

The Impact of Green Supply Chain Management Practices on Corporate Sustainability Performance: Empirical Evidence from the Food Industry of Indonesia

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Green supply chain management (GSCM) is an important resource for organisations that provides assistance with maintaining sustainable performance. Although, the ineffective development of GSCM in organisation can negatively impact its sustainable performance. To address this issue, this study aims to investigate the effect of GSCM practices on corporate sustainable performance. Using a cross-sectional research design, data were collected from the 609 managers of the food industry by using the convenient sampling technique, which yielded a 65.68% response rate. Further, the data were analysed using the PLS-SEM. The findings have shown that the environmental education system and green information system have an insignificant association with sustainable performance, while the other six components have a significant association with sustainable performance. The current study contributed to the extant literature by recommending that GSCM be an important predictor for maintaining the sustainable performance of an organisation. The study also contains implications for supply chain managers, especially in the food manufacturing industries.

Key words: *Green supply chain management, sustainable performance, food industry, Indonesia.*

Introduction

In the contemporary environment, depletion of resources, worldwide warming, and environmental pollution have become big causes of environmental stability deterioration. The factors causing environmental hazards are continually forcing companies, individuals, and even communities to take proper precautions (Walker, Di Sisto, & McBain, 2008). Organisations that are experiencing environmental problems should review their current production process (Srivastava, 2007) and should also implement practices that can help to improve their performance. For this purpose, green supply chain management (GSCM) has become a prominent factor in handling current environmental issues (Adriana, 2009). In the views of Eltayeb, Zailani, and Ramayah (2011), GSCM has become a multidisciplinary concept that has emerged especially through the development of environment-friendly managerial practices, specifically regarding supply chain management. Srivastava (2007) further defined that the GSCM encompasses various stages, such as manufacturing process, obtaining materials, product design, distribution of product, and product end-of-life management.

Therefore, it could be asserted from the definition above that GSCM is a broad subject in the contemporary age. Nevertheless, most prior studies on GSCM, which were conducted during its developmental stage, investigated a single functional dimension, like revenue logistics or green purchasing (Sarkis, 2003). Further research was conducted in the years that followed to examine the environmental perspective across various supply chain aspects (Schmidt, Foerstl, & Schaltenbrand, 2017; Younis, Sundarakani, & Vel, 2016). In spite of the increasing trend of research into the broad concept field of GSCM in recent years, it is still difficult to develop an inclusive framework for all measurements that make the GSCM more effective. In the extant literature, various authors also found a lack of holistic conceptual framework for the dimensions of GSCM (Sharma, Chandana, & Bhardwaj, 2015). Along with these discrepancies, Diabat and Govindan (2011) further elaborated that the GSCM could be considered the best way to create stability in corporate sustainable performance (CSP).

Sustainable improvement has begun to draw important attention, such as the report of Brundtland, published in 1987. In this report, sustainability is defined as fulfilling current needs without sacrificing any future ability (WCED, 1987). The extant literature discusses three facets of sustainability performance: economic, environmental, and social performance. To optimise sustainability level, every organisation needs to sustain an equal balance in its social, environmental, and economic processes (Shah and Rahim, 2019a). Concerning the complications in the dimensions, and also their association to each other, it is not easy for any organisation to achieve balance, success, and competitive advantage. Therefore, Diabat and Govindan (2011) further elaborated that the GSCM could be considered the best way to create a balance in the environmental, social, and economic performance advantage. In prior

studies, many researchers explained the importance of the GSCM in the achievement of sustainable performance (Sarkis, Zhu, & Lai, 2011). For instance, the theory of natural resource-based view (NRBV) explains a greater practice that is based on environmental perspective as a substantial source of competitive advantage for enterprises (Hart, 1995). Such types of environmental practices create a positive influence on sustainable corporate performance by reducing the consumption of energy and usage of material, improving the engagement of stakeholders, decreasing costs burden, and increasing the quality of the product.

Nevertheless, in the extant literature, numerous studies have examined the influence of GSCM practices on two sustainable performance dimensions: social and environmental. There are several other studies that also examined the influence of GSCM on other dimensions of sustainable performance, such as the economic performance of the organisation (Younis et al., 2016; Zhu & Sarkis, 2004) and environmental performance (Chien & Shih, 2007; Li, Jayaraman, Paulraj, & Shang, 2016; Zhu, Sarkis, & Geng, 2005). Therefore, it can be seen that in previous studies, the effect of GSCM on the environmental and economic performance was well investigated, but there has been little attention given to the third dimension of sustainable performance, social performance. In addition, the previous studies have paid more attention to developed countries and limited attention to developing countries (Chien & Shih, 2007; Geng, Mansouri, & Aktas, 2017), especially to the Indonesian food industry. The food industry in Indonesia has played a significant role in the country's economic development. The food products that are manufactured in the food industry are to be used for human consumption (Bank of Indonesia, 2016). Certainly, food production promotion is essential, as it also played an important role in the economic development of Indonesia. This argument is further supported by the report of Food Ingredients Asia (2019), who postulated that the proper implementation of GSCM could only enhance the manufacturing condition of the Indonesian food industry.

Concerning the literature mentioned earlier, shortcomings in current research were identified across eight GSCM dimensions, which are green purchasing, green manufacturing, green distribution and packaging, green marketing, environmental education, internal environmental management, investment recovery, and green information systems. Thus, based on these dimensions, the main aim of the study is to investigate the impact of these GSCM practices on the sustainable performance of food manufacturing companies in Indonesia. To achieve this objective, a self-administered survey was completed by food manufacturing companies working in Indonesia. For analysis of the model, a PLS-SEM approach was employed.

Literature review

Green Supply Chain Practices

It is explained by Srivastava (2007) that the GSCM consists of green purchasing, green design, green production, and green distribution, logistics, marketing, and revenue logistics. In other words, with reference to Walker et al. (2008), the concept of SCM covers all stages of the production cycle, from the raw material extraction in the design, manufacturing, and delivery phases; to the product usage by the consumer; and until the disposal of the product. The practices of GSCM are considered to be extremely extensive. In line with the SCM concept, the GSCM boundary entirely depends on the researcher's goals (Srivastava, 2007). Therefore, when the literature on empirical research is being examined on GSCM, it can be seen that there are differing dimensions discussed in the extant literature. In light of the extant literature, eight dimensions have been included in our study. These dimensions are discussed below.

Green Purchasing

The first step in the GSCM is purchasing function. Its success entirely depends on the environmental effort integration, such as through purchase activities and the environmental objectives of the organisation (Carter, Kale, & Grimm, 2000; Srivastava, 2007). For this purpose, the function of green purchase is an essential GSCM dimension. The green purchasing function is an environmental problem that is concerned with the process of procurement (Rao & Holt, 2005). This function can be achieved by selecting a good supplier to help the company with its environmental goals.

Green Manufacturing

Another important step in GSCM practices is green manufacturing. The green manufacturing function comprises the implementation and planning of the activities that require smaller amounts of energy and resources in the production process and also cause minimal pollution of the environment (Carter, 2005; Gao, Li, & Song, 2009). In line with this, the green manufacturing aim is to constantly improve the industrial production process to reduce water, soil, and air pollution. In short, green manufacturing can be explained as providing environmentally friendly products, while minimising resources and wastage (Routroy, 2009).

Green Packaging

Green packing is a very important component of GSCM, as it has a very close relationship with the other components of GSCM. This is because its direct influence on the environment is considered to be more important (Routroy, 2009). Green packaging practices involve the

simplifying packing, paper wrapping usage, eliminating excessive packaging, and use of simple packaging of the materials and green packaging practices (Kung, Huang, & Cheng, 2012).

Green Distribution

In the GSCM, green distribution is considered to be an important activity that influences green supply chain performance. Green supply includes all activities that reduce the damages of environmental and shipment wastage (Gao et al., 2009). Included in this are fuel consumption, from transferring product from one place to another, and packaging characteristics, which have a great effect on green distribution and improve sustainable performance (Sarkis, 2003).

Green Marketing

In organisation, green marketing fulfils human needs while minimising influence on the environment (Singh & Pandey, 2012). In the same vein, Olu Adeyoyin (2005) explained that green marketing include designing, price setting, promoting, and distributing products in a manner that will not create any bad effect on the environment. In the current study, green marketing is considered a more important component for the promotion of a product.

Inventory Recovery

Inventory recovery is also an integral dimension of GSCM. The recovery of investment is considered to be a traditional practice where excessive inventory or scrap material issues are resolved (Zhu & Sarkis, 2004, 2007). The main aim of investment recovery is to regain the high value of surplus and outdated products (Ayres, Ferrer, & Van Leynseele, 1997). Moreover, investment recovery comprises all items in the opposite logistics development.

Internal Environmental Management

Internal environment management is the creation of policies for environmental protection (Chan, He, Chan, & Wang, 2012). It includes upper and middle-level management activities that strengthen the environmental cooperation between departments and set up management systems for environmental issues that come within the scope of internal environmental management (Zhu et al., 2005).

Environmental Education

The development of human resources through environmental education plays a vital role in an organisation and, importantly, paves the way for sustainable practices (Yildiz Çankaya & Sezen, 2019). The extant empirical research greatly emphasises environmental education, which is important for green management and the success of the firm (Sarkis, Gonzalez-Torre, & Adenso-Diaz, 2010). These studies specified that education related to environment serves two important objectives. The first objective is to personally understand the environmental policies of the organisation. The second objective is to create change in the behaviour of an individual to maintain a critical relationship with the environment (Sammalisto & Brorson, 2008).

Green Information System

The effective application of GSCM practices is entirely contingent on the ability of an organisation's information system to capture all related data along, the efforts towards environmental sustainability, and also an organisation's performance (Preuss, 2002; Sammalisto & Brorson, 2008). Such data can be then analysed to generate the necessary information, which is considered too important for making the decisions that ultimately help improve sustainable performance through SCM (Preuss, 2002). Indeed, the information system related to sustainability represents the effort of environmental controlling through internal environmental management system support and also through broadcasting the needs of different stakeholders in an organisation (El-Gayar & Fritz, 2006).

Hypothesis Development

The resource-based view (RBV) theory is used to elaborate on GSCM's effect on business performance (BP). The RBV shows that this valuable and non-substitutable resource could afford an organisations a competitive advantage (Barney, 1991). The resources are both tangible and intangible, and they include agility of market, human resources, leadership, and social reputation (Mahoney & Pandian, 1992). The tangible assets of an organisation provide a short-term competitive advantage because these resources are easily imitated. The intangible resources are challenging to imitate and accrue more experience and market value over time (Hart, 1995).

Relatedly, Hart (1995) further explained that restraints that are created through the natural atmosphere, like depletion in natural resources, threaten an organisation's capabilities and existing resources. Then, researches expanded the scope of resource-based approaches by including the opportunities and limitations inherent in the natural environment. Hart's typology, which is called the natural resource-based view (NRBV), stated that firms could

gain a competitive advantage through strategy implementation, i.e. product stewardship, pollution anticipation, and sustainable development. Furthermore, as per the NBRV, environmental practices like GSCM could be considered an important resource that could increase the performance of an organisation (Choi & Hwang, 2015). GSCM practices are considered challenging for a competitor to imitate because they are founded on experiences and updated knowledge.

Another theory that might also be used to explain the effect of GSCM on CSP is stakeholder theory. Since organisations in the contemporary environment have a major focus only on those activities that are profit-making (Choi & Hwang, 2015). Nevertheless, with increasing competition impairing the environment, the increased importance of global competitive advantage, and the significant expansion of social responsibility, the stakeholder concept now comes to the forefront. The stakeholder's conception is well defined: any individual or group who entirely affects the achievements of a business (Freeman, 1994). Similarly, Freeman (1994) further categorised stakeholders in two ways: firstly, internal stakeholders, who are owners, managers, and employees; and secondly, external stakeholders, who are suppliers, competitors, and the government. As per the recommendations of Freeman, the stronger the relation between the parties of a society, the easier it will become to reach mutual goals. Generally, the stakeholder's theory suggests that a business should always be managed to meet the expectations of its stakeholders in a better way.

In line with the previous discussions, to understand the basic problem of the environment and to produce an effective and good solution, firms need to recognize the reason for environmental issues within their scope. To meet the needs of the people, businesses produced goods using minimal resources, which caused pollution in the environment through dangerous air, waste, and soil discharges (Azapagic, 2003). Environmental performance is a measure of the ability of an organisation to decrease pollution, diminish wastage, and reduce environmental accidents. GSCM has a greater impact that covers all efforts to overcome the dangerous effects of a company's product on the environment. Such efforts can positively affect the improvement of sustainable business performance (environmental performance) by decreasing dangerous liquid wastage and encouraging better action for the improvement of community wealth (Eltayeb et al., 2011). In summary, green activities in business have a greater impact on environmental practices by decreasing waste in the production and proper usage of materials and energy (Famiyeh, Adaku, Amoako-Gyampah, Asante-Darko, & Amoatey, 2018; Zhu, Sarkis, & Lai, 2007a)

Furthermore, one of the debatable issues that is associated with GSCM is that green practices provide a cost-benefit to the organisation (Hart & Ahuja, 1996). In the extant literature, there are various opinions on this issue. The first opinion is that GSCM can also incur a cost burden. This argument is supported by Bowen, Cousins, Lamming, and Faruk (2006), who

specified that the practices that are associated with the environment cannot affect short-term business performance. In other words, Min and Galle (2001) further explained that green purchase increased costs in organisations, which could negatively influence business performance. The second viewpoint is that GSCM has a positive effect on sustainable (economic) performance. For instance, NBRV refers to the idea that all environmental practices can help to provide significant benefits to a business. Generally, extant literature has cited that GSCM can improve the economic performance of a business in two ways (Hart, 1995). First, firms can gain an economic benefit through diminishing energy costs and material wastage. Second, by increasing green practices, businesses can also achieve economic benefits through enhancing their customer loyalty and their reputation (Schmidt et al., 2017). Several other studies explained that GSCM has a positive and significant effect on the economic performance of a business (Tang, Lai, & Cheng, 2012; Zhu & Sarkis, 2004).

Moreover, by increasing the awareness of corporate social responsibility, green supply practices allow firms to create a more positive image in the eyes of their stakeholders, customers, personnel, society, and government by reducing environmental damages. Such positives are considered to be highly significant to customer loyalty and customer satisfaction (Hoffman, 2001; Zhu & Sarkis, 2007). Similarly, Testa and Iraldo (2010) further stated that GSCM could help to increase brand image, foster good relations with stakeholders, and improve the motivation of personnel. In summarising this discussion, it can be inferred that successful environment practices may assist in strengthening a firm's relationship with all stakeholders. Therefore, based on the above discussion, it is hypothesised that:

H₁ There is a significant association between green purchasing and sustainable business performance in the food industry of Indonesia.

H₂ There is a significant association between green manufacturing and sustainable performance in the food industry of Indonesia.

H₃ There is a significant association between green marketing and sustainable performance of food industry of Indonesia.

H₄ There is a significant association between green packaging and distribution and sustainable performance of food industry of Indonesia.

H₅ There is a significant association between internal environmental management and sustainable performance of food industry of Indonesia.

H₆ There is a significant association between environmental education and sustainable performance of food industry of Indonesia.

H₇ There is a significant association between investment recovery and sustainable performance of food industry of Indonesia.

H₈ There is a significant association between green information system and sustainable performance of food industry of Indonesia.

Methodology

This study has determined a cross-sectional design and quantitative approach. The association between GSCM practices and CSP was tested using a self-administered questionnaire. For data collection, the researcher asked questions of 609 employees of food manufacturing companies in Indonesia by using the non-probability convenient sampling technique. For the data collection, questionnaires were delivered to the respondents personally, and respondents were asked to fill the questionnaire within one hour. A total of 400 questionnaires were received back from respondents, which is a 65.68% response rate. Generally, a response rate greater than 20% is recommended in the extant literature for SCM practices research (Christmann, 2000; Darnall, Henriques, & Sadorsky, 2010).

The scale for the green purchasing was adapted from the study of (Zhu & Sarkis, 2007). One item for the scale was adapted from the study (Shang, Lu, & Li, 2010). Also, the questionnaire for green manufacturing, green packaging and green distributions were adopted by the studies of (Shang et al., 2010), (Faruk, Lamming, Cousins, & Bowen, 2001), (Lieb & Lieb, 2010) and (Lieb & Lieb, 2010). Similarly, the scale for the internal environmental management was adopted from the study of Shang et al. (2010) and Zhu, Sarkis, and Lai (2007b). The scale for environmental education and green marketing were adopted from (Shang et al., 2010). The scale for the investment inventory was adopted from the study of (Chan et al., 2012). The scale for the green information system was adopted from the study of (Paulraj, 2011). The scale for environmental performance was adopted from the studies of Paulraj (2011) and Zhu et al. (2007a). To measure corporate sustainability performance, three scales were adopted from the study of Bansal (2005): corporate environmental performance, corporate social performance, and corporate economic performance. In the current study, all the questions in the questionnaire were measured using the Likert scale, ranging from strongly agree=1 to strongly disagree=5. All of the collected data was analysed by Smart PLS 3.0. This is in line with previous researchers, who also considered Smart PLS to be the best for analysing results in a better way (Ahmad, Bin Mohammad, & Nordin, 2019; Shah & Rahim, 2019b).

Data Analysis

Construct Reliability and Validity

It is necessary to establish the construct reliability and validity before assessing the research model (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). Therefore, first, we assessed the convergent validity and discriminant validity of the measurement model. Table 1 explains the measurement model of the study. All the factor loadings were higher than 0.7, which is required for establishing the reliability of the indicators. All the constructs have Cronbach's alpha > 0.70, average variance extracted (AVE) > 0.5, and composite reliability (CR) > 0.60,

which established the convergent validity of the model (Hair, Hult, Ringle, & Sarstedt, 2014). For discriminant validity, in the Fornell and Larcker criterion, the diagonal values show the square of AVE, which must be greater than the constructs' correlation with other variables (Hair, Hult, Ringle, & Sarstedt, 2017). Similarly, the results of the Fornell and Larcker criterion shown in Table 2 have established the discriminant validity of the construct.

Table 1: Measurement Model

Construct	Item	Loadings	Cronbach's Alpha	CR	AVE	Item(s) Deleted
Corporate Economic Performance (CEcoP)	CEcoP1	0.721	0.761	0.799	0.504	
	CEcoP2	0.825				
	CEcoP3	0.72				
	CEcoP4	0.544				
Corporate Environmental Performance (CEnvP)	CEnvP2	0.597	0.787	0.811	0.521	CEnvP1, CEnvP3, CEnvP4, CEnvP7
	CEnvP5	0.813				
	CEnvP6	0.719				
	CEnvP8	0.739				
Corporate Social Performance (CSocP)	CScoP1	0.825	0.787	0.855	0.545	CScoP2
	CScoP3	0.687				
	CScoP4	0.794				
	CScoP5	0.77				
	CScoP6	0.592				
Environmental Education	EEdu1	0.916	0.913	0.929	0.766	
	EEdu2	0.903				
	EEdu3	0.86				
	EEdu4	0.819				
Green Distribution and Packaging	GDP3	0.802	0.702	0.833	0.625	GDP1, GDP2, GDP4
	GDP5	0.756				
	GDP6	0.812				
Green Information System	GIS2	0.759	0.782	0.851	0.591	GIS1
	GIS3	0.653				
	GIS4	0.792				
	GIS5	0.854				
Green Manufacturing	GMan1	0.739	0.771	0.845	0.524	
	GMan2	0.747				
	GMan3	0.73				
	GMan4	0.768				
	GMan5	0.625				
Green Marketing	GMkt1	0.734	0.747	0.831	0.553	GMkt2,

	GMkt3	0.835				GMkt4
	GMkt5	0.608				
	GMkt6	0.779				
Green Purchasing	GP1	0.765	0.819	0.873	0.579	
	GP2	0.697				
	GP3	0.731				
	GP4	0.783				
	GP5	0.823				
Internal Environmental Management	IEM1	0.833	0.823	0.854	0.549	
	IEM2	0.541				
	IEM3	0.843				
	IEM4	0.563				
	IEM5	0.856				
Investment Recovery	IR1	0.919	0.701	0.866	0.764	
	IR2	0.827				
Corporate Sustainability Performance*	CEnvP	0.864		0.835	0.632	
	CEcoP	0.867				
	CSocP	0.632				

*Second-Order Construct

Table 2: Fornell and Larcker Criterion for Discriminant Validity

	CEcoP	CEnvP	CSocP	EEdu	GD	GIS	GMan	GMkt	GP	IEM	IR
CEcoP	0.710										
CEnvP	0.568	0.721									
CSocP	0.267	0.258	0.738								
EEdu	0.010	0.040	0.237	0.875							
GDP	0.504	0.515	0.313	0.194	0.790						
GIS	0.151	0.11	0.172	0.125	0.170	0.768					
GMan	0.277	0.213	0.434	0.150	0.266	0.037	0.724				
GMkt	0.163	0.259	0.144	0.014	0.182	0.100	0.171	0.744			

GP	0.246	0.342	0.200	0.026	0.248	0.068	0.239	0.574	0.761		
IEM	0.118	0.108	0.165	0.069	0.138	0.083	0.025	0.127	0.076	0.741	
IR	0.358	0.260	0.190	0.100	0.221	0.064	0.025	0.04	0.017	0.036	0.874

Note: CEcoP = Corporate Economic Performance, CEnvP = Corporate Environmental Performance, CSocP = Corporate Social

Performance, EEdu = Environmental Education, GDP = Green Distribution and Packaging, GIS = Green Information System, GMan = Green Manufacturing, GMkt = Green Marketing, GP = Green Purchasing, IEM = Internal Environmental Management, IR = Investment Recovery

Hypotheses Testing

In order to test the hypotheses, PLS-SEM was applied using Smart PLS 3.0. The model contains one endogenous variable, i.e. CSP. The value of coefficient of determination, R^2 , and predictive relevance, Q^2 , of the endogenous variable is 0.48 and 0.14 respectively, which passed the substantial criteria (Hanseler et al., 2012). Moreover, Table 3 presents the results of PLS bootstrap algorithms that confirm the significant direct relationship of green distribution and packaging ($\beta = 0.40$, t value = 9.82, p value = 0.00), green manufacturing ($\beta = 0.25$, t value = 4.18, p value = 0.00), green marketing ($\beta = 0.21$, t value = 2.77, p value = 0.01), green purchasing ($\beta = 0.21$, t value = 2.31, p value = 0.02), internal environmental management ($\beta = 0.23$, t value = 2.58, p value = 0.01) and investment recovery ($\beta = 0.26$, t value = 5.24, p value = 0.00) with CSP. However, no empirical evidence is found for the significant relationship of environmental education ($\beta = 0.06$, t value = 1.06, p value = 0.29) and green information system ($\beta = 0.04$, t value = 0.51, p value = 0.61) with CSP.

Figure 1. Estimations of Structural Model

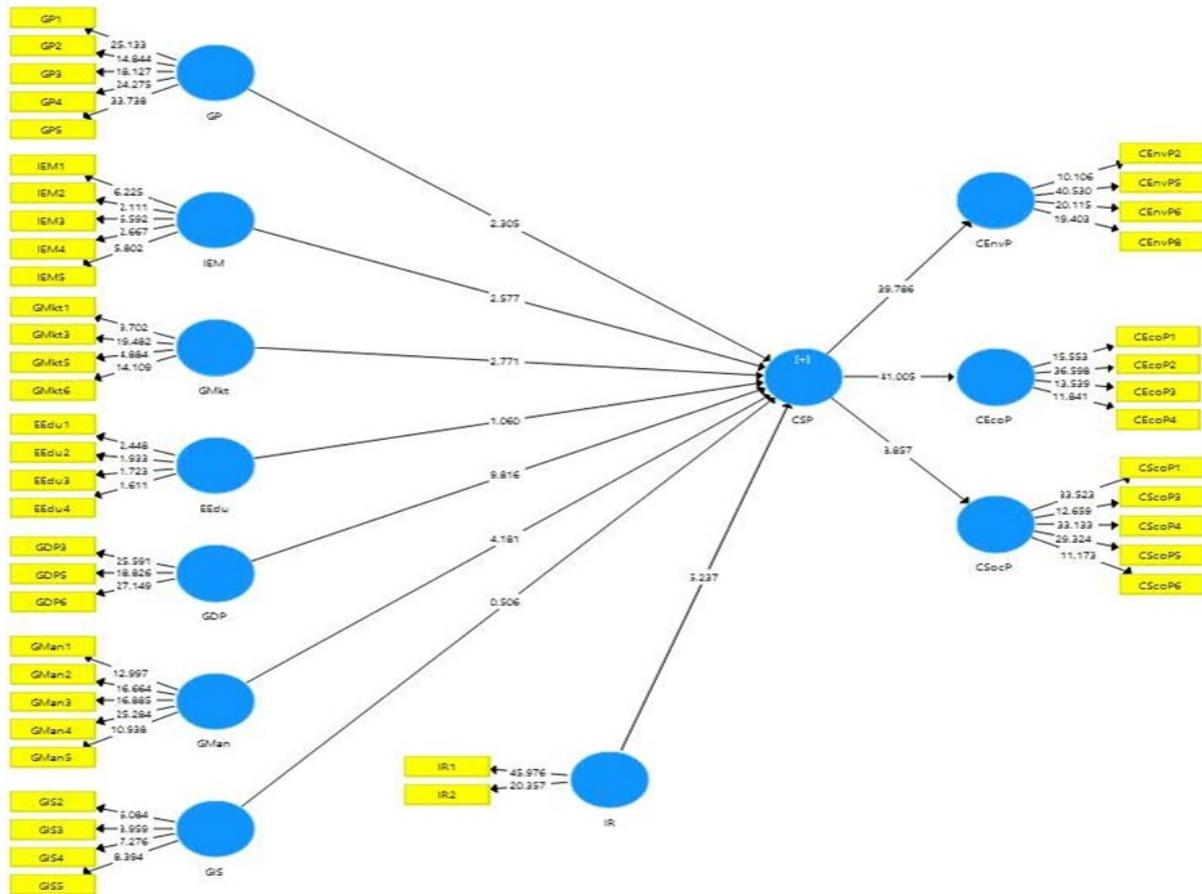


Table 3: Hypotheses Results

Hypothesis	Beta	S.E	T Value	P Value	CI ^{BCa} Low	CI ^{BCa} High	Decision
EEdu -> CSP	0.062	0.058	1.060	0.289	-0.179	-0.002	Not Supported
GDP -> CSP	0.400	0.041	9.816	0.000	0.322	0.481	Supported
GIS -> CSP	0.044	0.088	0.506	0.613	-0.149	0.204	Not Supported
GMan -> CSP	0.248	0.059	4.181	0.000	0.122	0.349	Supported
GMkt -> CSP	0.208	0.075	2.771	0.006	0.106	0.381	Supported
GP -> CSP	0.208	0.09	2.305	0.022	0.054	0.390	Supported
IEM -> CSP	0.227	0.088	2.577	0.011	0.065	0.399	Supported
IR -> CSP	0.262	0.05	5.237	0.000	0.16	0.351	Supported

Note: CEcoP = Corporate Economic Performance, CEnvP = Corporate Environmental Performance, CSocP = Corporate Social Performance, EEdu = Environmental Education, GDP = Green Distribution and Packaging, GIS = Green Information System, GMan = Green Manufacturing, GMkt = Green Marketing,

GP = Green Purchasing, IEM = Internal Environmental Management, IR = Investment Recovery

* Significance level < 0.05

Discussions and Conclusion

This research furthers the theory of GSCM by assessing the association between GSCM activities and CSP. The study examines the effect of eight GSCM practices on CSP. This will provide implications for the managers of the food industry in Indonesia to recognize suitable GSCM practices to enhance their organisational sustainability performance. In line with the previous study, the current study also strengthens the foundations of NRBV by establishing the influence of GSCM on CSP. For instance, Schmidt et al. (2017) inferred a positive association among GSCM practices and market and financial performance. Moreover, Chan (2005) explained that environmental organisation is significantly impacted by environmental strategies. Though environmental activities require huge investments and apply financial pressures in the short-run, their outcomes in the long-run ensure a business's financial sustainability (Green et al., 2012; Esfahbodi et al., 2017).

In line with the prior studies of Carter et al. (2000) and Paulraj (2011), the findings inferred a positive relationship between green purchasing and CSP. This implies that careful procurement of organisational products and consideration of environmental, social, and economic perspectives may enhance CSP. Similarly, a significant positive association is found among internal environment management practices and CSP. These findings are consistent with the studies of Chan et al. (2012) and Zhu et al. (2005), who argued that a company could enhance its sustainability performance by developing an effective internal environmental management system. This environmental management system enables organisations to reduce the hazardous processes that may harm the environment and society. Similarly, there is also a significant positive relationship found between green marketing and CSP. It suggests that considering the environment in a company's promotional activities may enhance its CSP through developing a positive image and trust among society (Singh & Pandey, 2012; Pride & Ferrell, 1993).

Moreover, the findings suggest that green distribution and packaging can enhance CSP. Green packaging may reduce negative environmental impacts by adopting recycling processes (Zsidisin & Sierd, 2001). Similarly, green distribution may control fuel consumptions by optimizing distribution channels and routes (Kumar et al., 2015). Likewise, the study found empirical evidence of a significant association between green production and CSP that highlights the importance of environmentally friendly products and production processes in the achievement of sustainability-oriented goals through the use of healthy ingredients and minimization of waste (Gao et al., 2009; Routroy, 2009). Lastly, the study



found no empirical evidence of the association between education regarding environment and green information system, as these are better predictors of the rest of the GSCM practices (Sammalisto and Brorson, 2008; Sarkis et al. 2010).



REFERENCES

- Adriana, B. (2009). Environmental supply chain management in tourism: The case of large tour operators. *Journal of cleaner production*, 17(16), 1385-1392.
- Ahmad, R., Bin Mohammad, H., & Nordin, S. B. (2019). Moderating effect of board characteristics in the relationship of structural capital and business performance: An evidence on Pakistan textile sector. *Journal of Studies in Social Sciences and Humanities*, 5(3), 89-99.
- Ayres, R., Ferrer, G., & Van Leynseele, T. (1997). Eco-efficiency, asset recovery and remanufacturing. *European management journal*, 15(5), 557-574.
- Azapagic, A. (2003). Systems approach to corporate sustainability: a general management framework. *Process Safety and Environmental Protection*, 81(5), 303-316.
- Bank of Indonesia. (2016). Indonesia Economic condition in 2016. Retrieved from
- Barney. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120.
- Bowen, F., Cousins, P., Lamming, R., & Faruk, A. (2006). Horses for courses: explaining the gap between the theory and practice of green supply. In *Greening the supply chain* (pp. 151-172): Springer.
- Carter, C. R. (2005). Purchasing social responsibility and firm performance: the key mediating roles of organisational learning and supplier performance. *International Journal of Physical Distribution & Logistics Management*, 35(3), 177-194.
- Carter, C. R., Kale, R., & Grimm, C. M. (2000). Environmental purchasing and firm performance: an empirical investigation. *Transportation Research Part E: Logistics and Transportation Review*, 36(3), 219-228.
- Chan, R. Y., He, H., Chan, H. K., & Wang, W. Y. (2012). Environmental orientation and corporate performance: The mediation mechanism of green supply chain management and moderating effect of competitive intensity. *Industrial Marketing Management*, 41(4), 621-630.
- Chien, M., & Shih, L.-H. (2007). An empirical study of the implementation of green supply chain management practices in the electrical and electronic industry and their relation to organisational performances. *International Journal of Environmental Science and Technology*, 4(3), 383-394.
- Choi, D., & Hwang, T. (2015). The impact of green supply chain management practices on firm performance: the role of collaborative capability. *Operations Management Research*, 8(3-4), 69-83.



- Christmann, P. (2000). Effects of “best practices” of environmental management on cost advantage: The role of complementary assets. *Academy of Management Journal*, 43(4), 663-680.
- Darnall, N., Henriques, I., & Sadorsky, P. (2010). Adopting proactive environmental strategy: The influence of stakeholders and firm size. *Journal of management studies*, 47(6), 1072-1094.
- Diabat, A., & Govindan, K. (2011). An analysis of the drivers affecting the implementation of green supply chain management. *Resources, conservation and recycling*, 55(6), 659-667.
- El-Gayar, O., & Fritz, B. D. (2006). Environmental management information systems (EMIS) for sustainable development: a conceptual overview. *Communications of the Association for Information Systems*, 17(1), 34.
- Eltayeb, T. K., Zailani, S., & Ramayah, T. (2011). Green supply chain initiatives among certified companies in Malaysia and environmental sustainability: Investigating the outcomes. *Resources, conservation and recycling*, 55(5), 495-506.
- Famiyeh, S., Adaku, E., Amoako-Gyampah, K., Asante-Darko, D., & Amoatey, C. T. (2018). Environmental management practices, operational competitiveness and environmental performance: Empirical evidence from a developing country. *Journal of Manufacturing Technology Management*, 29(3), 588-607.
- Faruk, A. C., Lamming, R. C., Cousins, P. D., & Bowen, F. E. (2001). Analyzing, mapping, and managing environmental impacts along supply chains. *Journal of Industrial Ecology*, 5(2), 13-36.
- Food Ingredients Asia. (2019). Indonesia 4.0 and opportunities for the Thai Food Industry. Retrieved from <https://www.figlobal.com/asia-Indonesia/visit/news-and-updates/Indonesia-40-and-opportunities-thai-food-industry>
- Freeman, R. E. (1994). The politics of stakeholder theory: Some future directions. *Business ethics quarterly*, 409-421.
- Gao, Y., Li, J., & Song, Y. (2009). Performance evaluation of green supply chain management based on membership conversion algorithm. Paper presented at the 2009 ISECS International Colloquium on Computing, Communication, Control, and Management.
- Geng, R., Mansouri, S. A., & Aktas, E. (2017). The relationship between green supply chain management and performance: A meta-analysis of empirical evidences in Asian emerging economies. *International Journal of Production Economics*, 183, 245-258.



- Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of management review*, 20(4), 986-1014.
- Hart, S. L., & Ahuja, G. (1996). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business strategy and the Environment*, 5(1), 30-37.
- Hoffman, A. J. (2001). Linking organisational and field-level analyses: The diffusion of corporate environmental practice. *Organisation & Environment*, 14(2), 133-156.
- Kung, F.-H., Huang, C.-L., & Cheng, C.-L. (2012). Assessing the green value chain to improve environmental performance: Evidence from Taiwan's manufacturing industry. *International Journal of Development Issues*, 11(2), 111-128.
- Li, S., Jayaraman, V., Paulraj, A., & Shang, K.-c. (2016). Proactive environmental strategies and performance: role of green supply chain processes and green product design in the Chinese high-tech industry. *International journal of production research*, 54(7), 2136-2151.
- Lieb, K. J., & Lieb, R. C. (2010). Environmental sustainability in the third-party logistics (3PL) industry. *International Journal of Physical Distribution & Logistics Management*, 40(7), 524-533.
- Mahoney, J. T., & Pandian, J. R. (1992). The resource-based view within the conversation of strategic management. *Strategic management journal*, 13(5), 363-380.
- Min, H., & Galle, W. P. (2001). Green purchasing practices of US firms. *International Journal of Operations & Production Management*, 21(9), 1222-1238.
- Olu Adeyoyin, S. (2005). Strategic planning for marketing library services. *Library management*, 26(8/9), 494-507.
- Paulraj, A. (2011). Understanding the relationships between internal resources and capabilities, sustainable supply management and organisational sustainability. *Journal of supply chain management*, 47(1), 19-37.
- Preuss, L. (2002). Green light for greener supply. *Business ethics: A European review*, 11(4), 308-317.
- Rao, P., & Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance? *International Journal of Operations & Production Management*, 25(9), 898-916.
- Routroy, S. (2009). Antecedents and drivers for green supply chain management implementation in manufacturing environment. *ICFAI Journal of Supply Chain Management*, 6(1), 20-35.



- Sammalisto, K., & Brorson, T. (2008). Training and communication in the implementation of environmental management systems (ISO 14001): a case study at the University of Gävle, Sweden. *Journal of cleaner production*, 16(3), 299-309.
- Sarkis, J. (2003). A strategic decision framework for green supply chain management. *Journal of cleaner production*, 11(4), 397-409.
- Sarkis, J., Gonzalez-Torre, P., & Adenso-Diaz, B. (2010). Stakeholder pressure and the adoption of environmental practices: The mediating effect of training. *Journal of Operations management*, 28(2), 163-176.
- Sarkis, J., Zhu, Q., & Lai, K.-h. (2011). An organisational theoretic review of green supply chain management literature. *International Journal of Production Economics*, 130(1), 1-15.
- Schmidt, C. G., Foerstl, K., & Schaltenbrand, B. (2017). The supply chain position paradox: green practices and firm performance. *Journal of supply chain management*, 53(1), 3-25.
- Shah, S. I. U., & Rahim, N. A. (2019a). Addressing the recent developments and potential gaps in the literature of corporate sustainability. *Journal of Studies in Social Sciences and Humanities*, 5(1), 28-40.
- Shah, S. I. U., & Rahim, N. A. (2019b). Effect of ethical climate on corporate financial performance in Pakistan: An application of confirmatory tetrad analysis (CTA-PLS) approach. *Journal of Studies in Social Sciences and Humanities*, 5(2), 53-67.
- Shang, K.-C., Lu, C.-S., & Li, S. (2010). A taxonomy of green supply chain management capability among electronics-related manufacturing firms in Taiwan. *Journal of environmental management*, 91(5), 1218-1226.
- Sharma, V. K., Chandana, P., & Bhardwaj, A. (2015). Critical factors analysis and its ranking for implementation of GSCM in Indian dairy industry. *Journal of Manufacturing Technology Management*, 26(6), 911-922.
- Singh, P., & Pandey, K. K. (2012). Green marketing: policies and practices for sustainable development. *Integral Review*, 5(1), 22-30.
- Srivastava, S. K. (2007). Green supply-chain management: a state-of-the-art literature review. *International journal of management reviews*, 9(1), 53-80.
- Tang, A. K., Lai, K. h., & Cheng, T. (2012). Environmental governance of enterprises and their economic upshot through corporate reputation and customer satisfaction. *Business strategy and the Environment*, 21(6), 401-411.

- Testa, F., & Iraldo, F. (2010). Shadows and lights of GSCM (Green Supply Chain Management): determinants and effects of these practices based on a multi-national study. *Journal of cleaner production*, 18(10-11), 953-962.
- Walker, H., Di Sisto, L., & McBain, D. (2008). Drivers and barriers to environmental supply chain management practices: Lessons from the public and private sectors. *Journal of purchasing and supply management*, 14(1), 69-85.
- WCED, S. W. S. (1987). World commission on environment and development. *Our common future*, 17, 1-91.
- Yildiz Çankaya, S., & Sezen, B. (2019). Effects of green supply chain management practices on sustainability performance. *Journal of Manufacturing Technology Management*, 30(1), 98-121.
- Younis, H., Sundarakani, B., & Vel, P. (2016). The impact of implementing green supply chain management practices on corporate performance. *Competitiveness Review*, 26(3), 216-245.
- Zhu, Q., & Sarkis, J. (2004). Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises. *Journal of Operations management*, 22(3), 265-289.
- Zhu, Q., & Sarkis, J. (2007). The moderating effects of institutional pressures on emergent green supply chain practices and performance. *International journal of production research*, 45(18-19), 4333-4355.
- Zhu, Q., Sarkis, J., & Geng, Y. (2005). Green supply chain management in China: pressures, practices and performance. *International Journal of Operations & Production Management*, 25(5), 449-468.
- Zhu, Q., Sarkis, J., & Lai, K.-h. (2007a). Green supply chain management: pressures, practices and performance within the Chinese automobile industry. *Journal of cleaner production*, 15(11-12), 1041-1052.
- Zhu, Q., Sarkis, J., & Lai, K.-h. (2007b). Initiatives and outcomes of green supply chain management implementation by Chinese manufacturers. *Journal of environmental management*, 85(1), 179-189.
- Zsidisin, G.A. and Siferd, S.P. (2001), "Environmental purchasing: a framework for theory development", *European Journal of Purchasing & Supply Management*, Vol. 7 No. 1, pp. 61-73.