

Analysis of Demand Volume, Material Supply, and Work Hours against Delta Power Listrindo CV Production Performance

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Abstract

Purpose: Purpose of this research is to find out what factors affect the production performance of CV Delta Power Listrindo so that later it can solve the challenges that exist in its production performance.

Methods: Production performance can be measured through various indicators, such as product efficiency, product quality, production time, and costs incurred. To achieve optimal production performance, companies need to implement various strategies and conduct analysis to find out what factors affect their production performance. CV Delta Power Listrindo finds challenges in its production performance, which requires a more in-depth analysis to find out what factors affect its production performance, this is what motivates researchers to conduct this research.

Results: The results of the study describe, the number of requests is positive and significant on production performance, found in the t column section, the variable number of requests has a t value (2.337) > t table (1.703) and a significant 0.028 < 0.05.

Limitations: Of course, this research has limitations, namely as follows, this research only focuses on certain manufacturing industries, so the results in this study cannot be extended to all industrial sectors, and the data used in this study comes from a certain period of time, so it cannot capture long-term fluctuations that may affect production performance.

Contribution : Based on the findings and results of research that shows the number of requests is positive and significant to production performance, variable demand is positive and significant to operational performance, and working hours are positive and significant to production performance. It is hoped that CV Delta Power Listrindo will pay more attention to the amount of demand, material inventory and working hours because these three factors have a positive and significant value on production performance. And it is hoped that further research can examine various factors, in order to find out what factors can affect the production performance of CV Delta Power Listrindo besides demand factors, material inventory, and working hours.

Keywords: *Production Performance; Number of Demands; Material Inventory; and Working Hours*

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1. Introduction

In an era of globalization, production has become one of the most important supporting forces of a country's economy. Production is one of the central concepts of the economy that has a broad and profound impact on the economic activity of a country (Alansori et al., 2021). Production is the activity carried out to add value to something or to produce something new in order to satisfy a need (Mahmuda & Agustin, 2020). Production can also be defined as a series of processes or activities that transform input into output that has economic value or benefits to society. Inputs in the context of production are all kinds of resources, ranging from labor, raw materials, machinery and equipment to technology and capital. Whereas output is the final result of a production process and can be goods or physical services (Mardhiana et al., 2023).

Defence of production can also be understood as an activity with the aim of producing usefulness in the present and future. Production also leads to a process that turns input into output. Production not only transforms the form of something that doesn't exist, but production creates something from natural resources to be useful. For example, cattle, people can take advantage of cattle by taking their skins for a garment, then cattle's milk, can be processed into a healthy milk drink, so it can benefit many people, this is in accordance with Q. S. Al-Nahl verse 65-66. However, production is more than just a physical process of turning raw materials into finished products (Soeharjoto & Hariyanti, 2019). Production also involves planning, organizing, and efficiently managing resources to desired goals. By developing human resource competence into the most priority benchmark or solution (Batubara & Harahap, 2022). Production therefore involves complex management elements, such as resource allocation, production process organisation, and quality control decisions.

Production can't get rid of what's called output. Production performance is an important factor in various industries, and organizations. Performance is the result of the quantity and quality of work done by those who have the responsibility (Hasibuan et al., 2023). Performance is a result of someone in performing work, and the outcome of such a person's work has real and measurable evidence (Annisa et al., 2023). Performance is the result of achieving operational and functional goals (Ramadhani & Nurbaiti, 2022). Measuring production performance is essential in an effort to improve business efficiency, productivity, and operational sustainability (Rubina et al., 2024). Production performance can be measured through labor productivities, product quality, and production cycle time (Pradnyawati, 2024). In the service sector, aspects such as customer waiting time, level of satisfaction, and timing accuracy in the production process are the main indicators of production performance. Performance measurement is the process of constantly measuring the amount of operational effectiveness based on targets, comparisons, and more (Dharma et al., 2022).

In today's industrial era, many manufacturing companies understand the importance of production stability amid uncertainty and fluctuating demand. Therefore, many companies are hoping their production will continue to be successful. The rapid growth of the world economy has also led to tight competition in the economy, actors seeking ways to implement some accurate strategies to generate many profitable benefits for their organization or company (Ichsan et al., 2020). And the rapid development of the business environment has changed the paradigm of companies from profit-oriented companies to responsible companies (Siregar et al., 2022). For this purpose, it is important to control the entire activity on the production line. It shows that every company always has a goal of further developing its business in the future. As for the factors that can influence production performance are technology, labour, production volume, availability of raw materials and components, environmental conditions and external factors, infrastructure, and working hours (Stevenson & William, 2012).

In an attempt to anticipate the existing problems, further analysis is needed. Analyzing some of the reasons is a good strategy for the company to find out where the problem is, so that the company can fix it. For various reasons of problems that can affect production performance, in this study will be carried out an analysis of how the quantity of demand, material supply and working hours significantly influence production performance (Hastalona et al., 2019). Material stock is an asset held by an entity in the form of raw materials and raw materials, with the aim of optimizing production operations to

meet market needs. Material stock refers to goods intended to be re-marketed or used in the production of goods for sale (Chrisna, 2018). In essence, inventory management is a continuous process in supporting the company's operations in ensuring production and delivery to customers or consumers. Production tools do not have to be dedicated specifically to consumption, or otherwise adapt consumptions to production needs. The supply of raw materials is aimed at accelerating the production process, whereas the stock of finished goods refers to the output of production prepared to meet demand in the market. Working hours can also affect the production process in a company. The impact of working hours on productivity is that if productiveness is defined as output per unit of labour divided by output of hours of work, then the more people work longer and produce one unit of output, the worker's productivity tends to decline. Working hours are a period of time to carry out activities, whether during the day or at night. Planning a future work schedule is an important step in improving time management (Neksen et al., 2021). Good working hours can increase employee efficiency. By providing enough rest and recovery between shifts, employees tend to be more fresh and productive at work. On the contrary, too long hours of work or lack of rest can lead to fatigue and lower productivity. There is a need for optimization of activities, effective management, quality assurance and an educational system that is carried out in accordance with the roadmap so that jobs can be performed optimally (Marliyah et al., 2023). If the work is not carefully planned, there is no guideline that can ensure that the effort is in line with the objective to be achieved. Working hours are the time it takes a person to create a good or service called production time. Working time is the time when work is completed, which can occur both in the day and in the night. Preparing a list of tasks to be completed in advance can help to manage working time more efficiently. The planning process must be carried out carefully, otherwise there will be no reliable guidelines to ensure the achievement of the goal. When dealing with previously completed work, entrepreneurs or traders can save time (Su'ud, 2007).

2. Literature review

This research was carried out on the CV Delta Power Listrindo, this company is a company that is active in the production of panels. The company is also quite famous in various other industries due to the existence of some demand that comes from outside the city, for example from PT. Telen Prima Sawit east Kalimantan island, and PT. First Rantau, Kuala Simpang, Aceh. Based on the initial observations that I have made, it is known that there is a production work of the panel that has an obstacle to the production performance process. Knowing the obstacle occurred in the delay in the production time which is not in accordance with the agreement between the two parties, this was directly authorized by Mr. Suyono as Deputy Director of CV Delta Power Listrindo. The research to be carried out is influenced by some previous articles or studies, namely research (Asynari et al., 2020) with the result of demand variable with positive value and influence on Operational Performance, and research (Dio et al., 2023) with the results of research that the variable quantity of demand has a positive value, and significantly influences on operational performance. As for (Mahmuda & Agustin, 2020) research results of internal control of supply of raw materials has a negative value and has a significant impact on production performance. And finally there's a study from (Neksen et al., 2021) with the findings that working hours have a positive value and significantly influence its y variable. From the above statements, no article or researcher is investigating the analysis of the quantity of demand, supply of materials and working hours of production performance. For the reason that there is, the resears want to conduct a research on analysis of demand quantity, supply material and hours of work of production CV of Delta Power Listrindo with the aim of analyzing whether there is an influence of the amount of demand and supply of material and work hours on the production performance of the CV of delta power listrindo so that it can provide new knowledge or information to the company.

3. Research Methodology

This type of research includes quantitative descriptive research. Displaying the influence of the variable quantity of demand, supply of material and working hours on production performance on the Delta Power Listrindo CV. Using quantitative analysis through hypothesis testing, it is possible to know the impact of the free variable on the bound variable. This research uses secondary data, which is data on demand, supply of materials and working hours obtained from CV Delta Power Listrindo and data used data from January 2022 to April 2024. The research was carried out at the Delta Power Listrindo CV

company. And the technique of data collection by observation and documentation. Observing the amount of requests is done in the marketing department, the material provision is done on the inventory department and the working hours are done at the admin department. In this study, the researchers took data analysis techniques using hypothesis tests, determination coefficients, t tests, and f tests.

4. Results And Discussion

4.1 Hipotesis Test

a. Koefisien Determinasi

Tabel 1 : Result Koefisien Determinasi

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.969 ^a	.939	.932	.68374

a. Predictors: (Constant), Jam Kerja, Jumlah Permintaan, Persediaan Material

Source: Dial using spss

Table 1 states that :

- 1) R = 0.969, means that the ratio of the quantity of demand, supply of materials, and working hours to the performance of production is 96%. It means the relationship of quantity demand, supplies, and hours of work has a close relationship to production performance. And the larger the value of R means that there is a closer relationship.
- 2) R Square is 0.939, meaning that 93.9% of the factors of production performance can be explained by the amount of demand and supply of material, and work hours, and 6.1% of the other factors are influenced by other factors.
- 3) Adjusted R Square of 0.932, meaning 93.2% of the productive performance factors can be described by the number of requests, supply, and hour of work, and the other 6.8% are affected by other factor.
- 4) Standard Error of the Estimate is 0.68374, meaning that the smaller the standard deviation value of the model means the better.

b. Partial testing (T test)

Table 2. Partial Test Results (T test)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	15.861	3.615		4.388	<,001
	Jumlah Permintaan	.057	.024	.126	2.337	.028
	Persediaan Material	.014	.004	.334	3.822	<,001
	Jam Kerja	.048	.006	.653	7.777	<,001

a. Dependent Variable: Hasil Produksi

Source : using data spss

Table 2 states that :

- 1) The first variable has a positive and significant value to the production performance. The test result t demand has a count t value (2,337) > t table (1,703) can be understood Ho rejected and Ha accepted. And has a significant value less than the probability value of 0.05 or 0.028 < 0.05, which means a positive demand value and significant to the performance of production. And the results of the research carried out in accordance with the research (Asynari et al., 2020) that the demand variable is positive and positive to the operational performance, and also in line with the study (Dio et al.,

2023) that the variable demand quantity has positive and significant value to operational performances. This happens if a company is experiencing fluctuations in the amount of demand, then the company must increase its production performance in order to produce the maximum output to meet demand.

- 2) The second variable of the material supply has a positive and significant value to the production performance. The result of the test of the materials supply has t count value (3,822) > t table (1,703) can be interpreted as Ho rejected and Ha accepted. And has a significant value less than the probability value of 0.05 or $0.001 < 0.05$, meaning the material supplies are positive and signifying to the performance of production. And the results of the research carried out in accordance with the research (Mahmuda & Agustin, 2020) that the material stock variables have a positive value and significantly influence the output of production, and also in conformity with the study (Wati et al., 2022) that the materials supplies variable has positive values and have a significant influence on the productive performance. This happens if the available raw materials do not meet the required quality standards, then will inhibit further processes that in the course of the process cause production to stop, so that the overall production performance is hindered.
- 3) The third variable of working hours has a positive and significant value for production performance. Working hours test results have counting t values (7,777) > t tables (1,703) can be understood Ho rejected and Ha accepted. And has a significant value less than the probability value of 0.05 or $0.01 < 0.05$, which means positive and significant working hours towards production performance. And the results of the research conducted in line with the research (M. A. R. Siregar et al., 2020) that the working-hour variable has a positive value and significantly affects employee performance, and also in accordance with the study (Neksen et al., 2021) that the work-hours variable is positive and has a significant impact on employees performance. This can happen if working hours are expressed as output per unit of work divided by working hours, meaning that the more people work, the more productivity increases and one unit of output is produced.

c. Testing simultaneously (F test)

Table 3. Simultaneous Test Results (F test)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	173.744	3	57.915	123.881	<.001 ^b
	Residual	11.220	24	.468		
	Total	184.964	27			

a. Dependent Variable: Hasil Produksi

b. Predictors: (Constant), Jam Kerja, Jumlah Permintaan, Persediaan Material

Source: using data spss

In the above table we obtain a value of f counting is 123,881 with a significant value of 0,001. According to the result of the test f data is significant, we also obtain an value of sig less than the alpha value ($0,001 < 0,05$), representation of ANOVA is the value of F counting of 123.881 whereas the value f of the table at the 95% confidence rate ($\alpha = 0,05$) is 3.03, this means f count of 123, 881 > ftable 3.03, then yielding HO rejected Ha accepted, for a significant amount of $0,001 < 0,05$, showing that the amount of demand, material supply, and working hours simultaneously have a positive and significant value to the performance of production.

Based on the results of the simultaneous test (test f) determined that the three variables are the amount of demand, supply material, and working hours positive and significant to the performance of production, this corresponds to the result that the value of f counts more than f of the table and the value is less than alpha. Then the quantity of demand and supply material and hours of work have a significant influence on the production performance. And the result of the test at the same time (test F) is consistent with the test coefficient determination on the R and R square values. That is, the value R = 0.969, means

that the relationship of the number of requests, supply materials, and hour of work to production performance is 96%. That means the ratio of the quantities of demand material and supply, and the working hours have a close relationship to the productive performance. and the larger the R value means the relationship is closer, and a square value of R is 0.939, that is, 93.9% of the factors of production performance can be explained by the number, supply of materials and hours, and 6.1% of the other work, is influenced by other factors.

5. Conclusion

The results of the research described, the amount of positive and significant demand for production performance, found in the part of the variable column t, the number of demand has a counted t value $>$ t table and a significant, it can be concluded that the quantity of demand can affect production performance if the company is experiencing fluctuations in demand quantity, then the company must increase its production performance in order to produce the maximum output to meet demand. The material supply is also positive and significant to production performance, found in the part of the column t variable material supply has a count t value $>$ t table and significant, it can be concluded that the material supply can affect production performance if the available material does not meet what is required and do not meet the quality standards, then will inhibit the flow of production processes causing the cessation of the production process. And working hours are positive and significant to production performance, found in the part of the column t variable working hours have count t values $>$ t tables and significant, it can be concluded working hours can affect production performance if productivity is defined as output per unit and labor is divided by output hours of work, then the more labor is working longer of course the production tends to decrease because the labour force must have good working hours, in the sense of working time and rest time must be balanced. And the simultaneous test (test f) showed the value of f counting $>$ f table and significant, showing the quantity of demand, supply of material, and working hours combined positively and significantly to the production performance.

Based on the findings and results of research that shows the number of requests has a positive and significant effect on production performance, variable demand has a positive and significant effect on operational performance, and working hours have a positive and significant effect on production performance. It is expected that the company pays more attention to the amount of demand, material inventory and working hours because these three factors have a positive and significant value on production performance. And it is hoped that further research can examine various factors, in order to find out what factors can affect the company's production performance other than demand factors, material inventory, and working hours.

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