Journal of Social Research

P-ISSN: 2827-9832
E-ISSN: 2828-335x
http://ijsr.internationaljournallabs.com/index.php/ijsr

EVALUATION OF SUPPLIERS IN THE IMPLEMENTATION OF SUSTAINABLE SUPPLY CHAINS FOR THE APPAREL INDUSTRY IN INDONESIA

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ABSTRACT

In the context of globalization, the development and management of operations related to products and services are becoming more complex, stakeholders are demanding and aware of the challenges of sustainability along the supply chain. One of them is the clothing industry which is a global industry that provides basic human needs and is one of the industrial sectors that has an impact on the environment and society. To address the risk and opportunity issues of sustainability from an industry and value chain perspective, apply the concept of sustainable supply chain management (SSCM). This study aims to design an instrument in the form of a minimum standard to measure supplier performance and analyze it. Using a qualitative analysis method resulting from due diligence on suppliers with a total of 77 question points consisting of 23 questions on the environmental dimension, 23 questions on the social dimension related to employment, and 26 questions related to governance. The results show that 3 suppliers are at the High-performance level, 4 companies are in the Medium-performance category, 5 are companies with low performance and 1 company is in the very low category. By categorizing the highest total gain of ESG, namely 100%, and the lowest score of 34.62%. This value indicates the level of compliance with the minimum standards set. Recommendations for Further Research An even number of due diligence is carried out for categories in the fashion industry (clothing, hats, bags, footwear). The aspects and weights of each of these sustainability aspects can be re-analyzed if used for other types of industries outside the fashion industry.

Keywords: *sustainable supply chain, ESG aspects, standard minimum requirements, supplier performance*

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INTRODUCTION

In the context of globalization, the development and management of operations related to products and services are becoming more complex, and stakeholders demand and are aware of the challenges of sustainability along the supply chain (Fritz 2022). One of them is the clothing industry, which is a global industry that provides basic human daily needs and is an industrial sector that influences the environment and society (Harsanto et al., 2023). The report presented by Euromonitor & and McKinsey describes the global revenue from the fashion industry in 2022 as $ 1.7 trillion - $ 2.5 trillion. This shows that clothing is an attractive industry for various groups of people. Data shows that 75% of Asia is the largest employer of workers in the garment sector.

Data released by the Ministry of Industry (2022) the textile and textile product industries contribute to the national economy by absorbing 3.65 million workers or around 18.79% of the total workers in the manufacturing industry sector(Aprita & Adhitya, 2020). The existence of a high demand for clothing will affect the use of natural resources, and the use of synthetic materials from petroleum will (González-Benito et al., 2010).

Creates a significant increase in greenhouse gases and waste (Wren, 2022). Other implications of this industry, cause negative impacts on the environment, such as consuming a

lot of water, and using hazardous chemicals, as well as negative social impacts such as poor working conditions, low wages, child labor, and slavery in developing and developed countries, are not paid properly for overtime pay, which happened to a company located in Central Java in February 2023 (Tribunnews, 2023).

Sustainable supply chain management (SSCM) is needed, to create an industry that cares about and is aware of the environmental and social aspects of upstream and downstream supply chain activities (Wren, 2022).

A critical step in creating an environmentally and socially conscious apparel industry is the implementation of sustainable sourcing practices (Bhandari et al., 2022). Through the implementation of minimum requirement standards related to sustainability aspects by analyzing, measuring, and monitoring sustainability risks improving sustainability performance, and communicating about SSCM activities to their suppliers (KhanMohammadi et al., 2018). Several standards in the application of requirements and audit criteria include SMETA (Sedex Members' Ethical Trade Audit), and amfori BSCI (Business Social Compliance Initiative) (Fraser, Schwarzkopf, et al., 2020). In addition, some other tools or standards can be used to integrate Corporate Social Responsibility (CSR) practices with corporate sustainability, namely the ISO 26000 standard guidelines for social responsibility and sustainability reporting with the framework by the Global Reporting Initiative (GRI), which has been widely carried out by various companies (Sicoli et al., 2019).

The importance of considering sustainability criteria in supplier selection and evaluation. In this context, supplier evaluation must also consider uncertain factors (regulation changes, changes in market needs, natural disaster risks, or political instability) that might affect supplier performance in the future (Khan et al., 2018).

Research conducted by (Fraser, Schwarzkopf, et al., 2020) suggests that it is important for suppliers to implement sustainable practices in their supply chains. This can provide long-term benefits in terms of efficiency, company reputation, and lower environmental impact (Mokhtar et al., 2016).

The role of suppliers is very important in creating a sustainable supply chain, through strategic development of a sustainable supply chain, namely by evaluating and selecting suppliers (Er & Firat, 2016).

The importance of sustainable supply chain management and performance evaluation and sustainable supplier selection in the manufacturing industry, especially in developing countries takes into account environmental, social, and economic factors in supplier selection and highlights the use of a multi-criteria approach in supplier evaluation (Khan et al., 2018).

Based on the importance of implementing SSCM in the clothing industry, this research was conducted to design a minimum standard (minimum requirement) for assessing supplier CSR performance, and the level of supplier compliance with Sustainability standards in the Apparel Industry.

METHOD

This study used a qualitative analytical method by examining the aspects needed to measure performance indicators for the evaluation of 13 suppliers of the fashion industry, consisting of 8 companies engaged in the apparel sector, 2 companies engaged in gloves, 1 company engaged in hats, 1 the company is engaged in the bag sector and 1 in the footwear

sector, with a workforce of over 100 workers, has local and foreign buyers and has been operating for more than 5 years.

The problem studied in this research is the evaluation of suppliers in implementing sustainable supply chains in the fashion industry. After obtaining the appropriate aspects and indicators, an assessment will be carried out on the supplier with a due diligence process, and then the due diligence results will be analyzed descriptively for each point generated. performance appraisal can be done by giving a value according to the indicator, namely the answer "yes" or "no". One point is awarded for a 'yes' answer (Fraser, Müller, et al., 2020).

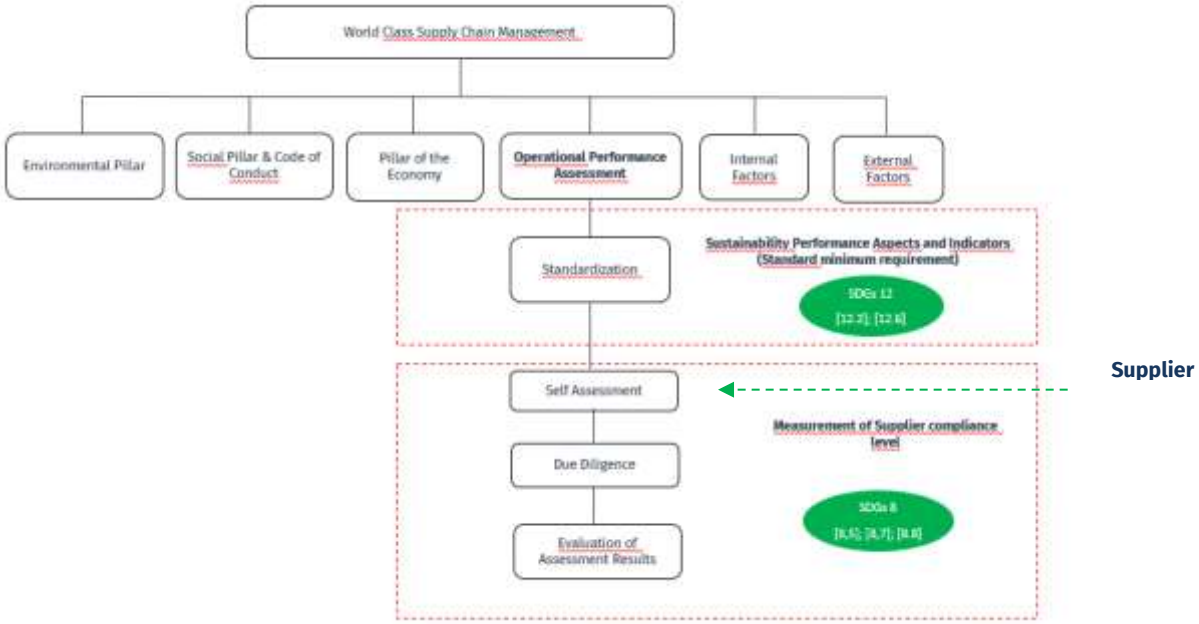

Figure 1. Conceptual Framework

Determining supplier qualifications is an important step in supply chain management by involving the process of evaluating and selecting potential suppliers. A sustainable approach in the supplier qualification process is very important nowadays, where suppliers must have dynamic capabilities to be able to adapt and evolve in the face of rapid environmental changes.

Four performance assessment criteria were set, namely high performance with a score range of 86-100%; Medium performance score range of 71-85%; Performance score range of 51-70%; and low performance <50%. This assessment will show the level of compliance with the specified minimum sustainability requirement standards.

RESULTS AND DISCUSSION

Assessment of the thirteen suppliers by considering the level of compliance with various sustainable criteria.

Minimum Standard Requirements

Sustainability criteria in supplier assessment are determined and combined based on literature studies from various journals. A total of 23 criteria for the Environmental dimension,

26 criteria for the Social dimension, and 27 criteria for Governance are set as the minimum standard requirements for evaluating supplier performance.

Code	Dimension	Indicator	Reference											
			Moretto et al., 2018	Fraser et al., 2020	Fraser, Schwarzkopf, et al., 2020	Kumar et al., 2023	KhanMohammadi et al., 2018	Yunita., 2014	Fraser, Müller, et al., 2020	Khan et al., 2018	Er & Firat, 2016	Baskaran et al., 2012	ISO 26000	Peraturan Pemerintah
A. Praktik Bisnis Dan Tata Kelola														
A.1	Policy	Sustainability Policy	V										V	
		Communication		V										
A.2	Company Commitment	Sustainability Coordinator	V	V										
		Vision and mission		V										
		Training on Sustainability	V	V				V						
		Code of Conduct	V	V									V	
		Anti Corruption	V	V									V	
A.3	Business Permit	Business License		V										
A.4	Occupational Health and Safety	Fire Alarm			V									
						V							V	
		Emergency door			V								V	
		Evacuation Route Marker			V								V	
		fire extinguisher			V								V	
		Chemical Inventory List							V					
		Solvent Variant							V					
A.5	Basic Assessment	An overview of partners or suppliers	V	V										
		Basic Assessment	V	V				V						
A.6	Action plan	Action plan	V	V				V		V			V	
		Employee Engagement				V	V	V	V	V			V	
A.7	Monitor & Evaluation	Monitor & evaluate							V	V				
		Communication with staff	V	V	V	V			V	V			V	
A.8		Internal Report	V			V							V	

Code	Dimension	Indicator	Reference											
			Moretto et al., 2018	Fraser et al., 2020	Fraser, Schwarzkopf, et al., 2020	Kumar et al., 2023	KhanMohammadi et al., 2018	Yunita., 2014	Fraser, Müller, et al., 2020	Khan et al., 2018	Er & Firat, 2016	Baskaran et al., 2012	ISO 26000	Peraturan Pemerintah
	Internal Reports & Communications	Public Report	V										V	
A.9	Raw material	Ingredients source	V			V				V				
		Policy on the use of raw materials	V			V	V							
A.10	Social Cooperation	Collaboration	V										V	
		Experience exchange	V	V									V	
		Donation	V	V				V					V	
B. Employment Practices														
B.1	Employment	Cooperation agreement				V						V	V	
		No Forced Labor	V	V	V			V				V	V	
		HR Policy	V	V	V	V		V				V	V	
		Decent wages	V	V	V	V		V				V	V	
		Overtime	V	V	V			V				V	V	
		Health insurance	V	V	V	V		V				V	V	
		Employment Guarantee	V	V	V	V		V				V	V	
		Holidays / Annual Leave	V	V	V			V				V	V	
		Sick leave	V	V	V			V				V	V	
		Child Labor	V	V	V			V				V	V	
		Complaint Procedure	V	V	V			V				V	V	
		Representative	V	V	V	V		V				V	V	
		Discipline Violations	V	V	V			V				V	V	
		Employees with special needs	V	V	V			V				V	V	
		Measuring Employee Satisfaction	V	V	V	V		V				V	V	
		Privacy protection	V	V	V			V				V	V	

Code	Dimension	Indicator	Reference											
			Moretto et al., 2018	Fraser et al., 2020	Fraser, Schwarzkopf, et al., 2020	Kumar et al., 2023	KhanMohammadi et al., 2018	Yunita., 2014	Fraser, Müller, et al., 2020	Khan et al., 2018	Er & Firat, 2016	Baskaran et al., 2012	ISO 26000	Peraturan Pemerintah
		Protection of employee life balance	V	V	V			V				V	V	
		Freedom of Association	V	V	V			V				V	V	
B.2	Occupational Health and Safety	OSH procedures	V	V	V			V				V	V	
		OSH Company Policy	V	V	V			V				V	V	
		OSH Training	V	V	V	V		V				V	V	
		Workspace layout	V	V	V			V				V	V	
B.3	Equality	Equal opportunity	V	V	V	V		V				V	V	
B.4	Education and training	Training	V	V	V	V		V				V	V	
		Personnel Development	V	V	V			V				V	V	
		Apprentice	V	V	V			V				V	V	
C. Environmental Practices														
C.1	Energy and Resource Consumption	Energy and Resource Consumption	V	V	V	V	V						V	
		Policy to reduce energy consumption	V	V	V	V	V						V	
		Sustainable energy	V	V			V	V					V	
		Offset Carbon	V	V			V	V					V	
		Energy efficiency for lighting	V	V	V	V	V						V	
		Power off policy	V	V	V	V	V						V	
		Turn off the lights policy	V	V			V	V					V	
C.2	Water Consumption	Low energy equipment	V	V			V	V					V	
				V		V	V	V					V	
				V			V	V					V	
				V			V	V					V	
				V			V	V						
C.4	Utilization Permit			V			V	V						v
				V			V	V						v

Code	Dimension	Indicator	Reference											
			Moretto et al., 2018	Fraser et al., 2020	Fraser, Schwarzkopf, et al., 2020 Kumar et al., 2023	KhanMohammadi et al., 2018	Yunita., 2014	Fraser, Müller, et al., 2020	Khan et al., 2018	Er & Firat, 2016	Baskaran et al., 2012	ISO 26000	Peraturan Pemerintah
	Environmental Pollution Control			v			V						
				V		V	V						v
		IPLC	V	V		V	V						v
		RPTKA	V	V		V	V						v
C.5	Expenditure	Reduction of single-use consumables	V	V		V	V						
		Sustainable Spending	V	V		V	V						
		Working Paper				V			V				
		Print				V			V				
		Cleaning agent	V	V		V							

Supplier Assessment Based on the Three Aspects of Sustainability

resulted in 3 suppliers with High performance with a score range of 86-100%; 4 suppliers with Medium performance score range of 71-85%; 5 suppliers getting Low performance score range of 51-70%; and 1 low performance <50% obtained an assessment as shown in Table 1.

Table 1. Supplier assessment scores based on the Sustainability Aspect

Vendor	Verification	Category	Type of business
AM	52	Low performance	Apparel
BA	72	Medium performance	footwear
CB	55	Low performance	Apparel
CJ	85	Medium performance	Apparel
EKSN	92	High performance	Bag
GU	95	High performance	Apparel
GT	58	Low performance	Apparel
JG	45	Very low performance	Gloves
MR	97	High performance	Gloves
PK	81	Medium performance	Apparel
PRG	85	Medium performance	Apparel
SG	58	Low performance	Apparel
TR	68	Low performance	Hat

This supplier assessment is seen based on the category of sustainability aspects, namely governance, labor practices, and the environment which are submitted in the form of questions as part of due diligence. There were 77 questions asked to suppliers consisting of 23 questions

on the environmental dimension, 26 questions on labor practices, and 27 on the governance dimension. The average score for the three sustainability aspects was determined, the highest score was obtained by MR at 97% and JG at 45% with the lowest score obtained by. This value indicates the level of compliance with the minimum standards set and as an early detection effort to find opportunities and threats for stakeholders (Baskaran et al., 2012).

Supplier Performance Based on Highest & Lowest Sustainability Aspects

Table 2 Highest ESG Performance

Sustainability Aspect	Company	Score	Level Performance
Highest ESG Performance			
Environment	EKSN	95,24	High performance
Employment Practices	MR	100,00	High performance
Governance	MR	100,00	High performance

Table 3 Lowest ESG Performance

Sustainability Aspect	Company	Score	Level Performance
Lowest ESG Performance			
Environment	AM	38,46	Low performance
Employment Practices	JG	44,44	Low performance
Governance	SG	34,62	Low performance

Assessment of the three sustainability aspects of the 13 suppliers that were used as research objects, classified for the highest performance with a score above 85% based on the highest environmental aspect was PT EKSN with a score of 95.24% with 20 points, while for labor practices and governance, the value got 100% perfect with 27 questions answered PT MR. And for the lowest performance in the environmental aspect with a score of 38.46% of the 9 points answered by PT AM, PT JG got the lowest score for employment practices with a score of 44.44% from 12 question points and 9 governance questions with a score of 34 .62% by PT SG.

Supplier selection in the process of implementing a sustainable supply chain can help companies identify risks and opportunities to improve performance from governance, environmental, and social aspects (Mejías et al., 2019). Of the minimum standards set for evaluating suppliers 77 questions consisting of 23 questions for the environmental dimension, 26 for questions on labor practices, and 23 questions on the governance dimension. By categorizing the highest total gain of ESG, namely 100%, and the lowest score of 34.62%. This value indicates the level of compliance with the minimum standards set.

Management of risks and sustainability challenges at suppliers is very important, for this reason, an adaptation of production and consumption systems is needed as well as collaboration

with stakeholders to fulfill SDGs agenda number 8, namely ensuring decent work in the supply chain which includes aspects of fair wages, hours humane work, a safe work environment and fulfillment of human rights. Obtained an average score of 82% with 288 compliance questions from a total of 13 suppliers. SDG no 12 for responsible consumption and production which is one of the challenges such as environmentally friendly raw materials that may be more expensive or difficult to find in the quantities needed.

CONCLUSION

The selection of sustainable suppliers by establishing a supplier selection and evaluation program is an innovative step in implementing a sustainable supply chain system. There are 23 criteria for the environmental dimension, 26 criteria for the social dimension, and 27 criteria for governance. The three aspects that form the basis for determining performance measurements in a sustainable supply chain, namely Governance, Environment, and Social can be used as a reference for companies engaged in the fashion sector in Indonesia.

Criteria index performance on sustainability aspects assessment of the three aspects of supplier assessment related to sustainability, the results obtained are classified according to the performance obtained, 3 suppliers are at the high performance level, 4 companies are in the medium performance category, 5 are companies with low performance and 1 company with very low category. This value can indicate the level of compliance with the minimum standards set and as an early detection effort to find opportunities and threats for the company and stakeholders.

Establishing a sustainable supply chain is in line with SDGs goal number 8, namely decent work and economic growth with target 8.7 related to eradicating forced labor, slavery, and child labor and 8.8 protecting the rights of labor, workers but in practice, this is a challenge and areas for improvement, by ensuring fair labor practices, decent wages and safe working conditions for employees throughout the supply chain, companies can contribute to improving workers' welfare and SDGs no 12 related to responsible consumption and production through target 12.6 Encouraging companies, especially large and transnational companies, to adopt sustainable practices and integrate sustainability information in their reporting cycle. The role of a sustainable supply chain is to encourage compliance with regulations and standards related to workers' rights, the environment, and social responsibility. Transparency in business practices helps build trust with stakeholders and consumers.

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