

Sustainable Supply Chain Management Practices and SMEs Performance

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ABSTRACT

The research was conducted to analyze the relationship between sustainable supply chain management practices and the performance of environmentally friendly batik SMEs. The concept of Sustainable Supply Chain Management has become the right choice for business activities. Eco-friendly batik SMEs must be responsible for environmental practices and social practices in the scope of internal and external management and their impact on all dimensions of corporate sustainability performance. The research sample was 70 owners of environmentally friendly batik SMEs in several cities in Central Java and Yogyakarta. Data analysis was performed through Partial Least Squares (PLS). The general conclusion of this research was that internal management and external management influenced corporate performance. However, supplier assessment and supervision and supplier collaboration did not influence corporate performance.

Keywords: Internal management, external management, SME performance, MRPB, Triple Bottom Line, Eco-friendly batik SMEs

1. Introduction

It is undeniable, the existence of small and medium scale enterprises (SME) can lever Indonesia's economic growth. The Indonesian economic development policies is a force to encourage SMEs to become real forces that are capable of increasing regional economic growth and absorbing labor. The presence of SMEs is also the most important part of the economy in Indonesia because SMEs are one of the biggest movers. According to Tambunan in (Wanty, 2006), the importance of SME in Indonesia is also related to its strategic position in various aspects. In the Indonesian economy, SMEs occupy a strategic position. This is due to the role of SMEs in creating new jobs, apart from being a means of equitable distribution of people's economy to reduce poverty and unemployment.

The batik industry is one of several SMEs in Indonesia. The Indonesian batik industry is considered to have controlled the world market so that it is able to become a driving force for the Indonesian economy. So far, the batik industry has experienced good growth. The Ministry of Industry noted that Indonesia's batik exports had reached Rp. 747.4 billion in 2018. In addition to having an increasingly improving economic impact on the surrounding community, the batik industry also accelerates economic growth in Indonesia. It also contributes foreign exchange for the country with exports done to a number of countries. But on the other hand, the batik industry also has some

unfavorable impacts. Particularly, it is felt in the environment around the batik business from inorganic liquid waste. The causes of these problems include the inability of batik SMEs to design the production process properly and also the ignorance of batik SMEs to the bad impact of their production activities on the environment.

Kurniawan et al., (2014) said that the batik industry had a bad impact in the form of large amounts of inorganic wastewater, thick color, smelled and had temperature, acidity (pH), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), High Total Suspended Solid (TSS). This was due to the use of chemicals and dyes in the batik production process so environmental pollution occurred and a bad economic impact for industry players would be generated if it was not handled immediately with good planning. If wastewater is discharged into rivers without being treated first, it can cause environmental pollution, especially in aquatic ecosystems.

About river pollution in Pekalongan, Central Java, according to Living Environment Agency of the City of Pekalongan it was said that only 45% of batik waste was processed by the Wasted Water Processing Installation and most of the rest was disposed into the river. Several rivers in Pekalongan City had been polluted by batik waste. As happened in the river along Klego Village, East Pekalongan. The river water is already black, gives off a very strong odor, plus a drain pipe that leads to the river. At least, nearly 5 million liters of waste every day are contributed badly by the batik industry there. The city of Pekalongan is indeed one of the centers for the batik SME industry that has the potential to support the local economy, but it does not yet have an adequate waste water management system. (Budi Susanto, 2019, <https://jateng.tribunnews.com/dlh-kota-pekaongan-sadari-baru-45-persen-limbah-batik-terolah-ipal-sisanya-terbuang-ke-sungai/>, 9 April 2019).

Based on the above phenomenon, a batik enterprise can be terminated if it disturbs the environment around it or does not comply with the expectations of the surrounding community. Batik business actors should not only seek the profit, but they also have to pay attention to environmental conditions, such as improper waste disposal and the application of Sustainability Supply Chain Management (SSCM) because they set up a business that cannot be separated from the surrounding community. SSCM explained that companies could improve their internal processes through environmental and social practices and improve supplier performance (Jing & Dai, 2018). Wantao (2018) explained that SSCM was a combination of GSCM and CSR and aimed to maximize the performance of all dimensions that led to sustainable development, such as paying attention to social responsibility and environmental practices in conducting business activities. GSCM (Green Supply Chain Management) was an extension of the traditional supply chain where the green supply chain included a series of activities aimed at minimizing bad environmental impacts.

The aim of this research was to ascertain (a) the influence of internal environmental management practices on the environmental performance, social performance and economic performance of SMEs (b) the influence of social responsibility management practices on environmental performance, social performance and economic performance of SMEs (c) the influence of collaboration of suppliers on environmental performance, social performance and economic performance of SMEs (d) the influence of assessment and supervision on environmental performance, social performance and economic performance of SMEs (e) the influence of environmental performance and social performance on the economic performance of SMEs. This

research was expected to be able to be beneficial for business agents and the community related to the success of sustainable supply chain management practices and performance of SMEs

2. Literature Review and Hypothesis Developments

2.1 Legitimacy Theory

The legitimacy theory is based on a social contract between the company and the community. The theory underlied thinking about the ability of organizations to provide welfare to society (Fasikhah et al., 2018). Legitimacy can be considered as an attempt to equate the perception or assumption that actions taken by a company are actions that are desired by the community. The company would certainly continue to strive so it could operate in accordance with the values and norms that existed in society (Magness, 2006). Legitimacy theory suggests companies to convince the community that the company's activities and performance can be well received by the surrounding community.

2.2 Stakeholder Theory

Companies are part of several elements which form society in the social system. This condition creates a reciprocal relationship between the company and its stakeholders. It means that the company must carry out its role in two directions, namely meeting the needs of the company itself and the needs of stakeholders. Huang & Kung (2010) stated that stakeholder theory was an activity carried out by companies that were influenced by individual and group interests. The relationship between the company and the community is a reciprocal relationship in which stakeholders provide the resources needed by the company while the company meets the demands of the stakeholders. The stronger the relationship between the company and stakeholders, the better the company's business activities. Conversely, if the relationship between the company and stakeholders is bad, the company's business activities will be difficult.

2.3 Triple Bottom Line Theory

The triple bottom line theory provides the view that if a company wants to survive, it must pay attention to the triple bottom line "3P" (profit, people and planet). The triple bottom line has become a pillar to measure the value of a company's success (John Elkington, 1997). In addition to companies pursuing profit, companies must also pay attention to and be involved in fulfilling the welfare of the community because the company's development is inseparable from the support of the community (people) and all company activities are in direct contact with the environment. Therefore, the company must also contribute to preserving sustainability of environment. The condition of society depends on the economy, and the economy depends on society and the environment. The triple bottom line concept implies that the company must prioritize the interests of all parties involved and influenced by the activities of the company.

2.4 Internal Environmental Management Practices and SME Performance

Beske & Seuring (2014) explained that the application of environmental practices (such as environmental management systems) could lead to better environmental performance. Jing & Dai

(2018) explained that social sustainability was focused on internal and external parts of the company. Environmental management practices can be expected to have a positive impact on both parts. Such as environmentally friendly production can reduce waste and preserve the community's environment, so it can increase the company's social reputation. Zhu, Sarkis, & Geng (2005) stated that environmental management practices had a positive impact on a company's economic performance. The use of environmentally friendly materials, efficient production processes, and reduce the use of resources could reduce high production costs. Based on the explanation above, the hypotheses is :

H1a: Internal environmental management practices have impact on environmental performance of SMEs.

H1b: Internal environmental management practices have impact on social performance of SMEs.

H1c: Internal environmental management practices have impact on economic performance of SMEs.

Kolk (2016) explains that in corporate social responsibility management (CSR management), the involvement of employees and the community can improve community environmental protection and company environmental performance. Jing & Dai (2018) explained that CSR management practices include two parts (employees and society). Good relations between employees and the community (customers) can improve the company's social reputation and social performance. Walker & Jones (2012) explained that if a company improved employee safety and working conditions, it could increase employee satisfaction and reduce accidents, thus it could increase the amount of production and reduce losses. The application of corporate social responsibility management can increase production efficiency. From some of the supporting arguments, the hypotheses is :

H1d: Internal social responsibility management practices have positive impact on environmental performance of SMEs.

H1e: Internal social responsibility management practices have positive impact on social performance of SMEs.

H1f: Internal social responsibility management practices have positive impact on economic performance of SMEs.

2.5 External Supplier Management and SME Performance

Jing & Dai (2018) explained that collaboration with several raw material suppliers had a positive impact on the company's environmental performance. It suggested that supplier collaboration could reduce transaction costs and get resources that were priced according to the company's desire to have a comparative advantage in environmental performance. However, supplier collaboration does not have a significant direct impact on corporate social performance. It can be viewed from the current development process that did not really care about supplier collaboration. They only focused on one supplier. Therefore, some of the research hypotheses is:

H2a: Supplier collaboration has a positive impact on environmental performance of SMEs.

H2b: Supplier collaboration has a positive impact on social performance of SMEs.

Research conducted by Gimenez et al., (2012) concluded that assessment of suppliers did not have a significant direct impact on company performance. Assessment of suppliers could be indicated from the supplier's habits of visiting the company to provide raw materials. The aim is to reduce

unprofessional suppliers so that it has a good effect both for supplier development and supplier improvement which in turn has a direct impact on the environment and supplier performance. In other words, the performance appraisal of suppliers directly impacts supplier performance. Based on the description above, the hypotheses is:

H2c: Supplier monitor and assessment have a positive impact on environmental performance of SMEs.

H2d: Supplier monitor and assessment have a positive impact on social performance of SMEs.

Gimenez et al., (2012) explained that supplier collaboration and supplier monitor and assessment created a positive impact on company performance. Supplier collaboration as well as supplier monitor and assessment can help companies achieve higher production value and use fewer resources can lower production costs. Based on the explanation above, the hypotheses is:

H2e: Supplier collaboration has a positive impact on economic performance of SMEs

H2f: Supplier monitor and assessment have a positive impact on economic performance of SMEs.

2.6 SME performance

Jing & Dai (2018) explained that environmental performance and social performance had a positive impact on economic performance. It indicates that companies with good environmental and social performance are able to achieve more economic benefits. Environmental and social performance can be considered as intangible assets. Intangible assets can promote to customers and increase community satisfaction thus the company's reputation is getting better. Therefore, the research hypotheses is:

H3a: Environmental performance has a positive on economic performance of SMEs.

H3b: Social performance has a positive impact on economic performance of SMEs

3. Research Methodology

The model of research performed was described bellow :

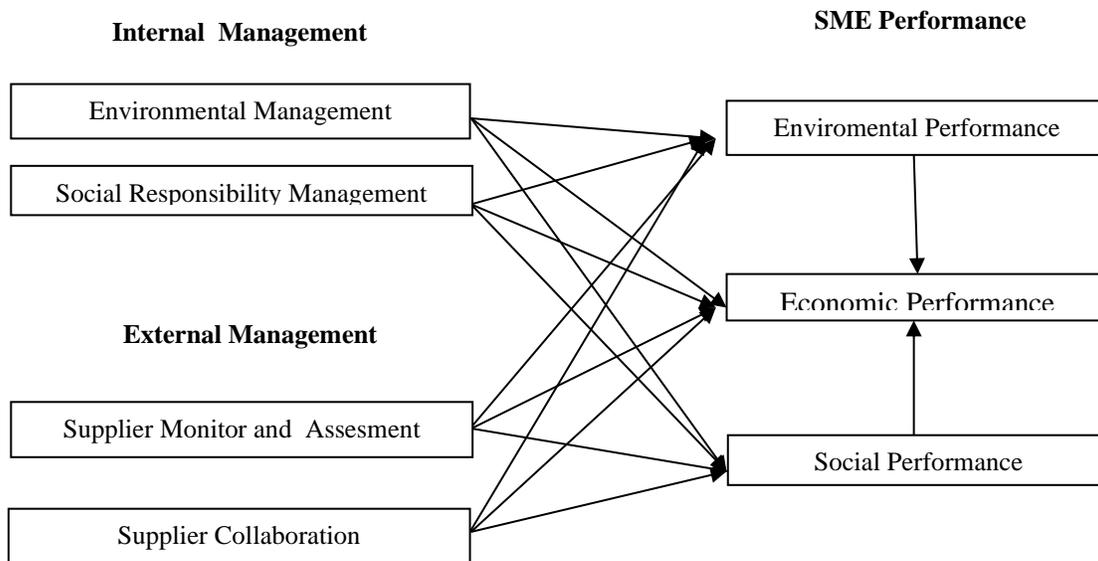


Figure 1 Reseach Model

3.1 Population and Samples

The population of the study were batik SMEs (Small and Medium Enterprises) in Central Java and Yogyakarta including 17 batik craftsmen in Batik Village of Laweyan in Solo, 7 batik craftsmen in Semarang, 1 batik craftsman in Pekalongan, 30 batik craftsmen in Bayat Klaten and 15 batik craftsmen in Giriloyo Bantul Batik Village, Bantul Yogyakarta. The samples were selected through purposive sampling based on certain criteria and considerations. In the study, the samples were 70 batik SMEs which were assessed according to predetermined criteria. The criteria for SMEs as a sample were having a maximum of 30 employees, annual income was less than Rp. 2.5 billion, having used organic materials in batik coloring, being efficient in energy use and waste that did not pollute the environment.

3.2 Data Analysis Method

The analytical method applied was PLS (Partial Least Square). The software used was SmartPLS. SmartPLS is a software used to test the relationship between the dependent latent variable and the independent latent variable. Because PLS is based on variance, it can use a small sample size with a minimum criterion of 30-100 samples. Technical analysis was PLS which was carried out in two stages, conducting measurement model tests to test the validity and reliability of the constructs of each indicator and structural model tests to ensure the influence between variables.

3.3 Data Analysis

Tabel 1. Data Analysis

Hypotheses	Description	Path Coef.	T Statistic	P Value	Result
H1a	Environmental management practices - environmental performance of SMEs	0,432	4,090	0,000	Supported
H1b	Environmental management practices - social performance of SMEs	0,126	0,600	0,548	Not Supported
H1c	Environmental management practices - economic performance of SMEs	- 0,247	2,642	0,008	Supported
H1d	Socially responsible management practices - environmental performance of SMEs	0,313	2,593	0,010	Supported
H1e	Social responsibility management practices - social performance of SMEs	0,528	1,558	0,120	Not Supported
H1f	Social responsibility management practices - economic performance of SMEs	0,532	4,876	0,000	Supported

H2a	Supplier monitoring and assessment- environmental performance of SMEs	0,323	2,255	0,025	Supported
H2b	Supplier monitoring and assessment- social performance of SMEs	-0,39	0,167	0,868	Not Supported
H2c	Supplier monitoring and assessment- economic performance of SMEs	0,467	4,763	0,000	Supported
H2d	Supplier collaboration - environmental performance of SMEs	-0,085	0,742	0,459	Not Supported
H2e	Supplier collaboration - social performance of SMEs	0,334	2,051	0,040	Supported
H2f	Supplier collaboration - economic performance of SMEs	0,174	1,525	0,128	Not Supported
H3a	Environmental performance - economic performance of SMEs	0,266	3,028	0,003	Supported
H3b	Social performance - economic performance of SMEs	-0,213	2,498	0,013	Supported

Table 1. An example of a table.

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4. Discussions

4.1 Internal Environmental Management Practices and SME Performance

Based on the testing of first hypothesis, H1a was accepted. The conclusion indicated that environmental management practices had an effect on the environmental performance of SMEs. The environmental management practice variable had a high average index value which meant that environmental management practice had a good index. The indicator about the waste that was disposed of not endangering the environment was the highest index value. The application of environmental management practices such as the use of natural dyes in the batik coloring process and waste management could improve environmental performance.

The environmental performance variable performed a high index which meant that the environmental performance variable had a good index. The indicator on efforts to protect and protect the environment was the highest index. By protecting the environment, SMEs could

improve their environmental performance. This conclusion was in line with the research conclusions by (Zhu et al., 2005; Beske & Seuring, 2014; Jing & Dai, 2018) which stated that environmental management practices had an impact on economic performance.

4.2 Positive Impact of Environmental Management Practices on Social Performance of SMEs

Based on the second hypothesis testing, H1b was rejected. The conclusion indicated that environmental management practices had no impact on the social performance of SMEs. The environmental management practice variable displayed a high average index value which meant that it had a good index. However, indicators related to water use according to utility had the lowest index. It showed that SMEs had not fully implemented environmental management practices. So that if it was internally linked environmental management practices were not related to social performance.

The social performance variable displayed a high average index value which meant that it had a good index. However, environmental management practices had no effect on the social performance of SMEs. The conclusion contradicted the research conclusion of Gimenez et al., (2012) and (Jing & Dai, 2018) which stated that environmental management practices had an impact on corporate social performance.

Environmental management practices have a positive effect on the economic performance of SMEs. Thus, H1c was accepted. The environmental management practice variable displayed a high index which meant that it had a good index. The indicator about the waste that was disposed of not endangering the environment had the highest index. This showed that environmentally friendly batik SMEs had used natural dyes in the coloring process so that the resulting waste did not endanger the environment and it would be able to produce high prices and quality. Thus, the sales profit of SMEs increased.

The economic performance variable had a high average index value which meant that it had a good index. The indicator of an increase in return on sales had the highest index and this showed that product quality and high prices could increase sales profit so that the economic performance of SMEs increased. The conclusion was in line with the conclusions of research by Zhu et al., (2005) and Gimenez et al., (2012) which explained that environmental management practices had an impact on economic performance.

Based on the results of hypothesis testing, social responsibility management practices had a positive impact on the environmental performance of SMEs. Hence, H1d was accepted.

The social responsibility management practice variable had a high average value which meant that it displayed a good index. The indicator of the absence of underage employees was the highest index value. In the absence of underage employees, it would make it easier for SMEs to direct employees to reduce waste and save electrical energy to improve environmental performance.

The environmental performance variable had a high average index value which meant that it had a good index. Indicators related to efforts to protect the environment were the highest index values. It showed that reducing waste and saving electrical energy played a role in protecting the environment so that the environmental performance of SMEs increased. The conclusion of study

was in line with the conclusions of the study conducted by (Gimenez et al., 2012; Kolk, 2016; Jing & Dai, 2018) which stated that social responsibility management practices impacted environmental performance.

From testing of the fifth hypothesis, social responsibility management practices have no effect on the social performance of SMEs. Hence, H1e was rejected. The variable of social responsibility management practices had a high average index value which meant that it had a good index. However, the indicator regarding the provision of health insurance to employees had the lowest index. It showed that SMEs had not been able to provide health insurance to employees. So, if it was linked internally, SMEs had not been able to improve social performance.

The social performance variable showed a high average index value which meant that it had a good index. However, indicators on improving employee health and safety had the lowest index compared to other indicators. The inability of SMEs to ensure the health of employees indicated that they were not yet able to meet the needs of employees. The conclusion contradicted the conclusions of research from Gimenez et al., (2012) and (Jing & Dai, 2018) which stated that social responsibility management practices impacted social performance.

Social responsibility management practices had a positive effect on the economic performance of SMEs. Thus, H1f was accepted. The social responsibility management practice variable displayed a high average index value which meant that it had a good index. The indicator of the absence of underage employees was the highest index value. It showed that the absence of underage employees would make it easier for SMEs to direct the production process and the production process could produce products according to the target. Hence, it could increase sales profit. Then, the economic performance of SMEs had increased.

The economic performance variable had a high average index value which means that it had a good index. The indicator of an increase in return on sales had the highest index value which showed that the absence of underage employees could increase production results so that the return on sales increased. The conclusion contradicted the research conclusions of (Gimenez et al., 2012; Jing & Dai, 2018) which stated that social responsibility management practices had no effect on economic performance. However, the results of the study support the conclusions of Walker & Jones, (2012) which stated that social responsibility management practices had an impact on economic performance.

4.3 External Supplier Management and SME Performance

Based on the testing of seventh hypothesis, supplier monitor and assessment had a positive effect on the environmental performance of SMEs. Therefore, H2a was supported. The supplier monitor and assessment variable had a medium index value which meant that it had a fairly good index. Indicators regarding waste treatment by suppliers performed a fairly good index, which meant that indirectly supplier monitor and assessment could improve the environmental performance of SMEs.

The environmental performance variable had a high average index value which meant that it had a good index. The indicator on efforts to protect and protect the environment was the highest index.

Suppliers who carry out waste treatment had participated in protecting and protecting the environment so that indirectly, supplier monitor and assessment could improve the environmental performance of SMEs. The conclusion was in line with the conclusions of research by (Carter & Rogers, 2008; Gimenez et al., 2012; Jing & Dai, 2018) which stated that supplier monitor and assessment had an impact on environmental performance.

Through testing for the eighth hypothesis, it was concluded that supplier monitor and assessment did not impact SME performance. Therefore, H2b was rejected. The supplier monitor and assessment variable performed a medium index value which meant that it had a fairly good index. However, the indicator for the level of environmental damage repair showed the lowest index. The suppliers only fulfilled their obligation to send raw materials to SMEs. They were not responsible for environmental damage due to operational activities. Social performance was not related to them.

The social performance variable had a high average index value which meant that it had a high index. This conclusion was the same as the research conclusions of Gimenez et al., (2012) and (Jing & Dai, 2018) which stated that supplier assessment and supervision had no impact on social performance.

From the eighth hypothesis testing that had been implemented, supplier assessment and supervision has a positive effect on the performance of SMEs. Thus, H2c was accepted. The variable of supplier assessment and supervision had a medium index value which means that it had a fairly good index. The indicator of timeliness of raw material delivery was the highest index. The timeliness of the delivery of raw materials made the production process run smoothly without any obstacles so that the company could produce products according to the target. Therefore, the economic performance of SMEs increased.

The economic performance variable had a high average index value which meant that it had a good index. An indicator of an increase in return on sales was the highest index and this shows that the timeliness of the delivery of raw materials could facilitate the production process, which in turn it would increase sales profit. Thus, supplier assessment and supervision might improve the economic performance of SMEs. This conclusion contradicted the research by Jing & Dai, (2018) which stated that supplier assessment and supervision had no effect on economic performance. However, this study supported the research of Gimenez et al., (2012) and Zhu et al., (2005) which stated that supplier review and supervision did not influence economic performance.

The tenth hypothesis testing concluded that supplier collaboration had no impact on environmental performance. Thus, H2d was rejected. The supplier collaboration variable had a high average index value which means that it had a good index. However, the indicator for meeting supplier needs had the lowest index compared to other indicators. It indicated that SMEs had not been able to meet supplier needs. Even though suppliers had sent natural raw materials, it turned out that the environmental performance was still poor, because they were still not fully able to process the resulting waste.

The environmental performance variable had a high average index value which meant that it had a good index. However, the indicator of reuse / recycle ability had the lowest index compared to

other indicators. It indicated that SMEs had not been able to process waste and they had not been able to improve their environmental performance. This conclusion contradicted the conclusions of research by Jing & Dai, (2018) and Carter & Rogers, (2008) which stated that supplier collaboration affected environmental performance. However, the results of this study supported the research by (Gimenez et al., 2012) which stated that supplier collaboration had no impact on environmental performance.

Based on testing of eleventh hypothesis, it was proven that supplier collaboration had a positive impact on social performance. Of course, H2e was accepted. The supplier collaboration variable had a high average index value which meant that it had a good index. The supplier service quality indicator had the highest index and it showed that the supplier had performed a good service satisfying SME actors. Good relations among suppliers and SMEs of batik would lead to mutual trust so that the social performance of SMEs was getting better.

The social performance variable displayed a high average index value which meant that it had a good index. The indicator that the product produced did not have a bad impact on health and that the public was involved in business activities had a high index. It indicated that the product was safe for health. In addition, the absorption of labor from the surrounding community increased social performance. This conclusion contradicted the results of research conducted by Jing & Dai, (2018) which stated that supplier collaboration had no effect on social performance. However, the conclusions of this study supported the research conclusions of Pagell & Gobeli, (2009) and Gimenez et al., (2012) which stated that supplier collaboration impacted social performance.

The twelfth hypothesis testing concluded that supplier collaboration did not impact on economic performance of SMEs. Thus, H2f was rejected. The supplier collaboration variable had a high average index value which meant that it had a good index. However, the indicators of meeting supplier needs had the lowest index value. It showed that SMEs had not been able to meet supplier needs. Even though suppliers had sent natural raw materials, supplier collaboration had not been able to improve the economic performance of raw material efficiency.

The economic performance variable had a high average index value which meant that it had a good index. However, the production cost efficiency indicator had the lowest index because even though suppliers had sent natural raw materials, it did not make SMEs production cost efficient. This conclusion was in line with the conclusions of the research of Gimenez et al., (2012) and Jing & Dai, (2018) which stated that supplier collaboration did not impact economic performance.

4.4 SME Performance

Based on testing of the thirteenth hypothesis, environmental performance had a positive impact on economic performance. Thus, H3a was accepted. The environmental performance variable had a high average index value which meant that environmental performance had a good index. The indicator on efforts to protect and protect the environment was the highest index. SMEs had implemented environmental practices such as selecting environmentally friendly natural dyes. Thus, SMEs had participated in protecting the environment. It made the quality of batik products increase at a high price. The condition made the sales profit achieved also increased.

The economic performance variable had a high average index value which meant that it had a good index. The indicator for an increase in return on sales was the highest index. Environmental performance was proven to improve the economic performance of SMEs. This conclusion was in line with the conclusions of research by de Giovanni, (2012) and Jing & Dai, (2018), which stated that environmental performance had a positive impact on economic performance.

Finally, from testing of fourteenth hypothesis, it was concluded that social performance impacted economic performance. Hence, H3b was supported. The social performance variable had a high average index value which meant that it had a good index. The indicator that the product produced did not have a bad impact on health was the highest index. SMEs had shown their concern for the community. Concern for the community was a plus value. The resulting product was increasingly in demand and it would increase sales profit.

The economic performance variable displayed a high average index value which meant that it has a good index. This showed that products that were safe for health were more attractive and increased sales profit. The increase in sales profit would of course affected the economic performance of SMEs. This conclusion was the same as the conclusions of research by (de Giovanni, 2012) and (Jing & Dai, 2018) which stated that social performance had a positive impact on economic performance

4.5 Conclusions, Limitations and Suggestions

Based on the research results that had been explained, several conclusions formulated were :

1. Positively, environmental management practices impact environmental performance.
2. Environmental management practices did not impact social performance.
3. Positively, environmental management practices impact economic performance.
4. Positively, social responsibility management practices impact environmental performance.
5. Social responsibility management practices did not impact social performance.
6. Positively, social responsibility management practices impact economic performance.
7. Positively, supplier monitor and assessment impact environmental performance.
8. Supplier monitor and assessment did not impact social performance.
9. Positively, supplier monitor and assessment impact economic performance.
10. Supplier collaboration did not influence environmental performance.
11. Positively, supplier collaboration impact social performance.
12. Supplier collaboration did not impact economic performance.
13. Positively, environmental performance impact economic performance.
14. Positively, social performance impact economic performance.

There were several limitations of the study. It was the difficulty in distributing questionnaires. In addition, this research was only conducted in Semarang, Klaten, Solo, Pekalongan, and Bantul. It was due to the lack of information sources regarding environmentally friendly batik SMEs. From some of the above limitations, it was suggested for further research to expand the object of research to the environmentally friendly batik industry in all over Central Java.

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