

# Role of Green Supply Chain Management Practices on Manufacturing Company Performance: A Moderating Role of Supply Chain Traceability and Institutional Pressures

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**Abstract- Purpose:** This research paper has analysed the role of green supply chain management practices on organisational performance in the manufacturing sector of Malaysia. The moderating role of supply chain traceability and institutional pressure are considered as the moderators. **Method:** Primary data was collected via Likert scale based survey questionnaire. The sample of this study was considered to be 369 employees and managers from Malaysian manufacturing companies. SEM has been used as the data analysis technique in this paper to assess the role of moderators in the model. **Findings:** The results have indicated that institutional pressures moderates the relationship of green purchasing and organisational performance and there is also a direct impact of internal environment management on organisational performance. However, the results have also indicated that traceability is not as efficient moderator in the model as in its presence none of the predictors have a significant impact on organisational performance. **Limitations:** This paper is centric on the manufacturing firms only. Therefore, other sectors of business are not entertained in this study. Consequently, the outcome of this study cannot be implemented in any sector other than manufacturing. Secondly, this study has emphasized on Malaysia as the core geographical domain of investigation

**Keywords;** Green supply chain management, GSCM practices, green purchasing, organisational performance, institutional pressures, traceability

## 1. Introduction

The following study is designed to examine the role of Green Supply Chain Management (GSCM) on organizational performance. Additionally, the moderating role of institutional pressure and supply chain traceability

is also determined under this study. The adaptation of GSCM has gained the interest of recent investigations due to its association with the environment [1-6]. Additionally, the role of supply chain management itself is pivotal for indicating the performance of an organization [7, 8]. However, the association of societal responsiveness with organizational performance is also a critical concern of the recent studies [9, 10]. For instance, quality of production, eco-centralism, and sustainable development are some of the most common filaments adapted by market giants [11].

Moreover, the adaptation of sustainable business development has also become another important competitive factor between contemporary businesses [12-20]. Therefore, this study will examine the impact of GSCM on the organizational performance with reference to manufacturing firms Malaysia. In correspondence, a quantitative research approach has been employed in this study to signify the moderating role of institutional pressure and supply chain traceability on the relationship between GSCM and organizational performance.

The role of GSCM on the performance of firms has been abundantly examined. In association with this, a contradicting view has been obtained from the literature. It is because, GSCM poses intense financial consequences that are intensely influential on the performance of the organizations [21-25]. For example, [23] determined in their study that adaptation of GSCM requires an up-gradation of all the measures involved in the traditional supply chain. Hence, the impact of GSCM is negatively influential on the performance of the organization in the shorter-term as the organization has to deal with intense cost-effective measures. On the other side, [19] claimed that the adaptation of GSCM is indeed a cost-efficient

measure for longer-terms. This is because, GSCM rests on sustainable practices of product design, material induction, and end-of-life decision of the product.

In association with this, the adverse effect of the traditional supply chain cannot be neglected. Briefly, the environment is significantly getting destroyed with traditional supply chain practices as carbon emissions from traditional supply chain practices are altering the atmospheric compositions [26-30]. In regard to this crucial issue, the following study has been developed to list the impact of GSCM on the performance of manufacturing organizations with reference to the moderating effect of institutional pressure and supply chain traceability. This study is significant as it contributes to sustainable environmental by encouraging manufacturing firms towards the adaptation of GSCM and eco-centralism.

The following core objective of this study is developed from the review presented above:

- To examine the role of Green Supply Chain Management on organizational performance
- To explore the moderating effect of institutional pressure on the impact of GSCM on organizational performance
- To investigate the moderating effect of supply traceability in the relationship of GSCM and organizational performance

## 2. Literature Review

The concept of the green supply chain has gained a reputation in the literature due to its direct association with the betterment of the environment. The integration of environmental sustainability into the management strategies of the supply chain is determined as the green supply chain [31-38]. In detail, the design of the product, the material used for manufacturing of the product, packaging of the product, delivery of product and management of end-of-life of product are all elements of the supply chain [11, 13, 22]. In association with this, the relationship between GSCM and organizational performance has been examined by numerous analysts in the past years. Most of the studies indicate that GSCM is positively related to the performance of an organization [19, 31, 33, 37]. However, a certain number of researches disagree with the fact [8, 38]. To distinguish between the mixed approaches of analysts towards the casualty of GSCM and the performance of the organization, moderating variables are employed by the recent studies.

In correspondence, Zhu et al., (2012) [37] examined the contingent nature of GSCM while stimulating the organizational performance through the moderating effect of the eco-centricity of the organization. The authors defined eco-centricity as the association of environmental sustainability with organizational operations. The findings revealed that organizational performance is significantly

influenced by the eco-centric practices of the firm. However, there was no influence of the eco-centric supply chain on the economic development of the regions as analysed by the researchers. Similarly, Golpira et al. (2017) [13] explored the significance of environmental sustainability in shaping the supply chain practices with reference to manufacturing companies of the UK. The analysts employed a quantitative approach and extracted responses from 28 manufacturing firms of the UK. The core findings of the research were GSCM exhibits a significant relation with the cost-based performance of a firm and environmental behaviour of a firm as well. These studies derivate a strong positive and multi-directional relationship between a firm's performance and its adaptation towards GSCM.

Conversely, Zhu et al. (2012) [37] examined the impact of the green supply chain on the performance improvement measures of manufacturing firms in China. The author's extracted data from 396 Chinese manufacturing firms and figured out the management of the green supply chain has a limited impact on performance improvement measures. However, the authors further stated that the internal and external aspects of practicing GSCM are the core determinants that steer the adaption of a green supply chain towards performance improvement. Additionally, Namagembe et al., (2019) [23] tested the determinants of adaptation of GSCM in the manufacturing firms. The analysts listed that external pressure from the industry was the core filament that hinders the adoption of GSCM practices in the manufacturing firms. Similarly, Teixeira et al. (2016) [31] claimed that the induction of GSCM practices costs significantly to the manufacturers as they have to develop new channels of transportation for sustainable practices, redesign the production structure and even install new facilities. However, Hu and Feng (2017) [14] contradicted this fact by comparing the long-term cost-efficiency as imposed by a green supply chain. For instance, GSCM gives rise to the conversation of procedure rather than consumption, hence no new costing is required [13, 21]. From these, a contradicting aspect of the impact of the green supply chain on the performance of the manufacturing firms has been obtained. Therefore, this study has implied supply chain traceability and institutional practices as the moderators determine the impact of GSCM on manufacturing firms specifically in the regions of Malaysia.

*H1: Adaptation of Green Supply Chain Management (GSCM) is positively influential on the performance of manufacturing firms*

From the past literature, the role of supply chain traceability and institutional practices has been determined as the moderator of the relationship between GSCM and performance of the firm [9, 15, 24]. Market pressure under this content is referred to as the influential forces of the

industry that backs up the decision making of an organization and ranks their performance [12, 21, 24]. As the role of market pressure is intensely associated with the performance of an organization this variable has been selected as the moderator for the determination of GSCM adaptation and its impact on organizational performance. On the other side, the supply chain traceability is denoted as the process of forward as well as backward trading within the practised supply chain [15, 24, 34]. This concept is recently adapted among the manufacturing firms; therefore, it has been underlined as another crucial moderator in this study.

In addition, Vanalle et al. (2017) [34] explored the non-market pressure on the adaptation of green supply chain measures on the performance. The authors figured that non-market pressure has an intense influence on the decision of organizations to adopt the green supply chain. Specifically, legal obligations and ethical considerations were considered as the core non-market pressure by the authors. On the other hand, Dubey et al. (2017) [12] explored the role of market-pressure such as competition, demand, and supply on the adaptation of supply chain strategies. Their findings suggest that market pressure is significantly associated with the organization's decision to employ green supply chain. Further, the analysts justified their findings with the long-term and short-term impact of a green supply chain on the manufacturing firms.

*H2: Institutional pressure moderately influences the role of GSCM on the performance of manufacturing firms.*

On the other hand, the role of supply traceability on the practices of the green supply chain has been examined by different analysts and a contradicting outcome has been obtained from the literature. For instance, Cousins et al. (2019) [11] explored in their study that supply chain traceability in the manufacturing firms of the UK is negatively moderated among the GSCM practices as well as environmental performance. Contrastingly, Jabbour and de Sousa Jabbour (2016) [15] claimed in his study that traceability in the supply is an innovative concept that enables the firms to enhance interaction between their suppliers and consumers as well. Moreover, manufacturing firms with multiple channels of products are comprehensively supported by a traceable supply chain practice [4, 5, 14]. Moreover, Suryanto et al. (2018) [29] investigated the role of supply chain traceability in controlling the risk of misleading supplies. The researchers figured out that the risk of misleading supplies is indeed controllable by the induction of a traceable supply chain practices. In association with all these findings, the following hypothesis has been generated:

*H3: Supply chain traceability moderately impact of green supply chain management on the performance of manufacturing firms*

### 3. Theoretical and Conceptual Framework

Institutional theory reflects three peculiar pressure that is influential on the decision making of organizations namely; normative, coercive and mimetic [5]. Firstly, normative pressure is designated to enforce organizations towards legitimate actions. Specifically, the pressure from external stakeholders (especially the one who vest investment) is considered in this. For example, activities of an organization relating to core business such as sales, import, and export are determined under this pressure. Secondly, the power of governing bodies is studied under the coercive pressure of institutional theory. Briefly, the pressure of the government and regulating bodies on the actions of an organization are listed here. Thirdly, the mimetic pressure initiates when organizations begin to mimic the practices of successful competitors in the industry. At this stage, the mimicking organizations are obliged to adopt certain measures as designed by the successful competitor.

Similarly, Bitektine et al., (2018) [5] explored the impact of traceability in accordance with the contingent theory of traceability and normative values of a firm. The researcher explored that firms are intensely responsible for the induction of traceability in business operations. In detail, the theory of organizational development defines adaptation of business expansion, knowledge of individuals and effectiveness of the organization [10]. In simple words, the organizations are obliged to continuously keep growing to sustain their position in the market place. This is because the demands are in the current market place are constantly upgrading. Hence, organizations are also mandated to upgrade themselves. In addition, it has been determined by different studies that the theory of organization development seek adaptation of contingency in the strategy of organization management [8]. In association, contingency planning along with recent practising has been claimed as a most effective measure that stimulates several aspects of a business [5, 8, 10]. Moreover, from the theory of organizational development, the fact that growth is a constant goal has been explicitly induced by recent firms.

Specifically, the theory of organizational development lists out three essential practices of recent firms. At first, the theory urges the management to identify the opportunities and then plan for the accomplishment of identified opportunities [5]. Secondly, the theory suggests organizations to shape their human capital as a competitive edge for competing in the market. Thirdly, the organizations are obliged to increase their effectiveness within the market of practice [8, 10]. Eventually, the organizations that employ the essentials of organizational development theory experience a creative work-environment equipped with challenging human capital and an essential operational framework to treat complex requirements of the business.

The listed theories indicate a pivotal role in the development of organizations and their routine practices. Additionally, the pressure from internal as well as external forces has been determined as influential in the capacity of the performance of organizations. In association with the organizational development theory, it focuses on the growth and adaptation of innovative measures in the organizational practices [8]. In response, this study has examined the impact of GSCM adaptation on organizational performance. Hence, the concept of rapid development and up-gradation as defined by the organizational development theory has been employed in this study [10]. Briefly, this study has analyzed the practices of the sustainable supply chain that can be adapted by manufacturing firms. In doing so, all the essentials of organizational development theory will be practised by the firms. For example, organizations must identify the opportunities, at the recent market induction of environmental factors that holds peculiar opportunities for the businesses.

On the other hand, the theory of institutional pressure has been reviewed as the responsiveness of an organization towards its surroundings. In accordance with this, the responsiveness of manufacturing firms towards the adaptation of GSCM measures with reference to the external as well as internal forces has been analysed in this study. Moreover, the role of traceability is also underpinned in association with the theory of traceability and normative value of organizational performance. With reference to this, the theoretical concepts that organizations are stimulated from their surroundings and traceability of their operations. Altogether, this study has listed the relationship of GSCM (innovative measures) and organizational performance (development) and align all the concepts of the theory of institutional pressure, traceability and normative value, and organizational development.

On the basis of discussed reviews and theoretical framework, the following conceptual framework has been formulated for this study. Accordingly, the determinants of green supply chain namely; green purchasing, cooperation with consumer, internal environment and eco-design are considered as the core positive stimulator of green supply chain that positively impact the performance of manufacturing organizations. Additionally, the role of institutional pressure and supply chain traceability is determined as moderators under this influence.

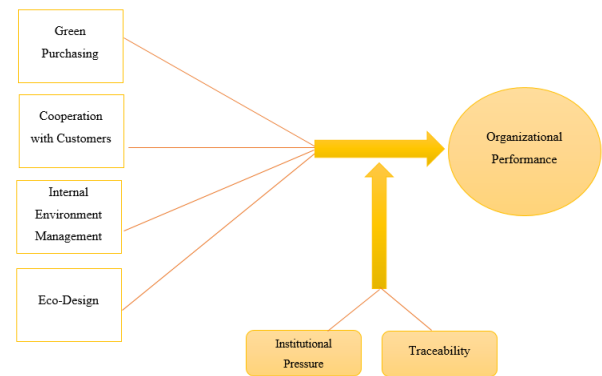


Figure 1. Conceptual Framework of the Study

#### 4. Research Method and Approach

In this particular study, quantitative data has been used by the researcher that was accumulated from a primary source using survey questionnaires. Primary quantitative data was suitable for this study because the researcher intends to highlight the impact of GSCM practices on the performance of manufacturing companies in Malaysia along with the mediating role of supply chain traceability and institutional pressures. However, the sample size has been calculated as follows:

$$n = \frac{z^2 \times p \times q}{e^2}$$

$$n = \frac{(1.96)^2 \times 0.5 \times (0.5)}{(0.05)^2} = 384$$

The aforementioned equation,  $z$  represents the standard score at 5% that highlights the level of significance at 1.96. Whereas,  $p$  symbol indicates the targeted proportion that is 0.5 and  $q$  highlights the population proportion that is 0.5 [18]. Furthermore,  $e$  represents the error that is 5% indicating the confidence level of 95%. 384 sample size was computed with the help of equation therefore 450 survey questionnaires were distributed by the researcher. Total questionnaires were distributed among the 450 respondents however some responses were incomplete and improper to be incorporated in the research. Therefore, only data of 369 responses were included and therefore, the response rate of the study is 82%. In this regard, a sample size of 369 employees is adopted by researcher and survey has been conducted with employees that are engaged in the supply chain practices and operation in organisations of Malaysia. For this purpose, the convenience sampling technique was used due to the accessibility issue it was not possible for the researcher to reach all the managers easily. Furthermore, the targeted audience selected in this particular study belonged to one specific region, Kuala Lumpur was familiar with the supply chain operations in order to gather the relevant data related to research aim. The survey questionnaire was distributed physically among the selected population by a researcher that helped to assemble the subjective opinion of participants regarding the different aspects of green supply chain

practices and its impact on the performance of the organisation. The questionnaire incorporated in the research consists of the 5 points Likert scale that ranges from strongly disagree to strongly agree while reliability was also tested using Cronbach Alpha. Moreover, respondents of the study are permitted to choose the desired option according to the level of degree they agreed or disagreed with a certain statement. Mackey and Gass (2015) [20] highlighted that closed-ended questionnaire permits the participants to demonstrate the level of their consent of the statement specified in the survey.

Further, structured equation modelling (SEM) technique has been adopted by the researcher because it permits to implement the numerical and statistical model robustly. SEM helps to analyse and calculate the unbiased relation between different variables and unveil the impact of one variable over another [35]. It was essential to utilise the SEM model in this underpinned research because the relationship between independent and dependent variables was assessed along with the mediating variables. With the adoption of the SEM technique, Confirmatory factor analysis (CFA) and Path analysis were implemented. CFA was used to conduct the test the latent constructs and other relevant variables [1]. Furthermore, path analysis was adopted to conduct the test over mediating, direct and indirect effects of different variables. In addition to this, statistical software named as SmartPLS was used to conduct the data analysis because it utilises the partial least squares (PLS) techniques to examine the values [27]. The AVE has been used to test the convergent validity that enabled the researcher to inspect whether there is an existence of a similar relation between both variables. However, HTMT ratio has been used to measure the

discriminant validity to highlight the variable construct that does not relate to each other.

The factor loadings have been used to explore the relevancy of each factor to the variables considered in this study [25]. Furthermore, path analysis technique has also been adopted by the researcher to detect the direct and moderating dependencies between different variables of the study. In addition to this researcher used path analysis to identify and investigate the relationships among the variables through multiple regression analysis conducted on the basis of data accumulated through a questionnaire survey. Along with the analysis of findings comprehensive conclusion and strategic recommendations has been presented to prevent the challenges green supply chain practices that can affect the organisational performance.

## 5. Analysis and Results

### 5.1 Reliability and Convergent Validity

As per the method utilised in this research, this study has made use of confirmatory factor analysis (CFA) in order to verify the structure of the factors that are involved in the model. This statistical analysis also helps in determining the statistical significance of the relationship between the variable and constructs of the model. For this research, 0.6 is considered to be the benchmark for factor loadings, composite reliability and Cronbach's Alpha as prescribed by [7] which means that in order for all the constructs to be verified as valid, the value of all the metrics should be 0.6 or greater. The following table indicates the values that are assigned to each of the variable and sub-variable:

**Table 1.** Reliability and Convergent Validity of the Constructs

	Factor Loadings	Cronbach Alpha	Composite Reliability	Average Variance Extracted
CC1	0.818	0.672	0.805	0.583
CC2	0.627			
CC3	0.828			
ED1	0.760	0.634	0.799	0.571
ED2	0.806			
ED3	0.697			
GP1	0.813	0.747	0.857	0.669
GP2	0.932			
GP3	0.691			
IEM1	0.885	0.799	0.883	0.717
IEM2	0.883			
IEM3	0.766			
IP1	0.940	0.773	0.825	0.617
IP2	0.662			
IP3	0.729			

OP1	0.764	0.872	0.913	0.724
OP2	0.866			
OP3	0.905			
OP4	0.863			
TRAC1	0.610	0.738	0.834	0.627
TRAC2	0.109			
TRAC3	0.508			

Table 1 includes the value of Cronbach Alpha which is calculated of each of the latent constructs and it can be asserted that all are above 0.6 and similar is the case with factor loadings and composite reliability. Moreover, the table has also included the value of Average Variance Extracted (AVE) for the constructs included in the model. This metric shows the amount of variance that can be explained by a construct in relation to the variance that is caused due to measurement error. In this research, the benchmark for AVE is considered to be 0.5 or greater as taken in the study conducted by Andersen et al. (2014) [3]. The above table shows that the AVE values for each :

variable and sub-variable are greater than 0.5. Conclusively, the above table indicates that the variables included in the model are suitable to test the relationships and impact.

## 5.2 Discriminant Validity

There are a number of different variables that are included in this research, it is important to assess whether or not the variables that should be unrelated are actually dissimilar. In order to assess the discriminant validity of the variables that are included in the model, the following table is presented

**Table 2.** Discriminant Validity of the Constructs

	Cooperation with Customers	Eco-Design	Green Purchasing	Institutional Pressure	Internal Environment Management	Organisational Performance
Eco-Design	0.743					
Green Purchasing	0.870	0.825				
Institutional Pressure	0.409	0.438	0.327			
Internal Environment Management	0.844	0.660	0.602	0.434		
Organisational Performance	0.466	0.413	0.388	0.329	0.684	
Traceability	0.116	0.123	0.109		0.070	0.093

The most widely used metric to assess discriminant validity is Heterotrait-Monotrait Ratio. As per the research conducted by Akgul et al. (2019) [2] the benchmark value of 0.90, this means that the value of HTMT for the variables can be 0.9 or lower in order to prove that it is not correlated with other variables with which it should be unrelated. As per the above table, it can be seen that for the independent variables, moderating variables, and dependent variable the value of HTMT is less than 0.9.

## 5.3 Path Assessment

This paper has aimed to study the role of GSCM practices on the organisational performance by

considering the moderating role of institutional pressures and supply chain traceability as the moderating variables. The sub-variables for the main independent variable are: green purchasing, eco-design, cooperation with customers, and internal environment management. There was the existence of multicollinearity in the data and in order to avoid that, both the moderators are tested separately, the following table includes the result of the impact of GSCM practices on organisational performance by considering institutional pressures as the moderator.

**Table 3.** Quality Assessment of Model with Institutional Pressure as Moderator

	R Square	R Square Adjusted
Organisational Performance	37.5%	35.9%

The values in Table 3 are important to be interpreted in order to understand the strength of predictors in explaining the change that occurs in the dependent variable. Similar to R-square, the value of adjusted R-

square is simply attuned for any discrepancies in the model. R-square of the model analysed in this paper is 0.375 which shows that collectively all the GSCM practices can demonstrate 37.5% of the variations that

might occur in the organisational performance with the inclusion of moderation of institutional pressure. After the alteration of the model for inconsistencies, the value of adjusted R-square is 0.359 showing that GSCM practices have the capability of explaining 35.9% of variations in

the organisational performance of manufacturing companies in Malaysia.

The following table explains the values of R and R-square by considering traceability as the moderator:

**Table 4.** Quality Assessment of Model with Traceability as Moderator

	R Square	R Square Adjusted
<b>Organisational Performance</b>	0.350	0.334

R-square of the model in which traceability is considered as the moderator is 0.350 which shows that collectively all the GSCM practices can demonstrate 35% of the variations that might occur in the organisational performance. After the alteration of the model for inconsistencies, the value of adjusted R-square is 0.334 showing that GSCM practices have the capability of

explaining 33.4% of variations in the organisational performance of manufacturing companies in Malaysia. In consideration of the problem of multicollinearity, the values of coefficients are also considered separately for each of the moderators. The following table shows the coefficient values for the model where institutional pressure is considered to be the moderator:

**Table 5.** Coefficients Table for Institutional Pressure

Path	Path Coefficient	T Statistics	P Values
Cooperation with Customers -> Organisational Performance	0.024	0.324	0.746
Eco-Design -> Organisational Performance	-0.003	0.042	0.967
Green Purchasing -> Organisational Performance	0.040	0.557	0.578
IP*CC -> Organisational Performance	-0.109	1.105	0.270
IP*ED -> Organisational Performance	-0.073	1.260	0.208
IP*GP -> Organisational Performance	0.190**	2.517	0.012
IP*IEM -> Organisational Performance	0.097	1.345	0.179
Institutional Pressure -> Organisational Performance	0.157***	3.035	0.003
Internal Environment Management -> Organisational Performance	0.465***	7.449	0.000

\*\* : Significant at 5%; \*\*\* : significant at 1%

The P-values in the above tables indicates that there are only three relationships that are found to be statistically significant at the 95% significance level. Firstly, in the presence of institutional pressures as the moderator, green purchasing tends to have a significant impact on the organisational performance considering the p-value of 0.012. The coefficient value is found to be positive which shows a direct relationship. The moderator

considered in this model also has a statistically significant and positive impact on organisational performance ( $p=0.003$ ). In terms of the direct impact of predictors on organisational performance, only internal environment management have a significant and positive relationship. The remaining predictors do not have a direct impact on organisational performance.

**Table 6.** Coefficients Table for Traceability as Moderator

Path	Path Coefficient	T Statistics	P Values
Cooperation with Customers -> Organisational Performance	0.062	0.815	0.415
Eco-Design -> Organisational Performance	0.010	0.176	0.860
Green Purchasing -> Organisational Performance	0.025	0.380	0.704
Internal Environment Management -> Organisational Performance	0.513***	7.888	0.000
TRAC*CC -> Organisational Performance	-0.100	1.173	0.242
TRAC*ED -> Organisational Performance	0.127	1.789	0.074
TRAC*GP -> Organisational Performance	-0.003	0.040	0.968
TRAC*IEM -> Organisational Performance	0.002	0.028	0.978
Traceability -> Organisational Performance	0.046	0.854	0.394

The coefficients in Table 6 includes traceability as the moderator. Considering this, the above table clearly

identifies that the only significant link is between internal environment management and organisational performance

on the basis of the sig value of 0.000 ( $p$ -value < 0.01). Also, the impact is positive as the coefficient value in the

above table is 0.513. Thus, institutional pressures are found to be a better moderator in the model.

## 6. Result of Hypothesis

Following table shows the results of the hypothesis made in this study to gauge the aim and objective of the study:

**Table 7.** Hypothesis Assessment Summary

S. No.	Hypothesis	Results
H1:	<i>Adaptation of Green Supply Chain Management (GSCM) is positively influential on the performance of manufacturing firms</i>	Partially Accepted
H2:	<i>Institutional pressure moderately influences the role of GSCM on the performance of manufacturing firms.</i>	Partially Accepted
H3:	<i>Supply chain traceability moderately impact of green supply chain management on the performance of manufacturing firms</i>	Rejected

## 7. Recommendations and Future Implications

The fundamental primary findings of this research indicate that the role of GSCM practices is moderated by institutional factors thus, production managers need to consider the additional factors while formulating and implementing GSCM practices. It has also been found from the findings of this research that the additional pressurizing factors help the companies to implement GSCM practices in a more efficient manner especially when it is related with the adoption of green purchasing and eco-design. The production managers need to take this into consideration that the implementation of these initiatives requires additional investments which may not yield results instantaneously. Also, it is recommended that the production managers of manufacturing companies operating in Malaysia should comply with the regulatory requirements that are set out by the regulatory bodies for the purpose of making sure that they do not have to face any negative consequence. One of the major managerial implications and recommendation of this study is that the companies also need to clearly identify their sustainability objectives which will allow them to ensure traceability of their GSCM practices for reporting it to other stakeholders involved.

## 8. Limitations

This study has examined the role of GSCM adaptation on the performance of manufacturing firms in Malaysia. With response to this, certain limitations are present in the study. At first, this study is centric on the manufacturing firms only. Therefore, other sectors of business are not entertained in this study. Consequently, the outcome of this study cannot be implemented in any sector other than manufacturing. Secondly, this study has emphasized on Malaysia as the core geographical domain of

investigation. So, the associated assumptions of this study are limited to the geographic presentation. Eventually, the study has adopted a quantitative approach as a result of which limited operational consequences are extracted out.

In response to the limitation, the study suggests that the outcomes of this study can be employed for the exploration of supply chain practices in other industries such as service sectors. Moreover, a wider aspect can be determined if this study is explored in globalized investigations. Finally, a qualitative approach can also be adapted to highlight a detailed association of listed variables and their relational outcomes.

## 9. Conclusion

Green Supply Chain Management and its related practices have become an emerging environmental practice especially in the manufacturing industry. Companies are using this for the purpose of gaining a reputed name in the industry and also improving their organizational performance. The primary results of this research have indicated that there are many Malaysian companies that have started to implement GSCM practices while there are some companies that are fully working on the sustainability and green supply chain framework. However, the adoption level is still low considering the vast manufacturing industry in the country. Regardless to the low adoption level, the findings of this research have indicated that it has a positive influence on the overall performance of the company. This research has taken into account the supply chain traceability and institutional pressures as moderating variables. The findings of this research have indicated that different type of institutional pressures including environmental and regulatory pressures contributes towards increasing number of companies adopting the



GSCM practices. Hence, it has been concluded from this research that institutional pressures moderate the impact of GSCM practices on organizational performance. Further, this research has also discussed the important role played by supply chain traceability in moderating the relationship between the two main variables. However, the model has shown that supply chain traceability is not found to be as effective as per the primary findings of this research.

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