



## CSR Program Social Return on Investment Analysis Case Study: PT PLN Indonesia Power PLTGU Cilegon OMU

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**ABSTRACT:** Responsibility and sustainability play a larger role in the activities of global businesses. The practice of Corporate Social Responsibility (CSR) can be used to promote more responsible and sustainable behavior. PT PLN Indonesia Power PLTGU Cilegon OMU is a sub holding of an Indonesian state-owned corporation committed to fostering a responsible and sustainable culture through CSR. The old CSR program in Margasari village, the company's first ring area, must be replaced because it has come to its exit time. Based on the Social Mapping Document 2022 and interviews, a SWOT analysis is conducted taking into account the current situation of the community. The analysis indicates that a new sewing group named Pujasari could be implemented as the new CSR program in the village of Margasari. Nevertheless, since a CSR program is a social investment, the company must be confident in the program's future return for the community. This study aims to determine the program's economic feasibility, Social Return on Investment (SROI) value, variables that may influence SROI achievement, and contribution to the Sustainable Development Goals (SDGs). In calculating SROI, the triple bottom line concept will be used, while the economic feasibility will use capital budgeting method. A sensitivity analysis will be conducted to determine the critical variable for achieving SROI. The study demonstrates that the calculation utilizing the triple bottom line concept (considering economic, social, and environmental benefit) over a 5-year project period yields an NPV of IDR 1,988 mio, an IRR of 109%, with a WACC of 13.349%. The program's SROI is 20.39, indicating that for every IDR 1 invested by the company in this program, IDR 20.39 in social benefit will be generated. Analysis of sensitivity reveals that WACC, the selling price of rags, working productivity, and price of rag primary materials are, in order, the most sensitive variables affecting the project's SROI value. In addition, the program demonstrates contribution to SDGs 1, 5, 8, 12, and 13.

**KEYWORDS:** Capital Budgeting Analysis, Corporate Social Responsibility, Social Return on Investment (SROI), Sustainable Development Goals, Triple Bottom Line

### INTRODUCTION

Responsibility and sustainability play a larger role in the activities of multinational corporations. To maintain a company's profit while also appeasing social demands for environmental sustainability, complex business strategies are required today. Corporate social responsibility (CSR) is one of the most prisms used by extant businesses to adopt increasingly responsible and sustainable behavior (Myrlyainen & Torkkeli, 2022). Corporate social responsibility (CSR) may mitigate business damage by encouraging socially and environmentally responsible behavior (Yadav et al., 2021). Corporations engage in corporate social responsibility (CSR) through a variety of business-strategy-aligned CSR activities, such as charitable giving, sponsorships, and benevolence, which strengthen their reputations and brands (Jankalova, 2016). CSR is mandated by *UU No.40 Tahun 2007* regarding *Perseroan Terbatas* (Limited Liability Company) and *Peraturan Pemerintah No.47 Tahun 2012*, which state that every Limited Liability Company engaged in business activities related to natural resources must engage in social and environmental responsibility. PT PLN Indonesia Power PLTGU Cilegon OMU (Operation and Maintenance Service Unit), which will be referred to hereafter as PLTGU Cilegon, is one of the many companies in Indonesia that are committed to CSR.

PLTGU Cilegon is located in the village of Margasari, which is classified as a first ring area. First ring villages are the villages closest to the company that are most susceptible to environmental impacts induced by the company's operations. At this time, the old CSR program in the village of Margasari will come to their exit time. The company intends to invest in a new program in Margasari village, which is essential because Margasari village is considered the company's first ring area. According to the Social Mapping Document 2022, the majority of villagers graduated from elementary school, which is strongly correlated with the village's low economic status. In fact, many women in the village of Margasari have the ability to sew. These tailors are currently accepting orders



for refashioning and seam repair. Their customers are limited to neighbors and families, which does not generate much in amount. In regard to the available resources and living conditions, the villagers have an imperative need for community empowerment, mostly among women, to increase their income-generating abilities so they can live better and provide better education for their children.

Based on the current situation, the company intends to establish a new sewing group in Margasari village called Pujasari (*Pusat Jahit Margasari*) as the new CSR program. The program could increase the community's capacity to recycle unused fabrics into rags. The majority of industries use rags to clean and maintain their operation utilities and facilities, so their resale value is relatively high. Due to its strategic location, another opportunity for the business is to manufacture safety clothing for the area's industries. Due to reduced delivery costs, this safety clothing can be offered at a lower price, providing a competitive advantage for the sewing group. As Margasari village is close to industrial areas, this is an excellent opportunity for the community. Operationally, the program will be a collaboration between the sewing group and Margasari Village-owned Enterprise (BUMDES), which is pleased about the collaboration opportunity because it will enhance the prosperity of the villagers.

PLTGU Cilegon through their CSR is considering investing in this program. Nevertheless, since a CSR program is a social investment, the organization must be confident in the program's future return for the community. PLTGU Cilegon is willing to know in the economic feasibility of the program using a financial analysis technique, as well as the Social Return on Investment (SROI) value using the Triple Bottom Line (TBL) concept. In addition, a sensitivity analysis will be conducted to identify the variables that may influence SROI achievement. Furthermore, the corporation wishes to ascertain the program's contribution to the achievement of the Sustainable Development Goals (SDGs). This research will be limited in 5 years investment analysis based on the program period in company regulation.

## LITERATURE REVIEW

### A. Village Empowerment

The Law of the Republic of Indonesia No. 6 of 2014 on Villages governs the development of villages in Indonesia. This statute establishes the village as a progressive, robust, independent, and democratic location. Village self-sufficiency is contingent upon rural empowerment (Kurniasih et al., 2019). Cognitive, psychological, economic, social, and legal components comprise the five elements of empowerment (Chisika & Yoem, 2023). Village empowerment has the potential to revitalize, advance, and improve the overall welfare of the village community (Syapsan, 2020; Purwowibowo, 2023), which has a significant impact on rural community economic development. Chisika and Yoem (2023) linked economic empowerment to the achievement of poverty reduction, health, education, and humanitarian development goals. Village empowerment focusing on women's economic is associated with the SDG (So, 2019). Chenavaz et al. (2023) note that entrepreneurs establish businesses to generate a profit, but in order to do so, they must satisfy multiple stakeholders, including employees, customers, suppliers, and the community. In this manner, CSR appears to be a natural consequence of the entrepreneurial process. According to Burchardt (2000), CSR can be a competitive advantage for businesses because it allows them to differentiate themselves from rivals. Consumers are increasingly interested in purchasing from companies with a commitment to social responsibility, so this advantage exists.

### B. Corporate Social Responsibility and Firm Value

Corporate social responsibility (CSR) is a business activity that goes above and beyond what a company, its shareholders, and the law require in order to achieve societal objectives (Das & Pandey, 2022). According to Niyommaneerat et al. (2023), CSR is the notion that businesses should assume responsibility for the effects of their actions on society and the environment and then ethically involve the relevant stakeholders in generating economic progress. Historically, companies' primary objective was to increase revenue. However, businesses now have a responsibility to uphold the CSR agenda as part of their core values in order to safeguard the environment and improve the quality of life for people. CSR activities can be informed by charitable contributions, investments in environmental protection, and customer service (suppliers and consumers) (Deng et al., 2020).

The factors that may impact CSR implementation include stakeholder, employee, and environmental pressure, as well as the correlation between corporate strategies and social objectives (Skare & Golja, 2014). CSR is essential for the strategic management component of corporate decision-making in order to increase company efficiency. CSR is positively correlated with higher firm value, according to research (Chintrakarn et al., 2017; Li et al., 2016). According to Kung and Rupp (2018), empirical research has demonstrated a positive impact of CSR on firm value, including shareholder value and financial performance. Participation in community-focused initiatives is advantageous for businesses, as research indicates that a company's profitability rises when it



commits to social responsibility (Das & Pandey, 2022). Moreover, the study demonstrates that investors prefer to possess shares of responsible corporations. As societal awareness of sustainable development and the triple bottom line increases, more companies are investing in CSR (Cao et al., 2023).

### **C. Social Return on Investment (SROI)**

The Roberts Enterprise Development Fund (REDF) developed the SROI methodology in 1996 to evaluate capital contributions. REDF examined how much their resources improved people's lives (Corvo et al., 2022). The New Economics Foundation (NEF) defines Social Return on Investment (SROI) as a mechanism for calculating the financial worth of resources spent. It includes social, economic, and environmental benefits. SROI values, not costs. It monetizes social costs and benefits relative to a company's financial and operational expenses. It measures a project's intangible effects. Managers and investors can utilize SROI to evaluate social and environmental performance (Iyer & Agrawal, 2014). SROI quantifies the triple bottom line impacts of a company to help stakeholders make decisions. The triple bottom line, which requires investments to provide integrated value by improving social, economic, and environmental outcomes. SROI is an index of return that converts social results into financial terms by dividing the estimated value of benefits by the estimated investment (Corvo et al., 2022).

There are two varieties of SROI analysis: evaluative and forecast. Evaluative SROI are based on actual results from the past. Consequently, this is performed after the project has been completed and actual data on potential effects is available. Forecast SROI estimates are based on projections. It measures the quantity of social value a project will generate if its actions produce the desired results (Iyer & Agrawal, 2014). According to Oshimi et al. (2022), there are six stages to SROI analysis, including identifying the analysis scope and key stakeholders, mapping the result of activities (impact mapping), evaluating the impact of activities and their values, identifying result of impacts, calculating SROI, and reporting.

### **D. Tripple Bottom Line (TBL)**

Elkington (1998) introduced the triple bottom line concept to encompass social, economic, and environmental sustainability. These pillars of the triple bottom line (TBL) strive to meet present and future resource needs without damaging the environment. According to Miller (2020), the triple bottom line encourages companies to measure their social and environmental impact as well as their financial success. TBL integrates several sustainability metrics (Yip et al., 2023). According to Ali et al. (2019) and Chin et al. (2015), sustainability performance is maintaining equilibrium between economic, social, and environmental factors to achieve market competitiveness while maintaining value proposition by creating new jobs, cutting costs, and reducing negative environmental impacts (Machado et al., 2020). Due to social and environmental issues, firms must comply with regulations while reduce costs, meet customer expectations, and provide outstanding service. Sustainability is now mandatory and no longer optional (Yee et al., 2021).

### **E. Sustainable Development Goals (SDGs)**

The UN General Assembly agreed on the 2030 Agenda for Sustainable Development in 2015. The 17 Sustainable Development Goals (SDGs) and 169 specific goals of the 2030 Agenda, signed by 193 nations (Gjorgievski et al., 2021; Saez, 2021). The Sustainable Development Goals aim to end poverty, protect the environment, and improve the lives of all people worldwide. It also meets present demands without compromising future needs (United Nations, 2023). The 17 SDGs recognize that development must balance social, economic, and environmental sustainability and that actions in one area will affect results in others (United Nations Development Programme, 2023). The UN knows that business helps achieve the SDGs globally and locally. In this setting, more firms are supporting the SDGs and sharing their efforts with stakeholders. To incorporate stakeholder expectations and the main societal concerns into the enterprise, develop and design sustainable business models that offer commercial solutions to societal issues, manage global sustainability risks, or create innovation and investment opportunities, businesses should include the SDGs in their corporate agendas (Ferrero et al., 2023).

## **RESEARCH METHODOLOGY**

### **A. Data Collection Method**

This study uses primary and secondary data. Interviews will be utilized to identify the business issue and gather background information. Primary data is needed to understand the company's history and current concerns. The CSR division head, Pujasari sewing group local hero, group members, and village stakeholder will be interviewed semi-structured. Secondary data might provide industry circumstances and firm history to enhance the study report. Social mapping report, CSR planning master plan document,



firm financial report historical data, data trend, and work and budgeting planning will complete primary data. Economic data like inflation, risk-free rate, and others will be used to simulate investment analysis calculations.

**B. Conceptual Framework**

Conceptual framework that will guide the research is shown in Figure 1. The research's business issue is PLTGU Cilegon's new CSR program's financial and social feasibility. The first research objective is to analyze the financial feasibility of the new CSR project using capital budgeting analysis. Next, social return on investment analysis will determine Pujisari CSR program's social return. The triple bottom line—social, economic, and environmental will determine SROI value. The net present value of the CSR program's outcome will be added and divided by company initial investment. Sensitivity analysis is the third research approach used to identify variables that may affect SROI success. It will test input variables within 20% of the original input. The research's last goal is to assess the program to SDGs practice contribution using Business Reporting on the SDGs.

**C. Data Analysis Method**

**1) Firm Value Measurement**

SROI and capital budgeting analysis can estimate firm value. Capital budgeting evaluates and selects long-term investments to maximize owners' wealth, according to Gitman & Zutter (2015). It assesses project feasibility. Capital budgeting requires capital cost calculation. The cost of capital reflects a project's minimum rate of return to increase the firm's value. Capital budgeting evaluates projects. NPV, IRR, and Profitability Index are used. This method will incorporate time value of money and risk and return (Gitman & Zutter, 2015).

Weighted Average Cost of Capital (WACC) is one of the numerous decision-making indicators utilized by financial analytics. This indicator can assist decision-makers in determining whether an investment's expected return is attractive or not (Dobrowolski et al., 2022). WACC consists of the cost of debt and cost of equity. The cost of debt is the expense incurred when a company borrows money/funds. It depicts the current interest rate environment and the default risk as perceived by investors (DePamphilis, 2010). Cost of equity is the rate of return that investors require from a company's common stock or shares in order to compensate for the risk they assume by investing in the company. Cost of equity will be determined using the Capital Asset Pricing Model (CAPM).

Net Present Value (NPV) calculates the present value of future net cash flows and discounts them using the firm's desired rate of return to evaluate capital investment proposals. Ali et al. (2023) define NPV as the difference between cash inflows and outflows over time or the project's lifespan. NPV > 0 means the project is acceptable; if NPV is negative (NPV < 0), its rejected; if NPV = 0, the project profit equals its cost (Karami & Jalalizadeh, 2023). Internal Rate of Return (IRR) is discount rate that decreases all cash flows' net present values (NPV) to zero, and it shows the minimum amount that a company expected to generate (Ali et al., 2023). IRR can help investors calculate asset returns and help firms choose capital projects. If the IRR exceeds the cost of capital, the project is accepted; otherwise, it is rejected (Micheli & Talavera, 2023). The Profitability Index (PI) shows how project benefits and costs connect. Higher PI values indicate more attractive investments (Kovac et al., 2023).

Social investment analysis data will be gathered by relevant parties who are impacted by the CSR project and will be analyze quantitatively. Net present value of benefits divided by net present value of investment will be used to calculate SROI. The triple bottom line concept will be used to compute the net present value of benefit. The monetization of the project's effects on the economy, society, and environment will be a component of the ripple bottom line.

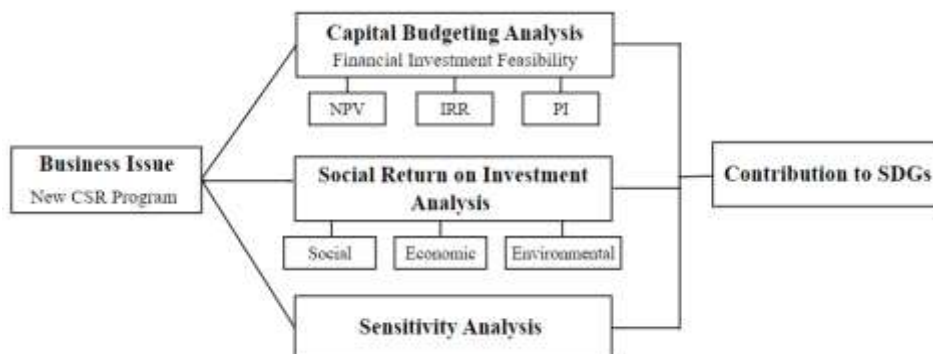


Figure 1. Conceptual Framework



## 2) *Sensitivity Analysis*

Sensitivity analysis is a method for evaluating the effect on different hypotheses. Morris et al. (2014) stated that sensitivity analysis is most illuminating when a variety of feasible and distinct assumptions are utilized. Sensitivity analysis is also used to determine how sensitive an economic variable is to changes in cost, risk-free rate, interest rate, inflation, and commodity price (Zhang et al., 2019; Batra & Verma, 2017). In order to analyze the effect on the model's output or financial performance, the input variables will be modified while all other variables maintain a constant value. In this study, sensitivity analysis will be used to determine how a single change to the input variables affects the outcome of the analysis, which in this case is the SROI value. In this study, input variables will be altered by 20% from their present value (Muharam & Tarrazon, 2017; Zhang et al., 2019). On the basis of the absolute value, a tornado diagram will be constructed to illustrate the sensitivity of the SROI value to the fluctuating input of multiple variables.

## 3) *Contribution to SDGs*

The third phase is the assessment of contributions to the SDGs. First, the targeted indicator will be chosen based on the program's positive impact. Using the guidelines from An Analysis of the Goal and Target by UN and of Business Reporting on the SDGs developed by GRI and UN Global Compact (2017), a matrix of impacts and suitable indicators will be created. Quantification of SDGs will depend on the identification of the target. Using both primary and secondary data, a quantitative analysis method will be used to contribute to the SDGs.

## RESULT AND DISCUSSION

### A. *Capital Budgeting Analysis*

Financial analysis methods will be used in a capital budgeting analysis to ascertain the financial feasibility of the Pujasari CSR program. To anticipate the financial cash flow over the next five years and assess the feasibility of the Pujasari program economically, data on inflation rates will be used. The average historical inflation rate of Bank Indonesia serves as the basis for the inflation rate used. Based on historical statistics, the average inflation rate is 2.88%. WACC is a type of financial metric that measures the average cost of all the capital that a company employs to finance its operations. Cost of debt and cost of equity should be computed in order to assess the cost of capital. The cost of debt is 6.83% after taxes, whereas the cost of equity is 13.69%. Using the Capital Asset Pricing Model (CAPM), the cost of equity is determined. With a weighting of 5.01% and 94.99% for debt and equity, the WACC of value is 13.349%.

A five-year projection for the Pujasari program will be made in order to assess the economic feasibility study. The Pujasari CSR program's initial investment was made by PLTGU Cilegon. The initial investment is IDR 97,500,000, which includes basic training for 25 community people, three sets of sewing equipment, and FGD and discussion. In order for the community to launch the business and achieve independence, the corporation will offer the initial investment. According to Gitman & Zutter (2015), the sewing equipment will have a 7-year depreciable life and be depreciated using the straight-line depreciation technique. A total of three sets of sewing machines will be purchased for a total of IDR 23,000,000 apiece. Each set of sewing machines has a salvage value of IDR 2,000,000, and each sewing machine depreciates by IDR 3,000,000 annually for a total of IDR 9,000,000.

### 1) *General Information and Production Scheme*

The business will be managed by three tailors with three sewing machines over the course of 288 working days per year. The production of rags will be 3kg/ hour, and each sewing machine will consume 85 watts of electricity. The Pujasari sewing group will produce two distinct types of goods: rags and wearpacks. The textile industry's unused fabric scraps will be used to manufacture rags. According to the interview with the village chief of Margasari and the head of BUMDES, they intend to produce one ton of rags per month for the first year of production. In the first year of production, only rags will be produced to familiarize the tailor with basic stitching techniques. In the second year, production of rags will increase in parallel with the increase in daily working hours shown in Table 1. The production of safety wearpacks will begin in the second year of production, assuming the tailors have acquired sewing skills through daily work and training.



**Table 1.** Production Scheme (Source: Primary data, interview 2023)

Component	Unit	Y1	Y2	Y3	Y4	Y5
Working hour	hour	5	6	7	8	8
Rag production	kg/ month	1080	1296	1512	1728	1728
Rag production	kg/ year	12960	15552	18144	20736	20736
Wearpack production	pcs/ year	0	50	65	85	110

**2) Operational Expenditure and Project Revenue**

The operational expenditures of the Pujasari Sewing group, which creates rag from unused fabric scraps and wearpack, include a number of items. The operational expenditures are separated into consumable, non-consumable, utility, and training. In calculating the projected expenditures, the rate of each expenditure component is increased by 2.88 percent. For years 1 through 5, operating expenses are as follows: IDR 90.1 mio, 108.5 mio, 128.4 mio, 145.2 mio, and 154.4 mio. The revenue or financial outcome of a project is the financial impact of selling the product. The price per kilogram of rags will be IDR 12,000, while the price per unit of wearpacks will be IDR 200,000. The revenue line for the first five years of the Pujasari project is IDR 155.2 mio, 202.2 mio, 244.2 mio, 289.3 mio, and 303.4 mio. The price of wearpack and cloth will increase annually by 2.88 percent due to inflation.

**3) Financial Outcome Cash Flow**

The cash flow of the project will be break down from a financial perspective. The operating cash flow generated by the project's primary operation is displayed in Table 2. EBITDA is net income before deducting interest, taxes, depreciation, and amortization from this operating cash flow. Based on *UU No.20 Tahun 2008* of Indonesia, this sewing project will be classified as a SME because the business has less than IDR 300 million in annual revenue. Based on *PP No.55 Tahun 2022*, all businesses owned by domestic taxpayers, including village-owned businesses, with a gross income up to IDR 500 million per tax year are not subject to income tax. Based on Table 2, which indicates that the project's gross income or revenue in the fifth year is IDR 303 million, which is still less than IDR 500 million, then it's not subject to 0.5% income tax, making it zero. Terminal value represents the anticipated value of an investment at the end of a specified time period. It represents the expected future financial flows or earnings beyond the projection period specified. The terminal cash flow is computed using the method of perpetual growth. The terminal growth rate used is based on the eleven-year average GDP growth rate of the textile and apparel manufacturing industry, which is 3.34% according to *Indonesia Badan Pusat Statistik* data.

**B. Social Return on Investment Analysis**

SROI research looks at investments in more depth than just their monetary return. SROI is focused on quantifying an organization's major or substantial benefits based on the concept of triple bottom line impact, which includes social, economic, and environmental factors. In order to translate social results into financial terms, SROI can also be thought of as an index of return, which is defined as the ratio of the estimated value of benefits to the estimated investment (Corvo et al., 2022). This study employs the SROI forecasting method to assess the social return of the Pujasari Sewing Group, a possible new CSR initiative from PLTGU Cilegon. Oshimi et al. (2022) list 6 stages for performing an SROI analysis. These will be the SROI calculation's general structure in the research described below, without the reporting phase.

**Table 2.** Operating Cash Flow from Financial Outcome (IDR) (Source: Author analysis, 2023)

Subject	Y0	Y1	Y2	Y3	Y4	Y5
Initial Investment	(97,500,000)					
Project Revenue		155,520,000	202,293,653	244,225,924	289,388,352	303,413,422
Total revenue		155,520,000	202,293,653	244,225,924	289,388,352	303,413,422
Operating Expenditure		90,163,752	108,511,030	128,421,918	145,215,223	154,496,589
Total operating expenditure		90,163,752	108,511,030	128,421,918	145,215,223	154,496,589
EBITDA		65,356,248	93,782,623	115,804,006	144,173,129	148,916,833



<b>Depreciation</b>	9,000,000	9,000,000	9,000,000	9,000,000	9,000,000
<b>Amortization</b>	-	-	-	-	-
<b>Income Tax</b>	-	-	-	-	-
<b>Addback depreciation</b>	9,000,000	9,000,000	9,000,000	9,000,000	9,000,000
<b>Cash flow</b>	(97,500,000)	65,356,248	93,782,623	115,804,006	144,173,129
<b>Terminal Cash Flow</b>	-	-	-	-	1,536,811,341
<b>Total Cash Flow</b>	<b>(97,500,000)</b>	<b>65,356,248</b>	<b>93,782,623</b>	<b>115,804,006</b>	<b>144,173,129</b>
<b>Discounted Cash Flow</b>	(97,500,000)	57,659,255	72,993,839	79,518,710	87,339,757

**1) Determining Project Scope and Identifying Key Stakeholder**

Writer will first decide the analysis's scope and identify its key stakeholders. The Pujasari sewing program, which is based in Margasari Village, will be the focus of the study. This analysis will be done over a five-year period. Margasari Village Regulator, CSR Division PLTGU Cilegon, BUMDES Margasari Village, Pujasari Sewing Group, and Customer, which consists of 9 people, are the primary stakeholders. To gather pertinent data, a semi-structured interview is done. Based on primary data from interviews and secondary data to expand the calculation material, the writer will calculate social, environmental, and additional economic results from the Pujasari project in this part.

**2) Outcome Mapping**

Based on the conducted interviews, impact mapping is completed in this part. Economic, social, and environmental outcomes are divided into three categories. The results are displayed in Table 3.

**3) Evaluating Outcome and its Value**

The outcome will be quantified by giving a value when the outcome mapping has been completed, which will allow the monetization impact. The SROI approach uses financial proxies to give the measured outcomes a value. The financial proxy used to monetize program result value is displayed in Table 3. The current price of sewing machines during the investment era, which is IDR 20,000,000 per set, is used to determine the value of sewing machines. the project's projected net profit over the next five years. The value of additional revenue is determined by the amount that each tailor earns from taking on extra work, such as basic sewing orders for IDR 15,000 per order. The value of the money saved by the client is determined by the money saved by purchasing rags from Pujasari Sewing Group, which are IDR 3,000/kg less expensive than rags from the previous rag provider. The cost of training is based on the per-person rate of IDR 3,450,000 at Aisyah program Institute in Indonesia.

According to UPC (2022), the production of fabric will result in 25 kg of CO<sub>2</sub>e being released into the atmosphere. Based on the LCA study performed by Sandin et al. (2019), 3% of the emission will be emitted during the fabric's end of life. An important public health and environmental concern that affects biodiversity, water pollution, and greenhouse gas emissions is the accumulation of post-consumer textile waste (PCTW) in landfills and open-air dumps (Bick et al., 2018). As PCTW decomposes in landfills or outdoor dumps, greenhouse gases including methane and carbon dioxide are generated (Devoy et al., 2021). These gases are major contributors to climate change. Based on the amount of unused fabric recycled, the value of GHG reduction will be equal to the reduction of CO<sub>2</sub>e, also known as the carbon tax fee. Carbon tax pricing is IDR 30/ kg CO<sub>2</sub>e/ kg fabric.

**4) Identifying Impact**

The results of assigning values to each impact using proxies are then used to calculate the total impact arising from the CSR program. Multiply the proxies by the total relevant impacted points to calculate it which can be seen on Table 3. The increased economic growth of the Margasari tailor community and BUMDES due to production activities will be omitted from the economic aspect outcome, since it was included in the financial outcome section. The quantity of customer savings is inversely proportional to the volume of rag production. The amount of GHG reduction is inversely proportional to the quantity of clothing produced. The value added from the Pujasari sewing project is calculated based on the influence of each aspect of the triple bottom line. Table 4 below shows the overall influence of each component. There are a total of 7 impacts. In order to avoid double counting in the following stage, economic effect numbers 2 and 3 (profit that BUMDES and group members get from the project profit) will not be included in the total impact calculation.



**Table 3.** Social Return on Investment Analysis (Source: Author analysis, 2023)

No	Stakeholders	Outcome	Monetizing Proxy	Outcome amount
<b>Economic</b>				
1	Pujasari sewing group member	Obtain adequate sewing equipment	Total amount of sewing equipment	IDR 20,000,000/ set x 3 set
2	Pujasari sewing group member	Increase economic growth of Margasari tailor community	The value is 75% from the net profit	75% x financial outcome cash flow
3	BUMDES Margasari Village	Increase economic growth of Margasari BUMDES	The value is 25% from the net profit	25% x financial outcome cash flow
4	Pujasari sewing group member	Increase purchasing power of other basic needs	The value is from additional income obtain	IDR 15,000/ order x 20 order/ month/ person x 12 month x 3 person
5	Customer	Increase customer profitability	The value of amount saved by customer	IDR 3,000/ kg rag x rag production
<b>Social</b>				
1	Pujasari sewing group member	Increase knowledge in sewing ability	Training member times training free from professional agency	IDR 3,450,000/ person x number of training members
<b>Environment</b>				
1	Pujasari sewing group	Reduce GHG from fabric waste open dumping in landfill	The value of GHG reduction based on the amount of recycle fabric times carbon pricing	Number of fabric x 0.75 kg CO <sub>2</sub> e/ kg fabric x IDR 30/ kg CO <sub>2</sub> e

**Table 4.** Total Outcome based on Tripple Bottom Line (IDR) (Source: Author analysis, 2023)

No	Outcome	Total Outcome				
		Y1	Y2	Y3	Y4	Y5
<b>Economic</b>						
1	Obtain adequate sewing equipment	60,000,000				
4	Increase purchasing power of other basic needs	10,800,000	10,800,000	10,800,000	10,800,000	10,800,000
5	Increase customer profitability	38,880,000	46,656,000	54,432,000	62,208,000	62,208,000
<b>Social</b>						
1	Increase knowledge in sewing ability	51,750,000	34,500,000	34,500,000	17,250,000	17,250,000
<b>Environmental</b>						
1	Reduce GHG from fabric waste open dumping in landfill	298,404	358,085	417,766	477,446	477,446
<b>Total</b>		<b>161,728,404</b>	<b>92,314,085</b>	<b>100,149,766</b>	<b>90,735,446</b>	<b>90,735,446</b>

5) *Calculating SROI*

The following stage is the SROI calculation, where net present value from outcome divided from the initial investment. The calculation of net present value for program outcomes is based on the triple bottom line idea. The program's combined financial and triple bottom line results are shown in Table 5 below. Due to the fact that Table 5 takes into account the value from the triple bottom line aspect as the influence from Pujasari program investment, the cash flow is higher than in Table 2. According to the calculation,





the social investment's outcome net present value is IDR 1,988,170,315 and the initial investment is IDR 97,500,000. Therefore, the program's SROI value is 20.39.

**Table 5.** Cash Flow from Financial and Triple Bottom Line Outcome (Source: Author analysis, 2023)

Subject	Y0	Y1	Y2	Y3	Y4	Y5
Initial Investment	(97,500,000)	-	-	-	-	-
Project Financial Revenue	-	155,520,000	202,293,653	244,225,924	289,388,352	303,413,422
TBL Revenue	-	161,728,404	92,314,085	100,149,766	90,735,446	90,735,446
<b>Total revenue</b>	-	317,248,404	294,607,738	344,375,690	380,123,798	394,148,868
Operating Expenditure	-	90,163,752	108,511,030	128,421,918	145,215,223	154,496,589
<b>Total operating expenditure</b>	-	90,163,752	108,511,030	128,421,918	145,215,223	154,496,589
EBITDA	-	227,084,652	186,096,708	215,953,772	234,908,575	239,652,279
Depreciation	-	9,000,000	9,000,000	9,000,000	9,000,000	9,000,000
Amortization	-	-	-	-	-	-
Income Tax	-	-	-	-	-	-
Addback depreciation	-	9,000,000	9,000,000	9,000,000	9,000,000	9,000,000
Cash flow	(97,500,000)	227,084,652	186,096,708	215,953,772	234,908,575	239,652,279
Terminal Cash Flow	-	-	-	-	-	2,473,194,825
<b>Total Cash Flow</b>	(97,500,000)	227,084,652	186,096,708	215,953,772	234,908,575	2,712,847,105
<b>Discounted Cash Flow</b>	(97,500,000)	200,340,935	144,844,670	148,288,180	142,307,086	1,449,889,443

**Social Investment Feasibility Result**

Project financial and triple bottom line outcomes will determine investment feasibility. Calculation shows that financial outcome NPV is IDR 1,100,954,146, whereas triple bottom line concept NPV is IDR 1,988,170,315. Gitman & Zutter (2015) say a project is suitable if its NPV is greater than 0. The triple bottom line profitability index (PI) is 21.391 compared to 12.292 for the financial outcome. If the PI ratio is more than 1, the project's outcome will exceed the investment amount (Kovac et al., 2023) and the investment will be accepted. Financial outcome IRR is 87% and triple bottom line IRR is 109%. Both models' IRR values exceed the company's 13.349% cost of capital. The feasibility studies NPV, PI, and IRR values indicate the project is feasible. The SROI value is 20.39 for the project. It means the community receives IDR 20.39 for every IDR 1 invested by the firm in this project. This program's SROI is higher than research by Adeyeye et al. (2022) with 5.8 SROI value and Thongplew et al. (2022) with 6.47 SROI for 5-year project projections. The corporation intends to maintain the CSR program for 5 years, and it is anticipated that the community will continue it on its own in the following years.

**C. Sensitivity Analysis**

Changes in the economic and operational parameters have an impact on the results from the triple bottom line variables. According to Khan et al. (2023); Zheng et al. (2023); Zhou et al. (2023); and Kovac et al. (2023), the following parameters will be used for the sensitivity analysis: electricity price, carbon tax pricing, price of wearpack raw material, price of rag raw material, selling price of wearpack, selling price of rag, inflation rate, training fee, WACC, and working productivity. According to Muharam and Tarrazon (2017) and Zhang et al. (2019), those parameters will vary from the current assumption by about 20%. The Tornado diagram from the sensitivity analysis, which is shown in Figure 2, displays the variable from the highest to lowest risk toward SROI achievement. The top four factors that have the most impact on SROI is WACC, selling price of rag product, working productivity, and price of rag raw material.

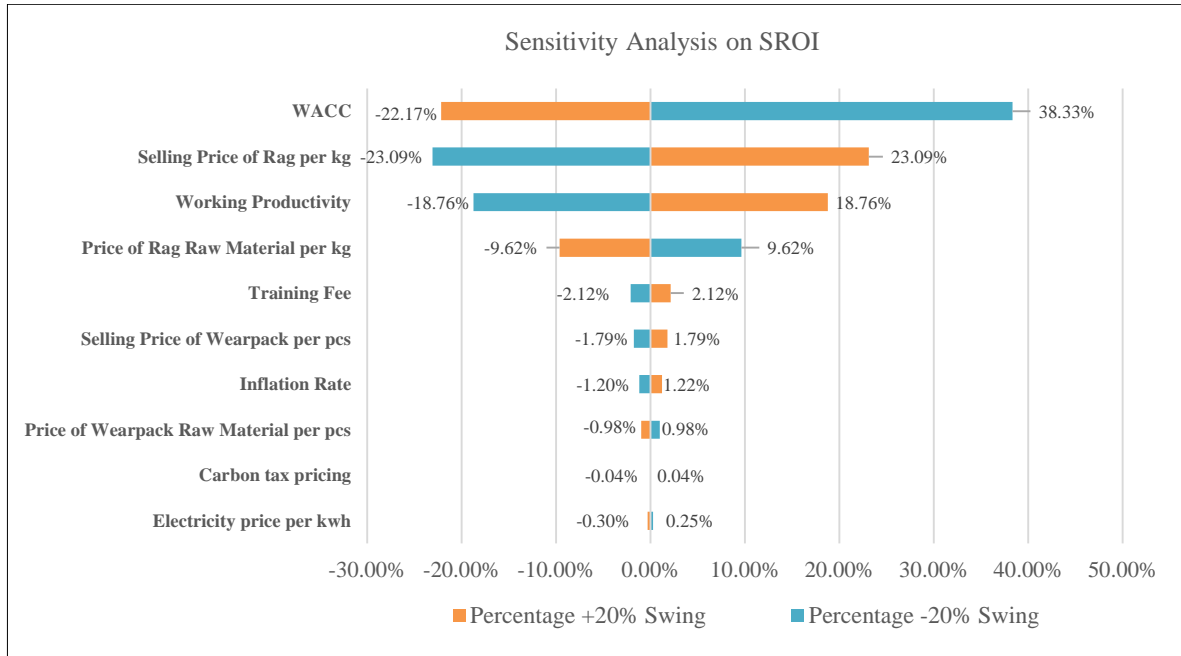


Figure 2. Sensitivity Analysis Tornado Diagram

**D. Contribution to SDGs**

PLTGU Cilegon supports SDGs through its CSR projects, including the Pujasari sewing group project. Business Reporting on the SDGs developed by GRI and UN Global Compact with the title of An Analysis of the Goals and Targets (2017), guides the project's SDG contribution. Global Indicator Framework for SDGs and Target of the 2030 Agenda for Sustainable Development by the United Nations (2017) is the second guideline. It supports SDGs 1, 5, 8, 12, and 13. The project's community and social impact investing contributes to target 1.1. It also achieves target 1.2 by reducing the number of persons living below the poverty line by increasing their income to IDR 1,361,588/ month. It also meets target 1.5 by reducing climate-related extreme event risk with reducing GHG by 66,000 kg CO2e from fabric recycling. Empowering women by teaching 40 community members to sew and hiring 3 tailors achieves goal 5 in target 5.1. Increased economic productivity achieves targets 8.2 and 8.3. Reducing trash by recycling it into an economic product achieves target 12.5. The project will reduce climate-related hazards and natural disasters by reducing 66-ton CO2e as GHG, which meets SDGs target 13.1.

**CONCLUSION AND RECOMMENDATION**

According to research, it is financially feasible to carry out the CSR program of Pujasari sewing group. The NPV value of IDR 1,988,170,315, is more than 0 according to the capital budgeting analysis. Being more than 1, the PI ratio of 21.391 is considered acceptable. The 109% IRR is bigger compared to 13.349% WACC. Based on SROI indicators, it is determined that the Pujasari sewing group CSR program is possible to implement. The program had a 20.39 SROI value, which indicates that for each IDR 1 the company spent, the value of benefits for the community is worth IDR 20.39. Sensitivity analysis reveals that WACC, rag selling price, working productivity, and rag raw material price are sequentially the most sensitive parameters in affecting the project's SROI value (60.5%, 46.19%, 37.53%, and 19.25% absolute, respectively). Carbon tax pricing (0.08%) is the factor that affects the SROI value the least. The program also contributes in the achievement of SDGs number 1, 5, 8, 12, and 13, which have been assessed according to appropriate guidelines. Since there is currently no baseline of SROI on the company's CSR program, the writer recommends PLTGU Cilegon to conduct SROI evaluation method for previous CSR programs in order to determine the lowest return ratio of social investment for the future program.



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