

Production Forecasting Analysis of CV. Peduli Pangan Indonesia

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Abstract. With the rising demand in the food sector, particularly for ready-made spices, CV. Peduli Pangan, which focuses on producing sachets of pepper, has a notable chance for expansion. To address this demand, accurate forecasting of production is essential for guiding choices related to production planning. Forecasting is an important tool for decision-making that underpins various manufacturing and service sectors.

This research aims to estimate the ideal production quantity of pepper sachets over the next 12 periods. Regression analysis is utilized to identify the best-fitting model based on the gathered data, facilitating an exploration of how important factors affect production. The resulting regression formula shows that the production levels are impacted by the cost of raw materials (HBB), product defects (PG), and workforce (TK). The constant figure of 11,109.687 signifies the fundamental production level when these factors are not considered. If all other factors are ignored, a decrease in production volume occurs when the raw material price (X1_HBB) is -0.15 and the defect rate (X2_PG) is -0.617. On the other hand, production volume rises if the labor factor (X3_TK) is valued positively at 37.317. This forecasting model is designed to aid CV. Peduli Pangan in making informed and precise production choices.

Keywords: Financial Knowledge, Forecasting, Linear Regression Analysis, Sachet Pepper Production.

INTRODUCTION

Production forecasting plays a crucial role in a company's operational management. This process aims to estimate future demand for products or services by utilizing past data and various analytical methods. Within the manufacturing sector, particularly in food processing companies like CV. Peduli Pangan Indonesia, precise production forecasting is essential for effective production operations. Companies need to prepare the right production strategy to meet increasing market demand, as well as optimally manage resources and inventory to avoid waste or shortages that can harm the company (Wiwik Handayani, 2020).

Production serves as the foundation of the company's activities, as it generates the products that are sold to fulfill customer demands. Consequently, effective production planning is crucial to ensure that the company can fulfill market demand promptly and at a cost-effective rate, which can enhance customer satisfaction and reinforce the company's standing in the marketplace. Nevertheless, in a rapidly evolving and highly competitive business environment, companies must be capable of evaluating a range of external and internal elements that could influence their future performance. One approach to achieving this is by conducting accurate production forecasting, which acts as a basis for strategic decision-making regarding business

sustainability. CV. Peduli Pangan Indonesia, established on October 11, 2023, is a company engaged in the production of sachet pepper. Along with the increasing demand for seasoning products after the COVID-19 pandemic subsided, the company is faced with the challenge of meeting market demand with an appropriate amount of production. However, despite high demand, the company had difficulty achieving its production targets and faced a failed product rate that exceeded the set normal limit of 2%. This led to considerable losses, which were thought to be caused by the lack of an effective forecasting system and relying solely on basic management techniques in its production process.

By examining data on production and demand from the last 11 months, it became evident that demand changes were influenced by several elements, including the costs of raw materials, product failures, and labor issues. Consequently, there is a need for a system that can deliver more precise and efficient predictions to foresee challenges that may occur in the production process. A technique suitable for forecasting production is multiple linear regression analysis. This approach can evaluate the impact of various factors on production volume at the same time. Some previous studies have identified various factors that affect production forecasting, such as the price of raw materials and the amount of labor (Ishak & Sonia, 2020; Sulistyono & Sulistiyowati, 2019). However, no study has specifically examined the factors of raw material prices, failed product rates, and number of employees in the context of production forecasting at CV. Peduli Pangan Indonesia using multiple linear regression. Therefore, this study aims to fill this void by applying the linear regression method to analyze the effect of these variables on the production forecasting of sachet peppercorns at CV. Peduli Pangan Indonesia.

Considering the previously discussed context, researchers are interested in conducting research with the title “PRODUCTION FORECASTING ANALYSIS AT CV. PEDULI PANGAN INDONESIA” to assist companies in improving the accuracy of production forecasting and optimizing efficient production processes.

LITERATURE REVIEW

Production Forecasting

Operational management is a series of activities that include planning, organizing, controlling, and managing the operational aspects of the company to produce goods and services of value to customers. According to Jay Heizer (2020), operational management aims to manage resources effectively, transforming inputs into outputs that meet market needs, so

that companies can achieve efficiency in their production processes. Meanwhile, Wiwik Handayani (2020) emphasizes that operational management also includes managing resources to produce quality products that are right on target and meet market demand.

Forecasting is an important part of operational management. With good forecasting, companies can predict demand and resource requirements, which allows companies to plan appropriate production activities. Accurate forecasting can also prevent shortages or overstocks that can be detrimental to the company. In this sense, forecasting supports strategic and operational decisions, which affect a company's productivity and competitiveness in the market.

Forecasting Management

Forecasting management is the process of predicting future events or conditions using historical data and specific techniques. Good forecasting is an important tool in operational management to help companies plan resource requirements, manage inventory, and formulate appropriate production strategies. In the context of production, forecasting management is useful for projecting market demand, as well as estimating raw material and labor requirements.

With accurate forecasting, companies can avoid shortages or overstocks of raw materials and products, which can disrupt the smooth production process. Abdillah & Handayani (2023) explain that forecasting also helps companies place more economical orders for raw materials, as well as organize stock formations so that costs do not swell. Therefore, proper forecasting can improve production efficiency and reduce operational costs.

Production Forecasting

Production forecasting is a process used to estimate the number of products that need to be produced in a certain period of time. According to Sulistyono & Sulistiyowati (2019), the main purpose of production forecasting is to assist companies in planning production capacity and organizing raw material inventory efficiently. This allows the company to meet market demand on time without burdening the company's budget with excessive inventory. Ishak & Sonia (2020) added that production forecasting also includes an understanding of the factors that affect demand, as well as how changes in these factors can affect the required production capacity.

Market Price of Raw Materials

According to Nur Asilah and Sahat Simatupang (2022), the market price of raw materials is the cost that must be incurred to obtain the basic materials used in the production process of goods or services. These raw materials can be raw materials, such as wood, metals, or grains, or more complex components, such as electronic chips or machine components, which are needed to produce finished products. Wati et al. (2022) added that the market price of raw materials is one of the key factors that determine the efficiency of production costs. Changes in the market price of raw materials can affect the cost structure and pricing strategy of the final product, which in turn can affect production forecasting. Therefore, monitoring the market price of raw materials is essential in making decisions related to production and business planning.

Failed Products

According to Fitri Nur Masruriah Management Study Program et al. (2019), failed products are production results that cannot achieve the expected specifications, resulting in additional costs for reprocessing or disposal. This affects the production forecasting that has been made, because the company must allocate additional resources to handle failed products, which can disrupt the production planning and budget that has been prepared. Julyanthry and Valentine Siagian (2020) also suggest that failed products can cause a mismatch between production results and predetermined targets.

This mismatch often requires greater costs to make repairs or remanufacture, which ultimately impacts production costs and schedules. Meanwhile, according to Dhiana Ekowati (2022), a failed product is a product that is produced but does not meet the required specifications, which causes additional costs for repairs or remanufacturing. These failed products can disrupt production budgets and forecasting, as companies have to incur extra costs to deal with products that do not meet quality standards, which can affect long-term production plans and the company's operational efficiency.

Workforce

According to Nirvana & Nanda (2020), manpower is human resources in an organization consisting of individuals who have the ability, skills, and knowledge to carry out the tasks and responsibilities given by the company. Labor plays an important role in carrying out every operational process and achieving company goals, because they carry out various production, administrative, and other service activities.

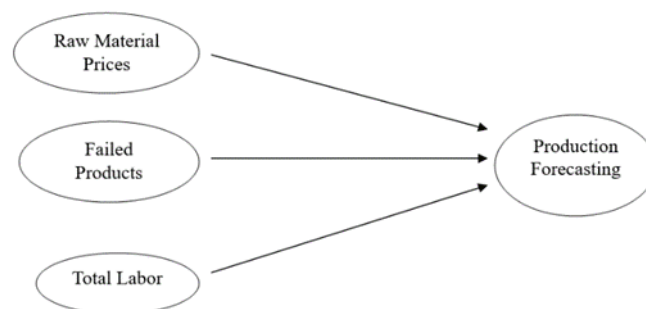
Dewi (2020) explains that workforce refers to a group of individuals employed by an organization to achieve specific goals. They cover a wide range of positions and roles required to run business operations, from the most basic level to the managerial level. The existence of a skilled and trained workforce will affect the company's performance in achieving goals, including in terms of production efficiency and optimal human resource planning.

Hypothesis

Hypotheses are provisional responses in research that lack strength and must be tested through observation. Thus, the following presents a hypothesis derived from the problem outlined earlier, specifically

1. Raw Material Prices Have a Negative Effect on Production Forecasting
2. Failed Products Negatively Affect Production Forecasting
3. Total Labor Positively Affects Production Forecasting

Figure 1. Research Conceptual Framework



METHODS

The kind of data utilized in this research is known as secondary data. Secondary data refers to information that has been gathered and assembled by individuals or organizations other than the researchers performing the analysis. This information is typically found in reports, publications, or other accessible resources that can be utilized for research objectives. The population considered in this research consists of all the operational data from the CV

company, Peduli Pangan Indonesia, which pertains to raw material prices, defective products, and workforce numbers. The method of sampling employed in this study is the census sampling technique. The sample comprises the operational data of the CV company, Peduli Pangan Indonesia, over a period of 11 months, from January 2024 to November 2024. This data encompasses the variables of raw material prices, the count of failed products, and the labor force each month. The analytical method adopted is Multiple Linear Regression, carried out with the SPSS analysis software. **RESULTS**

Table 1 - Research data of CV. Peduli Pangan Indonesia

Research Data CV.Peduli Pangan Indonesia 2024				
Month	Raw Material Prices (Rp)	Total Production (Pcs)	Failed Products (Pcs)	Total Labor
Januari	80.000	10 000	450	10
Februari	83.500	9.850	527	9
Maret	92.500	9.700	530	9
April	98.500	9.550	588	8
Mei	115.000	9.300	659	9
Juni	140.100	9.000	525	8
Juli	128.000	9.100	634	9
Agustus	122.500	9.200	650	9
September	111.500	9.400	646	10
Oktober	123.500	9.200	632	9
November	123.000	9200	655	10

- From the information provided in the table above, it's clear that the costs of raw materials rose consistently each month from January (IDR 80,000) until November (IDR 123,000) in 2024, although there was a decline in September (IDR 111,000). This rise in raw material costs adversely impacts the production levels at CV. Peduli Pangan Indonesia.
- The data in the table above indicates that the rate of product failures increased monthly from January (4.5%) to October (6.8%), which represents an issue that CV. needs to tackle without delay.
- According to the table above, it is evident that CV. Peduli Pangan Indonesia has gone through multiple changes in staffing over the past 10 months, leading to occasional inefficiencies in production at CV. Peduli Pangan.

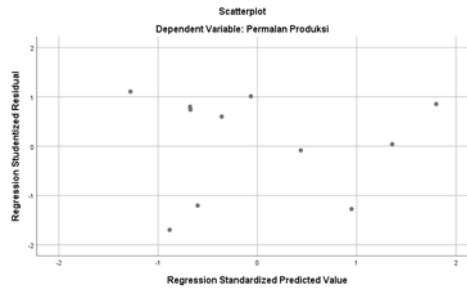
Table 2 - Multicolierity Test Data

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	11147.126	73.524		151.612	.000		
	Harga Bahan Baku	-.015	.000	-.872	-45.382	.000	.539	1.854
	Produk Gagal	-.755	.085	-.166	-8.880	.000	.572	1.750
	Jumlah Karyawan	34.781	7.142	.075	4.870	.002	.838	1.193

a. Dependent Variable: Permalan Produksi

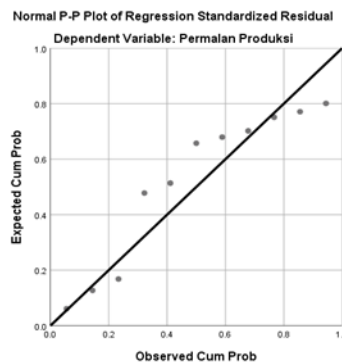
Based on the coefficients in the figure above, it can be seen that the VIF value is 1,854 (variable price of raw materials), 1,750 (variable product failure), and 1,193 (variable number of employees). So the conclusion is that the independent variables are free from the classic assumption of multicollinearity because the results are smaller than 10.

Figure 2 - Heteroskedasticity Test Data



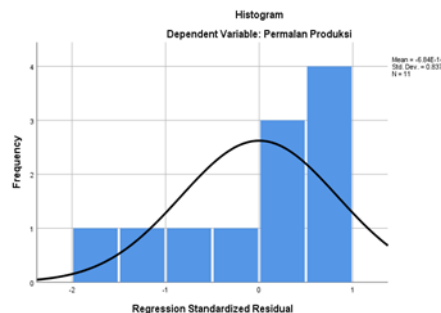
From the illustration presented in Figure 2, it can be seen that the data points are scattered randomly, both above and below zero on the Y-axis, and do not show any particular trend. Thus, it can be concluded that this regression model does not show heteroscedasticity.

Figure 3 - P-P Plots Normality Test Data



In Figure 3 above, it can be seen that the dots formed spread around the diagonal line. The second normality test can use the histogram test where the data forms a bell like the following picture

Figure 4 - Histogram Normality Test Data



It can be seen in the two tests that this data meets the criteria for the normality test so that this data can be called normally distributed data.

Table 3 - Autocorrelation Test Data

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.999 ^a	.999	.998	14.48711	2.111

a. Predictors: (Constant), Jumlah Karyawan, Produk Gagal, Harga Bahan Baku
 b. Dependent Variable: Permalan Produksi

With the significance level set at 5%, and given 11 samples (n), along with 3 independent variables and 1 constant (k = 4), the Durbin Watson statistic obtained from the regression analysis is 2.111. Consequently, the Durbin Watson value does not fall within the range of d, specifically between 2.2833 and 4 - 2.2833, which equals 1.7167. This discrepancy occurs because there are 4 independent variables while only 11 samples were taken, resulting in a very high du.

Nevertheless, we can still assess the presence of autocorrelation by employing the runs test, a non-parametric statistical technique that examines whether a data sequence is random. In simple terms, this test allows us to identify any structured patterns in the data that deviate from a random distribution.

Table 4 - Autocorrelation Test Data with Runs Test

Runs Test

	Unstandardized Residual
Test Value ^a	5.87286
Cases < Test Value	5
Cases >= Test Value	6
Total Cases	11
Number of Runs	6
Z	.000
Asymp. Sig. (2-tailed)	1.000

a. Median

From Table 4 above we can see that the Asymp.sig is 1.00. where this exceeds the significant limit of 0.05 so we can say that based on the Runs test results, it can be concluded that there is no evidence to suggest the presence of autocorrelation in the residual data. This is a good result and shows that the regression model has fulfilled one of its important assumptions. From all the results of the classical assumption test, it proves that the research data analysis has fulfilled all the classical assumption tests.

Multiple Liner Regression Results

Table 5 - Multiple Linear Regression Data

		Coefficients ^a					Collinearity Statistics	
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	11232.753	48.988		229.296	.000		
	Harga Bahan Baku	-.015	.000	-.918	-67.272	.000	.666	1.502
	Produk Gagal	-.714	.065	-.151	-11.005	.000	.663	1.509
	Jumlah Karyawan	31.015	4.839	.073	6.410	.001	.951	1.051

a. Dependent Variable: Permalan Produksi

Based on the values of the coefficients mentioned above, we can formulate a multiple linear regression equation as follows:

Production Forecasting = α - β_1 Raw material prices - β_2 Failed products + β_3 Number of employees + ϵ . If we substitute the figures from table 4.5, we arrive at this equation: Production Forecasting (Y) = 11,147.126 - 0.15 X1 - 0.755 X2 + 34.781 X3.

1. The value of 11,147,126 indicates that if there are no raw material costs, failed products, or employees, the projected sales would be 11,147,126.
2. The regression coefficient for X1, which is -0.15, suggests that for every single unit rise in raw material prices, the production forecast will decrease by 0.15. Conversely, for every single unit drop in raw material prices, the production forecast will increase by 0.15, provided that X2 and X3 remain the same.
3. The regression coefficient for X2, listed as -0.755, indicates that each one-unit increase in failed products will result in a 0.755 reduction in production forecasting. Conversely, if failed products decrease by one unit, production forecasting will rise by 0.755, assuming X1 stays constant.
4. The regression coefficient for X3, which is 34.781, signifies that an increase of one unit in the workforce will enhance production forecasting by 34.781. Conversely, reducing the number of employees by one unit will lower production forecasting by 34.781, as long as X1 and X2 remain unchanged. The positive sign (+) indicates a direct relationship, while the negative sign (-) denotes an inverse relationship between the independent variable (X) and the dependent variable Y..

Hypothesis Test

Table 6 – F Test Data (Simultaneous Test)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1052621.774	3	350873.925	1671.812	.000 ^b
	Residual	1469.135	7	209.876		
	Total	1054090.909	10			

a. Dependent Variable: Permalan Produksi
 b. Predictors: (Constant), Jumlah Karyawan, Produk Gagal, Harga Bahan Baku

Based on table 6 above, the F count is 1671.2812 with a probability of 0.000, which is below 0.05. This shows that all independent variables, namely the price of raw materials, failed products and the number of employees, have a significant effect simultaneously (together) on CV production forecasting. Peduli Pangan.

Table 7 - T Test Data (Partial Test)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	11147.126	73.524		151.612	.000		
	Harga Bahan Baku	-.015	.000	-.872	-45.382	.000	.539	1.854
	Produk Gagal	-.755	.085	-.166	-8.880	.000	.572	1.750
	Jumlah Karyawan	34.781	7.142	.075	4.870	.002	.838	1.193

a. Dependent Variable: Permalan Produksi

From the table above, it can be concluded that the hypothesis that states:

1. H1: The price of raw materials (X1) has a negative effect on production turnover (Y) can be accepted. Based on the t test, where t count is - 45.382 with a probability of 0.000 whose value is below 0.05. Thus H1 is accepted, which means that there is a significant negative effect of the variable price of raw materials partially on production turnover (Y).
2. H2: Failed products (X2) have a negative effect on production forecasting (Y) can be accepted. Based on the t test, where t count is - 8,880 with a probability of 0.000, the value is below 0.05. Thus H2 is accepted, which means that the significant negative effect of the failed product variable partially on production forecasting (Y).
3. H3: Labor (X3) has a positive effect on Production Peramaaln (Y) can be accepted. Based on the t test, where t count is 4.870 with a probability of 0.002 whose value is below 0.05. Thus H3 is accepted, which means that the significant positive effect of the variable number of employees partially on production permalan (Y).

Table 8 - R2 Test Data (Coefficient of Determination Test)

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.999 ^a	.999	.998	14.48711	2.111

a. Predictors: (Constant), Jumlah Karyawan, Produk Gagal, Harga Bahan Baku

b. Dependent Variable: Permalan Produksi

The main limitation of relying on the coefficient of determination is that it tends to favor the number of independent variables present in the model. Thus, it is advisable to utilize adjusted R Square (R²) when assessing the most effective regression model. Referring to the coefficient of determination in table 4.9 mentioned above, we observe that the correlation coefficient (R) is 0.999. This indicates that there is a 99.9% connection between the independent variable and the dependent variable. From this statistic, one can infer that the link between the independent variable and the dependent variable is exceedingly strong. The value of Adjusted R Square (R²) is 0.998. This statistical outcome signifies that the independent variables account for 99.8% of the variation in the dependent variable, while the remaining 0.2% (100 - 99.8%) is attributed to other factors not included in the examined regression model.

DISCUSSION

Effect of Raw Material Price Variables on Production Forecasting

Based on the test results on the variable price of raw materials on production forecasting, based on the analysis that has been carried out in this study, that the price of raw materials has a significant negative effect on production forecasting. The results of this study are in accordance with research conducted by Nur Asilah, Sahat Simatupang, (2022) entitled “the effect of raw material costs on production volume at PT. Subur Mekar Abadi Pondok Batu, Central Tapanuli Regency” in this study it was found that the variable cost of raw material prices had a negative effect on production, and research by Wati et al.

Wati et al., (2022) entitled “The Effect of Raw Materials on the Production Process (Study on Royal Bakery Alif Tdm Kupang)”, in this study it was found that raw materials have a negative effect on production. This shows that the rising price of raw materials will indeed have a negative effect on the production process so that changes in the price of raw materials, namely pepper, must be very concerned by CV. Peduli Pangan.

Effect of Failed Product Variables on Production Forecasting

Based on the test results on the failed product variable on production forecasting, based on the analysis that has been carried out in this study, that the price of raw materials has a significant negative effect on production forecasting. The results of this study are in accordance with Surya Fitri Nur Masruriah et al., (2019) in his research entitled “Analysis of Production Forecasting at Umkm Salted Eggs Bu Kaseng in Cikuntul Village” in this study it was found that failed products had a negative effect on production, and the research of

Indrawan et al., (2022) in their research entitled “Application of Cement Product Production Forecasting” in this study found that failed products have a negative effect on production. This shows that failed products that increase will indeed have a negative effect on production forecasting so that the increase in products must be considered by CV.Peduli Pangan.

Effect of Employee Number Variables on Production Forecasting

Based on testing the variable number of employees on production forecasting, based on the analysis that has been carried out in this study, that the number of employees has a significant positive effect on production forecasting. This is in accordance with research conducted by Nirwana & Nanda, (2020) in their research entitled “The Effect of the Number of Workers and Working Hours on the Total Production of Micro, Small and Medium Enterprises of the Tofu Industry in Solok City” in this study it was found that labor has a positive effect on production, and

Dewi, (2020), in her research entitled “The Effect of the Number of Workers on the Level of Convection Production at Cv. Surya Pelangi Pekanbaru Reviewed According to Islamic Economics”, in this study it was found that the amount of labor has a positive effect on the level of production. This shows that the amount of labor that increases will have a positive effect on production forecasting, this is a good thing for CV.Peduli Pangan if you want to increase its production.

CONCLUSION

Based on data analysis using SPSS, it was found that the price of raw materials, failed products, and labor have a significant influence on production forecasting. The prices of raw materials and failed products have a negative impact, where an increase in both variables decreases the amount of predicted production. In contrast, the amount of labor has a positive influence, such that an increase in labor drives an increase in projected production.

The multiple linear regression formula obtained to calculate production forecasting is: $\text{Production Forecasting} = 11,147.126 - 0.15 X_1 - 0.755 X_2 + 34.781 X_3$, with Y as production, X1 raw material prices, X2 failed products, and X3 labor. This formula can help companies plan production optimally based on changes in these three variables.

REFERENCES

- Abdillah, G., & Handayani, W. (2023). Pengendalian persediaan main wheel ATR 72 dengan metode MRP pada PT. *Trans Nusa. Jurnal E-Bis*, 7(1), 48–60. <https://doi.org/10.37339/e-bis.v7i1.1179>
- Batista, V. (2019). Perencanaan produksi dan pengendalian kebutuhan bahan baku pada CV. Jojomix. *Jurnal TIN (Teknik Industri UNTAN)*, 3(2), 76–81.
- Dewi, E. R. (2020). Pengaruh jumlah tenaga kerja terhadap tingkat produksi konveksi di CV. Surya Pelangi Pekanbaru ditinjau menurut ekonomi Islam. Skripsi Program Studi Ekonomi Syariah UIN SUSKA RIAU.
- Dr. Wiwik Handayani. (2020). *Manajemen operasional (Edisi ke-2)*. Indomedia Pustaka.
- Faris, M. F., & Handayani, W. (2021). Analisis penjadwalan produksi berdasarkan pesanan menggunakan metode asas prioritas pada CV Davero Cemerlang Indonesia Surabaya. *Al-Kharaj: Jurnal Ekonomi, Keuangan & Bisnis Syariah*, 4(2), 380–396. <https://doi.org/10.47467/alkharaj.v4i2.676>
- Fitri Nur Masruriah. (2018). Analisis peramalan produksi pada UMKM telur asin Bu Kaseng di Desa Cikuntul. *Anis Fitri Nur Masruriah*, 2(1), 1140–1149.
- Heizer, J. (2019). *Manajemen operasi: Manajemen keberlangsungan dan rantai pasokan*. Salemba Empat.
- Indrawan, S., Suarlin, J., & Sirlyana, S. (2022). Penerapan peramalan produksi produk semen di PT XYZ guna memenuhi permintaan konsumen. *Jurnal ARTI (Aplikasi Rancangan Teknik Industri)*, 17(1), 91–97. <https://doi.org/10.52072/arti.v17i1.367>
- Ishak, A., & Sonia, C. (2020). Perencanaan peramalan produk raket nyamuk dengan metode time series dan causal. *TALENTA Conference Series: Energy & Engineering (EE)*, 3(2), 61–67. <https://doi.org/10.32734/ee.v3i2.974>

- Khatimah, H., Abdullah, W. G., Abdi, D., & Oleo, U. H. (2023). Analisis peramalan produksi dan harga cabai merah (*Capsicum annum L.*) di Provinsi Sulawesi Tenggara. *Journal of Food System and Agribusiness (JoFSA)*, 7(2), 113–122.
- Nirwana, I., & Nanda, Y. F. (2020). Pengaruh jumlah tenaga kerja dan jam kerja terhadap jumlah produksi usaha mikro kecil menengah industri tahu di Kota Solok. *Jurnal Advanced*, 14(1), 30–40.
- Nur Asilah, & Simatupang, S. A. P. (2022). Pengaruh biaya bahan baku terhadap volume produksi pada PT. Subur Mekar Abadi Pondok Batu Kabupaten Tapanuli Tengah. *Jurnal Mahasiswa*, 4(4).
- Ramadhan, A. F., & Handayani, W. (2022). Analisis perencanaan bahan baku paving block dengan metode material requirement planning di PT. Pesona Arnos Beton. *Jurnal Pendidikan Ekonomi*, 7(112), 2.
- Sulistiyono, S., & Sulistiyowati, W. (2019). Peramalan produksi dengan metode regresi linier berganda. *PROZIMA (Productivity, Optimization and Manufacturing System Engineering)*, 1(2), 82–89. <https://doi.org/10.21070/prozima.v1i2.1350>
- Wati, V., Sulaiman, & Gasim. (2022). Pengaruh persediaan bahan baku terhadap proses produksi dengan volume penjualan sebagai variabel moderasi (Studi pada Royal Bakery Alif TDM Kupang). *Jurnal Akuntansi*, 9(1), 1–7.
- Yulianti, I. F. W., & Handayani, W. (2023). Quality control of Gery Saluut product packaging at CV. Surya Kencana Food. *Management Studies and Entrepreneurship Journal*, 4(6), 8143–8150.