

PAPER NAME

Dahlan_2018_IOP_Conf._Ser.__Earth_.pdf

AUTHOR

Lamatinuliu =0

WORD COUNT

2801 Words

CHARACTER COUNT

15335 Characters

PAGE COUNT

7 Pages

FILE SIZE

578.2KB

SUBMISSION DATE

Aug 30, 2022 1:53 PM GMT+7

REPORT DATE

Aug 30, 2022 1:53 PM GMT+7

● 1% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

- 1% Publications database

● Excluded from Similarity Report

- Internet database
- Crossref database
- Crossref Posted Content database
- Submitted Works database

PAPER • OPEN ACCESS

Identification And Determination Of Priority Of Key Performance Indicator Of Financial Perspectives on Industry Cocoa SMEs in South Sulawesi

To cite this article: Muhammad Dahlan *et al* 2018 *IOP Conf. Ser.: Earth Environ. Sci.* **175** 012029

View the [article online](#) for updates and enhancements.

You may also like

- [A Norwegian zero emission neighbourhood \(ZEN\) definition and a ZEN key performance indicator \(KPI\) tool](#)
Marianne Kjendseth Wiik, Selamawit Mamo Fufa, Inger Andresen et al.
- [Recommended key performance indicators for operational management of wind turbines](#)
S Pfaffel, S Faulstich and S Sheng
- [Using the BIMCO Shipping KPI Database to identify costs and benefits of e-navigation solutions](#)
D A Nesheim and K E Fjørtoft



The Electrochemical Society
Advancing solid state & electrochemical science & technology

241st ECS Meeting

Vancouver, BC, Canada. May 29 – June 2, 2022



ECS Plenary Lecture featuring
Prof. Jeff Dahn,
Dalhousie University





Register now!

Identification And Determination Of Priority Of Key Performance Indicator Of Financial Perspectives on Industry Cocoa SMEs in South Sulawesi

Muhammad Dahlan¹, Ramlawati², Lamatinulu^{1*}

¹Department of Industrial Engineering, Faculty of Industrial Technology, Universitas Muslim Indonesia, Makassar, Jalan Urip Sumoharjo Km 05, Makassar 90231, Indonesia

²Department of Management, Faculty of Economic, Universitas Muslim Indonesia, Makassar, Jalan Urip Sumoharjo Km 05, Makassar 90231, Indonesia
Email: m.dahlan@gmail.com

Abstract. This research specifically identifies and sets priority Key Performance Indicators (KPIs) of customer perspectives on the SME cocoa processing industry in South Sulawesi. This series of research activities include literature study, field survey, interviews, and questionnaires spread on expert responded. The method used is statistical methods and Analytical Hierarchy Process (AHP) to determine the priority ranking of KPIs in the financial perspective. The result of this research is the determination of 6 formulas and rank of KPIs. KPIs which become the performance indicator on 3 main priority sequences are the increase of profit (KPIF2) with the weight of 0.326 in the rank 1, the percentage of income increase (KPIF1) with the weight of 0.228 in the rank 2 position and the Return of Investments (KPIF3) at position 3 by weight 0.153. The priority scale of KPIs is the basis for assessing the performance of the financial aspects of the SME processing industry on the scale of SMEs.

Keywords: performance, SMEs, financial, Cocoa, AHP, KPIs

1. Introduction

Based on Central Bureau of Statistics data in 2014, South Sulawesi is the largest cocoa producer in Indonesia. Cocoa production in this region is dominantly sold only in the form of cocoa beans so the added value of cocoa produced is still low. Factors contributing to the low added value are the lack of cocoa processing industries in the central cocoa bean producing region. Based on the fact, there is cocoa producing areas in South Sulawesi, establishing the cocoa processing plant in Small and Medium scale. The purpose of the factory is to increase the added value of cocoa beans. The role of small-scale cocoa processing industry is still low because the existing cocoa processing industry is still dominated by large-scale industries and generally stands in urban areas.

The SME processing industry in South Sulawesi has not been able to contribute significantly to the economic improvement of the community. This is because the performance of the cocoa processing industry is not yet optimal. One of the causes of the low performance of the SME cocoa industry is because it has not used performance measurement instruments yet. Any form of measured industrial activity based on measurement indicators then can be managed properly. This is in accordance with the phrase that if you want to fix something, it must have its measurements (Radovic & Karapandzic, 2005). To establish strategic measures to improve the performance of the SME cocoa processing industry, a measurement instrument of Key Performance Indicators (KPIs) is required. KPIs can be used to measure performance on an ongoing basis (Velimirovica, 2011), informing where the performance value positions in the past, present, and future (Smith, 2001). KPIs are essential in management controls to evaluate the performance and contribution of individuals and organizations (Wang, 2004).

Based on the study of the role of KPIs, it is necessary to identify and assign the weighting of the priority scale of KPIs in the assessed perspective (Lamatinulu and Dahlan, 2016). Identify KPIs for performance measurement based on Balanced Scorecard concept approach (BSC). The identification



and specification of KPIs based on the four perspectives of the BSC are defined as financial, customer, internal business and learning, and growth (Kaplan and Norton, 1992). BSC approach is done because this concept can be a performance measurement strategy on SME scale industry (Izlaysky, 2014, Lamatinulu, 2016). One of the fundamental problems faced by the cocoa processing industry in South Sulawesi is the problems related to financial problems, such as capital, income and profit levels. Based on this case, this research specifically discusses the performance analysis related to financial perspective. The focus of the analysis is the identification of KPIs on the financial perspective of the SME processing cocoa industry. In addition to certifying KPIs also determine the weight of priority scale of performance indicators on financial perspective with Analytical Hierarchy Process (Saaty, 1993). This method is a method that can be used to determine the priority weight of KPIs (Lamatinulu and Dahlan, M, 2016). The analysis of priority weighting of performance indicators from a financial perspective is the most important factor determining the level of performance level achieved in the financial perspective and overall performance value..

2. Method and Material

The location of the research is the area that has the cocoa processing industry of SME scale in the province of South Sulawesi. Sources of data related to the aspects of financial performance are expert respondents who are considered to understand the financial management of small-scale industry organizations. The research stages can be outlined as follows:

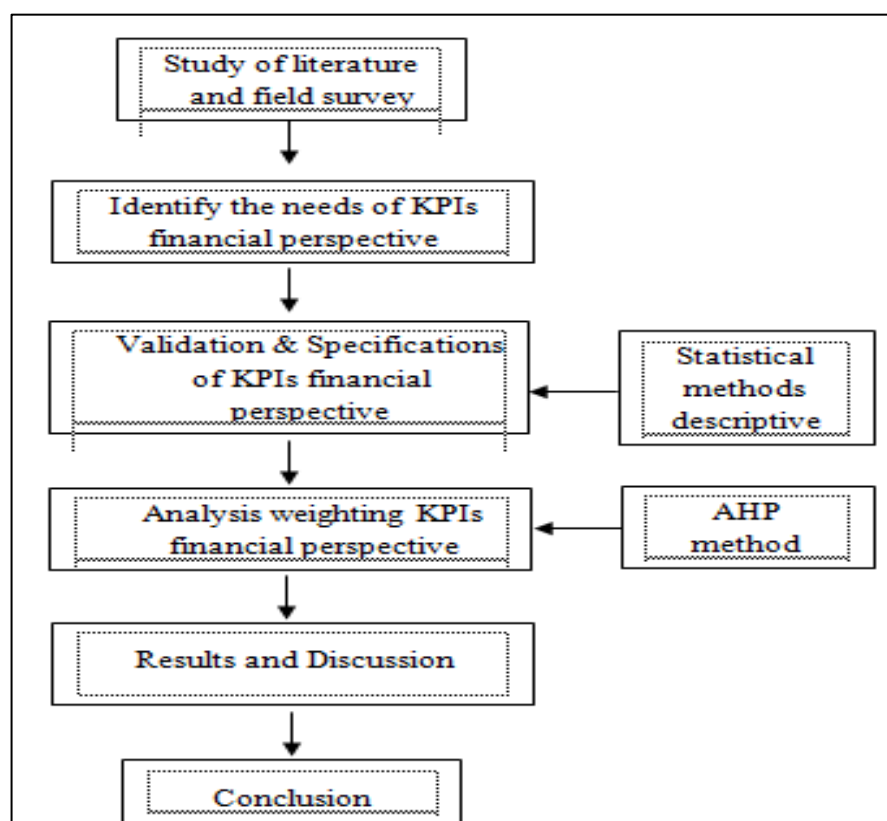


Figure 1. Research stages

In this research, a writer uses two questionnaire instrument, that is Questionnaire for descriptive statistical analysis (Thompson, 2009) by using Likert scale 1-4 in order of significance value of requirement level. The second questionnaire instrument is a pairwise comparison questionnaire for AHP analysis using a 1-9 assessment scale with meaningful rating sequences of importance weights (Saaty, 1980).

3. Results and Discussion

The financial performance of an SME industry is determined by its financial position. The company can be said to achieve achievement if its financial performance shows improvement. The stability of financial performance can improve the ability of an SME industry to generate profits and maintain its viability. Financial performance is a reflection in improving the health of the company (Sutrisno, 2009) and is an analysis to see the application of financial regulation appropriately and correctly (Fahmi, 2011). To manage the financial aspects of a cocoa processing industry SME hence required financial performance measurement instruments. An important factor in measuring financial performance is the identification and determination of KPIs related to financial performance. Based on the result of the study, several factors are proposed to be the KPIs needed to measure the financial performance of small-scale cocoa processing industry (Table 1).

Table 1. KPIs description of the financial perspective.

KPIs were proposed	Code
Percentage increase in revenue	KPI _{F1}
Percentage of profit increase	KPI _{F2}
Percentage increase in product sales value	KPI _{F3}
Ratio of sales and costs	KPI _{F4}
Return on investment (ROI)	KPI _{F5}
Cash ratio	KPI _{F6}

In Figure 2 shows there are 6 KPIs of validation result in financial perspective. The validation results of the KPIs specification indicate that all proposed KPIs can be accepted as a requirement in measuring performance in a financial perspective as it shows a value of > 4.

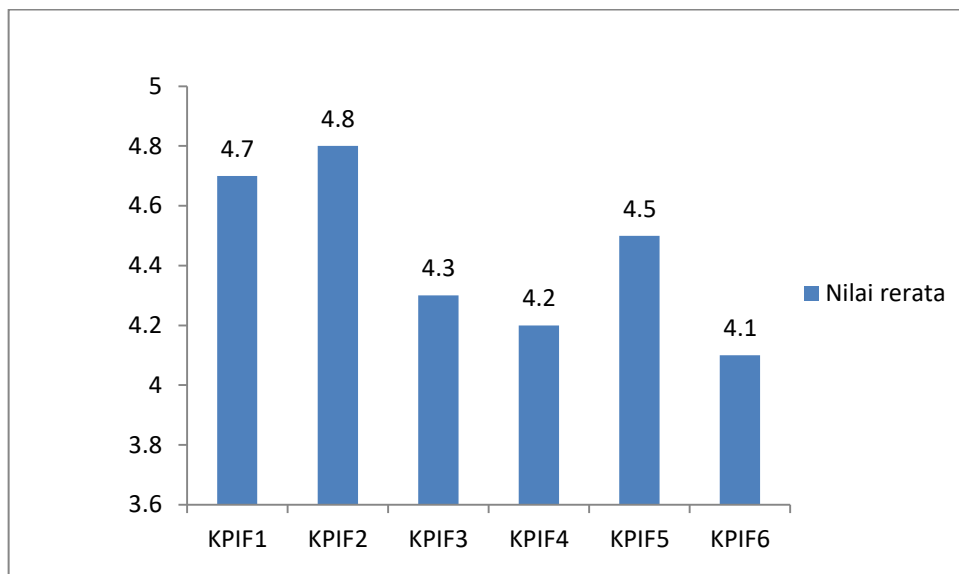


Figure 2. Results of the assessment of the level of need of KPIs in a financial perspective

The result of identification, specification, and validation of KPIs become to perform weighted analysis of priority scale of performance indicator on the financial aspect. Based on the assessment of paired comparison questionnaires from expert respondents then compiled table 2.

Table 2. Value of pairwise matrix elements

	KPI _{F1}	KPI _{F2}	KPI _{F3}	KPI _{F4}	KPI _{F5}	KPI _{F6}
KPI _{F1}	1	0,5	2	3	2	3
KPI _{F2}	2	1	2	3	3	4
KPI _{F3}	0,5	0,5	1	2	0,5	3
KPI _{F4}	0,333	0,333	0,5	1	0,5	2
KPI _{F5}	0,5	0,333	2	2	1	2
KPI _{F6}	0,333	0,250	0,333	0,5	0,5	1

Based on the values of the matrix elements in table 2, it is normalized to the values of those elements as a basis for assigning the value of the vector eigen weight or priority matrix (Table 3). Evidence that the results of the matrix comparison matrix assessment analysis can be accepted as a result of consistent assessment then tested by setting the Consistency Index (CI) value and Consistency Ratio (CR) value. The value of CI is based on the eigenvalue (λ_{max}). To get the value of CR then first determine the value of Random Index (RI) is defined based on the order matrix. As for the result of weight and rank priority KPIs financial perspective, value (λ_{max}), CI, RI, and CR can be seen in table 3.

Table 3. Results of priority weighting analysis of KPIs

Description KPIs	Code	Weights	Ranking
Percentage increase in revenue	KPI _{F1}	0.228	2
Percentage of profit increase	KPI _{F2}	0.326	1
Percentage increase in product sales value	KPI _{F3}	0.141	4
Ratio of sales and costs	KPI _{F4}	0.089	5
Return on investment (ROI)	KPI _{F5}	0.153	3
Cash ratio	KPI _{F6}	0.063	6

The result of AHP analysis in table 3 shows that all assessment results are acceptable because it has CR value <0.1 (Saaty, 1980). The results of the assessment indicate that the percentage increase in profit (KPIF1) is a performance indicator that has a weight of the highest priority value that is ranked 1. This indicates that the increase in profit factors in the SME industry of cocoa processing is an indicator that can provide the largest contribution to the improvement of financial performance. The profit-increasing position is a top priority, so the SME industry of cocoa processing needs to take strategic steps to increase profits. An increase in profits is related to the profitability ratios calculated based on the overall efficiency criteria in business issues (Tulsian, 2014). Another factor to increase profits is an effort to reduce product prices, as this can increase demand for the same product (Cho, 1999). The key performance indicator that is in second priority position is the revenue increase. Revenue greatly affects the profits of the company, therefore, the cocoa processing SMEs need to implement an income-generating strategy. The strategy associated with rising incomes is the improvement of services to customers because a good service strategy can have an impact on increasing revenues and improving the financial performance of an industry (Eggert, et al., 2014).

The key performance indicator in the third priority position is Return on Investment (ROI). ROI is one of the business performance measurement and evaluation instruments designed specifically to evaluate financial efficiency and profitability (Botchkarev and Andru, 2011).

KPIF5 is closely related to KPIF2 and KPIF1 because all of these indicators are related to profitability issues. Performance indicator on the fourth priority is the increase in the value of product sales. The higher increase in sales value can have an impact on the improvement of income and profits. Performance indicators on the fifth priority are the sales and cost ratio. In this indicator shows that if sales increase at a low cost can contribute to sales value. Without sales and marketing activities an industry is difficult to survive because improvements in sales and marketing functions have the potential to speed up return on investment (Peterson, et al., 2015). The performance indicator of the financial perspective on the sixth priority is the Cash Ratio. The cash ratio is the ratio of cash and cash equivalents to current liabilities. A high cash ratio shows that a business has the ability to meet its short-term cash payments (Brigham and Gapenski, 1996). Overall all key performance indicators identified are critical for performance improvement. The contribution of each of these financial performance indicators to performance improvement efforts is determined by the magnitude of priority weight of each KPIs.

4. CONCLUSIONS

Based on the results of data analysis, then there are some conclusions in this study that can be described as follows:

- 4.1 There are 6 key performance indicators (KPIs) needed to measure the financial performance of the SME processing cocoa industry.
- 4.2 Key Performance Indicators (KPIs) which are the top priority for performing performance bookkeeping in a financial perspective are indicators related to profit improvement efforts with a weight of 0.326. This performance indicator should get the main attention because it can give the biggest impact on the business improvement of financial performance for cocoa processing industry of Small and Medium scale business.
- 4.3 To optimize the achievement of performance improvement target performance targets, there is a need for strategic steps such as improving customer service, increasing sales volume and value, production cost efficiency to set the selling price of a competitive product.
- 4.4 The priority ranking of KPIs in the financial perspective is the basis for determining the priority of strategies needed to optimize the achievement of financial performance indicator targets in the SME cocoa processing industry in South Sulawesi.

5. References

- [1] Botchkarev, A., and Andru, P. (2011). A Return on Investment as a Metric for Evaluating Information Systems: Taxonomy and Application. *Interdisciplinary Journal of Information, Knowledge, and Management*, 6: 245-269.
- [2] Brigham, E. F. and Gapenski L.C. (1996). *Intermediate Financial Management*, 5th Edition, The Dryden Press, New York.
- [3] Cho, D. (1999). The impact of a price cut on net income and profit margin. *Journal of Financial and Strategic Decisions*, 12(2): 83-94.
- [4] Eggert, A., Hogueve, J., Ulaga, W., Muenkhoff, E., (2014). Revenue and Profit Implications of Industrial Service Strategies. *Journal of Service Research*, 17(1): 23-39.
- [5] Fahmi, I. 2011. *Analisis Kinerja Keuangan*. Cetakan Kesatu. Alfabeta. Bandung.
- [6] Izlavsky O. (2014). The Balanced Scorecard: Innovative Performance Measurement and Management Control System. *Journal Technology Management & Innovation* 9(3): 210-222.
- [7] Kaplan, Robert S. and David P. Norton (1992). The Balanced Scorecard – Measures that Drive Performance. *Harvard Business Review*.
- [8] Lamatinulu and Dahlan, M. 2016. Determination of Key Performance Indicators Priorities aspects of Teaching Learning Process and Atmosphere Academic Study Programs in Private Higher Education. *Research Journal of Applied Sciences*, 11(12): 1495-1500.
- [9] Lamatinulu, 2016. Penerapan konsep Lean dan Six Sigma (DMAIC) dalam penetapan Strategi perbaikan kinerja pada perspektif Konsumen dan Proses Bisnis Internal. *Proceeding Seminar Nasional Manajemen Teknologi XXIV*. 23 Januari 2016, Surabaya, Indonesia. Hal. A.33-1 - A.33-9
- [10] Peterson, M.R., Gordon, G., and Palghat, K.V. (2015). When Sales and Marketing Align: Impact on Performance. *Journal of Selling*, 15(1): 29-43.
- [11] Radovic, M., Karapandzic, S. (2005) *Process Engineering*, Faculty of Organizational Science, Beograd
- [12] Saaty, T.L. 1980. *The analytic hierarchy process*. New York, USA: McGraw Hill.
- [13] Saaty, T. L. (1993). *Decision Making for Leader : The Analytical Hierarchy Process for Decisions in Complex World*,: University of Pittsburgh. Pittsburgh.
- [14] Smith, J. (2001) *The KPI Book*, Insight Training & Development, Stourbridge, England
- [15] Sutrisno, E. 2009. *Manajemen Sumber Daya Manusia*. Edisi Pertama. Cetakan Pertama. Penerbit Kencana. Jakarta.
- [16] Thompson, B.C. (2009). Descriptive Data Analysis. *Air Medical Journal*, 28(2): 56-59
- [17] Tulsian, M. (2014). Profitability Analysis (A comparative study of SAIL & TATA Steel). *IOSR Journal of Economics and Finance*, 3(2): 19-22.
- [18] Velimirović D., Velimirović B, M. (2011). Role And Importance Of Key Performance Indicators Measurement, *Serbian Journal of Management* 6 (1): 63 – 72
- [19] Wang, W. L. (2004) . A Study of Constructing Performance Indicator System. Retrieved on November 6, 2009, from <http://www.manage.org.cn>

● 1% Overall Similarity

Top sources found in the following databases:

- 1% Publications database

TOP SOURCES

The sources with the highest number of matches within the submission. Overlapping sources will not be displayed.

- | | | |
|--|---|---|
| <div data-bbox="135 645 199 734">1</div> | <div data-bbox="239 645 1460 734">West, Douglas, Ford, John, Ibrahim, Essam. "Strategic Marketing", Strat...
Publication</div> | <div data-bbox="1460 645 1549 734"><1%</div> |
|--|---|---|