Supply Chain Management

It has been described by [11] that firms should be more focused on the social responsibility and not only be focused on the profit maximization. The social responsibility described, it is the responsibility of the firms to work and act at the best interest of environment and as a whole society. Through introducing the social and environmental topic within the supply chain management (SCM) which is traditional in nature, the SSCM has extended the traditional realm of the idea by taking in the deliberation the economic sustainability, society and environmental time of conning and the supply chain optimizing [12, 13]. There are numerous researchers who defined the SSCM that it could be deemed as a SCM major focusing to maintain the environmental, social and economic stability to achieve the long term sustainable development [14, 15]. Moreover, in other words, [14] further explored that SSCM is considered to be a management of information, material and flow of capital and as well as among the firm's cooperation along with the supply chain whereas enchanting the goals from three components of sustainable

growth. A further discussion has been elaborated by Dubey, et al. [13] who further categorized the SSCM into two groups which are, management philosophy and management process set.

The SSCM practices has been comprises internal and external practices of the firms that are used to make the supply chain within the organizations more sustainable with respect to three dimensions of the sustainability [16]. The firms which has good practiced about the sustainable supply chain are able to enhance their sustainable competences. Various scholars have been done a various researches on the SCM practices. Nonetheless, a little attention has been reviewed in the extant literature on SSCM practices and case analysis has been used to discussed about the practices through diversified industries and has been explored the practices in the manufacturing industries [17].

Furthermore, several researcher has been used the qualitative method for analysis to investigate the combination of SSCM and the best practices [18, 19]. In addition, [19] further categorized the SSCM practices into three perspectives that are "strategic orientation, collaboration, supply chain continuity, risk management and pro- activity". Whereas, [20], further identified SSCM into four dimensions which are process design, product design, and sustainable association with the customer as well as suppliers. Likewise, [18] have also focused on four areas which are, "sustainable design, sustainable distribution, sustainable production and investment in the SSCM practices". Nevertheless, SSCM practices which are discussed in the extant literature streams has the inconsistent findings and also there is little attention on the combined effect of SSCM practices. Therefore, current research has been endeavored to implement the SSCM practices. For this purpose, in the current study has been proposed a five SSCM practices dimensions which are taken about the core practices into the account which are entirely based previous literature stream.

### 2.2. Supply Chain Dynamic Capabilities

In previous literature, it has been shown that SSCM could estimate the sustainable growth of the supply chain with respect to a specific period which required a confident static capability within the supply chain management (SCM) [21]. Nevertheless, in the fluctuating environment, such type of abilities has a need to be adjusted continually. The SC has could be able to only contented the market demand if the novel abilities has been created to increase or enhance the long term sustainable efficiency [2]. For creating the new ability, it is important the dynamic capacity of the enterprise. According to [22], the dynamic capability has been flourished regularly to integrate and built the internal and external competencies to address the environment which is rapidly changed with the passage of change. The dynamic capabilities theory (DCT) is the resource based theory (RBV) extension. However, the emphasized of the RBV theory is on the resources choice, or the selectin of the resources which are considered to be appropriate, while the dynamic capability has emphasized on the renewal and resource development [23]. As per the recommendation, [23] who explained that resource which

are intangible in nature are considered to be bundle to create the capabilities.

In addition to this, supply chain management capabilities has been integrated by the DCT, is the capability to adjust the SCM. Currently, it is considered to be a developing and popular concept and yet its essence is very difficult to understand [24]. On the other hand, [25] further explored that the organization become a more flexible from the supply chain dynamic capabilities (SCDC), and therefore, it could be more easily to adapt the trend of the market and also efficiently to tackle the volatility in the market, and ultimately provide assistance to firm to attain the for the industrial competitive advantage. The firm competitive advantage not only based on single sub capability, but it could be achieved from the different sub-capabilities combination [26].

### 2.3. The Relationship between SSCM Practices and Organizational Sustainable Performance

Various studies have been conducted who investigated that how the SSCM practices could increase the organizational sustainable performance (OSP). A study conducted on the manufacturing firms by the [27] who found that SSCM practices have positive and significant association with the sustainable performance, especially from the social perspective and economic perspective. In the same vein, a further study [28] that was conducted on the five different firms also the positive effect of SSCM on the sustainable performance. [29] confirmed that firms SSCM activities has significant and positive association with the sustainable performance. [30] further used the explorative method to found the positive effect of SSCM on the brand of firms as well as also on the performance within the industry of the Scottish cashmere. Similarly, it is also found in the other studies that SSCM has a positive association with the sustainable performance [31]. Thus after seeking this associate association it is hypothesized that:

**H1:** SSCM practices has a significant association with the organizational sustainability performance of restaurant industry of Indonesia.

**H1a:** SSCM practices has a significant association with the economic performance of restaurant industry of Indonesia.

**H1b:** SSCM practices has a significant association with the environmental performance of restaurant industry of Indonesia.

**H1c:** SSCM practices has a significant association with the social performance of restaurant industry of Indonesia.

### 2.4. The Relationship between Sustainable Supply Chain Management Practices, Supply Chain Dynamic Capabilities and Organizational Sustainable Performance

Previous researches on the dynamic capabilities has shown that it has a positive and significant effect on the business performance. It is further investigated by [32] that dynamic capabilities has the abilities to gain the competitive advantage and hence also provide help to gain the performance of the industry. Similar findings have

been shown by the various other studies, [17] argued currently the dynamic capabilities are relatively considered to be a new concept, and there is also limited research how it could affect to sustainable performance. A study explored by [18] on the luxury industry and found the positive impact of supply chain dynamic capabilities on sustainable performance and on the new products of firms. On the other hand, various other researchers also analyzed this relationship through the various specific dimensions and found that strategic cooperation ability could help to increase the sustainable advantage of firm.

The SSCM would provide help to achieve the competitive advantage which are short term, which in the turn could be boost with the further development of the dynamic capabilities [32]. The combination of both of SSCM and dynamic capability is limited with respective to empirical research. All kind of information is provided by the customer orientation and participation in the SSCM practices [33], and to some of the extent encourage the dynamic capabilities and improve the sustainable performance. In addition, [34] further explored that cultivation and spillover of the firm's capability in global supply chain has shown that firms are able to gain the knowledge and resource's from various chain members and therefore has improved their capability [34]. Moreover, [35] also elaborate that trust of the supply chain partner is considered to be a vital in dynamic capabilities of the firms.

It is proposed by [36] that SSCM practices might not be considered as the source of competitive advantage. In addition, [13] further argued that SSCM could impact on the competitiveness of the enterprise through the moderating linkage. With respective to the resource base view, dynamic capabilities could be often moderate the sustainable resources to improve the performance [37]. [9] further investigated that dynamic learning capability could be more effectively moderate the impact of the SSCM practices on the performance. On the other hand, various other scholars also explored the relationship among the sustainable supply chain management, dynamic capabilities and business performance [38, 39]. The researcher has started their work from the dynamic and proposed that the relationship of the supplier has a positive effect on the flexibility of the production and optimization of the product, hence improve the sustainable performance. They further also confirmed the combined effect of dynamic capabilities within the supplier and firm efficiency relationship. Thus based on the previous discussions, it is hypothesized that:

**H2:** SCDC significantly moderates in the relationship of SSCM practices and organizational sustainable performance of restaurant industry of Indonesia.

**H2a:** SCDC significantly moderates in the relationship of SSCM practices and economic performance of restaurant industry of Indonesia.

**H2b:** SCDC significantly moderates in the relationship of SSCM practices and environmental performance of restaurant industry of Indonesia.

**H2c:** SCDC significantly moderates in the relationship of SSCM practices and social performance of restaurant industry of Indonesia.

## 2. Research Framework

Based on the previous discussions, research framework of the current study has been established. The current framework has shown the sustainable supply chain management practices (SSCMP) as an exogenous, supply chain dynamic capabilities (SCDC) as a moderator and organizational sustainable performance (OSP) as an endogenous variable. All of the following variables are depicted in the following Figure 1.

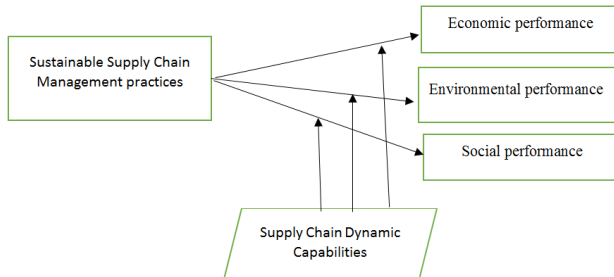


Figure 1. Research Framework

## 4. Methodology

The present study is cross sectional and correlational in nature because the data been collected on time. A quantitative approach through using the self-administered questionnaire was used to investigate the relationship between the exogenous, moderator and endogenous variable in the restaurant industry of Indonesia. The primary data for the current study has been collected by using the five point Likert Scale from strongly agree=1 to strongly disagree=5. For measure all the variable the questionnaires were taken from the extant literature or studies. Five items for the SSCM practices has been adopted from the various studies [4, 40-42]. Similarly, five items have been adopted for the supply chain dynamic capabilities [33, 43, 44]. Moreover, three items were measured to the economic performance that were adopted from the study [45, 46]. Three items for the environmental performance has been adopted from the several studies [31, 45, 47, 48]. Lastly, three items for the social performance has been adopted from the studies of [49-51]. For the data collection, questionnaire translated both in the English and Indonesia language.

At the time of study, there were almost 900 supply chain managers were working in Indonesia five star hotels. The samples size 269 supply chain managers for the current study was selected by using the [52] table which were working in the five star hotels in the Indonesia by using a simple random sample technique. There two sampling techniques which has been used in the methodology. One is probability and other is non probability. In the probability sampling, each element has an equal chance of occurrence while in non-probability not equal chance of occurrence of the elements. The generalizability of the probability sampling is more as compare to non-probability sampling. Therefore, for the current study a simple random technique has been used so that the generalizability of findings could be increased [53]. In this regards, total 269 self-administered questionnaires were distributed among the supply managers of five star hotels in the Indonesia. The total of 210 questionnaires were returned back from the hotels

which is 78% response rate of the total. As a result, 210 responses were included for the analysis.

## 5. Data Analysis

Several prior studies adopted partial least square – structural equation modelling (PLS-SEM) approach in testing the direct and indirect relationship of variables [37,38,39]. Therefore, the research hypotheses of present research were assessed through PLS-SEM. The measurement and structural model of the study were assessed by using Smart-PLS 3 software. PLS-SEM approach is appropriate in case of non-normal data or small sample size [40].

### 5.1. Measurement Model of Study

To test the model, we used the structural equation modelling (SEM) technique through using the partial least squares (PLS) with Smart PLS 3.0 software [41]. This software is called a second generation software that could be used to test the complex model along with the latent variables. Table 1 has been showing the results which were obtain through the measurement of model. Before assessing the model, the construct reliability and validity must be established [41]. Therefore, first, we assessed the convergent validity and discriminant validity of the measurement model. Table 1 presents the measurement model of the study. All the factor loadings that are less than 0.5 are deleted from the model in order to establish the indicators reliability. All the constructs have cronbach's alpha > 0.70, average variance extracted (AVE) > 0.5 and composite reliability (CR) > 0.60 that established the convergent validity of the model [41]. For discriminant validity, in the fornell and larcker criterion, the diognal values represents the square of AVE that must be greater that the constructs' correlation with other variables and in the HTMT analysis all the values should be less than 0.85 [41]. Similarly, the results of the Fornell and larcker criterion (in Table 2) and HTMT analysis (in table 3) have established the discriminant validity of the construct.

Table 1. Measurement Model of the study

Measurement Scale	Items	Loadings	Cronbach's Alpha	AVE	CR
Economic Performance	EcoP 1	0.707	<b>0.72</b>	<b>0.57</b>	<b>0.80</b>
	EcoP 2	0.826			
	EcoP 3	0.725			
Environmental Performance	EnvP 1	0.791	<b>0.73</b>	<b>0.52</b>	<b>0.76</b>
	EnvP 2	0.542			
	EnvP 3	0.803			
SC Dynamic Capabilities	SCD C1	0.729	<b>0.79</b>	<b>0.54</b>	<b>0.86</b>
	SCD C2	0.702			

	SCD C3	0.792			
	SCD C4	0.759			
	SCD C5	0.695			
SSCM Practices	SSC MP1	0.758	<b>0.75</b>	<b>0.50</b>	<b>0.83</b>
	SSC MP2	0.748			
	SSC MP3	0.697			
	SSC MP4	0.747			
	SSC MP5	0.578			
Social Performance	SocP 1	0.745	<b>0.71</b>	<b>0.52</b>	<b>0.76</b>
	SocP 2	0.723			
	SocP 3	0.699			

**Note:** ECOP- Economic Performance, EnvP- Environmental Performance, SCDC- SC Dynamic Capabilities, SSCMP- sustainable supply chain management capabilities, SocP-social performance

**Table 2. Fornell and Larcker Criterion for Discriminant Validity**

	EcoP	EnvP	SCDC	SSC MP	SocP
<b>EcoP</b>	<b>0.755</b>				
<b>EnvP</b>	0.436	<b>0.722</b>			
<b>SCDC</b>	0.522	0.437	<b>0.736</b>		
<b>SSC MP</b>	0.434	0.51	0.563	<b>0.709</b>	
<b>SocP</b>	0.353	0.686	0.407	0.472	<b>0.722</b>

**Note:** ECOP- Economic Performance, EnvP- Environmental Performance, SCDC- SC Dynamic Capabilities, SSCMP- sustainable supply chain management capabilities, SocP-social performance

**Table 3. HTMT Analysis for Discriminant Validity**

	EcoP	EnvP	SCDC	SSC MP	SocP
<b>EcoP</b>					
<b>EnvP</b>	0.761				
<b>SCDC</b>	0.728	0.629			
<b>SSC MP</b>	0.624	0.748	0.720		
<b>SocP</b>	0.609	0.554	0.593	0.730	

**Note:** ECOP- Economic Performance, EnvP- Environmental Performance, SCDC- SC Dynamic Capabilities, SSCMP- sustainable supply chain management capabilities, SocP-social performance

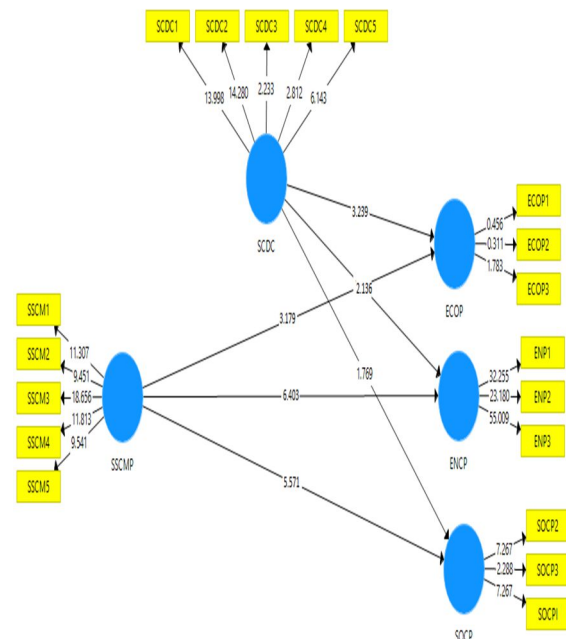
**5.2. Direct Effect**

In order to test the hypotheses, PLS-SEM was applied using Smartpls 3.0. The model contains three endogenous variables i.e. economic performance, environmental performance and social performance (dependent variable) having R<sup>2</sup> 0.30, 29, 25 and Q<sup>2</sup> 0.15, 14, and 12 respectively (see Table 6) that establish the substantiality of the Model. Table 4 presents the results of PLS bootstrap algorithms that confirms the significant direct relationship of SSCMP and economic performance ( $\beta = 0.21$ , t value = 3.18, p value = 0.002), environmental performance ( $\beta = 0.386$ , t value = 6.40, p value = 0.000) and social performance ( $\beta = 0.357$ , t value = 5.57, p value = 0.000). Thus, considering direct relationship, all the hypotheses are supported in this study. These results are consistent with studies of [28, 29], who found the SSCMP as a significant predictor of sustainability performance in various countries. Particularly in Indonesia, SSCM practices will help to avoid purchasing of products that can result in environmental degradation [54]. Consequently, it enables the organizations to improve their financial performance [38] by improving profits and sales through sustainability activities [19].

**Table 4. Direct Effect**

Hypothesis	Beta	S.E	T Value	P Value	Decision
SSCMP-> EcoP	0.205	0.065	3.179	0.002	Supported
SSCMP -> EnvP	0.386	0.060	6.403	0.000	Supported
SSCMP -> SocP	0.357	0.064	5.571	0.000	Supported

\* SCDC = Supply chain dynamic capabilities, SSCMP = sustainable supply chain management practices, EcoP = Economic performance; EnvP = Environmental performance; SocP = Social Performance \* Significance level = 0.05



**Figure 2. Direct Effect.**



### 5.3. Testing Indirect Moderating Effect

The research model hypothesized that supply chain dynamic capabilities moderates on the relationship of SSCMP and sustainable performance of Indonesia restaurant industry. The moderation test was employed by using the two stage calculation approach. This approach was employed as per the suggestion of [54], who recommended that when the objective of study is whether is that moderating variable significantly moderates in the relationship of exogenous and endogenous variable. For this purpose, to test the moderation hypotheses, this study has used [55] criteria to determine whether the moderation condition is exist.

The findings of the moderation (see Table 5) inferred that SC dynamic capabilities moderates the relationship of SSCMP with economic performance ( $\beta = 0.229$ ,  $t$  value = 5.18,  $p$  value = 0.000), environmental performance ( $\beta = 0.124$ ,  $t$  value = 3.09,  $p$  value = 0.002) and social performance ( $\beta = 0.115$ ,  $t$  value = 2.86,  $p$  value = 0.004). These findings suggest that SCDC is considered to be significant moderator in the relationship of SSCMP and all the sustainable performance indicators. This shows that higher level of SCDC in the business is considered to be more significant in the relationship of SSCM practices and sustainable performance of the Indonesia restaurant industry. These results replicate the findings of several prior studies [19, 56]; who found the significant indirect role of SC dynamic capabilities in enhancing organization's sustainability performance through SSCM activities. These findings not only provide the mechanism for enhancing organization's sustainability performance, but will also motivate the managers to adopt the SSCM practices to enhance their competitive strength and overall business performance.

Table 5. Indirect Effect

Hypothesis	Beta	S.E	T Value	P Value	Decision
SSCMP*SCDC -> EcoP	0.229	0.044	5.181	0.000	Supported
SSCMP* SCDC -> EnvP	0.124	0.040	3.085	0.002	Supported
SSCMP*SCDC -> SocP	0.115	0.040	2.859	0.004	Supported

Note: SCDC = Supply chain dynamic capabilities, SSCMP = sustainable supply chain management practices, EcoP = Economic performance; EnvP = Environmental performance; SocP = Social Performance  
\* Significance level = 0.05

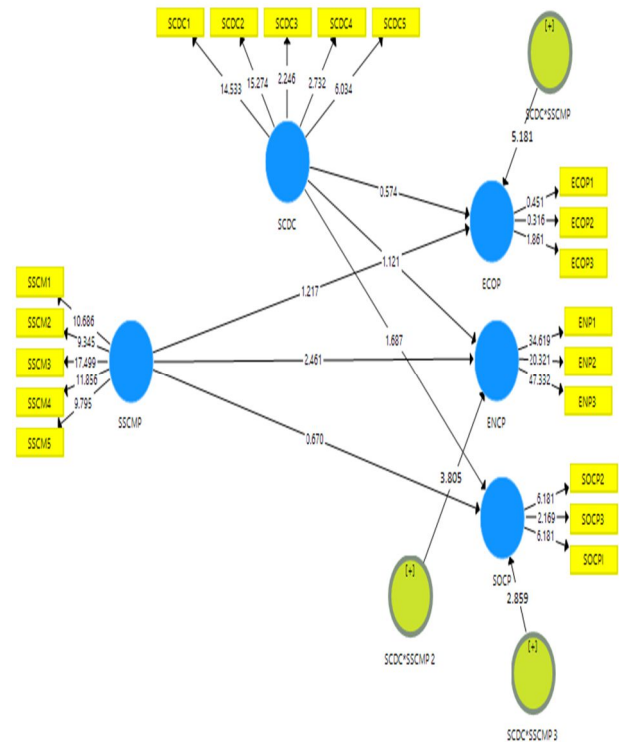


Figure 3. Moderating Effect

Table 6. Predictive Relevance and R<sup>2</sup> of the Model

Endogenous variables	R <sup>2</sup>	Q <sup>2</sup>
Economic performance	0.30	0.15
Environmental performance	0.29	0.14
Social performance	0.25	0.12

### 6. Conclusion

The presents study contributes to the existing literature in several ways. First, it provides the empirical evidence of the relationship between SSCM practices and organization's sustainability performance in the context of restaurant industry in Indonesia that strengthen the findings of prior studies [57, 58]. Second, this study is amongst the few that explore the SSCM practices relationship with organization's sustainability performance in developing countries specifically Indonesia. It also extends the literature and provide generalizability to the findings of prior studies that focused on developed countries [59]. Finally, our findings provide empirical support to indirect effect of SC dynamic capabilities in the relationship of SSCM practices with sustainability performance and adds knowledge to the existing literature.

The present research provides considerable implications to the practitioners specifically related to restaurant industry. First it provides the mechanism of enhancing business sustainability performance through SSCM practices. Second, it encourages the managers to adopt SSCM by establishing it link with overall business performance from past studies. This will motivate them and enhance their confidence in implementing sustainability activities in their existing SCM system. Finally, this research will help the restaurant managers in enhancing their

competitive advantage through sustainable supply chain management initiatives.

### 6.1. Limitations and Future Research

This research has some limitations since it has a cross-sectional design and the data obtained make inferences about the responses at one time only. However, a longitudinal study is preferred to assess change in responses at different point of time and to establish the causal relationships among variables. Furthermore, the data was collected from Thai restaurant SC managers. Thus, future research should enlarge the sample and balance the number of purchasing and other managers, to conduct a comparative analysis between two groups of managers. Moreover, this study uses parcel sum of squares or multidimensional construct using in this study to draw the overall conclusion about latent variables. Therefore, it is recommended that the prior studies should analyze the whole model by focusing on each dimension of the construct.

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