THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

The Implementation of Balanced Scorecard as Performance Measurement: A Case Study of Palm Sugar Business in Indonesia

Makkarennu
Lecturer, Department of Forestry, Hasanuddin University, Indonesia
Syahidah
Lecturer, Department of Forestry, Hasanuddin University, Indonesia
Diyah Yumeina
Lecturer, Department of Agriculture, Hasanuddin University, Indonesia
Adelia Caroline
Assistant Lecturer, Department of Forestry, Hasanuddin University, Indonesia
Andi Achmad Rizaldy
Assistant Lecturer, Department of Forestry, Hasanuddin University, Indonesia
Dian Ayu Lestari Hasannudin
Assistant Lecturer, Department of Forestry, Hasanuddin University, Indonesia
Andi Mawaddah Zakiyah
Assistant Lecturer, Department of Forestry, Hasanuddin University, Indonesia

Abstract:
One of the leading commodities to support national food security is sugar palm. Food security is a significant issue in efforts to fulfill food needs and community welfare. In implementing palm sugar business management, the problem faced is the management that has not been integrated from upstream (supply of raw materials) to downstream (commercialization of products). For this reason, management integration is needed starting from the procurement and availability of palm sap raw materials as the only source of raw materials, processing palm sugar products, distribution to products to consumers. One of the performance measurement methods used is the Balanced Scorecard method— performance measurement using the Balanced Scorecard, which is then integrated with AHP. The results showed that the palm sugar business could be said to be profitable because the profitability value is > 0, and it can be said to be efficient with a performance value of 89.03.

Keywords: Sugar palm, balanced scorecard, AHP, performance, profitability

1. Introduction

Food security is a significant issue in efforts to fulfill food needs and community welfare. Fulfilling food needs is a challenge because Indonesia is an archipelagic country. In addition, the geographical area of Indonesia is the cause of differences in soil conditions and suitability for certain types of food (Nurhemi et al., 2014). One of the efforts to strengthen food security is to improve the efficiency of marketing products that support food security (Baladina et al., 2014).

One of the leading commodities to support national food security is sugar palm. This commodity produces palm sugar, one of the superior regional commodities in the Sinjai Regency, South Sulawesi. Palm trees can be utilized in almost all tree parts, including the fruit and roots, as medicinal ingredients. Of all these palm derivative products, palm sap as an ingredient for palm sugar production is a derivative product that has the most incredible economic value (Murtado et al., 2014). Palm sugar has many advantages compared to cane sugar because it has a more diverse nutritional content, antioxidant properties, low glycemic index, and good health benefits (Heryani, 2016).

In implementing palm sugar business management, the problem faced is the management that has not been integrated from upstream (supply of raw materials) to downstream (commercialization of products). For this reason, integration of control is needed starting from the procurement and availability of palm sap raw materials as the only source of raw materials, processing palm sugar products, and distributing products to consumers. The business development strategy is carried out by analyzing performance. One of the performance measurement methods that can be used is a Balanced Scorecard method which combines four perspectives, namely one financial and three non-financial perspectives: customers, internal business processes, learning (Riana, 2017); (Prasad, et al. 2021), which is very suitable to be used because it emphasizes not only the financial aspect but also the non-financial aspect (Sirajuddin et al. 2021). The Balanced Scorecard is a new system within the scope of management, which has the concept of measuring business

performance by balancing the measurement of the performance of an organization that has so far been too inclined to financial performance (Syaifatulloh and Heni, 2020). Performance measurement can support goal planning, performance evaluation, strategic policy formulation, tactical and supply chain operations (Sertiawan et al., 2011). Performance measurement using the Balanced Scorecard and integrated with AHP., which has the concept of measuring business performance by balancing the measurement of the performance of an organization that has so far been too inclined to financial performance (Syaifatulloh and Heni, 2020). Performance measurement can support goal planning, performance evaluation, strategic policy formulation, tactical and supply chain operations (Sertiawan et al., 2011). Performance measurement using the Balanced Scorecard, which has the concept of measuring business performance by balanced scorecard the measurement of the performance of an organization that has so far been too inclined to financial performance (Syaifatulloh and Heni, 2020). Performance measurement can support goal planning, performance evaluation, strategic policy formulation, tactical and supply chain operations (Sertiawan et al., 2011).

2. Literature Review

2.1. Palm Sugar

Sugar palm is a type of palm plant that is almost spread throughout Indonesia, where all parts of this plant can be used starting from the sap, the stems, the leaves, and the fibers (Ruslan, et al. 2018). Sugar palm is a plant that has a high ecological function value and is easy to cultivate to support the community's economy (Webliana and Dwi, 2020). Sugar palm is the raw material for sugar production, and the potential of palm sugar in Indonesia is very abundant, where most of it grows as mixed forest. However, the Palm sugar production process is still very traditional, with a very diverse quality (Pontoh, 2014). Palm sugar has many advantages over cane sugar, including more varied nutritional content, antioxidant properties, low glycemic index, fiber, and good health benefits (Heryani, 2016). Small-scale craftsmen and households generally carry out the brown sugar production process, traditionally carried out in rural areas. Critical factors in the manufacture of brown sugar are the quality of the juice, cooking, and packaging (Muchaymien et al., 2014). In addition to printed sugar, the product produced by palm sugar is ant sugar. The product of sugar palm is palm sugar in the form of powder, has a distinctive aroma, and is brownish-yellow in color. The processing of palm sugar is the same as the processing of printed sugar (Mashud, 2012). Ant sugar has low water content, so it is more durable than molded-sugar because its crystal form is more practical to use, and the price of ant sugar is also higher (Fahrizal et al., 2017). Palm sugar can be stored for up to 160 days at a temperature of 150 C and an RH of 77% (Kurniawan et al., 2018).

2.2. Balanced Scorecard

One of the performance measurement methods is the Balanced Scorecard method which combines four perspectives, namely one financial perspective and three non-financial perspectives: customers, internal business processes, learning (Riana, 2017). Performance measurement can support goal planning, performance evaluation, strategic policy formulation, tactical and supply chain operations (Sertiawan et al., 2011). The Balanced Scorecard was developed to measure financial performance and as an essential tool for corporate organizations to reflect new thinking in the era of competitiveness and organizational effectiveness. The concept introduced by Kaplan and Norton as in the book Conceptual Foundation of the Balanced Score (Kaplan, 2010) presents a company performance measurement system using specific criteria, namely: financial perspective, customer perspective, process perspective, and learning perspective. In line with the above, in addition to assisting in organizational effectiveness, especially in decision making, this method is also valuable for evaluating and incentivizing managerial performance.

2.3. Analytical Hierarchy Process (AHP)

The AHP method is carried out by making pairwise comparisons to make decisions based on a predetermined hierarchy (Evan and Rika, 2019). This AHP method can solve very complex problems and is easily simplified, and can provide convenience in every decision based on determining criteria, compiling a hierarchy, and giving comparison values to standards to the ranking process (Yanto, 2021). The application of AHP to expect an immediate solution to the complex problems that we have experienced so far because this process has allowed revisions to be made. Each repetition of this process is like making a hypothesis and testing it again so that, in the end, it will increase understanding of a system. In general, the steps that must take in using AHP to solve problems are:
- Define the problem and determine the desired solution.
- Create a decision hierarchy structure so that it can view from a detailed perspective.

3. Methodology

Data collection was carried out through a Participatory Action Research (PAR) approach. The data to be collected in this study consists of primary data and secondary data. Primary data were obtained through surveys/field observations and interviews with communities/farmer groups in the sample villages, local traders who were directly involved in marketing the selected products, village officials, and Focus Group Discussions. Primary data includes palm sugar resources/potential, environmental resource management, institutions, access to capital, post-harvest processing, the technology used in utilizing and operating palm sugar products, and supply chains and value chains of palm sugar products.

4. Data Presentation and Analysis

The data analysis used in this research is qualitative and quantitative analysis. Qualitative analysis is used to get an overview of the conditions in the palm sugar business. Quantitative analysis is used to see the business analysis and some calculations carried out in this study. Quantitative analysis is used to analyze costs, revenues, profits, profitability, and business efficiency analysis.

4.1. Cost

Costs in the tofu agroindustry consist of variable costs and fixed costs. Total cost is the sum of total fixed costs (TFC) and total variable costs (TVC). The total cost formulation is as follows:

TC = TFC + TVC

Information:
TC = Total Cost (IDR)
TFC = Total Fixed Costs (IDR)
TVC = Total Variable Cost (IDR)

4.2. Revenue

Total income is the result of multiplying the amount of production with the selling price. Mathematically acceptance is written by the formula:

TR = P x Q

Information:
TR = Total Revenue (IDR)
P = Price per kilogram (IDR)

4.3. Profit

Operating profit is the final result of revenue minus the total cost of production. Mathematically profit is written by the formula:

π = TR – TC

Information:
π = Profit (IDR)
TR = Total Revenue (IDR)
TC = Total Cost (IDR)

4.4. Profitability

Profitability is a comparison between the profit from sales with the total cost expressed as a percentage. Mathematically it can be formulated as follows:

Profitabilitas = $\frac{\pi}{TC}$ x100%

Information:
π = Operating Profit (IDR)
TC = Total Operating Costs (IDR)

4.5. Balanced Scorecard Performance Measurement

The performance measurement system in the balanced scorecard concept consists of four perspectives, namely financial perspective, customer perspective, internal business process perspective, and learning and growth perspective.

5. Results

5.1. Efficiency Analysis

5.1.1. Palm Sugar Processing Business

Cost Description		Unit	Number of Units	Price (IDR)	Amount (IDR)
1.	Variable cost				
a.	Purchasing Nira	L	192.000	1.500	288.000.000
b.	Direct Labor	HOK	12	10.000.000	120.000.000
c.	Office Operations	Unit	12	2.500.000	30.000.000
2.	Fixed cost				
a.	Workforce in the Family (HOK)	HOK	36	3.000.000	108.000.000
b.	Factory fixed cost	Unit	12	10.000.000	120.000.000
c.	Depreciation	Unit	1	174.000.000	174.000.000
Total Biaya					840.000.000

Table 1: Palm Sugar Processing Business

Operating costs consist of fixed costs and variable costs. Based on the table above, can explain that the total costs incurred are IDR. 840.000.000/year. Variable costs consist of the purchase of sap, office operations, and direct labor.

5.1.2. Profit and Profitability

Cost Description	Average Production (kg/year)	Price (IDR/kg)	Total Revenue (IDR)
Palm Sugar	24.000	80.000	1.920.000.000
Total Cost (IDR)			840.000.000
Profit (IDR)			1.080.000.000
Profitability (%)			128,57

Table 2

The table above shows the production of the palm sugar business. The annual production of palm sugar is 24,000 kg/year at a price of IDR.80,000/kg. So, the total revenue is IDR. 1,920,000,000. The profit earned is IDR. 1,080,000,000. Profitability is a comparison between profits and total costs. The profitability value of the palm sugar business is 128.57, and this shows that every use of production input of IDR. 1.00 will generate a profit of IDR. 128.57, so the palm sugar business can be profitable because the profitability value is > 0.

5.1.3. Palm Sugar Business Revenue

No	Description	Business Efficiency
1	Total Cost (IDR)	840.000.000
2	Revenue (IDR)	1.080.000.000
3	Business Efficiency (R/C Ratio)	2,28

Table 3

The table above shows that the business efficiency is 2.28, which indicates that the palm sugar business has been efficient. The R/C value (2.28) indicates that every IDR 1.00 of the costs incurred will provide an income of 2.28 times the costs incurred.

5.2. Balanced Score

Performance measurement is carried out to assess the progress that the company has achieved based on predetermined goals. One of the performance measurement methods that can use is the Balanced Scorecard method which combines four perspectives, namely one financial perspective and three non-financial perspectives: customers, internal business processes, learning (Riana, 2017). The Balanced Scorecard is used to complement the measurement of financial performance and as an essential tool for corporate organizations to reflect new thinking in the competitive era and organizational effectiveness. The concept introduced by Kaplan and Norton as in the book Conceptual Foundation of the Balanced Score (Kaplan, 2010) presents a company performance measurement system using specific criteria, namely: financial perspective, customer perspective, process perspective, and learning perspective. The current highly competitive market conditions are more concerned with balancing financial and non-financial data in management reporting and recording. Therefore, the Balanced Score was developed as a modern performance evaluation procedure to overcome the defects of the performance measurement system adopted so far by introducing these four perspectives. (Prasad, et al. 2021).

In line with the above, in addition to helping in organizational effectiveness, especially in decision making, this method is also valuable for evaluating and incentivizing managerial performance. Financial and non-financial perspectives used as benchmarks in assessing performance measurement in this business are finance, customers, internal business processes, and learning and growth.

No	Perspective	Weight
1	Finance	0,090
2	Customer	0,449
3	Internal Business Process	0,281
4	Learning and Growth	0,180
	Inconsistency Ratio	0,0

Table 4

The table above shows that the customer perspective has the highest weight with a weighted value of 0.449, and finance has the lowest weight with a weighted value of 0.090.

5.2.1. Financial Perspective

Measurement of financial performance shows whether the planning that has been prepared and the implementation of the strategy can provide fundamental improvements to the company's profits. These improvements are

reflected in targets specifically related to increased sales, efficiency in production costs, and increased profit margins. The following is a performance assessment based on a financial perspective.

No	Strategic Goals	Weight
1	Increase sales	0,537
2	Production cost-efficiency	0,268
3	Increase profit margin	0,195
	Inconsistency Ratio	0,1

Table 5

The table above shows a financial perspective that has three strategic objectives. The strategic aim with the highest weighted value is increasing sales with a weighted value of 0.537. The strategic objective with the lowest weighted value is increasing the profit margin with a weighted value of 0.195.

5.2.2. Customer Perspective
The company performs on customer satisfaction, increasing market share, and increasing customer profitability from the customer perspective. Companies must be able to find out what customer expectations of the company and vice versa. Relating to the customer perspective also means relating to customer satisfaction. In the balanced scorecard concept, the indicators used to measure the customer perspective are measuring the customer's core and the customer's value proposition.

No	Strategic Goals	Weight
1	Customer satisfaction	0,334
2	Increase Market Share	0,525
3	Increase customer profitability	0,142
	Inconsistency Ratio	0,05

Table 6

The table above shows the customer perspective. The customer perspective has three strategic objectives: customer satisfaction, market share, and customer profitability. The strategic aim with the highest weighted value is increasing market share with a weighted value of 0.525. The strategic objective with the lowest weighted value is to increase customer profitability with a weighted value of 0.142.

5.2.3. Internal Business Process Perspective
Internal business process perspective is a series of activities within the organization to create quality products/services to meet customer expectations. The balanced scorecard approach in the perspective of internal business processes focuses on three main processes: the Innovation process, the operation process, and the Post-sales service process. To translate the three business processes, the perspectives used to measure performance are quality optimization, production process effectiveness, and supply chain development. The following is the performance value on the three business processes that the company has set.

No	Strategic Goals	Weight
1	Quality optimization	0,640
2	Production process effectiveness	0,206
3	Supply chain development	0,154
	Inconsistency Ratio	0,1

Table 7

The table above shows an internal business process perspective that has three strategic objectives. The highest value weight is in the strategic goal of quality optimization with a weight value of 0.640. The lowest value is in the strategic plan of supply chain development, with a weighted value of 0.154.

5.2.4. Learning and Growth Perspective
The learning and growth perspective in measuring performance describes the organization's ability to make improvements by utilizing its resources. Employees or employees are company assets, and their welfare must be monitored and monitored to maintain performance and increase team member capabilities. There are two main factors or strategic objectives in measuring the learning and growth perspective, namely improving team member skills and team member productivity as presented in the following table :

No	Strategic Goals	Weight
1	Team member skill improvement	0,750
2	Team member productivity	0,250
	Inconsistency Ratio	0

Table 8

The table above shows the learning and skills perspective, which consists of 2 strategic objectives. The strategic goal with the highest score is improving team member skills with a weighted value of 0.750. The strategic plan with the lowest weighting value is team member productivity with a weighted value of 0.250. The following is the measurement of the percentage of performance based on strategic objectives and themes in four perspectives:

5.2.4.1. Financial Perspective

Strategic Theme	Strategic Goals	Measurement
Increase income	Increase sales	Sales Percentage
	Production cost-efficiency	Percentage of production cost-efficiency
	Increase profit margin	Percentage increase in profit margin

Table 9

5.2.4.2. Customer Perspective

Strategic Theme	Strategic Goals	Measurement
The increasing number of customers	The increasing number of customers	Percentage of customer satisfaction with the product
	Increase Market Share	Number of market segments controlled by the company
	Increase customer profitability	Profit percentage from product sales

Table 10

5.2.4.3. Internal Business Process Perspective

Strategic Theme	Strategic Goals	Measurement
Product quality improvement	Quality optimization	The standard number of products
	Production process effectiveness	Number of products produced
	Supply chain development	Supply chain model from upstream to downstream

Table 11

5.2.4.4. Learning and Growth Perspective

Strategic Theme	Strategic Goals	Measurement
HR Quality Improvement	Team member skill improvement	Adding team member skills
	Team member productivity	Amount of time to complete the activity

Table 12

The use of the Balanced Scorecard provides benefits for organizations, including improving communication between individuals the organization. Management can focus on the overall organizational process, bringing each unit in the organization to the same direction, namely serving the community, motivating employees, improving the reward system, and increasing team member satisfaction. Some of the obstacles that be solved are the organization's inability to choose and use appropriate performance measures, the failure of the organization's information system, commitment from management, lack of human resources, and decision-making authority.

5.3. Performance Measurement

The Balanced Scorecard that has been designed starting from the strategic objectives, strategy measures, weights, targets, and strategic initiatives, is grouped into a scorecard based on their respective perspectives. The achievement of each strategic goal is calculated by multiplying the weights to get a performance score. The performance scores of each strategy target will be added up from each perspective and become a performance score for palm sugar exploitation. The performance measurement table can be seen below.

Strategic Target	Realization	Target	Achievement	Sub Weight	Weight	Score
Finance						
Increase Sales	76.67	81.33	94.26	0.537	9.64	9.08
Production Cost Efficiency	66.67	73.33	90.91	0.268	9.29	8.45
Profit Margin	56.67	65.33	86.73	0.195	8.87	7.69
Sub-Total			271.91	1.00	27.80	25.22
Customer						
Customer satisfaction	65.00	72.00	90.28	0.334	9.23	8.33
Increase Market Share	60.00	68.00	88.24	0.525	9.02	7.96
Customer Profitability	58.33	66.67	87.50	0.142	8.95	7.83
Sub-Total			266.01	1.00	27.20	24.12
Internal Business						
Quality Optimization	65.00	72.00	90.28	0.64	9.23	8.33
Production Process Effectiveness	61.67	69.33	88.94	0.206	9.09	8.09
Supply Chain Development	71.67	77.33	92.67	0.154	9.47	8.78
Sub-Total			271.89	1.00	27.80	25.20
Development & Growth						
Team member Skills Improvement	55.00	64.00	85.94	0.75	8.79	7.55
Team member Productivity	48.33	58.67	82.39	0.25	8.42	6.94
Sub-Total			168.32	1.00	17.21	14.49
Total		978.136			89.03	

Table 13

The table above shows the results of measuring the performance of the palm sugar business in Bonto Sinala Village, Sinjai Borong District, Sinjai Regency. Based on the table above, it is known that the performance value in palm sugar exploitation is 89.03. This score is obtained from the financial perspective contribution of 25.22. The customer perspective contributed 24.12, the internal business perspective contributed 25.20, and the development and growth perspective contributed 14.49.

6. Conclusion

This study summarizes that the palm sugar business shows a profitability value > 0, which is profitable. In terms of business efficiency, it shows that the palm sugar business has been efficient. Performance measurement with a balanced score indicates that the customer perspective has the highest weight and the financial view has the lowest. The financial outlook, which has three strategic objectives, shows that the highest weight value increases sales. The strategic goal, which has the lowest weight value, is increasing profit margins. The customer perspective, which also has three strategic objectives, shows that the highest weighted value increases market share. The strategic goal with the lowest weight value is on the strategic plan of growing customer profitability. The internal business process perspective also has three strategic objectives. The highest value weight is on the strategic goal of optimizing quality. The lowest score is the supply chain development strategic plan, with the performance value in palm sugar exploitation being 89.03.

7. References

i. Baladina N, Anindita R, Setiawan B. (2014). Penguatan Ketahanan Pangan Nasional Melalui Strategi Perbaikan Efisiensi Pemasaran Hasil Pertanian. SEPA. 11 (1): 55 – 65.

ii. Evan, R., dan Rika, H. (2019). Metode Analitical Hierarchy Process (AHP) dalam Pemilihan Umum Presiden Indonesia 2019. Jurnal Nasional Informatika dan Teknologi Jaringan. Vol 3 (2) : 297-306.

iii. Fahrizal, Nggandung, Y., &Kartiwan. (2017). Optimasi Produksi Gula Cetak dan Gula Semut Lontar Terintegrasi Dengan Metode Linear Programming. Seminar Nasional Hasil Penelitian (SNHP)-Vii Lembaga Penelitian dan Pengabdian Kepada Masyarakat Universitas PGRI Semarang: 505 –510.

iv. Heriyani, H. (2016). Keutamaan Gula Aren & Strategi Pengembangan Produk. Lambung Mangkurat University Press. Banjarmasin.

v. Kaplan, R.S. (2010). Conceptual Foundation of the Balanced Scorecard. Working Paper. Harvard Business School, Harvard University.

vi. Kurniawan, H. Bintoro, N. Nugroho, J. (2018). Pendugaan Umur Simpan Gula Semut dalam Kemasan Dengan Pendekatan Arrhenius. Jurnal lmiah Rekayasa Pertanian dan Biosistem. 6 (1) : 93-99

vii. Mashud, N. (2012). Aren Sebagai Sumber Pangan. Prosiding seminar Nasional Aren. Bogor. Pusat Penelitian dan Pengembangan Perkebunan.

viii. Muchaymien Y, Rangga A, Nuraini F. (2014). Penyusunan Draft Standard Operating Procedure (SOP) Pembuatan Gula Merah Kelapa (Studi Kasus di Pengrajin Gula Merah Kelapa Desa Purworejo Kec. Negeri Katon Kab. Pesawaran). Jurnal Teknologi Industri dan Hasil Pertanian. Vol 19 (2): 205-217.

ix.   Nurhemi, Shinta, R.I, Soekro, Guruh, S. R. (2014). Pemetaan Ketahanan Pangan di Indonesia : Pendekatan TFP dan Indeks Ketahanan Pangan. Working Paper. Bank Indonesia.

x.   Pasad, K, et al. (2021). Performance Evaluation of an Insurance Company Using an Integrated Balanced Scorecard (BSC) and Best-Worst Method (BMW). Management and Engineering. Vol 4 (1). 33-50.

xi.   Pontoh, J. dan Wuntu A. (2014). Perbaikan Proses Pembuatan Gula Merah Aren di Pabrik Gula Aren Masarang Tomohon. Jurnal MIPA Universitas Sam Ratulangi Online 3(2). Manado.

xii.   Riana, D.H. (2017). Pengukuran Kinerja Perusahaan PT. Indofood dengan Menggunakan Balanced Scorecard. Jurnal Sekuritas, Vol.1. No.2, hal 42-53.

xiii.   Ruslan, S., M., Baharuddin., dan Ira, T. (2018). Potensi dan Pemanfaatan Tanaman Aren (Arenga pinnata) dengan Pola Agroforestri di Desa Palakka, Kecamatan Barru, Kabupaten Barru. Jurnal Perennial. Vol 14 (1) : 24-27.

xiv.   Sertiawan S, Marimin, Arkeman Y, Udin F. (2011). Studi Peningkatan Kinerja Manajemen Rantai Pasok Sayuran Dataran Tinggi Jawa Barat. Agritech, Vol. 31 (1), 60 -70.

xv.   Sirajuddin, Annihlah, dan Shanti, K., A. (2021). Usulan Peningkatan Kualitas Kinerja Layanan Kesehatan Menggunakan Integrasi Metode Balance Scorecard, AHP, dan Omax (Studi Kasus : Pusksmas Ciwandan). Journal Industrial Services. Vol 7 (1). 176-183.

xvi.   Syaifatulloh, W., N dan Heni, H. (2020). Penerapan Metode Balance Scorecard Sebagai Alat Analisis Pengukuran Kinerja Perusahaan. Jurnal Akutansi dan Bisnis. Vol 6 (2). 62-77.

xvii.   Webliana, K, dan Dwi, S., R. (2020). Potensi dan Pemanfaatan Tanaman Aren (Arenga pinnata) di Hutan Kemasyarakatan Aik Bual Kabupaten Lombok Tengah. Jurnal AGROHITA. Vol 5 (1) : 25-35.

xviii.   Yanto, M. (2021). System Penunjang Keputusan dengan Menggunakan Metode AHP dalam Seleksi Produk. Jurnal Teknologi dan Informasi Bisnis. Vol 3 (1) : 167-174.