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IDENTIFICATION OF FACTORS INFLUENCING EMPLOYEE WORK PRODUCTIVITY IN OIL PALM PLANTATIONS

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Abstract
Work productivity is a comparison between the results achieved and employee participation per unit of time. Age has an influence on labor productivity. A person's length of service has an influence on their work. The study was conducted in Afdeling 2, Afdeling 4 and Afdeling 5 during the period March - May 2024. The purpose of this study was to identify factors that influence the work productivity of harvest employees in oil palm plantations using quantitative descriptive research methods. The results of the study indicate a positive and significant influence of age and work experience on the Work Productivity of harvest employees in PT.X plantations Based on Multiple Linear Regression Analysis Y = 24.034 + 0.228X1 + 0.231X2. Based on the results of the hypothesis test, the results are the calculated t value of the Age variable (X1) 4.132 > 1.987 t table value and significant value 0.000 < 0.05 meaning that the Age variable (X1) has an effect on the variable Work productivity of harvest employees (Y), the calculated t value of the Work Experience variable (X2) 3.815 > 1.987 t table value and significant value 0.000 < 0.05 meaning that the Work Experience variable (X2) has an effect on the variable Work productivity of harvest employees (Y). The results of the determination test are 36.5%.

Keywords**: **Work Experience, Work Productivity, Age

INTRODUCTION

PT. X is a plantation company focused on palm oil. In 2023, PT X's plantation consisted of nine divisions. Each division has a different productivity level, closely related to the productivity of its harvesting employees.

AFDELING	4 TAHUN TERAKHIR								JUMLAH 4 TAHUN TERAKHIR		RATA-RATA 4 TAHUN TERAKHIR		SELISIH (REALISASI - RKAP)
	2019		2020		2021		2022						
	PRODUKTIVITAS		PRODUKTIVITAS		PRODUKTIVITAS		PRODUKTIVITAS		RKAP	REALISASI	RKAP	REALISASI	
	RKAP	REALISASI	RKAP	REALISASI	RKAP	REALISASI	RKAP	REALISASI					
1	17,66	16,71	17,32	14,67	22,01	23,26	24,00	24,93	19,52	18,77	19,52	18,77	-0,75
2	23,37	22,22	21,63	20,90	23,88	23,97	26,24	22,64	23,73	22,40	23,73	22,40	-1,33
3	28,67	25,81	29,87	30,34	29,21	30,82	33,23	32,79	30,29	30,02	30,29	30,02	-0,26
4	25,29	23,46	26,57	25,16	20,44	20,45	25,22	22,71	24,08	22,68	24,08	22,68	-1,40
5	16,37	13,10	21,06	18,53	27,69	27,75	34,49	24,63	22,26	18,69	22,26	18,69	-3,58
6	15,47	16,87	15,00	15,37	23,48	28,57	34,23	26,79	19,78	19,99	19,78	19,99	0,20
7	22,16	20,08	22,17	20,23	20,05	20,14	19,86	19,48	21,06	19,98	21,06	19,98	-1,08
8	21,79	21,10	21,22	23,12	22,36	23,39	26,61	25,21	22,88	23,14	22,88	23,14	0,26
9	30,38	27,01	27,71	30,51	29,00	31,09	29,77	29,39	29,22	29,50	29,22	29,50	0,28
ADOLINA	**22,06**	**20,30**	**22,64**	**21,97**	**23,92**	**24,83**	**27,40**	**25,19**	**23,90**	**22,96**	**23,90**	**22,96**	-0.95

Based on Table 1.1, the average productivity of the Plantation from 2019 to 2022 was 22.96 tons/ha/year, while the Plantation's RKAP was 23.90 tons/ha/year. This resulted in a difference of approximately 0.96 tons/ha/year. In terms of the difference between the RKAP and the realization, Afdeling 5 was the afdeling with a relatively low average achievement of -3.58, followed by Afdeling 4 at -1.40, and Afdeling 2 at -1.33. This occurred partly because some of the production plants underwent replanting due to the age of the plants entering the replanting

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period, and some harvesting workers were transferred to other jobs. Then in 2022, the same thing happened because some of the plants had entered the harvest period, but the fruit produced was not yet heavy enough to reach the set target. In addition, the available harvesting workers were still insufficient due to the aging of the workforce and the transfer of other jobs. During the replanting period, it is hoped that in the future, additional harvesting personnel will be added to the division so that the results and work carried out can run optimally.

March 2024 Harvest Capacity Table

KAPASITAS PANEN MARET 2024			
Usia (Tahun)	Rata-Rata Pengalaman Kerja (Tahun)	Jumlah Pemanen	Rata-Rata Kapasitas Panen (Kg/Hk)
19-25	3	16 Orang	1139
26-32	5	19 Orang	1142
33-39	9	29 Orang	1155
40-46	9	25 Orang	1172

The process of harvesting oil palm is closely related to age. According to the opinion(Bindrianes et al, 2017)The age of oil palm harvesters influences their physical ability to harvest fresh oil palm fruit bunches. However, long work experience can also be a determining factor in achieving the Company's goals.(Permatasari, 2022)The longer a worker works, the more their skills and abilities should improve. Although physical abilities may decline with age, harvesters with proven experience can still achieve company targets. Based on this phenomenon, this study aims to identify factors influencing the productivity of harvesting employees at the Company's plantations.

RESEARCH METHODS

This research was conducted in Division 2, Division 4, and Division 5 from March to May 2024. This study used a descriptive research method with a quantitative approach. The sampling method used was a saturated sampling technique. According to Arikunto,(Herizelmi et al, 2022)states that if the subject is less than 100, then the entire population becomes the research sample. However, if the subject is more than 100, then 10-15% or 15-25% can be taken. Based on this definition, the author used a research sample of all harvesting employees from Division 2, totaling 36 harvest employees, Division 4 with 29 harvest employees, and Division 5 with 24 harvest employees. The total sample was 89 harvest employees. The data collection techniques in this study used several methods in the hope of complementing and perfecting one data with another, including questionnaires, interviews, documentation, and literature studies. To measure the answers given by respondents in this study, a Likert scale was used with the following measurements:

Table1. Likert Scale

Weight	Category
5	Strongly agree
4	Agree
3	Disagree Less
2	Don't agree
1	Strongly Disagree

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Table2. Respondent Answer Score Category

Skor	Rumus	Nilai Jawaban	Skala
1	1 x 89 = 89	0 - 89	Sangat Tidak Setuju
2	2 x 89 = 178	90 - 178	Tidak Setuju
3	3 x 89 = 267	179 - 267	Kurang Setuju
4	4 x 89 = 356	268 - 356	Setuju
5	5 x 89 = 445	357 - 445	Sangat Setuju

Source :(Harahap, 2021)

Measurements using a Likert scale range from very influential to not influential. To calculate the ideal score (criteria) for all items, the following formula is used:

% Actual Score = $\frac{Skor\ Aktual}{Skor\ \ Ideal}$ **x 100%**

Information :

1. The actual score is the answer of all respondents to the questionnaire that has been submitted.
2. The ideal score is the highest value or all respondents are assumed to choose the highest score (5 X 89 = 445).

Table3Respondent Answer Score Category

No.	%Jumlah Skor	Skala
1	20.00 – 36.00	Tidak Baik
2	36.01 – 52.00	Kurang Baik
3	52.01 – 68.00	Cukup
4	68.01 – 84.00	Baik
5	84.01 – 100.00	Sangat Baik

Source: Narimawati, 2007

This study uses a validity test to assess the validity of a questionnaire (Sugiyono, 2019). A reliability test is a measurement that shows the extent to which the measurement is without bias and therefore ensures measurement consistency over time and at various points on the instrument (Sekaran et al., 2017). A normality test is a test used to evaluate whether the dependent variable, independent variable, or both in a regression model have a normal distribution or not. A multicollinearity test is a condition where there is a perfect or nearly linear relationship between independent variables in a regression model. A heteroscedasticity test is a condition where there is inequality in the variance of the residuals for all observations in the regression model.

This study used multiple linear regression as a data analysis method. The goal was to assess the influence of independent variables such as age and work experience on the dependent variable, productivity.

The following is the multiple linear regression equation:

$$Y = \alpha + \beta 1X1 + \beta 2X2 + e$$

Information :

Y =Work Productivity
α =Constant
β1, β2 = Regression coefficient of each independent variable
X1 =Age
X2 =Work experience

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E =standard error

After the multiple regression test, this study then conducted a T-test.used to test whether the independent variable (X) has a partial effect on the dependent variable (Y). The criteria for hypothesis testing are if the calculated t value > t table or significance value < α = 0.05, then H0 is rejected, which means the independent variable has a significant effect on the dependent variable (Ha is accepted). Conversely, if the calculated t value < t table or significance value > α = 0.05, then H0 is accepted, which indicates that the independent variable does not have a significant effect on the dependent variable (Ha is rejected) (Priyatno, 2016). Furthermore, the F test is used to test whether the independent variables (X) jointly influence the dependent variable (Y). The criteria for hypothesis testing are if the calculated F value > F table or significance value < α = 0.05, then H0 is rejected, which means the independent variables jointly influence the dependent variable (Ha is accepted). On the other hand, if the calculated F value < F table or the significance value > α = 0.05, then H0 is accepted, which indicates that there is no significant joint influence of the independent variables on the dependent variable (Ha is rejected) (Priyatno, 2016). Determination Test according to (Herlina, 2019) Determination analysis or what is known as R Square, symbolized by R2, is used to assess how much influence the independent variables (X) have together on the dependent variable (Y).

Research results

Some of the respondent characteristics used in this study include age, employment status, family dependents, education level, and length of service.

Table4Harvest Employee Age

No	Usia (Tahun)	Jumlah Responden	Persentase (%)
1	19 – 25	16	18.0
2	26 – 32	19	21.3
3	33 – 39	29	32.6
4	40 – 46	25	28.1
Total		89	100.0

Source: Primary Data, 2024

Table5Employment Status

No	Status Kerja	Jumlah Responden	Persentase (%)
1	KS	23	25.8
2	PKWT	66	74.2
Total		89	100.0

Source: Primary Data, 2024

Table6Family Dependencies

No	Jumlah Tanggungan (orang)	Jumlah Responden	Persentase (%)
1	0	8	9.0
2	1	3	3.4
3	2	21	23.6
4	3	33	37.1
5	4	19	21.3
6	5	5	5.6
Total		89	100.0

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Source: Primary Data, 2024

Table7Level of education

No	Tingkat Pendidikan	Jumlah Responden	Persentase (%)
1	SD	20	22.4
2	SMP	24	27.0
3	SMA	45	50.6
Total		89	100.0

Source: Primary Data, 2024

Table8Work experience

No	Pengalaman Kerja (Tahun)	Jumlah Responden	Persentase (%)
1	1 - 5	39	43.9
2	6 - 10	32	35.9
3	11 – 15	16	18.0
4	16 – 20	2	2.2
Total		89	100.0

Source: Primary Data, 2024

It can be concluded that the percentage of harvest employees aged 33 – 39 years is the age range with the highest percentage, namely 32.6%, with the majority of work status being PKWT with a percentage of 74.2% with the educational background of most being high school with a percentage of 50.2% and the majority of work experience in the range of 1 – 5 years with a percentage of 43.9%.

Instrument Test

Validity Test

KThe validity test results for each statement for the Age variable have a calculated R value > R table (0.361). Therefore, statistically it can be concluded that each question indicator is valid and can be used in this study. The validity test results for the Work Experience variable have a calculated R value > R table (0.361). Therefore, statistically it can be concluded that each question indicator is valid and suitable for use in this study. The validity test results for each statement for the Productivity variable have a calculated R value > R table (0.361). Thus, statistically it can be concluded that each question indicator is valid and suitable for use in this study.

Based on the results of measurements using SPSS from the histogram graph, it can be seen that the points are spread around the diagonal line and follow the direction of the diagonal line or histogram graph, so the regression model is normally distributed.

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Multicollinearity Test

Table Multicollinearity Test

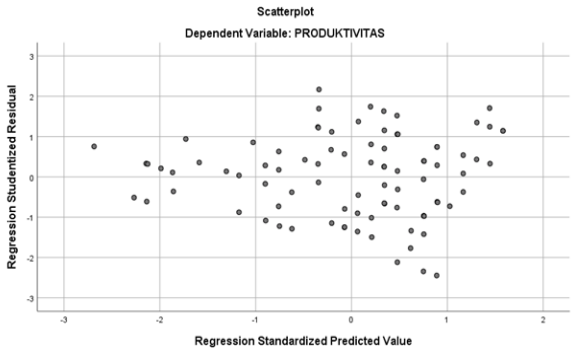
One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		89
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	2.19842536
Most Extreme Differences	Absolute	.072
	Positive	.062
	Negative	-.072
Test Statistic		.072
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.

Based on the table above, X1 (Age) and X2 (Work Experience) does not experience multicollinearity. This is based on the tolerance value for age and work experience being higher than 0.10 and the VIF value being lower than 10.00.

Heteroscedasticity Test



Picture1Heteroscedasticity Test

Based on the results of the heteroscedasticity test for the age and work experience variables using scatterplot, it can be seen that the points are spread randomly and are spread both above and below the number 0 on the Y axis. This indicates that there is no heteroscedasticity in the regression model, so the model can be used to predict the productivity of harvest employees based on the independent variables of age and work experience.

Multiple Linear Analysis

This analysis aims to determine the extent of influence of the independent variables, namely age and work experience, on the dependent variable, namely productivity. The following are the results of the multiple linear regression analysis:

Table9Multiple Linear Test

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Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	24.034	2.846	.381	8.445	.000
USIA	.228	.055	.351	4.132	.000
PENGALAMAN KERJA	.231	.060		3.815	.000

a. Dependent Variable: PRODUKTIVITAS

Based on the results of the multiple regression test, each independent variable has a positive correlation with the dependent variable, namely productivity. In other words, if the independent variables, namely age and work experience, are zero, then the dependent variable, namely productivity, is worth 24.034. If the regression coefficient of variable X1 (Age) increases by 1 unit, then the productivity of harvest employees increases by 0.228 units. Then, if the regression coefficient of variable X2 (Work Experience) increases by 1 unit, then productivity increases by 0.231 units in this study.

Hypothesis Testing

T-Test (Partial)

T-Test Table

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	24.034	2.846	.381	8.445	.000
USIA	.228	.055	.351	4.132	.000
PENGALAMAN KERJA	.231	.060		3.815	.000

a. Dependent Variable: PRODUKTIVITAS

Based on the results of partial testing (T Test) in the table shows the results of SPSS output, namely the calculated t value of the Age variable (X1) 4.132 > 1.987 t table value and significant value 0.000 < 0.05 which means that the Age variable (X1) has an effect on the variable Work productivity of harvest employees (Y), the calculated t value of the Work Experience variable (X2) 3.815 > 1.987 t table value and significant value 0.000 < 0.05 which means that the Work Experience variable (X2) has an effect on the variable Work productivity of harvest employees (Y).

F Test (Stimulus)

F Test Table

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	244.330	2	122.165	24.702	.000[b]
Residual	425.311	86	4.945		
Total	669.640	88			

a. Dependent Variable: PRODUKTIVITAS
b. Predictors: (Constant), PENGALAMAN KERJA, USIA

Based on the results of simultaneous testing (F Test) in the table shows the results, namely the calculated F value of Age (X1), Work Experience (X2), 24.702 > 3.10 F table value and significant value of 0.000 < 0.05 which means that the variables Age (X1), Work Experience (X2) have a significant effect on the variable Harvest Employee Work Productivity (Y).

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Determination Test (R2)

Determination Test Table

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.604[a]	.365	.350	2.22384

a. Predictors: (Constant), PENGALAMAN KERJA, USIA
b. Dependent Variable: PRODUKTIVITAS

Based on the results of the determination coefficient test, the SPSS output results show an R Square value of 0.365 or 36.5%, which indicates that there is a stimulating influence on the variables Age (X1) and Work Experience (X2).on the variable of employee productivity (Y) of 36.5% and the remaining 63.5% is influenced by several other variables such as work status, family responsibilities, salary, premiums, and so on.

The Influence of Age on Employee Work Productivity

Age plays a role in oil palm harvesting because the harvesting process requires strong physical strength and stamina. The harvesting process involves preparing work equipment and supporting tools, such as preparing a egrek/dodos (a wooden hoe) by sharpening it before use, then carrying it on a shoulder until it reaches the ancak (a wooden hoe). The egrek/dodos is heavy and long. During the oil palm harvesting process, the egrek is lifted upwards until it reaches the position of the bunches to be harvested. Harvesting fresh fruit bunches using an egrek requires strong strength and proper technique, so if the harvester is too old, it is not easy and can be dangerous for the harvester. Aging harvesters generally also have declining vision, making the harvesting process very difficult and can be detrimental for the harvester, because the fruit bunches are above the palm tree. If vision has decreased, being able to see whether the fruit bunches are ripe or still unripe is very difficult for the harvester. A harvester who harvests the wrong fruit (unripe) either intentionally or unintentionally can be subject to sanctions/fines which can be detrimental to the harvester.Those of productive age generally still have strong physiques and the ability and energy to work well, so they are still very capable of increasing their productivity. This is in line with Waskito's opinion in(Cynthia et al, 2024)In the productive age group, they still have prime physical condition and high work enthusiasm to develop their potential in work and achieve the targets set by the company.

The Influence of Work Experience on Employee Work Productivity

A harvester, besides being of productive age and having a strong and strong physique and strength, must also be supported by sufficient work experience, along with the ability, skills, and knowledge of proper oil palm harvesting. The oil palm harvesting process requires not only strong strength but also proper harvesting techniques, such as proper body position and the position of the egrek when harvesting the bunches. If done with the correct technique and supported by a sharp egrek, harvesters with sufficient work experience can harvest FFB with

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just one pull of the egrek. Sometimes, during harvesting, the fruit bunch stalks are already cut short, so if the stalks are cut, they don't have to be cut again with an axe. Harvesters with sufficient work experience can observe the ripeness of the fruit bunches from a distance, thus minimizing errors in harvesting unripe fruit bunches. Observing the ripeness of the fruit involves not only looking visually at the tree but also observing the number of loose fruit that fall onto the plate. This is in line with the opinion(Hariani et al, 2019)which states that Work experience is an experience that develops a person's potential, where this potential will emerge gradually over time in response to various experiences that are undergone.

CONCLUSION

There is a positive and significant influence The relationship between age and work experience on the productivity of harvesting workers. Age plays a significant role in the palm oil harvesting process, as this work requires significant physical strength and stamina. A harvesting worker, in addition to being of a productive age with strong and strong physical strength, must also be supported by sufficient work experience, along with the ability, skills, and knowledge of proper palm oil harvesting. The palm oil harvesting process requires not only strong strength but also proper harvesting techniques, such as proper body position and the position of the egrek when lifting the bunches. Age and work experience have an influence of 36.5% and the rest is influenced by other factors such as work status, family responsibilities, salary, premiums, work status, or agronomic techniques such as planting year, fertilization, maintenance and pest control, conditions of the field, land area and others.

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