

Analysis of Production Area Planning at the CV. Victo Bandar Lampung Furniture Company

Rika Triana¹, Defrizal²

Bandar Lampung University, Indonesia

E-mail: Rika.20011404@student.ubl.ac.id¹, defrizal@ubl.ac.id²

Abstract

The research carried out aims to determine efficient planning in terms of production area at the CV furniture company. Victo in Bandar Lampung. The approach used in this research involves quantitative descriptive analysis, with forecasting techniques using the Linear Trend method and Break Event Point analysis for data accuracy. The information obtained in this study comes from primary and secondary sources. Primary sources include direct interviews with company managers, while secondary sources are collected from company history. This data collection method includes interviews, direct observation, and review of related documents. The results of the research show that the production area for the coming year will be 533 units of cupboard products in 2023, 566 cupboard product units in 2024 and 600 cupboard product units in 2025, so that the CV. Victo furniture company in 2023-2025 will experience an increase of 6% of production area every year due to increasing trend demand. It is recommended that companies design their production area planning by applying the Linear Trend forecasting method and carrying out Break Event Point analysis to optimize their production processes and this research is expected to provide information for consideration for the company's progress. By knowing the correct production area planning calculations, it is hoped that the company's efficiency will increase so that it can reduce excessive production amounts and obtain even greater sales profits because needs have been well estimated.

Keywords Production Planning, Production Area, Forecasting, Linear Trend Analysis, Break Event Point.

INTRODUCTION

In a business, business actors need extensive production planning to produce a product. Producing more goods, both in quantity and type, can increase production area. To optimize company profits, determining the production area requires precise calculations. By managing inventory carefully, companies can avoid excess or shortage of stock, because excess stock will increase inventory costs and lead to higher risks. (Naisoko et al., 2020);(Haobenu et al., 2021).

Manufacturing companies, especially small and medium scale companies, often experience problems with inefficient extensive production planning. This occurs because their human resources do not have the ability to implement such planning. (Akanke et al., 2019). Companies can experience excess or shortage of inventory due to incorrect production planning. (Mariani, 2022)

CV.Victo is an individually owned company in the furniture/furniture and interior sector which carries out its activities located on Jl. Buton Jagabaya III Island, Way Halim District, Bandar Lampung City. The products produced are in the form of household furniture. In its sales, this company most commonly produces cupboards which are almost daily produced and some are sold based on customer orders.



One of the problems faced by CV.Victo is the lack of effective production area planning, because currently the company only relies on estimates of sales results for the previous period without using systematic analysis methods, the result of which is excess inventory from daily production. This can result in inefficiencies in the use of resources, increased production costs, missed sales opportunities and also affect the company's storage capacity.

Table 1. Sales Data for 2018-2022

Year	Number of sales / years (units)	Excess inventory / year (units)
2018	384	8
2019	432	12
2020	336	17
2021	480	14
2022	528	8

Source: CV Company. Victo Bandar Lampung, processed (2023)

From this, to get a more accurate production area planning, careful calculations are required. Using sales in the previous period to forecast production can be used to determine the area of production using Trend Linear forecasting and Break Even Point (BEP) analysis to find out whether the production calculation has reached the break-even point.(Tefa et al., 2022). The aim of this research is to determine an accurate production plan for the CV furniture company. Victo Bandar Lampung

LITERATURE REVIEW

Production planning

The production planning process involves determining production activities, determining the volume of activities that need to be carried out, and scheduling these activities for the future period (Suciyati, 2019). Based on the company's historical experience, demand forecasting is an important basis for developing a company's production strategy. This forecasting activity has a crucial role in various aspects of company decision making, including managing inventory, developing new products, planning production stages, and managing the flow of goods supply. (Soeltanong & Sasongko, 2021).

Production planning is carried out to adapt to market demand, manage product availability, with the hope of accommodating variations in product sales in stages (Darmayanti, 2016). Proper production planning can help anticipate future sales declines or increases (Reicita, 2020). Production planning is an important need as a managerial decision because good production planning is expected to reduce production costs and additional costs which will ultimately increase profits or reduce losses. (Alam & Neliedia, 2021)

Production area

Production capacity refers to determining the quantity and variety of products that a company needs to process during a certain period. This requires companies to not only decide on the amount of production, but also on the variety of products to be made. This decision was taken with the aim of optimizing profits by utilizing all available resources. (Haobenu et al., 2021).

To minimize waste and losses arising from the use of raw materials and supporting materials, it is very important for companies to determine production volumes that are in line with market needs. (Umbu Reku Raya, et al: 2021). Errors in determining production quantities can result in excess products that are not sold. On the other hand, managing production factors efficiently can enable companies to produce goods that can be sold at better profits (Sunarso, 2008).

How to Measure Production Area

In calculating the production area, there are many factors that influence it. There are five factors that influence the determination of the production area, namely:

- 1) Use of raw materials in the production process.
- 2) Variations and types of products produced.
- 3) Tools and machines used in the manufacturing process.
- 4) Number of employees involved in the production process.

How to Determine Production Area

Companies can determine their production area using a variety of methods. Each method has certain advantages and conditions for its use. Every company must find the most appropriate method to maximize production at the most efficient cost.

1. Forecasting Method

Forecasting is the science of utilizing data from the past to predict future outcomes (Suciyati, 2019). Forecasting methods are divided into three, namely:

- Long-term forecasting uses data from a long time, usually more than two years.
- Medium-term forecasting using data from three months to two years.
- Short-term forecasting uses data from 0 to 3 months.

From the equation above, you can get the right production capacity for production activities. Several models that can be used to calculate forecast production are the free trend model, semi-average trend model, Moment model, least squares model, and regression model.

2. Break Event Point Method

An analytical method known as break-even analysis focuses on understanding the correlation between sales numbers and a company's profitability. Through this analysis, the company can determine the point at which revenue from sales is able to cover the costs incurred, and can show at what point the company will make a profit or loss, depending on whether sales are above or below the break-even figure. (Maruta, 2018).



METHOD

This research is a type of quantitative descriptive research, which collects and processes quantitative data. The quantitative descriptive method aims to use numbers to describe a situation objectively, starting from data collection, interpretation, to appearance and results. This research was conducted at the CV furniture company. Victo Bandar Lampung with the aim of determining an accurate production plan.

In this study, the information used is divided into two types: primary sources and additional sources. The main sources include information gathered directly from interviews with company managers, which includes details about the production process, raw material consumption, and labor costs. Meanwhile, additional sources were obtained from analysis of company documents, including records about demand or sales of furniture products from the period 2018 to 2022, which have been collected by researchers directly.

The method chosen to collect data in this research includes three main approaches: in-depth interviews, direct observation, and document examination. In order to estimate production area, this analysis relies on linear trend calculation techniques based on furniture product sales data. This technique is used to project estimated product sales in the time period between 2023 and 2025.

To make predictions, the model used is linear regression using the following equation: $Y' = a + bx$, and the values of a and b

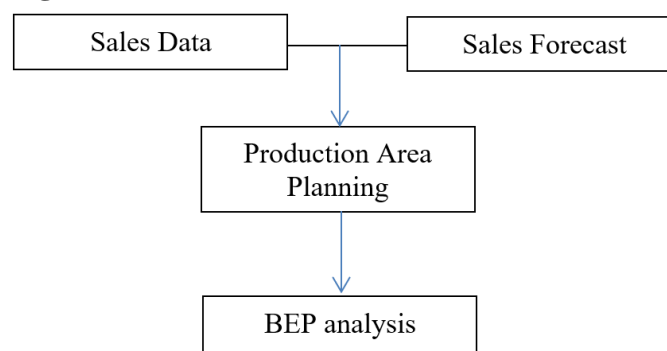
$$a = b = \frac{\sum y \sum xy}{n \sum x^2}$$

Furthermore, this research also includes break-even point calculations (Break Even Point - BEP) for the 2023–2025 period, to assess when the company can reach production levels that are not loss-making or profitable. This BEP calculation was carried out using a formula established by Alnasser and his colleagues in 2014.

$$BEP(X) = \frac{F}{P - V}$$

Information: V = Variable Costs, F = Fixed costs, P = Price per unit, X = Number of product units at BEP.

Framework of Thinking



One way to calculate the production area is to use forecasting techniques to calculate projected product sales in the previous year. Forecasting is a way of thinking about a quantity, such as demand for a particular product in the future (Naisoko et al., 2020).

From the framework above, it is explained that to determine production area planning, the first thing is to collect production sales data from the previous year, after that calculate the sales forecast where the data to be processed is data from production sales from the previous year using the Linear equation method. The results of the sales forecast can be used as a basis for planning the area of production in the future. Apart from using forecasting, production area planning can also be done using Break Event Point analysis, where the break-even point is determined, and the planned production area must be greater than the break-even point. (Tefa et al., 2022) and if the forecast results are higher than the break-even point then the forecast results are used to determine the production area.

RESULTS AND DISCUSSION

Raw materials and supporting materials are materials that companies need to support the production process, both of which are very important components in the production process. Therefore, raw materials must be considered carefully and accurately.

In a week, the company is able to produce 8-11 units of cupboards which are in accordance with the average production requirements per cupboard item, namely 100×60×200 in size. To make 1 unit of wardrobe furniture measuring 100×60×200 you need 3 pieces of multimin, 4 pieces of miccaewood, 2 pieces of HPL, 168 ½ gallons of glue, 3 pairs of hinges, 1 pair of rails and 20 screws.

The equipment used to expedite the production process is 4 units of cutting machines (serkels), 4 units of propyl machines (ruters), 6 units of drills, 3 units of grinders, 1 unit of spet, 3 units of compressors, 4 units of nail gun machines, 3 units hammer, 2 units saw and 5 units screwdriver.

Sales forecasting

The data analysis used to predict sales is by using Linear Trend forecasting to determine the number of sales of furniture products in 2023-2025. The forecast can be calculated as follows:

Table 2. Sales Forecasting Calculations

Year	Sales (y)	X	Xy	X ²
2018	384	-2	-768	4
2019	432	-1	-432	1
2020	336	0	0	0
2021	480	1	480	1
2022	528	2	1,056	4
Σ	2,160	0	336	10

Source: 2023 data processing



The Linear Trend Equation is $Y' = a + bx$ and the values of a and b can be calculated as follows:

$$a = 432 = \frac{\sum y}{n} = \frac{2.160}{5}$$

$$b = 33.6 = \frac{\sum xy}{x^2} = \frac{336}{10}$$

The Linear Trend Equation becomes:

$$Y = 432 + 33.6(x)$$

So based on the calculations above, the sales forecast for 2023-2025 is calculated as follows:

Year 2023 = (year $x=3$)
 = $432 + 33.6(3)$
 = $432 + 100.8$
 = 532.8
 = 533 units of cupboard products

Year 2024 = (year $x=4$)
 = $432 + 33.6(4)$
 = $432 + 134.4$
 = 566.4
 = 566 units of wardrobe products

Year 2025 = (year $x=5$)
 = $432 + 33.6(5)$
 = $432 + 168$
 = 600 units of wardrobe products

The calculation of the sales forecasting results above can be used as a basis for determining the production area for 2023-2025 which is summarized in table 3.

Table 3. Production area of the CV. Victo furniture company in 2023-2025

Year	Production area / unit
2023	533
2024	566
2025	600

Source: Data processing results, 2023

Based on the table above, it can be concluded that in 2023-2025 it is predicted that the CV. Victo Bandar Lampung company will produce 533 units of cupboards in 2023, 566 units of cupboards in 2024 and 600 units of cupboards in 2025. The results of this forecast can be used as a basis to determine the company's future production area.

Forecasting results are not sufficient to be used as a reference for determining production area, therefore BEP calculations are needed to determine the lower limit of planned production area, because there will be losses if the planned production area obtained from forecasting results is smaller than the break-even point. (Tefa et al., 2022)

The initial step is to calculate the variable costs of raw materials by using the results of forecasting the number of units of cupboard products produced to determine the raw material planning for making cupboards. The calculation method is the result of forecasting the production area in 2023 multiplied by the number of raw materials needed to make 1 unit, such as 533 units of cabinets \times 3 multi-sheets = 1,599 pieces.

Year 2023

- Multimin = 533×3 = 1,599 lbr
- Miccaewood = 533×4 = 2,132 lbr
- Hpl = 533×2 = 1,066 lbr
- Glue 168 = $533 \times \frac{1}{2}$ = 267 gln
- Hinge = 533×3 = 1,599 psg
- Rail = 533×1 = 533 psg
- Screw = 533×20 = 10,660 = 11 sec

Year 2024

- Multimin = 566×3 = 1,698 lbr
- Miccaewood = 566×4 = 2,264 lbr
- Hpl = 566×2 = 1,132 lbr
- Glue 168 = $566 \times \frac{1}{2}$ = 283 gln
- Hinge = 566×3 = 1,698 psg
- Rail = 566×1 = 566 psg
- Screw = 566×20 = 11,320 = 11 sec

Year 2025

- Multimin = 600×3 = 1,800 lbr
- Miccaewood = 600×4 = 2,400 lbr
- Hpl = 600×2 = 1,200 lbr
- Glue 168 = $600 \times \frac{1}{2}$ = 300 gln
- Hinge = 600×3 = 1,800 psg
- Rail = 600×1 = 600 psg
- Screw = 600×20 = 12,000 = 12 sec

The raw material planning for 2023-2025 is summarized in Table 4 as follows:

Table 4. Planning for raw materials for cabinet production in 2023-2025

Raw material	2023	2024	2025
Multimin (sheet)	1,599	1,698	1,800
Miccaewood (sheet)	2,132	2,264	2,400



Hpl (sheet)	1,066	1,132	1,200
Glue 168(small gallon)	267	283	300
Hinges (install)	1,599	1,698	1,800
Rail (install)	533	566	600
Couplers (box)	11	11	12

Source: data processing results, 2023

Next, to calculate the amount of labor required as part of variable costs, use the following formula:

$$\text{Labor productivity in 2022} = \frac{\text{Production area in 2022}}{\text{number of workers in 2022}} = \frac{536}{6} = 89.33$$

The calculation of the number of workers required for 2023-2025 uses the formula for planned production numbers divided by labor productivity, namely:

$$\text{Year 2023} = 533 : 89.33 = 5.96 = 6 \text{ people}$$

$$\text{Year 2024} = 566 : 89.33 = 6.33 = 6 \text{ people}$$

$$\text{In 2025} = 600 : 89.33 = 6.71 = 7 \text{ people}$$

Based on the calculations above, the number of workers in 2023-2025 will increase to 6-7 workers.

To calculate BEP, variable costs, fixed costs and unit price per product are required.

- Variable costs consist of direct labor costs and raw material costs.

The way to calculate direct labor costs is by multiplying the variable costs per worker times the number of workers. The weekly labor salary is Rp. 1,500,000,- × 1 month, namely Rp. 6,000,000,- × 6 workers, then the work costs per month are Rp. 36,000,000,- × 12 months, so the annual direct work costs are equal to Rp. 432,000,000,-.

Raw material costs are calculated based on raw material planning calculations for 2023-2025 and can be calculated including raw material use, unit price and quantity. The calculation of raw material costs is in table 5.

Table 5. Calculation of raw material costs for 2023-2025

Year	Name of goods	Raw materials used	Unit Price (Rp)	Amount (Rp)	Total (Rp)
2023	Multimin	1,599 (lbr)	140,000	223,860,000	651,230,000
	Micca wood	2,132 (lbr)	95,000	202,540,000	
	Hpl	1,066 (lbr)	125,000	133,250,000	
	Glue 168	267 (gln)	180,000	48,060,000	
	Hinge	1,599 (psg)	15,000	23,985,000	
	Rail	533 (psg)	35,000	18,655,000	
	Screw	11 (noun)	80,000	880,000	

2024	Multimin	1,698 (lbr)	140,000	237,720,000	691,400,000
	Miccawood	2,264 (lbr)	95,000	215,080,000	
	Hpl	1,132 (lbr)	125,000	141,500,000	
	Glue 168	283 (gln)	180,000	50,940,000	
	Hinge	1,698 (psg)	15,000	25,470,000	
	Rail	566 (psg)	35,000	19,810,000	
	Screw	11 (noun)	80,000	880,000	
	2025	Multimin	1,800 (lbr)	140,000	
Miccawood		2,400 (lbr)	95,000	228,000,000	
Hpl		1,200 (lbr)	125,000	150,000,000	
Glue 168		300 (gln)	180,000	54,000,000	
Hinge		1,800 (psg)	15,000	27,000,000	
Rail		600 (psg)	35,000	21,000,000	
Screw		12 (sec)	80,000	960,000	

Source: data processing, 2023

Based on the data above, it is the result of calculating the planning costs for raw materials with the note that the management of raw material purchases is not carried out all at once but rather makes purchases in stages according to the needs that will be used.

- Fixed costs consist of annual factory overhead costs, annual general administration costs and other costs. The following is a calculation of annual depreciation costs.

Table 6. Annual Depreciation Costs for CV. Victo Company

Equipment type	Amount (units)	Unit price (Rp)	Initial cost of product (P)	Economical life (N)	Annual Depreciation Fee
Cutting machine (serkel)	4	1,500,000	6,000,000	6 years	1,000,000
Propyl machine (ruter)	4	1,200,000	4,800,000	3 years	1,600,000
Drill	6	800,000	4,800,000	3 years	1,600,000
Grinding	3	450,000	1,350,000	4 years	337,500
Spet	1	250,000	250,000	2 years	125,000
Compressor	3	4000,000	12,000,000	10 years	1,200,000
Nail shooting machine	4	175,000	700,000	1 year	700,000
TOTAL Rp. 6,562,500,-					

Source: data processing results, 2023



The following is a calculation of factory overhead costs, administrative and general costs and other costs:

Factory overhead costs.

Electricity×12	= Rp. 18,000,000,-
Telephone/wifi×12	= Rp. 3,564,000,-
Transportation/ year	= Rp. 6,600,000,-
Annual Depreciation Fee×12	= Rp. 78,750,000,-
Amount	= Rp. 106,914,000,-
Administration and general fee	
Tax / year	= Rp. 3,500,000,-
Other costs	
Initial capital	= Rp. 245,000,000,-
Wagesmanager ×12	= Rp. 48,000,000,-
ATK×12	= Rp. 600,000,-
Cleaning fees×12	= Rp. 600,000,-
Amount	= Rp. 294,200,000,-

Furthermore, to find out the BEP in 2023–2025, it is necessary to calculate fixed and variable costs. The calculation is as follows:

- **Fixed cost**

Costs are projected to remain the same in 2023-2025, i.e

$$\text{IDR } 106,914,000,- + \text{IDR } 3,500,000,- + \text{IDR } 294,200,000,- = \text{IDR } 404,614,000,-$$

- **Variable Costs**

$$\text{Variable costs per unit of goods} = \frac{\text{Variable costs}}{\text{Production quantity}}$$

The variable costs obtained per unit of goods in 2023 are IDR 2,032,327/product unit, IDR 1,984,806/product unit in 2024 and IDR 1,941,601/product unit in 2025.

From the results of the calculation data above, the Break Even Point (BEP) can be calculated using the formula (Alnasser et al., 2014)

$$\text{BEP}(X) = \frac{F}{P-V}$$

Information: V= Variable Costs, F= Fixed costs, P= Price per unit, X = Number of product units at BEP.

The selling price for 1 unit of cupboard measuring 100×60×200 is Rp. 3,500,000,- the same as the previous price.

$$F= \text{Rp. } 404,614,000$$

$$P= \text{Rp. } 3,500,000$$

$$V= \text{IDR } 2,032,327 \text{ (2023), IDR } 1,984,806 \text{ (2024) and IDR } 1,941,601 \text{ (2025)}$$

So, the results of the BEP calculation for 2023-2025 are as follows:

- BEP 2023, (X) = 276 units of cupboard products
- BEP 2024, (X) = 267 units of cupboard products

- BEP 2025, (X) = 260 units of cupboard products

Results of production area planning at the CV furniture company. Victo is obtained from the results of projecting the number of unit sales of wardrobe products over the last 5 years using sales forecasting which was ultimately obtained due to the increasing demand trend. Therefore, the production area results for the coming year will be 533 units of cupboard products in 2023, 566 cupboard product units in 2024 and 600 cupboard product units in 2025. It can be seen that by using the Linear Trend forecasting method the straight-line trend equation is obtained. The positive result is 33.6, this means that the average sales each year will show an increase of 34 units of wardrobe products per year or an increase of around 6% in production area each year.

Calculating production area planning using forecasting alone is not efficient enough, therefore a Break Event Point analysis is needed so that it is known that the production area planning has reached its break-even point because sales will only be considered profitable if they exceed the BEP. (Tefa et al., 2022) However, if the forecast results are below the break-even point, the company will suffer a loss (Jayanti & Hartanti, 2019). From the results of the unit BEP calculation, the results obtained are smaller than the forecast results, namely 276 units of cupboard products in 2023, 267 units of cupboard products in 2024 and 260 units of cupboard products in 2025, which is the break-even point limit, and the forecast results are superior. rather than the results of the BEP calculation. Therefore, the results of forecasting calculations using the Linear Trend method can be used as a reference in determining future production areas at the CV. Victo Bandar Lampung furniture company.

CONCLUSIONS

From the evaluation of existing data, it was revealed that CV. Victo, a company operating in the furniture manufacturing sector, has not adopted a structured analytical approach to forecast its production needs. This condition has an impact on creating a product surplus every year. Therefore, it is recommended that companies design their production area plans by applying the Linear Trend forecasting method and carrying out Break Event Point analysis to optimize their production processes.

The production area planning using linear model forecasting analysis obtained a production area of 533 units of cupboard products in 2023, 566 units of cupboard products in 2024 and 600 units of cupboard products in 2025. From the results of this planning the company will experience an increase of 6% in the area. production every year, whereas in calculations using Break event Point planning the production area is 276 units of wardrobe products in 2023, 267 units of wardrobe products in 2024 and 260 units of wardrobe products in 2025. Therefore, the results of forecasting calculations using the Linear Trend method can be used as a reference in determining future production areas at the CV. Victo Bandar Lampung furniture company.

It is hoped that this research can provide information as a consideration for the company's progress. By knowing the correct production area planning calculations, it is



hoped that the company's efficiency will increase so that it can reduce excessive production amounts and get even more increased sales profits because needs have been well estimated.

REFERENCES

- Akande, O., Eneyo, E. S., Chen, X., & Ko, H. S. (2019). An Integrated Approach To Production Planning And Control Systems In Small Scale Industry. May, 1–73.
- Alam, I. A., & Neliedia. (2021). Analisis Penentuan Pola Produksi Untuk Meminimalisasi Biaya Produksi Pada Home Industri Keripik Pisang Kharisma di Bandar Lampung. 1–6. <http://dx.doi.org/10.31219/osf.io/qkvxh>
- Alnasser, D. N., Shaban, D. O. S., & Zubi, D. Z. A.-. (2014). The Effect of Using Break-Even-Point in Planning, Controlling, and Decision Making in the Industrial Jordanian Companies. *International Journal of Academic Research in Business and Social Sciences*, 4(5), 626–636. <https://doi.org/10.6007/ijarbss/v4-i5/888>
- Darmayanti, N. (2016). Model Perencanaan Produksi Untuk Memenuhi Permintaan Pasar Dan Pengendalian Persediaan Produk Jadi Pada Perusahaan Penghasil Minuman Ringan. *Jurnal BETA (Biosistem Dan Teknik Pertanian)*, 4(2), 36–46.
- Haobenu, S. E., Nyoko, A. E. L., Molidya, A., & Fanggidae, R. E. (2021). Perencanaan Persediaan Bahan Baku pada UMK Tiga Bersaudara Kota Kupang dengan Metode Economic Order Quantity (EOQ). *Reviu Akuntansi, Manajemen, Dan Bisnis*, 1(2), 61–75. <https://doi.org/10.35912/rambis.v1i2.653>
- Jayanti, E., & Hartanti, D. (2019). PENGARUH PENETAPAN TOTAL COST (TC), TOTAL REVENUE (TR), DAN BREAK EVEN POINT (BEP) TERHADAP LABA PADA PT. INDOCEMENT TUNGGAL PRAKARSA Tbk. *Jurnal Ekonomi*, 9(1), 1–12.
- Mariani. (2022). Manajemen Operasional Pada Proses Produksi Perusahaan. *Jurnal Ekonomi Dan Manajemen*, 2(1), 14.
- Maruta, H. (2018). Laba, Perencanaan Manajemen, Bagi. *Jurnal Akuntansi Syariah*, 2(1), 9–28.
- Naisoko, R. I., Foenay, C. C., & Nyoko, A. E. L. (2020). Analisis Penentuan Luas Produksi Pada Perusahaan Roti Bangkit Jaya Di Kota Kupang. *Journal of Management: Small and Medium Enterprises (SMEs)*, 13(3), 341–353. <https://doi.org/10.35508/jom.v13i3.3312>
- Reicita, F. A. (2020). Analisis Perencanaan Produksi Pada Pt. Armstrong Industri Indonesia Dengan Metode Forecasting Dan Agregat Planning. *Jurnal Ilmiah Teknik Industri*, 7(3), 160–168. <https://doi.org/10.24912/jitiuntar.v7i3.6340>
- Soeltanong, M. B., & Sasongko, C. (2021). Perencanaan Produksi dan Pengendalian Persediaan pada Perusahaan Manufaktur. *Jurnal Riset Akuntansi & Perpajakan (JRAP)*, 8(01), 14–27. <https://doi.org/10.35838/jrap.2021.008.01.02>
- Suciyati, E. (2019). Analisis Perencanaan Kapasitas Produksi Dengan Metode Break Even Point Pada UD Sinar Logam Jaya Kabupaten Tegal. *Fakultas Ekonomi Dan Bisnis*, 1–170.

- Sunarso. (2008). Penentuan Luas Produksi Optimum pada Perusahaan Manufaktur. *Jurnal Ekonomi Dan Kewirausahaan*, 89–95.
- Tefa, S., Nyoko, A. E. L., & Foenay, C. C. (2022). Perencanaan luas produksi pada Perusahaan Tahu Putra Jaya di Kota Kupang. *Fair Value: Jurnal Ilmiah Akuntansi Dan Keuangan*, 4(12), 5757–5767. <https://doi.org/10.32670/fairvalue.v4i12.1840>
- Umbu Reku Raya; Markusjose; Yohanis Sarong. (2021). ANALISIS PERENCANAAN LUAS PRODUKSI KERIPIK SINGKONG PADA USAHA KECIL MENENGAH (UKM) HIDAYAH DAN MAI ONA DI KOTA ATAMBUA Jose Markus Lie 1; Umbu Reku Raya 2 ; dan Yohanis Sarong 3. 14(1), 53–59.

