

Community Satisfaction Index on the BESA OH Program (Sustainable and Educational Holistic Waste Management)

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ABSTRACT

PT TIMAH Tbk Balai Karya, as a metal processing company, is committed to continuing its community empowerment programs in the areas surrounding its operations. The community empowerment programs that have been carried out by PT TIMAH Tbk Balai Karya are BESA OH (Sustainable Education with a Holistic Waste Management System), which consists of a community-based inorganic waste management program, an organic waste management program that integrates traditional composting methods with bioconversion using bioactivators, and an educational program for students aimed at increasing early childhood knowledge about the importance of waste collection and sorting through interactive counseling and hands-on practice. Therefore, as a form of periodic monitoring and evaluation, PT TIMAH Tbk Balai Karya conducts satisfaction index surveys on community groups that are recipients of its community empowerment programs. A survey to measure the community satisfaction index in the community empowerment area of PT TIMAH Tbk Balai Karya at Sungailiat Village, Sungailiat Subdistrict, was conducted in August 2025. Data collection was conducted using interviews with guided questionnaires. The questionnaire to calculate the community satisfaction index was designed with closed questions using the Likert scale, and the results of data processing are then analyzed quantitatively and qualitatively in the form of tables, graphs, and descriptions. The BESA OH (Sustainable Education with Holistic Waste Management System) community satisfaction index for Sungailiat Village, Sungailiat Subdistrict, Bangka Regency, is 3.419, or a converted community satisfaction index of 85.470, which indicates a very satisfied level.

Keywords: educational program; empowerment programs; sustainable waste management.

INTRODUCTION

Community empowerment is a process that involves continuous change in power relations among individuals and different social groups within a community [1]. The concept of empowerment comes from the root word “power,” which has led to various interpretations and conflicting views regarding the central role of power in the development process [2]. Community participation in Sungailiat City in the stages of waste management, from decision-making, implementation, utilization of results, to evaluation, is still considered inconsistent [3].

Meanwhile, PT TIMAH Tbk Balai Karya, as a metal processing company. Metal forming is one of the oldest manufacturing methods in which workpieces, objects, or parts are reshaped and transformed through the application of mechanical force without adding or removing material [4]. And committed to continuing its community empowerment programs in the areas surrounding its operations. The

community empowerment programs that have been carried out by PT TIMAH Tbk Balai Karya are BESA OH (Sustainable Education with a Holistic Waste Management System), which consists of a community-based inorganic waste management program, an organic waste management program that integrates traditional composting methods. The composting technique enhances aerobic organism development and has conventionally been employed for agricultural waste treatment, but it can also be successfully implemented for municipal organic waste management [5]. Several sources and types of food waste, such as used cooking oil, agro-industrial waste such as vegetables, fruits, juice, wheat, rice, potatoes, sugar cane, bread waste, milk waste, and other types of meat, fish, and poultry waste, have been proven to be profitable sources for bioconversion processes [6]. Bioactivator for making compost from traditional market vegetable waste [7]. Character education is very important for children's development and also important for society [8].

Waste management counseling needs to explain where, when, what, and how to sort and recycle waste. This counseling should also discuss the benefits of sorting and recycling waste, especially in relation to environmental concerns. Waste sorting counseling can be conducted through home visits, telephone conversations, or community meetings [9].

Monitoring and evaluation assist in assessing project quality, the impact of projects on established objectives, and the assessment of project plans and work plans. The goal is to improve the management of results, impacts, and outputs of current and future projects [10]. Data was collected through the form of a questionnaire with a numeracy and text-based questionnaire. The questionnaire was used to determine the level of the public satisfaction index and provided respondents with alternative answers [11].

The community satisfaction index (CSI) is a metric used to assess the degree of satisfaction within a community. It involves the collection of both quantitative and qualitative data, which captures community perspectives pertaining to the utilization of public services and their alignment with community needs [12].

Therefore, as a form of periodic monitoring and evaluation, PT TIMAH Tbk Balai Karya conducts this study aiming to evaluate community satisfaction with PT TIMAH Tbk Balai Karya's BESA OH Program through the aspects of inorganic waste management, organic composting, and environmental education. The results of this study can be used as a basis for continuous evaluation to strengthen community empowerment and support sustainable development.

METHODOLOGY

Survey Time and Location

A survey to measure the community satisfaction index in the community empowerment area of PT TIMAH Tbk Balai Karya at Sungailiat Village, Sungailiat Subdistrict, Bangka Regency was conducted in August 2025.

Respondent Determination Techniques

Respondents in this survey were selected from representatives of community groups that received community empowerment programs from PT TIMAH Tbk Balai Karya.

Data Collection Techniques

Data collection was conducted using interviews with guided questionnaires. The questionnaire to calculate the community satisfaction index was designed with closed questions using the Likert scale, as follows:

- 1: Dissatisfied
- 2: Not Fully Satisfied
- 3: Satisfied
- 4: Very Satisfied

The measurement scale evaluates respondents' individual perceptions of a particular phenomenon (object) through ordinal categories spanning from

"strongly disagree" at one pole to "strongly agree" at the corresponding opposite pole [13].

Data Processing Techniques

The collected survey data were tabulated in Microsoft Excel. Next, the data will be processed to obtain a community satisfaction index in the following manner:

- Average Score per Question

$$\frac{\text{Number of Points per Question}}{\text{Number of completed questionnaires}}$$

- Weighting per Question

$$\frac{1}{\text{Number of Questions}}$$

- Weighted Average Score per Question Average Score per Question x Weight per Question

- The Community Satisfaction Index value is calculated as the weighted average value per question x 25

- Interpretation of the Community Satisfaction Index

TABLE 1: The interpretation of the calculated public satisfaction index.

No.	Converted Community Satisfaction Index Value	Description
1	0 - 25	Dissatisfied
2	25 - 50	Not Fully Satisfied
3	50 - 75	Satisfied
4	75 - 100	Very Satisfied

Data Analysis Techniques

The results of data processing are then analyzed quantitatively and qualitatively in the form of tables, graphs, and descriptions.

Overview of Respondents

Respondents from the survey to measure the satisfaction index of beneficiaries of the community empowerment program of PT TIMAH Tbk Balai Karya numbered 49 people from the BESA OH (Sustainable Education with a Holistic Waste Management System). Program with profiles including respondent age, respondent education level, respondent profession, and respondent income.

Based on the survey results, the age profile of respondents was as follows: 2 respondents or 7% were aged ≤ 25 years, 16 respondents or 33% were aged 26-45 years, 24 or 49% of respondents were aged 46-65 years, and 7 respondents or 14% were aged >65 years. The educational level of respondents: 7 people or 14% had no schooling, 9 people or 18% had elementary school education, 1 person or 2% of respondents had junior high school education, 14 people or 29% had high school education, and 18 people or 37% had a university background.

The respondents' professions were as many as 8 people or 16% working in government agencies/civil servants, 14 people or 29% working as entrepreneurs/business owners/traders, 6 people or 12% working as laborers/fishermen, as many as 4 people or 8% as housewives and domestic workers, 12 respondents or 24% were unemployed, and 5 respondents or 10% were employed in other areas, including teachers, health workers, and others.

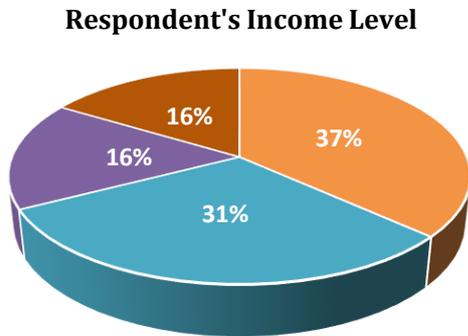


FIGURE 1: Respondent's Income Level.

In terms of income, most respondents were in the lower middle class, with 37% earning less than IDR 1,000,000 and 31% earning IDR 1,000,000–3,000,000 per month, while only 16% had an income above IDR 5,000,000. This shows that the BESAHOH program is also aimed at economically vulnerable groups that are potentially most affected by environmental issues.

In general, the respondent profile reflects community involvement with diverse social, economic, and educational backgrounds, enabling the Community Satisfaction Index (CSI) survey results to represent a variety of perceptions regarding program effectiveness.

Community Satisfaction Index

The satisfaction index of the beneficiaries of the BESAHOH community empowerment program was calculated for three aspects, namely the overall program, program management, and program distribution and service.

Overall Program Satisfaction Index

The public satisfaction index for the overall program is measured based on the relevance of the program to the needs of the community in terms of problems and potential, the benefits of the program, and the sustainability of the program. Public trust will increase when people receive quality service and feel satisfied with the service provided [14].

The Management System empowerment program got results. 32 respondents (65%) admitted that their income had increased, and 12 respondents (24%) admitted that their income had increased significantly with the BESAHOH program. This increase in income occurred due to the recycling of inorganic waste and the sale of high-quality compost for organic waste management.

In addition to the relevance and benefits of the program, the community satisfaction index for the overall program was also measured based on the sustainability of the program. Program sustainability was analyzed based on the continuity of the program provided and the community's commitment to continue running the program even after it was handed over by PT TIMAH Tbk Balai Karya.

The survey results on the sustainability of the BESAHOH program show that it was considered unsustainable by 6% of respondents, sustainable by 53% of respondents, and highly sustainable by the remainder 41% of respondents. This shows that the community empowerment programs organized are always interrelated. All respondents, though, admit that they still need assistance from PT TIMAH Tbk Balai Karya. In line with their commitment to maintaining the sustainability of the program, respondents also admit that they have shared the knowledge and skills acquired during the program with others, at least with their families, neighbors, and surrounding communities.

TABLE 2: CSI Overall BESAHOH Program.

Index Value	Converted CSI	Description
3,435	85,884	Very Satisfied

The results of data processing related to survey results on program relevance, program benefits, and program sustainability are the community satisfaction index for the overall BESAHOH program (Sustainable Education with a Holistic Waste Management System) is a community satisfaction index score for the overall program of 3.435 and a converted community satisfaction index for the overall program of 85.884, which is very satisfied. This means that the relevance, benefits, and sustainability of the BESAHOH program (Sustainable Education with a Holistic Waste Management System) are considered "very good" by the program's beneficiary community.

A study at the Kamal Community Health Center in Surabaya showed a CSI score of 84.28 [15], which is categorized as "very good." Similar to the BESAHOH Program, the study found that clarity of procedures, staff competence, and closeness to the community are important factors in shaping community satisfaction. However, unlike the BESAHOH Program, which excels in responsiveness, the study in Surabaya highlighted weaknesses in handling community complaints.

Program Management Public Satisfaction Index

TABLE 3: Program Management BESAHOH.

Index Value	Converted CSI	Description
3,395	84,885	Very Satisfied

The Community Satisfaction Index (CSI) for community satisfaction index value of 3.395 and a converted community satisfaction index for program management of 84.885, which is very satisfied. Indicating a high level of satisfaction. Analysis of the three main indicators, community participation, stakeholder synergy, and facilitator performance, showed encouraging results in all aspects.

In terms of community participation, respondents gave positive assessments of the program components, with the planning stage receiving good ratings from 57% of respondents and excellent ratings from 37%; the implementation stage was rated good by 53% and excellent by 39% of respondents; while the monitoring and evaluation process was considered good by 51% and excellent by 41% of respondents. These results indicate effective community involvement in all stages of the program. Collaboration between organizations received high ratings, with 53% of respondents rating inter-organizational cooperation as very good. In addition, the performance of Community Development Officers (CDOs) as facilitators received positive ratings, with 57% of participants acknowledging good relations with the community and all respondents (100%) acknowledging adequate technical competence (45% very good, 55% good). Overall, these results indicate successful program management implementation with a high level of community satisfaction.

The CSI program management score (84.885 – very satisfied) shows that community participation, synergy with stakeholders, and facilitator performance have been effective. These results are in line with research on Pertamina Hulu Mahakam's CSR program “Petani Maju 4.0” [16]. This study shows that the success of CSR is influenced by participatory planning mechanisms and assistance from facilitators. The BESA OH program shows a similar pattern, involving the community in planning, implementation, and evaluation, as well as adaptive CDO support, resulting in high appreciation for program management.

Community Satisfaction Index for Program Distribution and Services

The distribution and service aspects of the program received a community satisfaction index of 3,426 for distribution and service, and a converted community satisfaction index of 85,641 for distribution and service, indicating a high level of satisfaction. The distribution and service aspects of the program received a community satisfaction index of 3,426 for distribution and service, and a converted community satisfaction index of 85,641 for distribution and service, indicating a high level of satisfaction.

TABLE 4: Distribution and Services of the BESA OH Program.

Index Value	Converted CSI	Description
3,426	85,641	Very Satisfied

Most respondents (53%) stated that the program methods were very appropriate and clear, and 57% rated the distribution of beneficiaries as very good. The company's response to criticism and feedback was rated as good (61%) to very good (39%). This reflects a program service that is fair, focused, responsive, and transparent.

The distribution and service aspects of the program (85.641 – very satisfied) indicate that the community considers the BESA OH program to be on target, clear, and responsive. A study program at CSR PT Pelindo III also confirms that the public's positive attitude towards CSR programs arises when there is transparency and a quick response mechanism from companies to complaints [17]. PT Timah's results show appropriate practices, where the community feels that their voices are valued through responsive services.

Total Community Satisfaction Index

TABLE 5: CSI Total Value.

Index Value	Converted CSI	Description
3,419	85,470	Very Satisfied

The overall calculation of the Community Satisfaction Index (CSI) for the BESA OH (Sustainable Education with a Holistic Waste Management System) program implemented by PT TIMAH Tbk Balai Karya resulted in a score of 3,419, equivalent to 85.470, which falls into the very satisfied category. This result shows that beneficiaries consider the program to be highly relevant and impactful. In addition, respondents expressed strong hopes that the program will continue until the community is able to manage organic and inorganic waste independently. They also emphasized the importance of ongoing capacity building and additional training to ensure sustainable waste management practices in the long term.

In case CSR at PT Pertamina Patra Niaga Integrated Terminal Panjang reported a CSI value of 87.52 in the “Good” category, with indicators such as suitability to community needs, participation, and group income as important elements that influence satisfaction [18]. This figure is slightly higher than BESA OH, but in general, it shows that the standards of service quality and CSR benefits expected by the community are indeed in the range of 85-90.

CONCLUSIONS

The BESA OH (Sustainable Education with Holistic Waste Management System) community satisfaction index for Sungailiat Village, Sungailiat Subdistrict, Bangka Regency, is 3.419, or a converted community satisfaction index of 85.470, which indicates a very satisfied level.

PT TIMAH Tbk Balai Karya for the BESA OH Program (Sustainable Education with a Holistic Waste Management System) should continue its community empowerment programs, maintain good

cooperative relationships with stakeholders and the community, and develop the programs offered so that the scope of program beneficiaries can be expanded. Institutional capacity building is needed by the community empowerment program actors in this program.

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