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THE EFFECT OF RAW MATERIAL INVENTORY MANAGEMENT ON WORK PRODUCTIVITY OF PT. KSS (KARUNIA SEJAHTERA SEJATI) NIAS BRANCH

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Abstract

This study aims to determine the Effect of Raw Material Inventory Management on Work Productivity of PT. KSS (Karunia Sejahtera Sejati) Nias Branch. The research method used is a quantitative approach. The sample in this study amounted to 31 respondents. Data collection techniques were carried out through the distribution of questionnaires and documentation. Data analysis techniques used simple linear regression analysis, classical assumption tests, coefficient of determination tests and t-tests with the help of the SPSS version 25 statistical application. The R2 Determination Test that has been carried out obtained the result that the R2 value is 0.620. This shows that the Raw Material Inventory Management variable (X) can explain Work Productivity (Y) by 62%, while the remaining 38% is explained by other factors not covered in this study. Based on the data analysis, it shows that simultaneously the Raw Material Inventory Management variable has a positive and significant effect on Work Productivity with a significance of 0.000 <0.05 and the T-value obtained is 6.877> 1.696 so that it can be concluded that Ha is accepted and has an effect on the dependent variable of Work Productivity (Y). The conclusion of this study is that the Raw Material Inventory Management variable partially or simultaneously has an effect on Work Productivity and it is recommended that PT. KSS (Karunia Sejahtera Sejati) provide increased competency and understanding of employees regarding inventory management that is very necessary so that they are able to carry out their tasks more efficiently and effectively, so that work productivity increases. Periodic training and socialization regarding inventory management and its relationship to work productivity must continue to be carried out.

Keywords: *Raw Material Inventory Management, Work Productivity*

1. INTRODUCTION

Inventory management can be understood as a comprehensive and interconnected management process between its elements, carried out through careful planning regarding the time, quantity, quality, and costs required. Inventory itself plays a crucial role in a company's operational cycle because it bridges consumer demand and the organization's production and distribution capacity. In a trading company, inventory directly refers to goods ready to be sold to customers in daily business activities. Meanwhile, in a manufacturing company, inventory has a broader scope, including raw materials to be processed, goods in the production stage, and finished products ready for marketing.

However, service-based companies are also not exempt from the need for inventory management. Although they do not produce physical goods like manufacturing companies, service entities still require inventory, whether in the form of supporting equipment, supplies, or processed products used in providing services to consumers. In other words, inventory is not solely limited to merchandise, but also encompasses all forms of resources that need to be managed to support the continuity of business activities. Therefore, inventory management is not only a technical matter of organizing goods, but also a crucial strategy in maintaining operational continuity, increasing efficiency, reducing the risk of shortages or excess stock, and ensuring customer satisfaction.

The resource aspect of a company or institution holds a very strategic position because it is one of the important indicators in assessing the level of employee work productivity. The resources in question are not only limited to material aspects, but also include the quality of human resources as the primary driver of all organizational activities. Simply put, it can be said that if the quality of a company's resources is at a high level—whether in terms of workforce competence, availability of production facilities, or supporting technology—then employee work productivity tends to be easier to increase. Conversely, if the quality of these resources is low or inadequate, efforts to increase productivity will face various significant obstacles.

Thus, an organization's success is greatly influenced by its ability to manage and improve the quality of its resources. Companies that focus solely on production targets without considering the quality of their resources, particularly human resources, risk declining productivity and difficulty achieving their long-term goals. Therefore, every organization needs to pay serious attention to human resource development, for example through training, skills development, motivation, and providing a conducive work environment. Furthermore, the management of material and technological resources should not be overlooked. Modern production equipment, quality raw materials, and an efficient management system will significantly contribute to increased workforce productivity. In other words, the combination of quality human resources with adequate material and technological support will create a positive synergy that improves organizational performance. Therefore, every organization seeking success in running its business needs to view the resource aspect as a long-term investment, not just a cost. By optimizing human and material resources, the organization can ensure that its strategic objectives can be achieved effectively while building sustainable competitiveness amidst global competition.

PT KSS (True Prosperous Gift)The Nias Branch is a local company specializing in the management of construction materials. Its products are widely used in infrastructure development in the surrounding area. However, researchers' initial observations revealed that raw material management at PT KSS (Karunia Sejahtera Sejati) is suboptimal. This is evident in several issues, including limited production equipment, inaccurate raw material requirements planning, and distribution disruptions due to the flood-prone geographical conditions.

This phenomenon demonstrates a gap between raw material inventory management theory and actual practices. In theory, methods such as Economic Order Quantity (EOQ), Just-In-Time (JIT), and the use of information technology have been proven to optimize raw material management efficiency. However, the ineffectiveness of these methods at PT KSS (Karunia Sejahtera Sejati) resulted in decreased work productivity, such as delays in

fulfilling customer requests and an unbalanced workload for employees.

Problems arising from poor raw material inventory management not only impact the production process but also overall employee performance. Disrupted employee productivity will impact service quality and the continuity of company operations. Therefore, a systematic approach is needed to evaluate and improve the inventory management system in use.

2. RESEARCH METHOD

A type of research that uses numerical or quantitative data collection and analysis methods to answer research questions or test hypotheses. According to Punch (1988) in Ali et al.'s research (2022), quantitative research is empirical research in which the data is in a quantifiable form.

In quantitative research, population is defined as a generalization area consisting of objects/subjects that have certain qualities and characteristics determined by the researcher to be studied and then drawn conclusions. While the sample is a portion of the population (Sugiyono, 2014). In this study, the population is the Manager of PT KSS (Karunia Sejahtera Sejati) Nias Branch 1 person and 30 employees. So the population in this study is 31 people. According to Arikunto (2006: 134) explains that if the subject is less than 100, it is better to take all of them so that the research is a population study. But if the number of subjects is large (more than 100 people) can be taken between 10-15% or 20-25% or more. Therefore, the population is not too large or less than 100, the author took the entire population to be used as a sample, namely 1 Manager of PT KSS (Karunia Sejahtera Sejati) Nias Branch and 30 employees, the total number of respondents is 31 respondents.

When conducting research data collection, we are familiar with research instruments. Generally, research instruments are tools that contribute to the success of the data collection process, whether using observation, interviews, or other methods.

In this study, there are several data analysis techniques used, namely:

1. Validity Test
2. Reliability Test
3. Correlation Coefficient Test
4. Simple Linear Regression Analysis Test
5. Coefficient of Determination Test (R2)
6. Hypothesis Test (T-test)

3. RESULTS AND DISCUSSION

Validity testing was conducted using Pearson Product Moment correlation and involved 31 respondents outside the research sample. The basis for decision-making includes:

a) If r count > r table, then the instrument or statement item correlates significantly with the total score or is declared valid.
b) If r count < r table, then the instrument or statement item does not correlate significantly with the total score or is declared invalid.

Table 1. Validity of Raw Material Inventory Management Variable (X)

Statement	r count	r table	Information
1	0.483	0.355	Valid
2	0.407	0.355	Valid
3	0.777	0.355	Valid
4	0.457	0.355	Valid
5	0.486	0.355	Valid
6	0.508	0.355	Valid
7	0.657	0.355	Valid
8	0.499	0.355	Valid
9	0.586	0.355	Valid
10	0.557	0.355	Valid
11	0.521	0.355	Valid
12	0.641	0.355	Valid
13	0.888	0.355	Valid
14	0.727	0.355	Valid
15	0.483	0.355	Valid
16	0.424	0.355	Valid
17	0.641	0.355	Valid
18	0.584	0.355	Valid
19	0.443	0.355	Valid
20	0.389	0.355	Valid

Source: *Processed through SPSS Statistics 25, 2025*

Table 2. Validity of Work Productivity Variable (Y)

Statement	r count	r table	Information
1	0.407	0.355	Valid
2	0.625	0.355	Valid
3	0.741	0.355	Valid
4	0.548	0.355	Valid
5	0.859	0.355	Valid
6	0.743	0.355	Valid
7	0.397	0.355	Valid
8	0.755	0.355	Valid
9	0.446	0.355	Valid
10	0.440	0.355	Valid
11	0.440	0.355	Valid
12	0.420	0.355	Valid
13	0.773	0.355	Valid
14	0.859	0.355	Valid
15	0.405	0.355	Valid
16	0.426	0.355	Valid
17	0.451	0.355	Valid
18	0.421	0.355	Valid

19	0.770	0.355	Valid
20	0.743	0.355	Valid

Source: *Processed from Primary Data Using SPSS Statistics 25, 2025*

Reliability Test

Table 3. Calculation of Reliability of Each Variable

Variables	Cronbach's Alpha	N of Item
Raw Material Inventory Management	0.874	20
Work Productivity	0.893	20

Source: *Processed from Primary Data Using SPSS Statistics 25, 2025*

The results of the instrument reliability test produced a Cronbach's Alpha value > 0.6, namely 0.874 for the Raw Material Inventory Management variable and 0.893 for the Work Productivity variable. The reliability of the questionnaire on both variables above was declared reliable because the Cronbach's Alpha value > 0.6, which can be said to be sufficient and suitable for use in the context of this study.

Correlation Coefficient Test

Sugiyono (2019:255) explains several criteria in hypothesis testing, including:

1. If r count > r table and the significance level is less than 0.05, then it can be concluded that the correlation coefficient is significant.
2. If the calculated r < r table and the significance level is greater than 0.05, it can be concluded that the correlation coefficient is not significant.

Table 4. Calculation of Correlation Coefficient Test

Correlations

		Raw Material Inventory Management (X)	*Work Productivity (Y)*
Raw Material Inventory Management (X)	*Pearson Correlation*	*1*	*.787***
	Sig. (2-tailed)		*.000*
	N	*31*	*31*
Work Productivity (Y)	*Pearson Correlation*	*.787***	*1*
	Sig. (2-tailed)	*.000*	
	N	*31*	*31*

***. Correlation is significant at the 0.01 level (2-tailed).*

Source: Processed from Primary Data Using SPSS Statistics 25, 2025

Based on the results of the correlation test, it was found that there is a positive and significant relationship between Variable X and Variable Y, where the level of relationship between Variable X and Variable Y is at a strong relationship level, this is proven by the coefficient value being in the coefficient interval of 0.60 - 0.799. Thus, it can be interpreted that the better the Raw Material Inventory Management, the work productivity will increase. Thus, the hypothesis in this study is accepted, namely that there is a positive and significant relationship between the Raw Material Inventory Management variable and Work Productivity.

Simple Linear Regression Analysis Test

Table 5. Simple Linear Regression Analysis Test

Coefficientsa					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-4,395	10,610		-.414	682
Total X	1,011	.147	.787	6,877	000

a. Dependent Variable: TotalY

Source: *Processed from Primary Data Using SPSS Statistics 25, 2025*

Based on the SPSS output results above, the regression equation can be formulated as follows:

Y= -4.395 (a) + 1.011 (X) + e

These regression models mean:

a. Constantan (a) = -4.395 means that if the independent variable is considered constant at zero, namely X = 0, then Work Productivity will have a negative value. Because Raw Material Inventory Management should have a positive value, meaning that if Raw Material Inventory Management is not implemented properly, its value will be zero, so if this happens, Work Productivity will also have a bad or negative value of -4.395.
b. The coefficient towards the regression of Raw Material Inventory Management (b) = 1.011 means that for every one unit increase in the Raw Material Inventory Management variable, Work Productivity is predicted to increase by 1.011 units, assuming other variables remain constant.

R2 Determination Coefficient Test

Table 6. R_2 Determination Coefficient Test

Model Summary				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.787a	.620	.607	5.110

a. Predictors: (Constant), Total X

Source: Processed from Primary Data Using SPSS Statistics 25, 2025

Based on Table 4.9 above, the R2 value is 0.620. This indicates that the Raw Materials Inventory Management variable (X) can explain 62% of Work Productivity (Y), after adjusting for the sample and independent variables in this study. Meanwhile, the remaining 38% is explained by other factors not included in this study.

Hypothesis Test (T-Test)

Table 7. T Hypothesis Test

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4,395	10,610		-.414	.682
	Total X	1,011	.147	.787	6,877	.000

a. Dependent Variable: Total Y

Source: Processed from Primary Data Using SPSS Statistics 25, 2025

Based on the coefficients table above, it can be explained partially between the Raw Material Inventory Management variables (X) obtained a significant value of 0.000 where this value is greater than 0.05 so that it can be explained that the Sig value is <0.05 and the tcount value> ttable obtained a value of 6.877> from 1.696 so that it can be concluded that Ha is accepted and has an effect on the dependent variable Work Productivity (Y).

Discussion

The Influence of Raw Material Inventory Management on the Work Productivity of PT KSS (Karunia Sejahtera Sejati) Nias Branch

Inventory management is a set of interrelated inventory management activities with proper planning in terms of time, quantity, quality, and cost. Inventory refers to goods available for sale in the normal course of business, and in the case of manufacturing companies, this term refers to goods in the production process or those placed in production activities. However, in service companies, inventory is also needed to distribute the processed results from the inventory.

According to Jay Heizer (2011;261) in Noerpratomo (2018), regarding raw material inventory, inventory for a company is one of the most important keys in company operations, and all organizations certainly have a planning system and inventory system.

According to Sutrisno (2011), productivity is a measure of productive efficiency. It is a comparison between output and input. Input is often limited to labor, while output is measured in physical units, in the form of value. According to Hasibuan (2010), productivity is more simply defined as a mathematical comparison between the amount produced and the amount of each resource used during production. It can be concluded that productivity is one component that an institution or company must have if it wants to achieve its stated goals. In its activities, an institution or company must be able to increase productivity over time, because this concerns the institution's performance.

In a study conducted by Muhamad Zulfikar Ash Shiddiqy (2019), entitled "The Effect of Raw Material Inventory Control and Quality Control on Product Productivity at PT. Bineatama Kayone Lestari in Tasikmalaya City," this study aimed to determine the effect of raw material inventory control and quality control on product productivity. The results showed that simultaneously, both variables had an insignificant effect on product productivity. However, partially, inventory control material Standards have a significant effect on product productivity, while quality control does not have a significant effect.

PT KSS (True Prosperous Gift) Nias Branchis a local company specializing in the management of construction materials. Its products are widely used in infrastructure development in the surrounding area. However, based on initial observations, researchers found that raw material management at PT KSS (Karunia Sejahtera Sejati) is suboptimal. This is evident in several issues, such as limited production equipment, inaccurate raw material requirements planning, and distribution disruptions due to flood-prone geographic conditions.

How Big is the Influence of Raw Material Inventory Management on the Work Productivity of PT KSS (Karunia Sejahtera Sejati) Nias Branch?

In this study, there is an influence between Raw Material Inventory Management on Work Productivity, where the magnitude of the influence of raw material inventory management on work productivity is seen through tests that have been conducted by researchers. Based on the results of the Correlation Coefficient Test, there is a level of relationship between Variable X and Variable Y at a strong relationship level, this is proven by the coefficient value being in the coefficient interval of 0.60 - 0.799 (Strong) and the R2 Determination test that has been carried out obtained the result that the R2 value is 0.620. This shows that the Raw Material Inventory Management variable (X) can explain Work Productivity (Y) by 62%, after being adjusted to the sample and independent variables in this study. Meanwhile, the remaining 38% is explained by other factors not covered in this study.

As in the researchSiti Aisyah, Sahnan Rangkuti, Budi Antoro (2024) with the title The Influence of Raw Material Inventory and Labor on Production Volume at PT. Bukit Intan Abadi Medan. ExplainsThe results show that raw material and labor inventory management significantly and positively impacts production volume at PT Bukit Intan Abadi. These two variables contribute significantly, amounting to 74.2%, to increasing the company's productivity. Therefore, improved monitoring and proper management of raw material and labor inventory are crucial for achieving optimal production results.

So that this can help explain the two objectives in this study, namely There is a positive and significant influence of Raw Material Inventory Management on Work Productivity of PT. KSS (Karunia Sejahtera Sejati) Nias Branch. This is evidenced by the significance value of the t-test results of 0.000 <0.05 and a very high correlation value (R = 0.996). And partially between the Raw Material Inventory Management variables (X) obtained a significant value of 0.000 where this value is greater than 0.05 so that it can be explained that the Sig value <0.05 and the t count value> t table obtained a value of 6.877> from 1.696 so that it can be concluded that Ha is accepted and has an effect on the dependent variable Work Productivity (Y).

4. CONCLUSION

Based on the results of research on the Influence of Raw Material Inventory Management on Work Productivity of PT. KSS (Karunia Sejahtera Sejati) Nias Branch, several conclusions can be drawn as follows:

1. There is a positive and significant influence of Raw Material Inventory Management on the Work Productivity of PT. KSS (Karunia Sejahtera Sejati) Nias Branch. This is evidenced by the significance value of the t-test results of 0.000 < 0.05 and a very high correlation value (R = 0.996).
2. Independent Variable (X) Raw Material Inventory Management obtained a significant value of 0.000 where this value is greater than 0.05 so it can be explained that the Sig value <0.05 and the tcount value> ttable obtained a value of 6.877> from 1.696 so it can be concluded that Ha is accepted and has an effect on the dependent variable Work Productivity (Y). This shows that the Raw Material Inventory Management variable (X) can explain Work Productivity (Y) by 62%, and the remaining 38% is explained by other factors not included in this study.

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