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## The Effect of Green Supply Chain Management Practices on Sustainability Performance

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ABSTRACT. Sustainability performance as measured through environmental, economic, and social performance, could be a competitive advantage for organizations amid the current tight business competition. Green Supply Chain Management (GSCM) practices which consist of green purchasing, green manufacturing, green marketing, green distribution and packaging, internal environmental management, environmental education, and investment recovery, could be a way for organizations to obtain their sustainability performance. This study aims to examine the impact of GSCM on sustainability performance of natural-dyed batik SME in Yogyakarta Province. The data were collected using questionnaire and later obtained 39 respondents who were selected by using area sampling technique. The data were analyzed descriptively and quantitively using Partial Least Square (PLS) with SmartPLS 3.2.8 software. The results of the analysis show that green purchasing, green manufacturing, green marketing, internal environmental management, and environmental education affect SME's environmental, economic, and social performance positively and significantly. On the other hand, green distribution and packaging as well as investment recovery do not have positive and significant impact on SME's environmental, economic, and social performance. The conclusion of this study is that the adoption of GSCM practices does not affect the overall SME's sustainability performance, yet affects individually.

Keyword: green supply chain management; sustainability performance; partial least square (PLS)

#### INTRODUCTION

Global warming, climate change, and environmental issues are real problems and cannot be ignored. One of the causes of these environmental issues is industrialization. Industrialization on the one hand has a positive impact on the economy, but on the other hand it has a negative impact on environmental conditions. The positive impact of industrialization was also felt by Indonesia. The Coordinating Ministry for Economic Affairs, at the end of 2018 reported that SMEs as one of the driving wheels of the country's economy, experienced growth of up to 60.34%. The Ministry of Cooperatives and SMEs added that SMEs also play a role as contributors to the country's foreign exchange, which in 2017 amounted to Rp88.45 billion. Furthermore, according to the presentation of the 2018 Yogyakarta National Coordination Meeting, for the Yogyakarta Special Region Province, the contribution of SMEs to the Gross Regional Domestic Product (GRDP) of DIY is 79.64%.

In conditions of fairly tight business competition, an organization needs to achieve competitive advantage in order to win the competition, one of which is through the achievement of sustainability performance. Russel and Taylor (2011) define sustainability as meeting the needs of the present without compromising the ability of future generations to meet their needs. Sebhatu (2009), states that sustainability performance reflects one end goal of the company's steps in the continuum of corporate responsibility (Bhimani and Soonawalla, 2005; Schaltegger and Wagner, 2006; Johnson, 2007) of corporate conformity, certification, compliance, and reporting with a given standard of company performance in relation to stakeholder expectations (Epstein, 2008). Sezen and ankaya (2019) in their research suggest that there are three dimensions that can be used to explain sustainable performance in a company, including environmental, economic, and social performance.

Environmental performance is defined by Lankoski (2000) as a concept related to the level of environmental impact hazard caused by the company's activities. The environmental performance of the manufacturing sector, including SMEs, as the largest contributor to Gross Domestic Product (GDP), according to a report from the Indonesian Central Statistics Agency (BPS), citing various sources, stated that the sector was only able to manage 2% of the total waste managed in 2017. Waste generated by industry is generally disposed of in waterways, such as ditches, ditches, and rivers, which will eventually end up in the sea. The waste that flows in these waterways will certainly reduce the Water Quality Index (IKA). The IKA of the Special Region of Yogyakarta in 2017 was reported to have decreased to 35.95 with the status of river water quality based on the Water Quality Criteria of Government Regulation 82/2001 Class II is in a heavily polluted state, and there has been no change in river conditions based on the Score Storet results since 2015.

Economic performance is a description of a company's financial condition and company performance which is analyzed with financial analysis tools, so that it can be known about the good and bad financial condition of a company that reflects work performance in a certain period (Wulandari and Hidayah, 2013). The economic performance of batik SMEs in the Province of the Special Region of Yogyakarta is reported to have an increasing trend from year to year, which is supported by an increase in the number of domestic and foreign tourists visiting Yogyakarta from 2014 to 2018. According to data from the DIY Tourism Office, in 2017, the number of tourist spending for souvenirs reached IDR 309,898.00 per day. The expenditure of tourists certainly contributes to the economic growth of DIY, including its impact on 715 batik SMEs which are spread evenly throughout DIY.

Social performance includes several topics, namely labor, human rights, product responsibility, and society and so on (Nawangsari and Nugroho, 2019). Batik SMEs in DIY Province, especially

natural color batik SMEs, are reported to have continuously improved their social performance in line with the increasing trend of natural color batik after the Nusantara Batik Title was held by the Indonesian Batik Foundation in 2017. From this trend, it can be concluded that public awareness and interest in purchasing environmentally friendly products is also increasing.

Sustainability performance can be achieved by SMEs through the application of green supply chain management (GSCM) practices. GSCM according to Srivasta (2007) is an integration of environmental thinking into the entire chain of supply chain management, including product design, supplier selection, manufacturing processes, delivery of final products to consumers, and product management after its useful life. In the research of Sezen and ankaya (2019), there are eight dimensions that can be used to explain the practice of implementing GSCM in a company, including green purchasing, green production, green marketing, green distribution, green packaging, internal environmental management, environmental education, and restoration investment.

National Institutes of Health, US Department of Health & Human Services (2018) define green purchasing as an affirmative choice and acquisition of products and services that most effectively minimize negative impacts on the environment during the product life cycle in terms of manufacture, transportation, use and recycling or disposal. The practice of purchasing green in natural color batik SMEs is carried out through the purchase of environmentally friendly dyes produced from natural materials such as tom leaves, jolawe, mahogany wood, and many more.

Green production according to Ninlawan et al., (2010) is a production process that uses environmentally friendly raw materials, is very efficient, and produces little or no waste and pollution. Green production in natural color batik SMEs is carried out through the use of natural dyes in the batik production process and reducing chemicals in the production process.

Kotler and Keller (2006) define green marketing as a movement that leads to environmentally friendly products produced by an organization. Natural color batik SMEs carry out green marketing practices through the production of natural colored batik which is supported by providing education related to environmental issues to consumers.

Green distribution is defined by Ninlawan et al., (2010) as an activity in green distribution, namely green packaging and green logistics. Green distribution can be implemented by SMEs through choosing environmentally friendly delivery services and delivering products using effective delivery services and maximizing vehicle loads. Green packaging or can also be referred to as environmentally friendly packaging is defined by Zhang and Zhao (2012) as an environmentally friendly packaging where the packaging is made from natural ingredients, can be used repeatedly, is easily degraded and can be developed sustainably, even in the whole cycle life, is not harmful to the environment and the health of the human body and livestock. Green packaging can be implemented by SMEs through the use of environmentally friendly materials that can be used and recycled as their product packaging.

Internal environmental management is a company's work of environmental protection policies and environmental targets to ensure protection of the environment (Chan et al., 2012). Internal environmental management in SMEs can be implemented through the provision of cross-functional cooperation for environmental improvement as well as support from the leadership and representatives of SMEs in their efforts to preserve the environment. Environmental education according to Sezen and ankaya (2019) citing Agenda 21, 1992, chapter 36, is an important tool to ensure the development of natural resource management and pave the way to a sustainable society. Environmental education in SMEs is implemented through providing environmental-related training for managers and employees as well as participating in government programs related to the environment.

Zhu and Sarkis (2004) define investment recovery as a traditional business practice where the remaining inventory/materials or used/used materials are resold. Recovery of investment in SMEs is carried out through the sale of remaining inventory and recycling of used or damaged products. In a previous study, Sezen and ankaya (2019) stated that in the literature, the number of studies related to the effect of GSCM practices on the three dimensions of sustainability (economic, environmental, and social) is still limited. In addition, quoting from Geng et al. (2017), there are limitations in developing countries, where research on the relationship between GSCM and performance is mostly carried out in developed countries (Sezen and ankaya, 2019).

Based on the description of the background and limitations of the research above, the authors are interested in researching "The Influence of Green Supply Chain Management Practices on Sustainability Performance (Study on Colored Natural Batik SMEs in the Special Region of Yogyakarta)". This study aims to examine how the effect of the implementation of GSCM which consists of seven dimensional practices on sustainability performance as measured using three performances, whether the seven practices affect the overall sustainability performance or individual. In addition, the positive or negative effects caused by the implementation of GSCM practices on the three performances in sustainability performance were also investigated in this study.

#### **METHODS**

This research was conducted on 39 natural color batik SMEs in the Special Region of Yogyakarta Province. The sampling technique used in this study is one of the probability sampling techniques, namely the area sampling technique. The first criterion used for determining the sample of this research is SMEs that have been operating for at least 2 years, with the aim of seeing the progress of their sustainability performance. The second criterion is the application of green supply chain management practices in the operation of SMEs as indicated by the use of natural dyes in the batik dyeing process. The data used in this study is primary data obtained through a questionnaire that has been tested and meets the requirements of validity and reliability. The analysis technique used is Partial Least Square using the SmartPLS 3.2.8 application. The variable measurement technique in this study was measured using a Likert Scale.

#### RESULT AND DISCUSSION

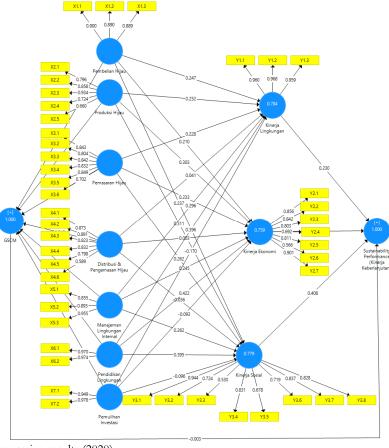
The primary data that has been collected by the researcher is then analyzed with the aim of knowing some of the characteristics of the respondents, namely position in SMEs, age of SMEs, and type of SME business. A more complete explanation of this can be seen in table 1.

Table 1. Characteristics of Respondents

Characteristics	Information	Frequency	Percentage
Position	SME Owner	28	71.79%
	SME Manager	11	28.21%
SME Age	25 years	9	23.08%
Ü	5 – 10 years	13	33.33%
	> 10 years	17	43.59%
SME type of	Natural color batik	4	10.26%
business	Natural and synthetic color	35	89.74%
	batik		

Source: Primary data processed (2020)

#### **Outer Model Test Results**



Source: PLS data processing results (2020)

Figure 1. Outer Model Test Results

# **Convergent Validity**

The results of the convergent validity test of 39 respondents as shown in table 2, it can be seen that each variable indicator has an outer loading value of 0.5. This means that all indicators are said to be valid for use in further research and analysis.

Table 2. Outer Loading 39 Respondents

Variable	Indicator	Outer Loading	Information
Green Purchase	X1.1	0.900	Valid
	X1.2	0.890	Valid
	X1.3	0.889	Valid
Green Production	X2.1	0.796	Valid
	X2.2	0.858	Valid
	X2.3	0.934	Valid
	X2.4	0.724	Valid
	X2.5	0.660	Valid
Green Marketing	X3.1	0.843	Valid
-	X3.2	0.804	Valid
	X3.3	0.842	Valid
	X3.4	0.832	Valid
	X3.5	0.849	Valid
	X3.6	0.702	Valid
Green Distribution and Packaging	X4.1	0.873	Valid

	X4.2	0.891	Valid
	X4.3	0.823	Valid
	X4.4	0.832	Valid
	X4.5	0.798	Valid
	X4.6	0.589	Valid
Internal Environmental Management	X5.1	0.855	Valid
	X5.2	0.893	Valid
	X5.3	0.955	Valid
Environmental Education	X6.1	0.970	Valid
	X6.2	0.974	Valid
Investment Recovery	X7.1	0.950	Valid
·	X7.2	0.977	Valid
Environmental Performance	Y1.1	0.960	Valid
	Y1.2	0.968	Valid
	Y1.3	0.959	Valid
Economic Performance	Y2.1	0.856	Valid
	Y2.2	0.842	Valid
	Y2.3	0.803	Valid
	Y2.4	0.691	Valid
	Y2.5	0.811	Valid
	Y2.6	0.567	Valid
	Y2.7	0.900	Valid
Social Performance	Y3.1	0.944	Valid
	Y3.2	0.724	Valid
	Y3.3	0.528	Valid
	Y3.4	0.831	Valid
	Y3.5	0.678	Valid
	Y3.6	0.720	Valid
	Y3.7	0.838	Valid
	Y3.8	0.828	Valid
Source: DIS algorithm test results (2020)			

Source: PLS algorithm test results (2020)

## **Discriminant Validity**

The results of the discriminant validity test of 39 respondents as shown in table 3, it can be seen that each variable indicator has a greater cross loading value when compared to other variables. This means that all indicators are said to be valid for use in further research and analysis.

Table 3. Cross Loading 39 Respondents

Indica	Variable									
tor	PbH	PrH	PMH	DPH	MLI	PL	PΙ	KL	TO	KS
X1.1	0.901	0.182	0.065	0.297	0.354	0.283	0.176	0.539	0.507	0.518
X1.2	0.887	0.227	-0.035	0.194	0.417	0.232	0.156	0.414	0.389	0.402
X1.3	0.890	0.264	0.233	0.152	0.253	0.315	-0.045	0.535	0.502	0.531
X2.1	0.172	0.791	0.136	0.377	0.169	0.270	-0.087	0.466	0.426	0.441
X2.2	0.216	0.855	0.166	0.241	0.037	0.132	-0.178	0.384	0.381	0.409
X2.3	0.291	0.936	0.048	0.309	0.039	0.197	0.065	0.416	0.478	0.470
X2.4	0.147	0.728	-0.061	0.081	-0.159	0.047	0.009	0.187	0.243	0.254

X2.5	0.146	0.665	0.157	0.107	-0.095	0.105	0.029	0.260	0.348	0.309
X3.1	0.221	0.102	0.848	0.135	0.055	0.168	0.315	0.297	0.338	0.329
X3.2	0.002	0.027	0.792	0.305	0.091	0.254	0.384	0.217	0.233	0.244
X3.3	0.239	0.171	0.850	0.332	0.103	0.208	0.339	0.412	0.420	0.431
X3.4	0.033	-0.008	0.837	0.063	0.099	0.256	0.294	0.291	0.329	0.331
X3.5	-0.037	0.229	0.839	0.253	-0.024	0.171	0.334	0.237	0.259	0.309
X3.6	-0.123	0.015	0.699	0.101	0.032	0.001	0.219	0.128	0.137	0.177
X4.1	0.265	0.274	0.214	0.879	0.167	0.124	0.255	0.276	0.284	0.261
X4.2	0.366	0.321	0.162	0.904	0.244	0.206	0.236	0.353	0.345	0.304
X4.3	-0.025	0.149	0.241	0.771	0.076	0.051	0.191	0.091	0.092	0.025
X4.4	0.078	0.212	0.292	0.836	0.105	0.086	0.143	0.254	0.229	0.234
X4.5	-0.031	0.183	0.208	0.783	0.085	0.111	0.151	0.169	0.133	0.136
X4.6	-0.187	-0.049	0.109	0.511	-0.036	-0.108	0.011	-0.012	-0.042	-0.079
X5.1	0.313	0.005	0.108	0.263	0.849	0.301	0.042	0.427	0.375	0.360
X5.2	0.324	-0.057	0.089	0.144	0.896	0.378	0.292	0.484	0.465	0.477
X5.3	0.374	0.114	0.031	0.139	0.957	0.366	0.157	0.558	0.506	0.532
X6.1	0.343	0.133	0.202	0.155	0.374	0.970	0.002	0.649	0.657	0.643
X6.2	0.270	0.261	0.248	0.168	0.381	0.974	0.042	0.707	0.704	0.698
X7.1	0.069	-0.031	0.291	0.175	0.129	-0.068	0.903	-0.039	-0.001	0.025
X7.2	0.106	-0.048	0.401	0.254	0.197	0.042	0.996	0.002	0.071	0.056
Y1.1	0.596	0.410	0.334	0.295	0.533	0.663	0.532	0.962	0.914	0.896
Y1.2	0.588	0.527	0.314	0.334	0.557	0.668	0.029	0.969	0.942	0.961
Y1.3	0.432	0.359	0.368	0.298	0.488	0.688	0.033	0.958	0.938	0.923
Y2.1	0.398	0.491	0.404	0.281	0.363	0.575	0.131	0.811	0.855	0.850
Y2.2	0.443	0.271	0.226	0.298	0.447	0.693	0.131	0.786	0.842	0.806
Y2.3	0.356	0.436	0.293	0.032	0.324	0.523	-0.042	0.792	0.801	0.799
Y2.4	0.301	0.411	0.415	0.153	0.284	0.327	-0.051	0.647	0.689	0.664
Y2.5	0.393	0.241	0.231	0.286	0.488	0.716	-0.061	0.784	0.811	0.774
Y2.6	0.547	0.442	0.191	0.473	0.328	0.364	0.155	0.535	0.573	0.505
Y2.7	0.485	0.406	0.339	0.200	0.499	0.595	0.060	0.850	0.899	0.865
Y3.1	0.518	0.467	0.394	0.218	0.488	0.628	0.079	0.884	0.896	0.943
Y3.2	0.519	0.473	0.140	0.218	0.302	0.504	-0.037	0.713	0.709	0.726
Y3.3	0.469	0.327	0.223	0.340	0.239	0.323	-0.169	0.505	0.502	0.534
Y3.4	0.508	0.296	0.405	0.248	0.304	0.644	0.123	0.788	0.808	0.829
Y3.5	0.208	0.378	0.255	0.169	0.385	0.535	-0.019	0.623	0.661	0.679
Y3.6	0.184	0.334	0.492	0.217	0.485	0.479	0.223	0.718	0.69	0.719

Y3.7	0.557	0.266	0.165	0.170	0.470	0.626	0.058	0.779	0.814	0.836
Y3.8	0.395	0.455	0.347	0.214	0.461	0.472	0.012	0.805	0.803	0.827

Source: PLS algorithm test results (2020)

## Average Variance Extracted (AVE), Composite Reliability, and Cronbach's Alpha

The results of the average variance extracted (AVE) test from 39 respondents as shown in table 4, it can be seen that each variable indicator has AVE 0.5. This means that all indicators are said to be valid for use in further research and analysis. Composite reliability value> 0.7 and Cronbach's Alpha 0.7 indicates that all variables can be said to be reliable for use in further research and analysis.

Table 4. AVE, Composite Reliability, Cronbach's Alpha 39 Respondents

Variable	AVE	Composite Reliability	Cronbach's Alpha
Green Purchase	0.797	0.922	0.873
Green Production	0.640	0.898	0.857
Green Marketing	0.662	0.921	0.899
Green Distribution and	0.651	0.917	0.900
Packaging Internal Environmental Management	0.813	0.929	0.885
Environmental Education	0.944	0.971	0.941
Investment Recovery	0.929	0.963	0.926
Environmental Performance	0.927	0.974	0.960
Economic Performance	0.622	0.919	0.894
Social Performance	0.594	0.919	0.897

Source: PLS algorithm test results (2020)

# Inner Model Test Results Goodness-of-Fit Test

The results of the goodness-of-fit test of 39 respondents as shown in table 5, it can be seen that each variable has R2 0.67. It can be interpreted that the effect of exogenous variables on endogenous variables is included in the good category.

Table 5. Results of R-square (R2)

Variable	R2
Environmental Performance	0.761
Economic Performance	0.752
Social Performance	0.771

Source: PLS data processing results (2020)

The coefficient of determination (R2) in the PLS analysis can also be evaluated by looking at the predictive-relevance (Q2) q-square value. The value of Q2 is calculated using the following formula:

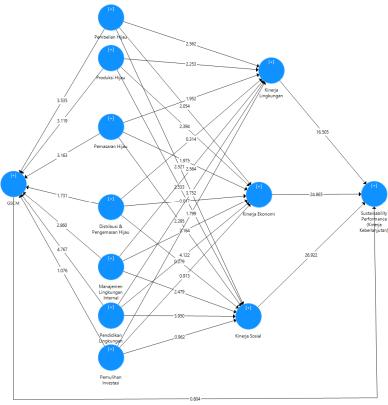
Q2 = 1 - (1-R12) (1-R22) ... (1-RP2)

Q2 = 1 - (1 - 0.7612) (1 - 0.7522) (1 - 0.7712)

Q2 = 1 - (1 - 0.58) (1 - 0.57) (1 - 0.59)

Based on the Q2 value, the research model used in this study can be stated to have good goodness-of-fit, where the exogenous latent variable used as the explanatory variable is able to predict the endogenous variable well, which is 93%.

#### Path Coefficient Test



Source: PLS Data Processing Results, 2020

Figure 2. Path Coefficient Results

Based on Figure 2, it can be concluded that the effect of environmental education on economic performance has the highest path coefficient value, which is 4.122; while the lowest path coefficient value is indicated by the effect of distribution and green packaging on economic performance, which is 0.017.

#### **Bootstrapping Results**

Hussein (2015) stated that the criteria for accepting or rejecting the hypothesis were carried out by (1) comparing the tstatistical values with ttables and (2) looking at the p-values. The value of ttable can be known by calculating the number of degrees of freedom (df) first with the following formula:

$$df = n - k - 1$$
  
 $df = 39 - 7 - 1$   
 $df = 31$ 

#### Information:

df = degrees of freedom (degrees of freedom)

n = number of samples

k = number of independent variables (independent variables)

The ttable value with a degree of freedom (df) of 31 for the one-tailed test at a significance level of 5% or t0.05 is 1.696. So, the hypothesis can be declared accepted if the value of tstatistics> 1.696 and p-values < 0.05.

Effect of Green Supply Chain Management (GSCM) Practices on Environmental Performance Table 6. Bootstrapping Results Effect of GSCM Practices on Environmental Performance

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T statistics ( O/ST DEV )	P values	Information
Green Purchase → Environmental Performance	0.247	0.236	0.101	2,451	0.007	Accepted
Green Production → Environmental Performance	0.252	0.245	0.108	2,342	0.010	Accepted
Green Marketing → Environmental Performance	0.228	0.207	0.105	2,167	0.015	Accepted
Green Distribution & Packaging → Environmental Performance	0.041	0.042	0.130	0.316	0.376	Rejected
Internal Environmental Management → Environmental Performance	0.296	0.283	0.128	2,315	0.011	Accepted
Environmental Education → Environmental Performance	0.396	0.408	0.103	3,856	0.000	Accepted
Investment Recovery  → Environmental Performance	-0.170	-0.155	0.094	1,804	0.036	Rejected

Source: PLS data processing results (2020)

Bootstrapping results in table 6 show that there are five dimensions of GSCM practices that positively and significantly affect the environmental performance of SMEs. The five dimensions include green purchasing, green production, green marketing, internal environmental management, and environmental education. Environmental education is the dimension that has the highest influence on environmental performance as indicated by the original sample value of 0.396. This study provides different results from previous research conducted by Sezen and ankaya (2019) which stated that green distribution and packaging are the dimensions that have the most influence on environmental performance. Environmental education practices can improve the

environmental performance of natural color batik SMEs through the provision of environmental training for SME managers and employees. Participation in government programs related to environmental issues also helps improve the environmental performance of SMEs. These results are in line with Dangelico's (2014) research which found that the development of a company's green team, consisting of employees who have environmental education, has a positive impact on the company's environmental performance and environmental reputation. Dangelico (2014) also added that to improve the company's competence regarding the environment, companies are advised to provide environmental training for their employees.

In this study, distribution and green packaging have a positive but not significant effect on the environmental performance of SMEs. This is because the owners and managers of natural color batik SMEs in the Special Region of Yogyakarta have not fully used environmentally friendly means of transportation in shipping their products. In addition, they also cannot ensure the optimization of the distribution route because it depends on the respective couriers they use to deliver their products. Investment recovery has a negative effect on the environmental performance of SMEs. This is because natural color batik SMEs in the Special Region of Yogyakarta are still categorized as early players in the implementation of investment recovery practices, who lack experience and lack of adequate technology and infrastructure to support this.

# Effect of Green Supply Chain Management (GSCM) Practices on Economic Performance Bootstrapping results in table 7 show that there are five dimensions of GSCM practice that positively and significantly affect the economic performance of SMEs. The five dimensions include green purchasing, green production, green marketing, internal environmental management, and environmental education. Environmental education is the dimension that has the highest influence on economic performance as indicated by the original sample value of 0.422. This study provides different results from previous research conducted by Sezen and ankaya (2019) which stated that green production is the most influential dimension on economic performance. Environmental education practices can improve the economic performance of natural color batik SMEs through the provision of environmental training for SME managers and employees. Participation in government programs related to environmental issues also increases the economic performance of SMEs. These results are in line with the research of Sezen and ankaya (2019) and Haninun et al. (2018) stated that the company's participation in the PROPER (Company Performance Rating Program in Environmental Management) program shows the company's commitment to environmental management which will be useful for stakeholders and is expected to be able to improve the image of stakeholders towards the company, especially consumers, as a result of the use of products that will increase the company's profitability.

Table 7. Bootstrapping Results The Effect of GSCM Practices on Economic Performance

- martin and provide the second	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T statistics ( O/ST DEV )	P values	Information
Green Purchase → Economic Performance	0.210	0.200	0.105	1,998	0.023	Accepted
Green Production → Economic Performance	0.303	0.300	0.119	2,558	0.005	Accepted
Green Marketing → Economic Performance	0.233	0.222	0.107	2,174	0.015	Accepted
Green Distribution & Packaging → Economic Performance	0.003	0.001	0.143	0.018	0.493	Rejected
Internal Environmental Management → Economic Performance	0.245	0.237	0.120	2.036	0.021	Accepted
Environmental Education → Economic Performance	0.422	0.430	0.102	4.121	0.000	Accepted
Investment Recovery  → Economic Performance	-0.093	-0.092	0.106	0.879	0.190	Rejected

Source: PLS data processing results (2020)

In this study, distribution and green packaging have a positive but not significant effect on the environmental performance of SMEs. This is because the owners and managers of natural color batik SMEs in the Special Region of Yogyakarta still use motorized vehicles in the process of shipping their products. The use of fuel that tends to be environmentally unfriendly for the product distribution process will certainly affect the economic performance of SMEs in a positive but not significant way. In terms of green packaging, natural color batik SMEs in the Special Region of Yogyakarta use paper bags or cloth bags for the outer packaging of their products. The price of paper bags and cloth bags is quite expensive when compared to plastic bags.

Investment recovery has a negative effect on the environmental performance of SMEs. This study reinforces previous research conducted by Sezen and ankaya (2019) which stated that investment recovery has a negative effect on economic performance. Based on the results of interviews with research respondents, the implementation of investment recovery in natural color batik SMEs in the Yogyakarta Regional Province has not been fully controlled by regulations. In addition, the recycling of damaged products has also been shown to increase production costs, which in turn results in a decline in the economic performance of SMEs.

#### Effect of Green Supply Chain Management (GSCM) Practices on Social Performance

Bootstrapping results in table 8 show that there are five dimensions of GSCM practice that positively and significantly affect the social performance of SMEs. The five dimensions include green purchasing, green production, green marketing, internal environmental management, and environmental education. Environmental education is the dimension that has the highest influence on social performance as indicated by the original sample value of 0.395. This study provides different results from previous research conducted by Sezen and ankaya (2019) which stated that distribution and green packaging were the most influential dimensions on social performance. Environmental education practices can improve the social performance of natural color batik SMEs through the provision of environmental training for SME managers and employees. Participation in government programs related to environmental issues also increases the social performance of SMEs. The results in this study differ from previous research conducted by Sezen and ankaya (2019) which stated that environmental education did not have a positive effect on social performance. Environmental education contributes to increased awareness of the environment and the achievement of a green strategy adopted to reach the broad masses (Sezen and ankaya, 2019). However, environmental education is not a practice whose results can be observed in a short time. In this study, environmental education has a positive and significant effect on the social performance of natural color batik SMEs in the Special Region of Yogyakarta Province. Based on the respondent's data that has been collected, as many as 76.92% are SMEs that are more than five years old, so it can be said that the social performance of SMEs can already be observed by the owners or managers of SMEs.

Table 8. Bootstrapping Results The Effect of GSCM Practices on Social Performance

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T statistics ( O/ST DEV )	P values	Information
Green Purchase → Social Performance	0.237	0.230	0.097	2,456	0.007	Accepted
Green Production → Social Performance	0.311	0.305	0.114	2,728	0.003	Accepted
Green Marketing → Social Performance	0.262	0.242	0.107	2,446	0.007	Accepted
Green Distribution & Packaging → Social Performance	-0.036	-0.029	0.126	0.288	0.387	Rejected
Internal Environmental Management → Social Performance	0.262	0.251	0.117	2,248	0.013	Accepted
Environmental Education → Social Performance	0.395	0.403	0.103	3,835	0.000	Accepted
Investment Recovery  → Social Performance	-0.096	-0.085	0.101	0.951	0.171	Rejected

Source: PLS data processing results (2020)

In this study, distribution and green packaging negatively affect the social performance of SMEs. Based on the results of interviews with the owners and managers of natural color batik SMEs in the Special Region of Yogyakarta, it can be concluded that the application of green packaging and distribution practices has not been implemented optimally. This causes no special attention given by consumers to the social image of SMEs in terms of distribution and green packaging of natural color batik SME products. Investment recovery also negatively affects the environmental performance of SMEs. Based on the results of interviews with the owners and managers of natural color batik SMEs in the Special Region of Yogyakarta, the main focus of SMEs in implementing investment recovery practices is currently still focused on economic goals. The respondents also added that if the investment recovery practices they apply have other impacts besides the economy, then this is a bonus for them.

# The Effect of Green Supply Chain Management (GSCM) Practices on Sustainability Performance

Bootstrapping results in table 9 show that there is no positive effect of implementing GSCM practices on the overall sustainability performance of SMEs.

Table 9. Bootstrapping Results Effect of GSCM Practices on Sustainability Performance

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T statistics ( O/ST DEV )	P values	Information
GSCM → Sustainability Performance	-0.003	-0.005	0.003	0.823	0.206	Rejected

Source: PLS data processing results (2020)

This study provides new results that were not examined by previous research conducted by Sezen and ankaya (2019) regarding the effect of green supply chain management (GSCM) practices on overall sustainability performance. According to the results of research by Wijethilake (2017), green practices can have a positive effect on the company's sustainability performance through cost advantages, increasing competitiveness through capacity building, increasing production and environmental performance, creating new capabilities, reducing waste, improving product quality. and process. This study provides different results from Wijethilake's research because the research samples used in this study are large multinational companies and local companies that have implemented proactive strategies and formal management control systems. More specifically, the sample in this study was selected based on the criteria that companies have published reports on sustainability, corporate social responsibility, and similar documents on their websites. According to data collected through questionnaires and the results of direct interviews with respondents, it can be concluded that there are still green supply chain management (GSCM) practices that SMEs have not fully implemented. GSCM practices that have not been considered and implemented optimally by natural color batik SMEs in the Special Region of Yogyakarta include distribution and green packaging as well as investment recovery practices. Furthermore, according to the results of data processing, GSCM practices are proven to have more influence on the sustainability performance of individual SMEs, namely environmental performance, economic performance, or social performance.

#### **CONCLUSION**

Based on the results of data analysis on the effect of green supply chain management (GSCM) practices on sustainability performance in natural color batik SMEs in the Special Region of Yogyakarta, the following conclusions can be drawn. First, there are five dimensions of GSCM practice, namely green purchasing practices, green production, green marketing, internal environmental management, and environmental education that affect the three dimensions of sustainability performance of the natural color batik SMEs which consist of positive and significant environmental, economic, and social performance. Second, green packaging and distribution practices affect the environmental and economic performance of natural color batik SMEs positively but not significantly. Meanwhile, judging from its effect on the social performance of SMEs in natural color batik, green packaging and distribution practices have a negative effect. Third, the investment recovery dimension also negatively affects the environmental, economic and social performance of natural color batik SMEs. Fourth, if the overall effect is examined, there is no positive effect between GSCM practices on the overall sustainability performance of natural color batik SMEs.

Future research is expected to add criteria for the minimum operating age of SMEs, which is more than 5 years, so that further research can be done regarding sustainability performance as an organization's long-term goal. The sample in this study is still relatively small, so that further research is expected to be able to expand the range of the research sample. Respondents in this study are still dominated by batik SMEs that produce two types of batik, namely natural and synthetic color batik, so that further research is expected to be able to use organizations that fully implement green supply chain management (GSCM) practices in their operations.

### References

Badan Pusat Statistik. Statistik Lingkungan Hidup Indonesia 2018 (2018)

Chan, R.Y.K., He, H., Chan, H.K. & Wang, W.Y.C. (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.

Dangelico, Rosa Maria (2014) Improving Firm Environmental Performance and Reputation: The Role of Employee Green Teams. *Business Strategy and the Environment*, 24(8), 735-749.

Dinas Pariwisata DIY. Statistik Kepariwisataan 2017 (2017)

Haninun, N.A., Lindrianasari, N.A., & Denziana, Angrita, (2018) The Effect of Environmental Performance and Disclosure on Financial Performance. *International Journal of Trade and Global Markets*, 11(1/2), 138.

Hussein, Ananda Sabil (2015) Modul Ajar Penelitian Bisnis dan Manajemen Menggunakan Partial Least Square (PLS) dengan SmartPLS 3.0. Universitas Brawijaya

Kharisma, Wilujeng (2019) Mayoritas Sungai di DI Yogyakarta Tercemar. Retrieved September 17, 2019.

Kotler, Philip & Kevin L. Keller (2006) Manajemen Pemasaran (Edisi Kesepuluh). Indeks

Lankoski, Leena (2000) Determinants of Environmental Profit: An Analysis of the Firm-Level Relationship between Environmental Performance and Economic Performance. *Doctoral Dissertations*, 951-22-5127-2.

Nawangsari, Rima Dewi & Nugroho, Paskah Ika (2019) Pengaruh Indikator Kinerja Ekonomi, Indikator Kinerja Lingkungan dan Indikator Kinerja Sosial Terhadap Profitabilitas Perusahaan Manufaktur. *International Journal of Social Science and Business*, 3(2), 162-168.

- Ninlawan, C. & Papong, Seksan & Tossapol, K. & Pilada, W. (2010) Critical Research and Practices. The Implementation of Green Supply Chain Management Practices in Electronics Industry, *Proceedings of The International MultiConference of Engineers and Computer Scientists*, 2010(3).
- Office of Research Facilities (2018) Green Purchasing. Retrieved October 8, 2019.
- Pemerintah Daerah Istimewa Yogyakarta. Paparan Rakornas Yogyakarta 2018: Perkembangan Koperasi & UKM DIY (2018)
- Russel, Roberta S., & Bernard W. Taylor. (2011) Operations Management: Creating Value along the Supply Chain (Seventh Edition). John Wiley and Sons, Inc
- Sebhatu, Samuel Petros (2009) Sustainability Performance Measurement for Sustainable Organization beyond Compliance and Reporting. Research Paper.
- Sezen, Bulent & Çankaya, Sibel (2019) Effects Of Green Supply Chain Management Practices On Sustainability Performance. *Journal of Manufacturing Technology Management*, 30(1), 98-121.
- Srivasta, S.K. (2007) International Journal of Management Reviews: Green Supply Chain Management: A State-of-The-Art Literature Review, *International Journal of Management Reviews*, 9, 53-80
- UMKM-ID. (2018). Kontribusi UMKM Dalam Roda Perekonomian Indonesia. Retrieved September 19, 2019.
- Wijethilake, Chaminda (2017) Proactive Sustainability Strategy and Corporate Sustainability Performance: The Mediating Effect of Sustainability Control Systems. *Journal of Environmental Management*, 196, 569-582.
- Wulandari, Ratna Dian & Erna Hidayah (2013) Pengaruh Environmental Performance dan Environmental Disclosure Terhadap Economic Performance (Studi pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia Periode 2009-2011). *Jurnal Ekonomi dan Bisnis Islam*, 8(2), 233-244.
- Zhang, Guirong & Zhao, Zongjian (2012) International Conference on Applied Physics and Industrial Engineering: Green Packaging Management of Logistics Enterprises. *Physics Procedia*, 24, 900-905.
- Zhu, Qinghua dan Joseph Sarkis (2004) Relationships between Operational Practices and Performance among Early Adopters of Green Supply Chain Management in Chinese Manufacturing Enterprises. *Journal of Operations Management*, 22, 265-289.