

PERFORMANCE OF PT MADUBARU PG MADUKISMO BY USING BALANCED SCORECARD APPROACH

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Abstract: PT Madubaru PG Madukismo is a company engaged in the field of sugar cane agro-industry in Yogyakarta province. Achievement in running a company can be seen from the performance of the company. Performance PT Madubaru overall company can contribute to developing the company in achieving the vision. A Balanced Scorecard is a management tool that can be viewed and maintained a balance between financial indicators (financial perspective) and non-financial indicators (customer, Bisnisinternal process, growth, and learning). The purpose of this study was to determine the performance of PT Madubaru PG Madukismo and formulate alternative strategies improving the performance of PT Madubaru. Data analysis and processing tools used the method of Pairwise Comparisons and Balanced Scorecard. The measurement results show the performance of PT Madubaru PG Madukismo, including very healthy (AA) with a value of 87.81%. Thus it has shown its best performance according to the vision, mission, and strategy of the company.

Keywords: Balanced Scorecard, Sugar Industry, Performance Measurement

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In the last decade, the development of the national sugar industry has decreased. This decrease is caused by the inability to overcome various fundamental problems such as high production costs, low rendered of sugarcane plants, inefficiency in engine performance, sugar imports which are not in line with domestic demand which causes ex-

cessive markets, and there is no synergy between ministries/institutions which ultimately leads to conflicts of interest (Tayibnapis, *et al.*, 2016). Besides, there are also external factors such as weather and climate that cannot be predicted causing a decrease in sugarcane productivity as experienced in China in 2012-201 (Li and Yang, 2015); (Rochimah, *et al.*, 2015).

PT. Madubaru is one of the companies that operate the Madukismo Sugar Factory (MDKS PG) in Indonesia. Madubaru has great potential and opportunities to grow and develop into a sugar cane-

based agroindustry company. According to (Fahdli, 2014), this company uses a business strategy of overall cost advantages (overall cost leadership), a business strategy of backward integration strategy and related diversification in its business activities.

Problems that occur in PT Madubaru are the result of the company's performance has not reached the minimum score set by the company, the operational aspects as determined by the respective departments and the lack of alignment or causality between one another strategy determined by the company so that there some strategies that are not achieved by the company.

The success of an organization, determined by the ability of the leadership of the organization to determine the right strategy in its organization and use the environment, by choosing the right organization of internal resources (Karakaya *et al.*, 2016). Strategies are historically related to dealing with different scenarios and actions through policies, goals, tactics, and programs to achieve the objectives of the company (Mainardes, *et al.*, 2014). The best way for companies to choose a strategy carefully and systematically is to follow a strategic management process (Barney, *et al.*, 2012). Organizations try to optimize performance in the strategic management process by using the balanced scorecard approach (Kádárová, *et al.*, 2014). The balanced scorecard translates the comprehensive vision and strategy in the Balanced Scorecard covering finance, customers, internal business processes, and growth and learning (Zsido and Fenyves, 2015).

The importance of this research is because each company employee has the duties and responsibilities of each employee needs an understanding of the company's vision, mission, and strategy in carrying out its duties. Besides, to compete well with other sugar factories in Indonesia, PT Madubaru as one of the sugar companies must be able to improve the performance of its sugar factory. To improve the performance of the sugar factory PT Madubaru, companies must be able to evaluate the performance of their companies both financially and non-financially, one of them is the Balanced Scorecard approach as an assessment of company performance.

METHOD

This research used descriptive analysis method to measure the level of performance at PT Madubaru PG Madukismo using the Balanced Scorecard approach. This research was conducted by purposive method in sugar factory owned by which all located in Yogyakarta it was carried out by collecting data for the last one year (2017) which included information about implementing the Balanced Scorecard in the company like description and alignment of the vision, mission and objectives of PT Madubaru PG Madukismo, designing strategic objectives into the perspective of the Balanced Scorecard, determining strategic size and key performance indicators (IKU) PT Madubaru PG Madukismo, achievement of Balanced Scorecard performance is obtained by comparing the realization of the results achieved against predetermined targets and determination of steps or strategic initiatives needed to improve the performance of PT Madubaru PG Madukismo.

The performance of PT Madubaru with the Balanced Scorecard approach. The performance of PT Madubaru with the Balanced Scorecard (BSC) approach begins with the translation of the company's vision, mission, and strategy. Furthermore, the strategic objectives of PT Madubaru were based on interviews with management and determining the KRI (Key Result Indicator), realization, targets, and managerial implications of each of these strategic objectives. Data processing and analysis techniques in this study are 1) weighting the importance of the four BSC perspectives; 2) weighting the importance of the KRI (Key Result Indicator); 3) weighting is done using the method of paired comparison or pairwise comparison, namely a scale of 1–9 (Saaty, 2008). This method shows the comparison of values between indicators (horizontal-vertical) on a scale of 1-9 as follows:

- Value 1 : Both elements are equally important
- Value 3 : One element is slightly more important than the other
- Value 5 : Elements that are essential or very important than the other elements
- Value 7 : One element is more important than the other elements

Value 9 : An absolute element is more important than the other elements

Value 2, 4, 6, 8: Values between two contiguous considerations

Reverse: If for the activity, I get one number when compared with activity j, then j has the opposite value when compared with i. Next, multiply the weight of each KRI (Key Result Indicator) with the weight of the perspective. 4) measuring the performance of KRI (Key Result Indicator) to analyze the performance of each size of the KRI (Key Result Indicator) in the KRI performance score (Key Result Indicator). The performance score shows the performance of the company under study, as shown in Table 1.

Table 1 Criteria for performance scores

Remarks	Total Score (TS)	Criteria
Very healthy	AAA	≥ 95
	AA	$80 < TS < 95$
	A	$65 < TS < 80$
Unwell	BBB	$50 < TS < 65$
	BB	$40 < TS < 50$
	B	$30 < TS < 40$
Not healthy	CCC	$20 < TS < 30$
	CC	$10 < TS < 20$
	C	$TS < 10$

Source: Rangkuti (2011)

RESULT

The level of performance of PT Madubaru PG Madukismo by using the Balanced Scorecard approach is carried out with the following steps:

Translation of the vision, mission, and strategy of PT Madubaru PG Madukismo

The vision of PT Madubaru is to make PT Madubaru (PG / PS Madukismo) a superior Agro Industry company in Indonesia by making farmers as partners. To realize this vision, the company establishes a mission, namely (1) Producing quality sugar and ethanol to meet the demands of society

and industry in Indonesia; (2) Produce products by utilizing advanced and environmentally friendly technology, managed professionally and innovatively, providing excellent service to customers and prioritizing partnerships with farmers; (3) Develop new products / businesses that support the core business; (4) Placing employees and other stakeholders as the most important part of the process of creating corporate excellence and achieving shareholder values.

Determination of strategic objectives of PT. Madubaru PG Madukismo

Determination based on the overall strategic objectives of the company and in-depth interviews with company management and combined with literature studies based on the company’s vision and mission. The results of the interviews were integrated with reviewing the company’s vision and mission obtained the company’s strategic goals divided into four BSC perspectives (finance, customers, internal business processes and growth and learning). PT Madubaru has two strategic objectives in the financial perspective, namely increasing profit, and decreasing production costs, one strategic goal in the customer’s perspective, namely increasing customer satisfaction, two strategic goals in the perspective of internal business processes, namely improving product quality and increasing production quantity, and three strategic goals in the perspective of learning and growth, namely increasing employee skills, increasing employee loyalty and increasing partnerships with farmers.

Determination of key performance indicators (IKU) of each strategic target

Determination of key performance indicators (IKU) is prepared based on interviews with experts arranged consisting of the lag indicator and lead indicator. KPI on (1) financial perspective namely average five-year net income, average Return on Equity (ROE) per five years, average Return on Investment (ROI) per five years and percentage reduction in cost of production costs per five year, (2) customer perspective, namely the number of sales per year and the percentage of customer sat-

Table 2 BSC Matrix at PT Madubaru

Perspective	Strategic target	Strategic size	
		size Results	Performance Triggers Size
Financial (F)	F 1 Increased profit	The average net revenue per five years	Improved reception The amount of the increase in production Reduction in production costs
		Average Return on Equity (ROE) per five years	Increasing the amount of profit (income) The amount of capital used by the company
		Average Return on Investment (ROI) per five years	The level of maintenance and additional investments (Capital Employed)
		Average Return on Investment (ROI) per five years	Increasing the amount of net profit The decline in raw material costs The decline in the cost of factory/fabrication
	F 2 Reduction in production costs	The percentage decrease in the cost of production per five-year load	Improved product quality
Customer (C)	C 1 Increased customer satisfaction	Total Sales per Year	Improved quality of service
		Customer Satisfaction percentage per year	Survey of customer satisfaction levels
Business Process and Internal (I)	I 1 Increased production optimization	Total production of white sugar per year	Increasing the amount of cane milled
	I 2 Increased productivity of Sugarcane	Sugarcane productivity quintal/ha	Increasing the amount of sugar cane production Increased acreage
Learning and Growth (G)	G1 Increased employee competency	The average employee training per year	The level of the company's needs
		The average productivity of employees per year	Number of employees Total net profit of the company
		The average employee who makes resign per year	Good relations between employers and employees Analysis of "human error" in the production, packing, etc.
	G2 Increased employee loyalty	The average area of land per year Partners Farmers	Good relations between the company and the farmers
	G3 Increased partnerships farmers Increased partnerships farmers		

isfaction per year, (3) the perspective of internal business processes, namely the amount of white crystal sugar production per year and productivity of sugar cane / ha, (4) learning and growth perspective, namely the average employee who participates in training per year, average employee productivity per year, average employees who apply for resignation per year and average farmer land area per year. Design of BSC PT. Madubaru complete in Table 2.

Performance Measurement of PT Madubaru PG Madukismo by using Balanced Scorecard

The design of the formed BSC can be used to measure and evaluate the performance of PT Madubaru PG Madukismo. The overall measurement of company performance is done using Microsoft Excel. The overall performance of PT Madubaru PG Madukismo can be calculated by multiplying between its constituent components, namely the weight of each perspective and IKU (outcome measure) and performance index. KPI performance indexes are grouped based on performance value ranges.

1. The weighting of BSC and IKU Perspectives

Weighting is done by interviewing the company management, and weighting aims to know how much influence each perspective has on the company's overall performance. The results of the weighting of the management are processed using the paired comparison method (pairwise comparison). Weighting produces the average value, as seen in Table 3. The weighting results can be seen that the perspective that has the highest weight is the financial perspective of 51%, the perspective that has the second highest weight is the internal business process perspective of 21%, the third is the customer's perspective by 18% and fourth is a growth and learning perspective of 10%.

2. Measurement of Achievement of IKU Targets (outcome measures)

In the financial perspective of PT Madubaru PG Madukismo includes: (1) The average net income per five years reaches the target of 75.69%;

(2) Average ROI per five years reaches the target of 72.89%; (3) Average ROE per five years reaches the target of 141.47% (4) Average production costs per five years reach the target of 23.25%. The achievement of the lowest KPI target on a financial perspective is sales growth. ROI value is influenced by the level of maintenance and the addition of assets and an increase in the number of net profits. Net profit for five years has decreased fluctuations so that the resulting ROI also declined.

In the customer's perspective PT Madubaru PG Madukismo consists of: (1) customer satisfaction reaches a target of 72.60%; (2) The percentage of sales per year reaches the target of 91.35%. In general, the performance of PT Madubaru PG Madukismo according to the customer's perspective is good. The company can provide satisfaction in accordance with what is expected by customers, but the management must maintain customer loyalty because the level of competition is generally higher.

In the perspective of internal business processes, PT Madubaru PG Madukismo consists of: (1) The amount of white crystal sugar per year reaches the target of 74.45%; (2) Productivity of sugar cane/ha per year reaches the target of 89.10%; Achieving KPI targets on the perspective of internal business processes is good, the company is able to maintain key factors in the internal production process. To maintain and improve overall company performance, management should increase the number of white crystal sugar by seeking alternative raw materials and increasing sugarcane productivity by expanding the number of farmer partners.

In the learning and growth perspective, PT Madubaru PG Madukismo includes: (1) employees who attend training per year reach the target of 98.70%; (2) employee productivity per year reaches the target of 83.01%; (3) Employee retention reaches the target of 86.67%; (4) The number of farmer partners per year reaches the target of 136.14%. In general, the performance of PT Madubaru PG Madukismo according to the learning and growth perspective has been good, especially the IKU, the number of farmer partners who have the greatest

achievement of 136.14% means that the company needs to maintain partner performance. However, employee productivity is the one that has the lowest target achievement, and the company must carry out activities that can encourage the increase of IKU's performance because the company prioritizes farmer partners as the company's mission.

3. Results of Assessment of PT Madubaru PG Madukismo Performance Index

The performance index of PT Madubaru PG Madukismo is an assessment of business performance that describes the position of the success of

the company's strategy in achieving its goals. The calculation results obtained overall performance index of PT Madubaru PG Madukismo which reached 87.81% so that the results of the performance of PT Madubaru PG Madukismo in 2017 reached a rating of "AA" with a very healthy category. To maintain and improve the performance achievement of PT Madubaru PG Madukismo as a whole, the management must continue to make performance improvements. Table 3. shows the results of measurement of PT Madubaru PG Madukismo performance index.

Table 3 The results of the performance of PT Madubaru PG Madukismo Year 2017

Strategic target	Strategic size	Target (a)	Realization (b)	Unit	target achievement / Score (C = b / a) (%)	Weights (d) (%)	Final Score (e = C*D) (%)
Financials (51%)							
1. Increased profit	1. Percentage of net income per 5 years (58.82%)	100	75.69	%	75.69	30	22.71
2. Reduction in production costs	2. The percentage of ROI per 5 years (17.65%)	18	13,12	%	72.89	9	6.24
	3. Percentage of ROE per 5 years (15.69%)	15	21,22	%	141.47	8	11.83
	4. The percentage of the cost of production per 5 years (7.84%)	20	24.65	%	23.25	4	4.74
Customers (18%)							
Increased customer satisfaction	Customer Satisfaction per year (83.33%)	5	3.63	Index	72.60	15	10,90
	Total sales per year (16.67%)	100	91.35	%	91.35	3	2,82
	Total = 100%				163.95	18	13.72

Continued in Table 3

Strategic target	Strategic size	Target (a)	Realization (b)	Unit	target achievement / Score (C = b / a) (%)	Weights (d) (%)	Final Score (e = C*D) (%)
Internal Business Processes (21%)							
Increased Production Optimization	The amount of white sugar per year (76.19%)	602 230	448 344	quintal	74.45	16	11.61
Increased productivity of Sugarcane	Sugarcane productivity/ha per year (23.8%)	523	466	Quintal/ha	89.10	5	4.55
	Total = 100%				163.55	21	16.15
Learning and Growth (10%)							
Increased employee competency	The number of employees who attend training (45%)	1000			987	Person	98.70
	Employee productivity per year (26%)	25,083,016			15,773,072	Rupiah	62.88
Increased employee loyalty	Employee Retention per year (14%)	15			28	Person	86.77
Increased farmers partnership	On average Partners Farmers per year (10%)	5400			7351.66	Person	136.14
	Total = 100%				484.39		10
	Total = 100%				Very healthy		87.81

DISCUSSION

Based on the calculation results, the total score of PT Madubaru's performance was 87.81%, which means that the performance of PT Madubaru PG Madukismo in 2017 reached a rating of "AA" in the very healthy category. The managerial implications that can be done are to maintain the level of achievement of the KPI performance targets that have been optimized and increase the level of achievement of the KPI performance targets which are considered to be still not optimal. So, strategic

initiatives can be used by PT Madubaru PG Madukismo is a development strategy.

- **Financial Perspective**

PT Madubaru PG Madukismo should try to increase sugar sales by increasing markets and restoring markets (Lukito dan Mustamu, 2013). Market penetration can be done through an approach to traditional and retail markets that are still not distributed in Yogyakarta. Product promotion is also enhanced through mass media, sponsorships, fairs,

and community events. Besides, PT Madubaru PG Madukismo also reduced the cost of sugar production by increasing the amount of sugar cane raw material so that the factory worked more efficiently.

- **Customer Perspective**

PT Madubaru PG Madukismo should improve customer service through commoditization, namely products focused on customers. One kilo retail sugar products must be adjusted to the customer's desires (customer orientation) both taste, color, and form of packaging such as sugar in a closed form, environmentally friendly packaging, and packaging in the form of sachets. In addition to maintaining consistent personal selling, it must also be done so that the company continues to have good relations with customers and loyal customers to buy products from PT Madubaru.

- **Business and Internal Processes Perspective**

PT Madubaru PG Madukismo should increase the productivity of white sugar by increasing sugarcane productivity/ha. Sugar cane productivity/ha can be done by increasing the number of partnerships with farmers, especially independent partner farmers. The increasing number of farmer partners will increase the production of sugar cane produced. Besides, PT Madubaru PG Madukismo should also revitalize old machines to make plant performance more efficient.

- **Learning and Growth Perspective**

PT Madubaru PG Madukismo should evaluate the effectiveness of training activities regularly. Evaluation is done to find out whether the quality of employees has met the needs of the company.

CONCLUSIONS AND REKOMENDATIONS

Conclusions

PT Madubaru performance results with the Balanced Scorecard approach has a score of 87.81%. The results of the overall performance of PT Madubaru 2017 Balanced scorecard perspective categorized as very healthy, which the financial

perspective had the highest score of 45.52%, and internal business process perspective of 16.15%, followed by 13.72% customer perspective and learning and growth perspective for 11.44%. Based on the results of the Balanced Scorecard analysis, the perspective of growth and learning has very good achievements, judging from the target achieved beyond that specified. The understanding of company employees towards performance measurement using the Balanced Scorecard (BSC) approach is good, where each employee understands each strategy, the outcome measure, and the target set.

Rekomendations

Based on the analysis of the Balanced Scorecard PT Madubaru, a very important perspective to be improved is internal business processes by increasing the quality and quantity of sugarcane through supervision of partner farmers from production to harvesting and providing additional incentives to partner farmers to be more motivated to plant sugar cane. Besides, every target that has been achieved needs to be updated so that each member of the organization is motivated to improve its performance.

REFERENCES

- Barney, Jay B./ ; Hesterly, W. S. 2012. *Strategic Management and Competitive Advantage*. USA: Pearson Education Ltd.
- Fahdli, I. 2014. *Perancangan Peta Strategi Yang Mendukung Penerapan Balanced Scorecard (Studi Kasus pada PT Madubaru)*. Universitas Gadjah Mada.
- Kádárová, J., Durkáčiová, M., and Kalafusová, L. 2014. 'Balanced Scorecard as an Issue Taught in the Field of Industrial Engineering', *Procedia - Social and Behavioral Sciences*, 143, pp. 174–179. doi: 10.1016/j.sbspro.2014.07.382.
- Karakaya, A., Yılmaz, K. and Demiral, G. 2016. 'Strategic Capabilities of Retail Market Managers: A Field Research in Karabuk', *Procedia - Social and Behavioral Sciences*, 235(October), pp. 93–100. doi: 10.1016/j.sbspro.2016.11.004.
- Li, Y. R. and Yang, L. T. 2015. 'Sugarcane Agriculture and Sugar Industry in China', *Sugar Tech*, 17(1), pp. 1–8. doi: 10.1007/s12355-014-0342-1.

- Lukito, R.K., dan Mustamu, R.2013. 'Analisis Strategi Bersaing Pada Distributor Gula di Indonesia', *AGORA*, 1(1), pp. 1–11.
- Mainardes, E. W., Ferreira, J., and Raposo, M. L. 2014. 'Strategy And Strategic Management Concepts/ : Are They Recognised By Management Students/ ?' doi: 10.15240/tul/001/2014-1-004.
- Rochimah, N. R., Soemarno and A.W.Muhaimin. 2015. 'Pengaruh Perubahan Iklim Terhadap Produksi Dan Rendemen Tebu di Kabupaten Malang (The Influence of Climate Change on Sugar Cane Production and Yields in Malang)', *Jurnal Pembangunan dan Alam Lestari*, 6(2), pp. 171–180.
- Saaty, T. L.2008. *Decision Making for Leaders: The Analytical Hierarchy Process for Decisions in A Complex World*. Pittsburgh: RWS Publications.
- Tayibnapi, A. Z., Wuryaningsih, L. E. and Sitisundari, M.2016. 'Efforts to Achieve Beyond Sugar in Indonesia', *IJMBS*, 6(4). Available at: <http://www.ijmbs.com/Vol6/4/2-ahmad-zafrullah-tayibnapi.pdf> (Accessed: 8 May 2019).
- Zsido, K. E. and Fenyves, V.2015. 'Application of "Traditional" and "New" Approach Methods in Business Performance Measurement', *Cross-Cultural Management Journal*, XVII(1), pp. 51–57. Available at: http://www.cmj.bxb.ro/Article/CMJ_7_7.pdf.