
MEASURING PERFORMANCE USING BALANCED SCORECARD CASE STUDY AT SP ALUMINIUM YOGYAKARTA

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Abstract

Small and medium enterprises (SME) have become the backbone of Indonesia domestic economy and accountable for Indonesia gross domestic product (GDP). Yogyakarta is famous for the location of many metal casting SMEs including SP Aluminium who produced household appliances and crafts. The competition between SMEs that continues to increase will require company performance measurements that are not only based on financial aspects, but also emphasize the balance of other aspects such as the Balanced Scorecard method. Currently, many SMEs such as SP Aluminium have never carried out performance measurements outside financial aspects, while non-financial aspects are also important for business development. The objective of this study is to measure SP Aluminium performance using Balanced Scorecard. The results showed that for the Financial Perspective, SP Aluminium had exceeded ROI and Profit Margin targets, but the Revenue Growth Indicator only reached the company target in 2013. For the Customer Perspective, Customer Profitability had exceeded the target and keep increasing, but Customer Growth sharply decreased in 2015 and didn't reach the company target. There are 3 indicator who meets the company target on Internal Business Process Perspective: Product Innovation, Operation Process, and After-sales Process. Meanwhile another indicator, Defective Product Ratio did not meet the company's target. For Learning & Growth Perspective, Employee Productivity had exceeded the company target since 2013. Meanwhile for Employee Satisfaction indicator, 76,40% of the employees were satisfied working in SP Aluminium. But Work Accident indicator needs more attention because the measurements result showed that the accidents occurred in the company always increased every year and far exceeded the set target.

Keyword: SME, SP Aluminium, Balanced Scorecard, Performance Measurement

Introduction

Small and medium business sector is an important part of the national economy, it has a major position and potential role for the development of national economy. Small and medium enterprises (SME) also has several advantages over large business, including being able to absorb local labors and use local resources, the business itself is relatively flexible. According to the Ministry of Cooperatives and SMEs, there are 64 million SMEs in 2020, it makes Indonesia as the country with the most SMEs compared to other Asian countries. Measuring company performance, especially SMEs, tends to focus more on the financial side. This tendency has an adverse impact on the sustainability of the company's business. This is because the partial performance measurement results tend to obscure or hide the company's actual ability to achieve economic value in the future.

One of the company performance measurement is Balanced Scorecard by Kaplan and Norton. Measuring company performance only based on the financial perspective can't provide a real picture of the company's condition. The balance of financial and non-financial perspective are the basic for BSC Measurement. BSC provide a strategic point of view by considering indicators in other perspectives. Each perspective defining strategic objectives that also linked through causal relationships to create a strategy map that represents the strategy of the company (Kaplan & Norton, 2000).

SP Aluminium is one of the foundry & aluminum smelter SME who produced household appliances and crafts located in Umbulharjo, Yogyakarta which famous for the location of so many foundry & aluminum smelter SMEs. Strategic planning and performance measurements are necessary to encounter the competition between the SMEs on the same field. From the aforementioned background, the objective of this paper was to measure SP Aluminium performance using four perspective of Balanced Scorecard.

Literature Review

Balanced Scorecard is an approach of strategy management developed by Robert Kaplan and David Norton in the early 1990s which consist of four perspectives for the measurements: financial, costumers, internal business processes and learning & growth perspective. One of the advantage of BSC is the ability to produce strategic plans with following characteristics: (1) comprehensive. (2) coherent, (3) balanced and measurable (Mulyadi, 2001).

BSC helps organizations identify visions, formulate strategies, and achieve target goals. The internal process perspective involved coordinating limited resources to obtain optimal results, and the learning & growth perspective involved employee competency, meanwhile the customer perspective involved tracking client satisfaction (Tsai *et al*, 2017). Balanced Scorecard had become very popular and widely used by many practitioners for measuring performance (Quezada *et al*, 2019; Lin *et al*, 2014; Tsai *et al*, 2017; Dincer *et al*, 2016). The four perspectives of Balanced Scorecard by Robert Kaplan and David Norton are as follows:

1. Financial Perspective

BSC uses financial performance indicators such as Net Income, Return of Investment, and Revenue Growth to determine the profit earned by the company. According to Kaplan & Norton (2000), from this perspective the companies have two main strategies: revenue growth and productivity. Revenue growth will be reflected in the other perspectives, introducing a new revenue source from new markets, new products, and new customers; or expanding the relationship with existing customers. The productivity, on the other hand, will be reflected in the search for efficiency in the operational activities such as cost reduction. Some of the financial perspective indicators as follows:

- Return On Investment (ROI) = $\frac{\text{Profit}}{\text{Investment}} \times 100\%$
- Profit margin = $\frac{\text{Net profit}}{\text{Sales revenue}} \times 100\%$
- Revenue Growth = $\frac{\text{Revenue } t_n - \text{Revenue } t_{n-1}}{\text{Revenue } t_{n-1}} \times 100\%$

2. Customer Perspective

In the customer perspective, the company needs to first determine the target markets and customers. The purpose of this perspective is to check how the company delivers effective value for the right customers and measured the profitability and satisfaction. Some of the customer perspective indicators as follows:

- Customer growth = $\frac{\text{Number of cust } t_n - \text{Number of cust } t_{n-1}}{\text{Number of cust } t_{n-1}} \times 100\%$
- Customer profitability = $\frac{\text{Net income}}{\text{Number of customers}} \times 100\%$

3. Internal Business Process Perspective

In this perspective, organizations identify the process for achieving the goals of customers and stakeholders. This process have to create the condition for the organization to attract and retain customers in its market segments, creating stakeholder value. Some of the internal business process perspective indicators as follows:

- Product innovation = $\frac{\text{Sales/year}}{\text{Production/year}} \times 100\%$
- Operation process = $\frac{\text{Production units/year}}{\text{Operating time/year}}$
- After-sales process = $\frac{\text{Production units/year}}{\text{Number of customers/year}}$

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- Defective product ratio = $\frac{\text{Number of defective products}}{\text{Total unit production}} \times 100 \%$

4. Learning & Growth Perspective

This perspective focused to increase the company performance by improving qualification including investments in new equipment, new product researches and development, and in company human resources. Some of the learning & growth perspective indicators as follows:

- Employee productivity = $\frac{\text{Revenue}}{\text{Number of employees}}$
- Employee satisfaction = $\frac{\text{Total average scores of respondents}}{\text{Number of respondent questions}} \times 100 \%$
- Work accident = $\frac{\text{Number of accidents/year}}{\text{Total employees in the current year}} \times 100\%$

Methods

A. Research Object

Subject of this study was SP Aluminium, a foundry & aluminum smelter SME who produced household appliances and crafts. With production capacity of 4 tons/day, SP Aluminium is supported by 120 employees and two production factories located in Umbuharjo, Yogyakarta.

B. Primary and Secondary Data

This research was conducted on April 2015 by collecting primary and secondary data. There are 12 Key Performance Indicators (KPI) across four BSC perspective that was measured and analyzed based on the data in 2012 until 2015, except for KPI Employee Satisfaction that was only measured in 2015. The primary data was collected by distributing employee satisfaction questionnaires to SP Aluminium employees and direct interviews with some managerial level leader including the operational director and the head of marketing & production. While the secondary data was collected in the form of company history, company goals, company organizational structure and production quantity data.

Result and Discussion

Before taking the performance measurements, a strategy map was made to explain the goals of every perspective and to communicate how value is created by the organization or company. The strategy map was shown in Figure 1.

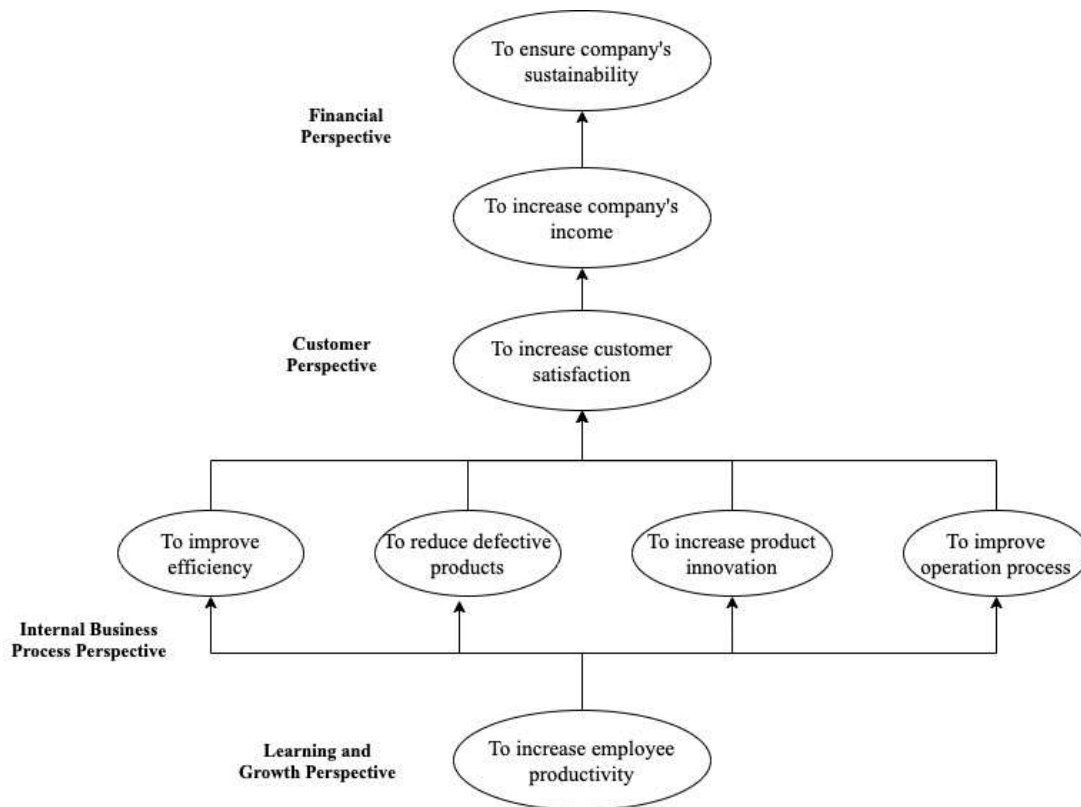


Figure 1. Balanced Scorecard Strategy Map

The correlations between perspectives in Figure 2 below showed the correlations between the goals of every perspectives, improvements in internal capacity such as increasing employees productivity will improve company internal process itself in the form of improved efficiency, reduced defective products, and increased product innovation. The improved internal processes then will improve customer and stakeholder satisfaction, so the financial results will be improved as well because the company's profit will rise.

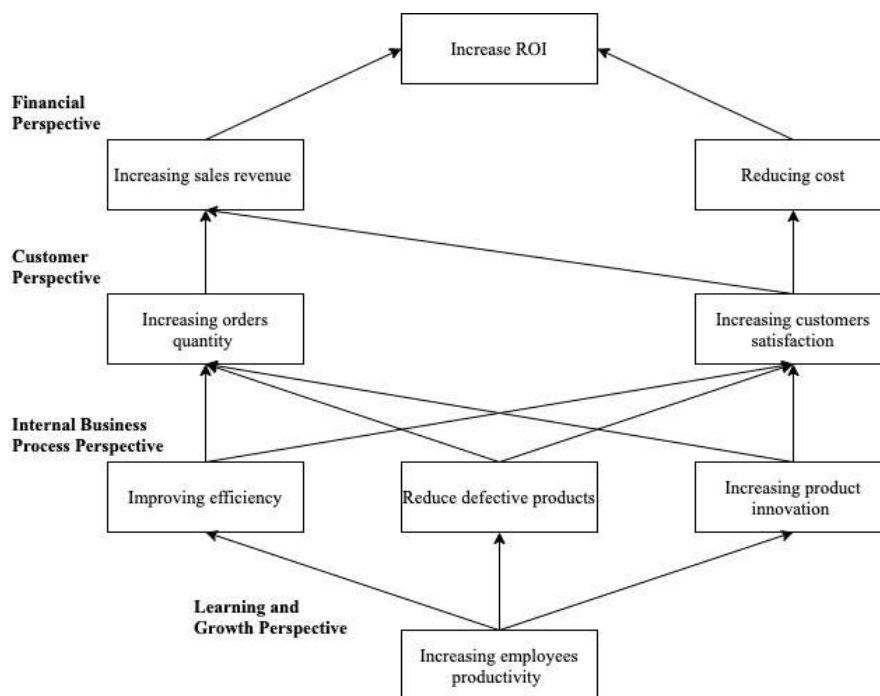


Figure 2. The correlations between perspectives

Performance Measurements:

1. Financial Perspective

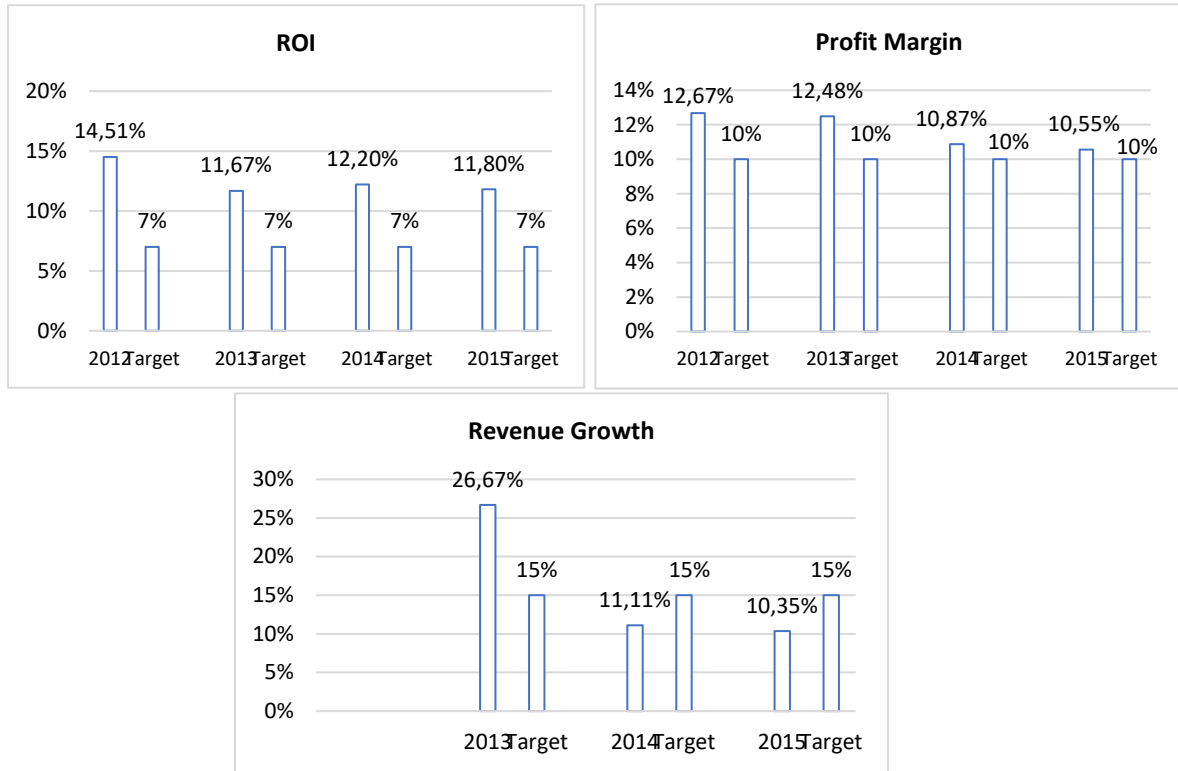
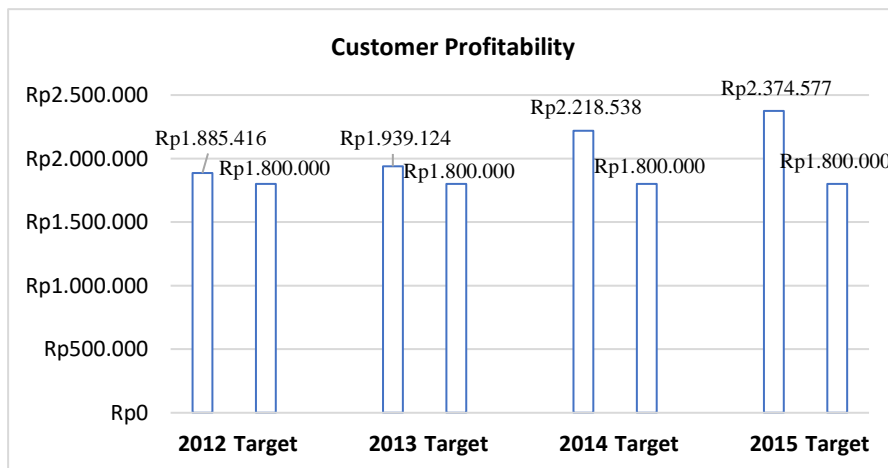


Figure 3. Financial perspective measurements

ROI was calculated for a period of time. From Figure 3 above, the ROI increased that SP Alumium did not achieve the profit margin obtained. Achieving a good ROI can accelerate company's growth. Meanwhile, the value of profit margin continued to decline every year. Even so the value has exceeded the company target of 10%. Revenue growth also decreased every year and only reached the company target of 15% in 2013. It can be caused by the competition with other SMEs on the same field with the same products. The financial perspective broadly measures the performance of the organization in managing optimal finances and market value. Optimal finance in the organization will strongly support the strategies of the rest perspectives.

2. Customer Perspective



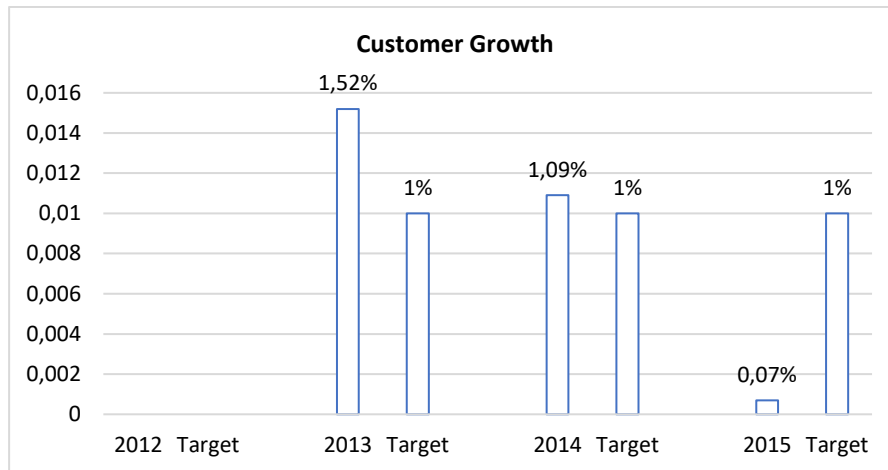


Figure 4. Customer perspective measurements

From the Figure 4 above, it can be seen that the value of customer profitability continued to increase every year. The value always exceeded the target set by company, Rp 1.800.000. Meanwhile the customer growth had decline significantly in 2015, it can be caused by several factors including social and economic conditions. The customer growth in 2013 dan 2014 had met the company's target of 1%.

This perspective emphasize customer satisfaction and customer focus in their business activities by understanding the customer needs. To ensure the sustainability of the company, it isn't only important to increase customer growth, but also to retain them for the long-term. SP Alumunium needs to focus on customer growth, despite the customer profitability had exceeded the company target. Some strategies such as product promotions, new marketing strategy, and new products development need to be done to achieve customer growth target.

3. Internal Business Process Perspective

Internal business process is a series of activities to produce the goods or services for the company's customers. From the Figure 5 below, it can be seen that the product innovation indicator had exceeded the SP Alumunium target of 85%. Meanwhile the operation process was getting quicker or better every year, this efficiency might be the results of improvements in the company's production division. The operation process target is 0.2 minutes/ unit products, but in 2015 it's only needs 0.17 minutes/unit products.

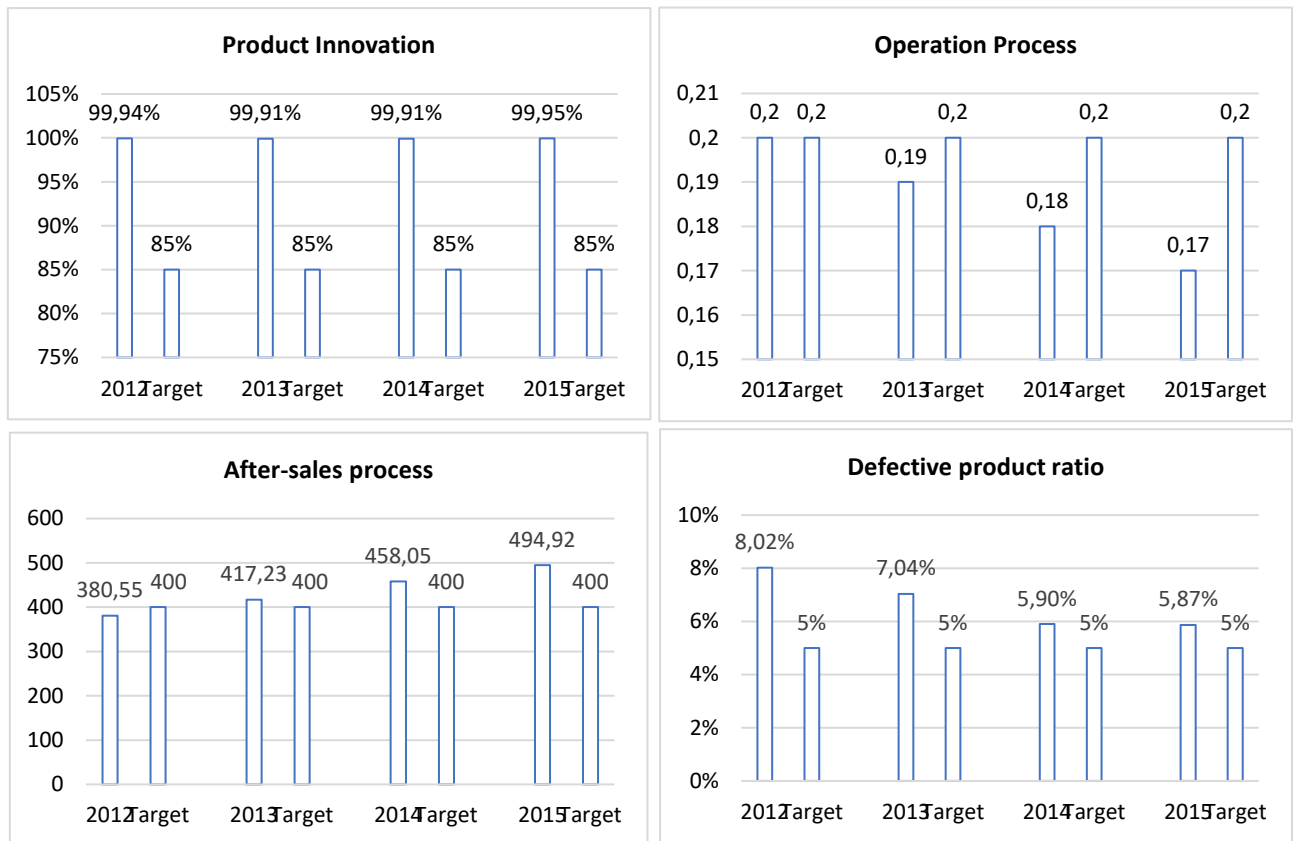
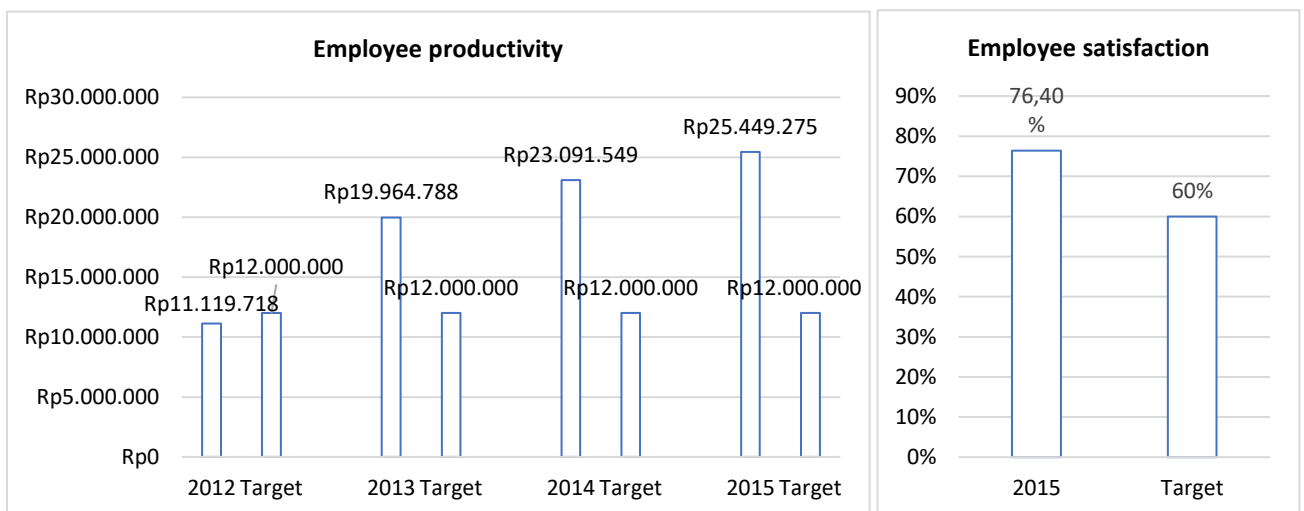


Figure 5. Internal business process perspective measurements

The after-sales target is 400 units/customers, and it can be seen in Figure 5 above that SP Alumunium had exceeded this target start from 2013. Meanwhile, the defective product ratio of SP Alumunium is still quite high, even though it always decreased every year. This indicator also did not meet the company's target of 5%, defective products. Further analysis with quality tools need to be done to know the main cause of the defective products, so the company could make some improvements to reduce the waste.

4. Learning & Growth Perspective



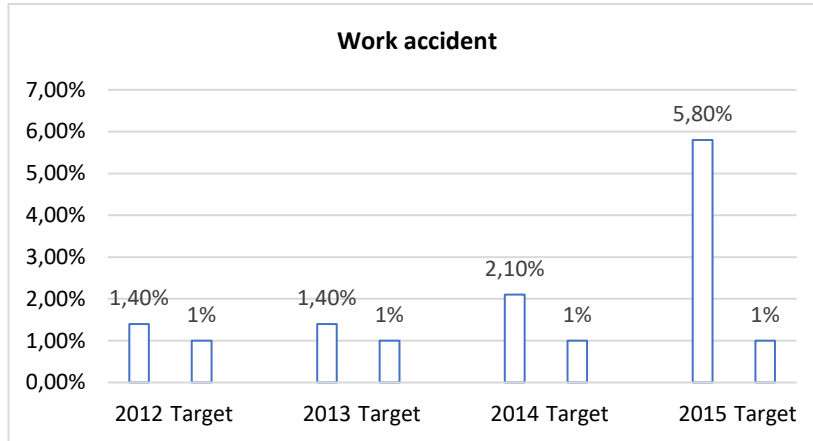


Figure 6. Learning & growth perspective measurements

From the Figure 6 above, it can be seen that the employee productivity keep increasing every year and exceeded the company’s target of Rp 12.000.000 start from 2013. Meanwhile work accident indicator needs more attention because it’s important to make sure that the employees could work safely, but the measurements result showed that the accidents occurred in the company always increased every year. The target is only 1%, but the accidents happened in 2012–2015 was always beyond that. This indicator needs further attentions and investigations so the incident will not turn into big accident with fatal consequences.

Employees satisfaction was measured using questionnaires and the results showed that 76,40% of the employees were satisfied working in SP Aluminium. The result had exceeded the company target of 60%, however the employee welfare needs to be improved again. More about employee satisfaction is explained below.

Employees Satisfaction

To measure employees satisfaction, we distributed the employees satisfaction questionnaires to 105 SP Aluminium employees with random sampling method. The indicators of the questionnaires were categorized into five groups: job satisfaction, working conditions satisfaction, salary satisfaction, supervision satisfaction, and work group satisfaction. The results of every indicators will be shown in Figure 7 below.

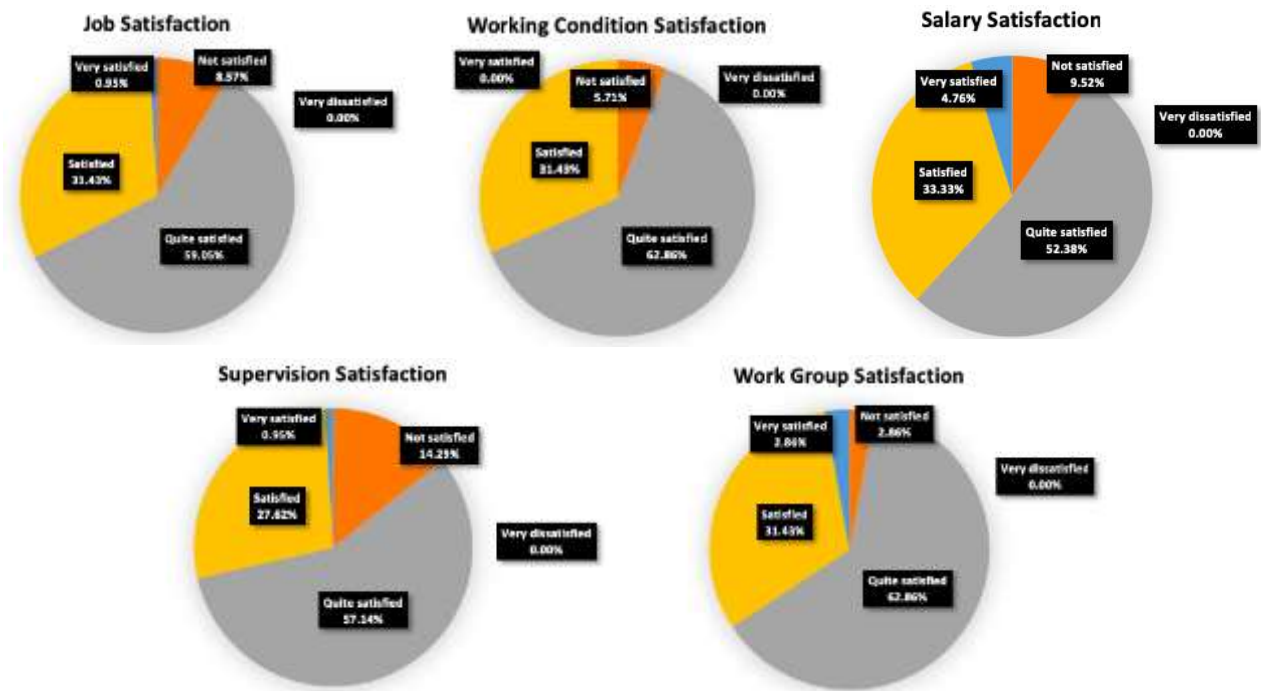


Figure 7. Employee satisfaction

From the results above, the highest score of dissatisfaction is shown in Supervision where 14,29% of SP Aluminium employees were not satisfied with the supervision of the company. Meanwhile for Salary Satisfaction,

9,52% of the employees were not satisfied with the salary given by SP Alumunium. From this results, we can conclude that the improvements of supervision and salary should be made to increase imployee satisfaction, so the goals to improve employee's productivity could be achieved.

Conclusion

The purpose of this study is to to measure SP Aluminium performance using four perspective of Balanced Scorecard. Based on the measurement results, the conclusions that can be drawn as follows :

1. From the measurement of Financial Perspectives, SP Alumunium had exceeded ROI and Profit Margin targets, but the Revenue Growth Indicator was always decreased every year and only reached the company target in 2013. It can be caused by the competition with other SMEs on the same field with the same products.
2. For the Customer Perspective, Customer Profitability had exceeded the target and keep increasing, but Customer Growth sharply decreased in 2015 and didn't reach the company target. Some strategies such as product promotions, new marketing strategy, and new products development need to be done to achieve customer growth target
3. There are 3 indicator who meets the company target on Internal Business Process Perspective: Product Innovation, Operation Process, and After-sales Process. Meanwhile another indicator, Defective Product Ratio did not meet the company's target. Further analysis with quality tools need to be done to know the main cause of the defective products, so the company could make some improvements to reduce the waste.
4. For Learning & Growth Perspective, Employee Productivity keep increasing every year and exceeded the company target since 2013. Meanwhile for Employee Satisfaction indicator, 76,40% of the employees were satisfied working in SP Alumunium, but 14,29% were not satisfied with the supervision of the company and 9,52% were not satisfied with the salary. But Work Accident indicator needs more attention because the measurements result showed that the accidents occured in the company always increased every year and far exceeded the set target. This indicator needs further attentions and investigations so the incident will not turn into big accident with fatal consequences.

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