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The Role of Institutional Pressures in Driving Internal and External Green Supply Chain Practices and Environmental Performance

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Abstract— **The contribution of the present investigation is also extended to determine the impact of green supply chain practices in influencing organizational performance. Hence, the understanding drive from such comprehensive approach will aid the manufacturing sector of Malaysia to identify the contribution of local and international institutions' pressures in affecting the success of Malaysian green supply chain methods. In this current research, we applied of Exploratory Factor Analysis (EFA) to discover the four factors are extracted by total twenty-nine items in which all items factor loadings are more noteworthy than 0.70. The results of structural equation modelling confirm that internal green supply chain practice and external green supply chain practice have significantly and positively influenced by institutional pressure. Furthermore, the outcomes of structural equation modelling also certify that, institutional pressure has a positive and significant impact on environmental performance. Finally, the outcomes more explained that internal green supply chain practices and external green supply chain practices have a positive and significant effect on environmental performance in manufacturing firms of Malaysia.**

Keywords— *Green supply chain practices, institutional pressure, Malaysia.*

1.   Introduction

The emergence of industrial era brought together the extensive utilization of power as the prime feature of budding economic progress. This required excessive usage of energy in business operations as the vital input to boost growth, but also enhanced the harmful emanation of greenhouse gases (GHG) [1], [2]. Even with ambitious policies than the ones already in place, the GHG emission are predictable to upsurge by 50% by the end of 2020 mostly driven by an anticipated 70% growth in carbon emissions from power utilization [3]. In addition, the expansion of information and communication technologies also relied substantially in power consumptions that carried numerous benefits to the development process, however, played major part in raising environmental burden. Moreover, the expansion of industries gave rise

to toxic emissions, industrial wastes, resource depletions, etc. that lead to augment environmental adversities [4]. Such pressure to natural atmosphere is the central cause of producing several adverse effects in the present world, in the form of extreme weathers, droughts, floods and resource scarcities.

Therefore, to cope with ecological condition, business, economies and governments are striving to encourage and regulate sustainable development that resulted in causing minimum or no harm to the environment [5]. In similar context, the growing importance of environmental management in business operations to drive sustainable performance is conceivable after witnessing the extensive deteriorations in environmental conditions. The adverse effects of global warming and environmental degradation have enhanced fears related to the survival of human civilizations, thereby, converging the major emphasis of modern world towards improving sustainability in every aspect of business, human and economic development [6].

In this regard, the role of green supply-chain management (GRSM) is crucial for linking eco-friendly business practices with improved environmental and economic performance of the firms [7], [8], [9], [10]. The aspect of supply chain management bring cohesion in every aspect of business operation starting from product development to customer usage [11]. Hence, enabling sustainability in each function of supply chain is beneficial to meet business and environmental goals together. GRSM involves internal and external environmentally responsive practices to ensure the success of sustainable development. To encourage sustainability, the commonly observed notion of enterprises presently is to grasp the GRSM methods to initiate proactive and responsible supply chains along with exploring indicators that drive effective GRSM application.

In search of investigating critical determinants of GRSM practices, many recent studies seek to study specific influencers of green management to encourage sustainable environmental conditions [11], [5], [6], [13]. The objective of this strand of research lies in identifying the crucial factors that motivate GRSM practices to bring improvements in natural environment

as well as business performance. Similarly, it has risen as a present-day practice in modern businesses to accomplish productivity, monetary benefit, organizational image, market segments to lessen ecological pressures of corporate products along with progressively enhancing international concerns for sustainability driving difficulty in managing global trade [14]. In this regard, the role of institutions is prime to disseminate the vitality of green business methods that hold the inspiration of both local and international markets [15].

Keeping in mind the excessive demand from customers, all around the world, for sustainable goods and services, businesses are prone to adopt green methods in performing organizational tasks [16]. In this regard, the enthusiasm for organization's green growth attribute can be resulted from numerous inspirations and underlies multi-facet motives. First, it can be dominated from organization's internal realization for being environmentally responsible or/and it can be instigated from organizational desire of becoming customer driven association and third, it can be resulted as an unavoidable aspiration due to enhanced regulations and environmental policies that are considered inevitable for business operations and international trade [17], [18]. Hence, the pressure from local and international customers and governments for ensuring eco-friendly business practices not only encourages GRSM but also help to bring productivity in firm performance. Stricter ecological controls and desire for augmented competitiveness increase organizational motivation of eco-friendly business practices and embrace the objectives of sustainable development [15].

Acknowledging the recent inclination of investigating the drivers of green management, the current study aims to explore the impact of institutional pressure (IP) in driving GRSM practices and firm performance of Malaysian manufacturing companies. In doing so, the study does not rely on single measure of GRSM but distributes the widespread prospect of GRSM into two crucial domains of internal green supply chain practices (IGSP) and external green supply chain practices (EGSP). Hence, the exclusiveness of present study held in identifying the influence of institutional pressure on both IGSP and EGSP along with exploring its effect on firm performance. Furthermore, the contribution of the present investigation is also extended to determine the impact of critical IGSP and EGSP in influencing organizational performance. Hence, the understanding drive from such comprehensive approach will aid the manufacturing sector of Malaysia to identify the contribution of local and international institutions' pressures in affecting the success of Malaysian green supply chain methods. Also, the present study can help manufacturing industry to capture the potential of institutional pressure and IGSP and EGSP in instigating firms' competitive advantage and performance.

2.   Literature review and hypotheses development

The importance of environmental management has been considerably identified in the literature for playing significant role in driving performance [19], [20], [21]. In examining the impact of environmental management, the critical role of GRSM is been highlighted in numerous studies to drive firm performance [4]. More recently, the focus of academia is witnessed to shift towards examining various drivers of GRSM in influencing its success and subsequent role in affecting organizational performance and competitive gains [11], [5], [6], [22].

In this regard, the institutional theory elaborated that the survival of firms extensively relies on obeying the rules and regulations prevailing in the environment and considered crucial for providing the due legitimacy to the organization [23]. Along with domestic environmental policies to boost sustainable development, International regulations are also referred as the prime motive of augmented institutional pressure for superior ecological supervision [15]. Institutional pressures (IP) not only stimulate the process of green management but stimulate productivity and effectiveness in firm performance by attracting competitive gains, brand image and customer responsiveness. In the domain of environmental management, there exist three types of institutional pressures [24]. They include normative pressure, which are caused from organization's desire of gratifying social norms. Such pressures include acclimating protocols adapted as the inspiration of external environment with the objective to be recognized and accepted by society and individuals. Second form of IP involved Coercive pressure, that is defined as the compulsory regulation imposed on the organizations to ensure environmental performance and reduced ecological burden. Third, IP also consists of mimetic pressure, that contains organizational adoption of green practices to imitate competitors and their successful policies. Therefore, numerous voluntary or involuntary pressures are faced by companies to divert their activities towards sustainability and therefore considered crucial to influence green management and performance [25].

In the regard, [15] examined the impact of supplier relationship management (SRM) on environmental performance. The results of the study established that improved management of suppliers and firm substantially influence environmental performance. In addition, the authors also investigated the interactive association of institutional pressures in influencing SRM-performance nexus. The empirical findings concluded that IP significantly moderated the impact of SRM on performance. Similarly, [26] also explored the relationship between institutional pressures, GRSM and performance in Chinese manufacturing industry. Analyzing 341 manufacturers, the findings of the study elaborated that coercive,

mimetic and regulatory pressures moderated the influence of GRSM on firm performance. In particular, the findings suggested that normative and coercive pressures instigated the organization to adopt eco-design and green purchasing that bring positive impact on performance. Similarly, it is discovered that regulatory pressures were likely to drive green purchasing and investment recovery. Finally, the study concluded that mimetic pressures have significant moderated impact on influencing the association of GRSM on economic performance of Chinese firms. Therefore, the present study hypothesizes that;

Hypothesis 1: Institutional pressure is significant to influence Internal GRSM.
Hypothesis 2: Institutional pressure is significant to influence External GRSM.
Hypothesis 3: Institutional pressure is significant to influence on Environmental Performance.

The relationship of GRSM is critical to ensure environmental management and firm performance. In this regard, both internal and external GRSM are regarded vital to boost environmental performance [15]. Internal GRSM practices include management of internal environment, such as managements' commitment, support, quality certification, and evaluation systems of measuring ecological improvements. Furthermore, the aspect of Eco-design also replicates internal GRSM practice to reflect firm's measures of product and process designing to decrease energy and waste consumption along with avoidance of harmful materials [26]. On the other hand, external GRSM involves green activities, such as investment recovery, that involves sale of excess inventory, scraps, capital equipment, etc. and green purchasing, that involves cooperation with supply-chain partners for environmentally sustainable procurements [15].

In the existing literature, many studies established that environmental management in the form of internal & external GRSM resulted in bringing positive impact on performance [27], [28], [13]. In particular, [17] established that GRSM brings positive impact on organizational environmental performance. Furthermore, [15] when examined the impact of internal and external GRSM and institutional pressures on firm performance found that institutional pressures carried negative impact on external GRSM that subsequently bring positive impact on firm's economic performance. The findings of the study further established that GRSM brings positive impact on organizational environmental performance and thus improves economic performance. Similarly, distributing internal and external GRSM practices in various domains, [29] investigated the relationships of environmental management, GRSM practices and performance of manufacturing enterprises. The empirical findings of the study reported that internal environmental management drive internal GRSM. Furthermore, the results established that investment

recovery and eco-design are significant to bring positive impact on firm's environmental performance. However, the study failed to find the significant association of green purchasing with environmental performance. Thus, in light of the above literature, the current study hypothesizes that;

Hypothesis 4: Internal GRSM practices are significant to influence on Environmental Performance.
Hypothesis 5: External GRSM practices are significant to influence on Environmental Performance.

Figure 1 presents the research model of the current examination.

Figure 1: Research Model
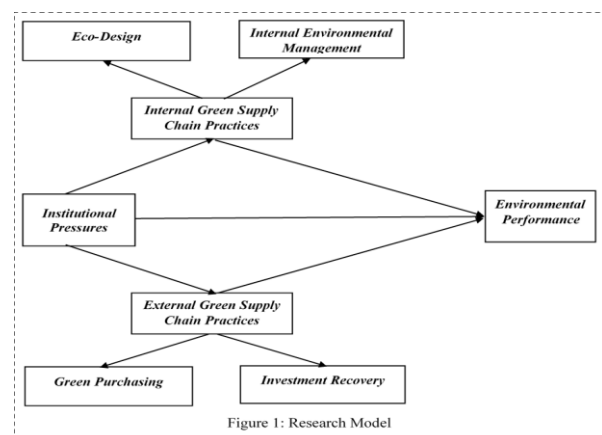
3. Methodology

The target sample for the current research are the junior, middle and higher level managers manufacturing firms of Malaysia. In doing as such, the study explain framework which is introduced in Figure. 1 the attributes of factors are measured in Likert scale system from 5 (Strongly Agree) to 1 (Strongly Disagree). The assessed factors of the current research incorporate four element elements. At first, internal green supply chain practice (IGSRM) which consist by eco-design (ECO) and internal environmental management (IEM). external green supply chain practice (EGSRM) is consist by green purchasing (GPU) and investment recovery (IRC). Institutional pressure (IPR) and environmental performance has their own items. The four items of ECO, IEM, GPU and IRC are taken from the study of [17]. Also, the four items of environmental performance are adopted from the study of [15]. However, nine items of institutional pressure are adopted from the study of Zhu et al. The information of the present study is accumulated by an overview survey transmuted in English and is gathered after an aggregate of fifty one different manufacturing firms of Malaysia. The instrument is referred by an email to the majority of the managers in different manufacturing firms on receiving their e-mail address. A sum of 510 survey were

referred to the managers, out of which 434 managers reacted. So, the response rate of the present study is 85.1% which is very good. Collectively, the technique for information collection has done in a period of a 12 weeks and 3 days. At last, the current study isn't financed any sponsoring or subsidizing organization. The examination additionally looked for after the standards of the target about good and great events [30].

4. Data Analysis

The information investigation of the current study is finished by using the Statistical Package for Social Sciences (SPSS V-23) and Analysis Moment of Structure (AMOS V-23) software's. A last data utilized in the current research is 400 in light of clearing univariate and multivariate anomalies. The techniques for selection of univariate and multivariate anomalies are Z-test score and Mahalanobis distance (D2) guidelines separately. Appeared Table 1 is the arrangement and structure of the final answers of the collected sample utilized in present study. Furthermore, Table 2 feature the mean and Pearson's Correlation of the variables utilized in this research. Additionally, to investigate the issue of multicollinearity, the current research using [31] confirm that the majority of the attributes in the Pearson's Correlation establishment are under 0.90. Therefore, affirm the nonappearance of multicollinearity among the variables [31], [32].

In this research, we utilized Principal Component factor (PCA) that combined a total of 29 items into four final factors. By focusing on a sample, the estimation of Kaiser– Meyer– Olkin (0.933) recommend that information is fitting to making the variables in light of the way that the estimation of KMO could easily compare to the cut off estimation of 0.7 as proposed by [32], [33].

Table-1: Descriptive Statistics

Gender			
		Frequency	Percent
Valid	Female	143	36%
	Male	257	64%
	Total	400	100%
Age			
		Frequency	Percent
Valid	20-30 years	76	19%
	31-40 years	205	51%
	41-50 years	43	11%
	51 and above	76	19%
	Total	400	100%
Working Experience			
		Frequency	Percent
Valid	1-5 years	278	70%
	6-10 years	59	15%
	11-15 years	30	8%
	> 15 years	33	8%
	Total	400	100%
Education			

		Frequency	Percent
Valid	Undergraduate	79	20%
	Graduate	245	61%
	Post Graduate	15	4%
	Others	61	15%
	Total	400	100%
Source: Authors Estimation			

Also, the results of Bartlet Test of Sphericity are in like way discovered critical (p<0.05), hence rejecting a null hypothesis of the absence of relationship in identity matrix [44, 45, 46]. These twenty-nine items completely clarified 71.23% of the aggregate variance extracted. The clarification of rotated component matrix includes a total of factors that displayed the items loadings more than 0.70 and are over the standard of 0.55 as clarified by [34], [35].

Table 2: Mean and Pearson Correlation Value

	MEAN	ECO	IEM	GPU	IRC	IPR	ENP
ECO	4.12	-					
IEM	4.01	0.40*	-				
GPU	3.89	0.29*	0.38*	-			
IRC	4.22	0.33*	0.33*	0.42*	-		
IPR	4.12	0.39*	0.40*	0.37*	0.40*	-	
ENP	3.24	0.42*	0.38*	0.39*	0.37*	0.42*	-

N=400

* Correlation is significant at the 0.01 level (2-tailed).

The consequences of factor investigation and factor loadings for entire items of the independent and dependent factors are appeared Table 3. Besides, the collected information is likewise examined for questionnaire convergent validity, reliability and discriminant validity [47, 48]. Convergent validity affirms that an instrument relates enormously with different components with which it ought to theoretically connect by expected hypotheses [49]. Moreover, the Cronbach Alpha and composite reliability is reflected as a valid detail that guaranteeing construct validity which investigate the general dependability of a grouping of different yet near construct [36], [37], [38].

Table-3: Factors Loading and Variance Explained [a]

	ECO	IEM	GPU	IRC	IPR	ENP
Eigen Value	4.31	3.84	3.04	2.34	1.485	1.003
%	20.67	14.67	10.32	9.32	8.892	7.345
Cum. %	20.67	35.35	45.67	54.99	63.89	71.235
ECO	0.90					
	0.89					
	0.87					
	0.82					
IEM		0.89				
		0.88				
		0.85				
		0.82				
GPU			0.86			
			0.85			
			0.82			

Construct					
		0.81			
IRC			0.85		
			0.84		
			0.83		
			0.77		
IPR				0.84	
				0.80	
				0.79	
				0.77	
				0.76	
				0.73	
				0.72	
				0.71	
				0.70	
ENP					0.82
					0.80
					0.79
					0.78
Source: Authors' Estimation					

In addition, we see all cures so as to affirm the construct validity. results of convergent and construct validity with Cronbach Alpha, Composite reliability and Average Variance Extracted are appeared to be Table 4. The results of composite relaibility and Cronbach Alpha ought to be more prominent than 0.7 as suggested by [36], [37], [38], [34], [39]. For our condition, the results of CR and Cα are more than 0.70. In association, the result of AVE is viewed as significant if it is higher than 0.50 as prescribed by [40], [41]. For our condition, the result of AVE for each of the variables are more than 0.50 and it correspondingly satisfy the dimension of model fit.

Table-4: Cronbach Alpha (CA), Composite Reliability (CR) & Average Variance Explained (AVE).

Constructs	CA	CR	AVE
ECO	0.919	0.898	0.608
IEM	0.954	0.908	0.598
GPU	0.901	0.839	0.543
IRC	0.912	0.852	0.516
IPR	0.962	0.920	0.646
ENP	0.939	0.882	0.570
Source: Authors' estimation			

The current study utilized Confirmatory Factor Analysis by utilizing 29 items that condense four segments which are IGRSM, EGRSM, IPR and ENP. The CFA demonstrate around the estimation of its measurement model fitness. In this examination, we utilize four major lists of surveying model fitness which incorporates Chi-Square Minimum/Degree of Freedom (CMIN/DF), the Standardized Root Mean Residual (SRMR), Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA) as proposed by [33]. Results of table 5 clarify the examination by utilizing these four lists.

Table-5: CFA Measurement Model Fit Indices

Indices	Final Measurement Model
CMIN/df	1.452
CFI	0.974
RMSEA (P-Close)	0.048 (0.562)
SRMR	0.045
Source: Authors' estimation	

For the most part, the outcomes of assessment recommend that the examined four variables demonstrate fits the information greatly well. Also, the cut off value for CMIN/DF ought to be under 2 as clear up by [33], [35], [38]. In our outcomes the value of CMIN/DF is 1.452 and it fits the estimation structure. Near to this, the Comparative Fit Index ought to be more than 0.90 which consider as exceptional and more good than 0.95 which consider as magnificent as proposed by [42]. For our situation the estimation of CFI is 0.974 and it moreover fits the standard of fit criteria. Additionally, the estimation of Root Mean Square Error of Approximation ought to be under 0.07 as prescribed by [43]. In our outcomes, the estimation of RMSEA is 0.048 which is under 0.07. The results of RMSEA proposed that our gathered information fit to an incredible degree well with our model estimation. Finally, the SRMR is comparably vital if it is lesser than 0.08 as proposed by [32], [42]. The outcomes affirm that the assessment of Standardized Root Mean Residuals is 0.045 and also fits the satisfactory model. Besides, it is revealed that our last model has included different related residual term inside a factor.

Tabl-6: SEM Hypothesis Testing

Hypothesized Path	Path Coefficient	C.R	P-Value	Remarks
IGRSM ← IPR	0.331	3.894	0.000	Supported
EGRSM ← IPR	0.402	3.336	0.000	Supported
ENP ← IPR	0.234	4.325	0.000	Supported
ENP ← IGRSM	0.521	3.446	0.000	Supported
ENP ← EGRSM	0.402	5.329	0.000	Supported
Note: Level of Significance (5% i.e. 0.050)				
Source: Authors' Estimation				

For examination of relationship among the factors, Table 6 depicted the result of structural equation modelling, regression path coefficient, critical ration, value of significance and the remarks related to hypothesized path. The outcomes of exploration confirm that internal green supply chain practice (β= 0.331, p<0.000) and external green supply chain practice (β= 0.402, p<0.000) have significantly and positively influenced by institutional pressure therefore confirming **H1** and **H2**. Furthermore, the outcomes of structural equation modelling also certify that, institutional pressure (β= 0.234, p<0.000) has a positive and significant impact on environmental performance thus confirming **H3**. Finally, the outcomes more explained that internal green supply

chain practices (β= 0.521, p<0.000) and external green supply chain practices (β= 0.402, p<0.000) have a positive and significant effect on environmental performance in manufacturing firms of Malaysia and thus confirm **H4** and **H5.** The ultimate model confirms 67.82% change of environmental performance by the three factors that are internal green supply chain practices, external green supply chain practices and institutional pressure in Malaysia.

5. Discussion and Conclusion

The emergence of industrial era brought together the extensive utilization of power as the prime feature of budding economic progress [50]. This required excessive usage of energy in business operations as the vital input to boost growth, but also enhanced the harmful emanation of greenhouse gases (GHG). Even with ambitious policies than the ones already in place, the GHG emission are predictable to upsurge by 50% by the end of 2020 mostly driven by an anticipated 70% growth in carbon emissions from power utilization. In addition, the expansion of information and communication technologies also relied substantially in power consumptions that carried numerous benefits to the development process, however, played major part in raising environmental burden.

Keeping this in mind, recent inclination of investigating the drivers of green management, the current study aims to explore the impact of institutional pressure (IP) in driving GRSM practices and firm performance of Malaysian manufacturing companies. In doing so, the study does not rely on single measure of GRSM but distributes the widespread prospect of GRSM into two crucial domains of internal green supply chain practices (IGSP) and external green supply chain practices (EGSP). Hence, the exclusiveness of present study held in identifying the influence of institutional pressure on both IGSP and EGSP along with exploring its effect on firm performance. Furthermore, the contribution of the present investigation is also extended to determine the impact of critical IGSP and EGSP in influencing organizational performance. Hence, the understanding drive from such comprehensive approach will aid the manufacturing sector of Malaysia to identify the contribution of local and international institutions' pressures in affecting the success of Malaysian green supply chain methods.

In this current research, we applied of Exploratory Factor Analysis (EFA) to discover the four factors are extracted by total twenty-nine items in which all items factor loadings are more noteworthy than 0.70. The results of structural equation modelling confirm that internal green supply chain practice and external green supply chain practice have significantly and positively influenced by institutional pressure.

Furthermore, the outcomes of structural equation modelling also certify that, institutional pressure has a positive and significant impact on environmental performance. Finally, the outcomes more explained that internal green supply chain practices and external green supply chain practices have a positive and significant effect on environmental performance in manufacturing firms of Malaysia.

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