Analysis of Factors Affecting Work Productivity of Tea Pickers at the Tea and Quinine Research Center, Simalungun Regency

Roki Sagutray Simangunsong
Universitas Samudera Langsa, Aceh, North Sumatera.
E-mail: gutraysimangunsong0@gamil.com

Abstract
This study aims to determine the effect of age, work experience, and gender on the work productivity of tea pickers. This research was conducted in the PPTK Laut Tawar Gardens, Simalungun Regency. The sampling technique used is probability sampling technique with a sample size of 40 respondents. To determine the factors that influence the work productivity of tea pickers at the Tea and Quinine Research Center, Simalungun Regency, statistical analysis was used with the classical assumption test method, multiple linear, and hypothesis testing. Data processing using SPSS computer software. The results of this study indicate that all independent variables, namely age (X1), work experience (X2) and gender (D1) simultaneously, have a significant effect on the dependent variable, namely work productivity (Y).

Keywords: **productivity, labor, tea**

Introduction

Development in developing countries generally focuses on the industrial sector. Industrial policy is aimed at expanding job opportunities, business equity and supporting development. Therefore, the industrial sector is often used as an object of development in the very important economic field. The agricultural sector is a sector that has received considerable attention from the government due to its very important role in the framework of long-term economic development as well as in the context of the nation's economic recovery. Plantation is a sub-sector that plays an important role in the national economy and plantations have a major contribution to national income, job creation, export revenue and tax revenue. In its development, this sub-sector is inseparable from various national and global dynamics (Damanik, 2015).

Tea is a commodity that has a strategic role in development in the agricultural sector and the national economy (Permata Sari and Suminartika, 2018). According to (Soekartawi, 2001), agro-industry processing agricultural products and therefore agro-industry is part of the six agribusiness subsystems that have been agreed so far, namely the subsystem of providing production facilities and farming equipment, processing products (agro-industry), marketing, facilities and coaching.

Literatur Review

Tea with the Latin name Camellia sinensis, belongs to the genus Camellia, is native to Southeast Asia, tea is one of the most popular drinks in the world, and its position is second only to water. Tea is a beverage that contains caffeine, a beverage made by brewing the dried leaves, shoots, or petioles of the Camellia sinensis plant with hot water. Its popularity is because tea has an attractive taste and aroma (Rohdiana et al, 2005).

Productivity is defined as the relationship between output (goods or services) and inputs (labor, materials, money). Productivity is a measure of productive efficiency. A comparison between the output and input. Input is often limited by labor, while output is measured in physical units, forms and values (Sutrisno, 2015).

Work productivity according to Cascio (1998) is productivity as a measurement of output in the form of goods or services in relation to inputs in the form of employees, capital, materials or raw materials and equipment. In line with the above view, Sedarmayanti (2001) states that work productivity shows that individual is a comparison of the effectiveness of the output (achievement of maximum performance) with the efficiency of one of the inputs (labor) which includes quantity, quality in a certain time.

Implementation Method
Research Time and Place
The time of this research was carried out in January - February in 2022. This research was carried out in Laut Tawar gardens with an area of 61.14 Ha at PPTK (Tea and Quinine Research Center) Sidamanik District, Simalungun Regency.

Research Design
The method used in this research is the survey method. According to (Sugiyono, 2017) the survey method is used by researchers in obtaining natural data directly from distributing questionnaires, tests, interviews and so on directly to the company. In this study, researchers used questionnaires and interviews in conducting a survey.

Determination of Population and Sample
Population Determination

Determination of the population in this study using the probability sampling method in which each population has the same opportunity to be a sample.

Sampling

In this study using a saturated sampling technique where all the population was sampled as many as 40 people, with consideration of using the survey method because the population in PPTK was small.

Result And Discussion
Classic Assumption Test
Normality Test
Normality test is to test whether in a regression model, the dependent variable, the independent variable or both have a normal distribution or not.

Decision making according to Ghozali (2013) is as follows:

a. If the Kolmogorov-Smirnov significance result shows a significant value > 0.05 then the data is normally distributed.

b. If the Kolmogorov-Smirnov significance result shows a significant value < 0.05, then the data is not normally distributed. The test results in this study can be seen in the table below

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		36
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	3628.83553304
Most Extreme Differences	Absolute	.138
	Positive	.059
	Negative	-.138
Test Statistic		.138
Asymp. Sig. (2-tailed)		.082[c]

Source: Attachment 4

From the Kilmogorov-Smirnov Test Sample Test above, it shows the Asymp value. Sig. (2-tailed) is 0.082, and the value is greater than 0.05. Thus, it can be concluded that the research data meet the requirements of the normality test.

Multicollinearity Test

The multicollinearity test was used to test whether the regression model found a high correlation between the independent variables. If there is a high correlation, then multicollinearity occurs. The diagnosis of multicollinearity can be seen in the VIF value, if the VIF value is < 10 then there is no multicollinearity. The results of the multicollinearity test can be seen in the table below

| | | Colineqrity statistics | |
		Tolerance	VIF
1	(Constant)		
	Usia	.506	1.976
	Pengalaman Kerja	.509	1.966
	Jenis Kelamin	.991	1.009

Source: Attachment 4

From the Multicollinearity test, it can be seen that the Tolerance value is > 0.10 and the VIF value is < 10.00. It can be concluded that the data in this research does not have multicollinearity symptoms.

Heteroscedasticity Test

The Heteroscedasticity test aims to test whether in the regression model there is a variance inequality from one observation to another observation, it is called homoscedasticity and if it is different it is called heteroscedasticity. A good regression model is homoscedasticity or there is no heteroscedasticity (Ghozali, 2018). The basis of the analysis is as follows:

a. If there is a certain pattern, such as the dots that form a certain regular pattern (wavy, widen and then narrowed), it indicates that heteroscedasticity has occurred.

b. If there is no clear pattern, and the points spread above and below the number 0 on the Y axis, then there is no heteroscedasticity. The results of the Heteroscedasticity test can be seen in the graph below.
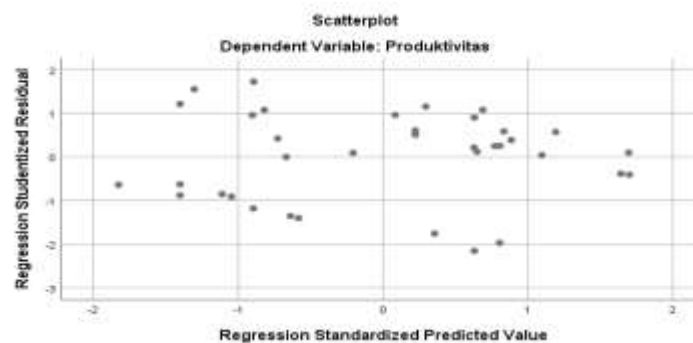
Source: Attachment 4

Based on the figure (Scatterplot), it shows that the points spread randomly and are spread both above and below the number 0 on the Y axis. It can be concluded that there is no heteroscedasticity in the regression model, so the regression model is feasible to use for this study.

Multiple linear analysis and hypothesis testing

To simplify the calculation of the regression from the research data, this study was completed with the help of SPSS 25 computer software. The test results of the multiple linear regression model of the factors that affect the work productivity of tea pickers in PPTK Simalungun Regency can be seen in the following table this:

Multiple Linear Regression Test Results

Variabel	Koefisien Regresi	t-Hitung	Signifikansi
(Constant)	8.216.454	1.644	.110
Usia	-136.694	-1.070	.293
Pengalaman Kerja	169.683	1.670	.105
Jenis Kelamin	3992.768	3.137	.004

R	= 0,543		
R Square	= 0,295		
Adjusted R Square	= 0,229		
F-Hitung	= 4,461		
F-Tabel	= 3,28		0,05
t- Tabel	= 1,692		0,05

Source: Attachment 5

Based on the test results in the table, it can be seen that the regression equation in this study is:
$$Y = 8.216{,}454 - 136{,}694\,X_1 + 169{,}683\,X_2 + 3.992{,}768\,D_1 + e$$
The meaning of the regression equation:
1. The value of the work productivity constant (Y) of 8,216,454 states that if the variables of age, work experience and gender do not change (constantly) then work productivity is worth 8,216.454 Kg/Hok.
2. If X_2 and D_1 remain constant, every 1 year additional age will cause a reduction in work productivity of 136,694 Kg/Hok.
3. If X_1 and D_1 are fixed, every 1 year increase in work experience causes an increase in work productivity of 169.683 Kg/Hok.
4. If X_1 and X_2 are fixed, it can be interpreted that the magnitude of the influence of the sex variable on productivity is 3,992,768 Kg/Hok.

A. F Test (Simultaneous)

The F test is a simultaneous test to determine whether the variables of age (X_1), work experience (X_2), and gender (D_1) together have a significant effect on the work productivity of tea pickers.

ANOVAᵃ

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	192752943.900	3	64250981.300	4.461	.010ᵇ
	Residual	460895656.405	32	14402989.263		
	Total	653648600.306	35			

Attachment 5

Based on the results of the F test, it can be seen that the significance value is 0.010 which indicates that the variables of age (X_1), work experience (X_2), and gender (D_1), have a significant effect on productivity (Y) because the sig value, which is obtained is 0.010 < 0, 05. Meanwhile, based on the F test, the calculated F value is 4.461 > F table 3.28 so it can be concluded that age (X_1), work experience (X_2), and gender (D_1) affect the work productivity of tea pickers at PPTK Lauttawar, Sidamanik District, Simalungun Regency.

Coefficient of Determination Test Adjusted R-Square

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.543[a]	.295	.229	3795.12704

a. Predictors: (Constant), Jenis Kelamin, Pengalaman Kerja , Usia

Source: Attachment 5

Based on the table of determination coefficient test results, it can be seen that the value of the coefficient of determination in Adjusted R Square is 0.229, which means Age (X_1), Work Experience (X_2), and Gender (D_1). Simultaneously it can affect the productivity variable (Y) by 22.9% while the remaining 77.1% is influenced by other variables that are not included in the model such as education level, number of dependents, side jobs and other variables.

Partial Test (t Test)

Partial test is used to see the effect of each independent variable individually on the dependent variable. Therefore, the test used is the t-test or t-test. The decision making criteria are:

a. if tcount < ttable then the independent variable has no significant effect on the dependent variable;
b. if tcount > ttable then the independent variable has a significant effect on the dependent variable. Or can by looking at the value:
a. sig > 0.05 then the hypothesis is rejected, b. sig < 0.05 then the hypothesis is accepted.

Hasil Uji t

Variabel Bebas	t_{hitung}	Sig.
usia (X_1)	-1,070	0,110
Pengalaman Kerja (X_2)	1,670	0,105
Jenis Kelamin (D1)	3.137	0,004
Nilai t_{tabel}	1,692	

Attachment 5

Based on the results of the t test, the partial effect of each variable, namely age (X_1), work experience (X_2) and gender (D_1) on work productivity (Y) in Fresh Sea PPTK, Sidamanik District, Simalungun Regency is as follows:

Effect of age (X1) on work productivity:

Based on data processing using SPSS 25 through the t-test, the t-test value obtained for the age variable on work productivity shows the t-count value -1.070 <1.692 ttable and has a significance level of 0.110> 0.05 then H0 is accepted and H1 is rejected, this indicates that the age variable has no significant effect on work productivity.

From the test results above, it shows that age does not affect productivity in PPTK Lauttawar because the value of tcount -1.070 < 1.692 ttable has no significant effect, which means that whatever age the tea picker workers have at PPTK will not affect one's work productivity because the PPTK has determined the number of wholesalers required. the tea pickers must get it in a day.

The results of this study differ from those of Ary Rahmady Pratama, et al (2015), entitled "Analysis of Factors Affecting the Work Productivity of Tea Pickers at PTPN XII (Persero) Kebun Wonosari" stating that age has a significant influence on work productivity. Due to increasing age, the knowledge of the tea-picking workforce will also get better. This is because the increase in work productivity is only up to a certain age where then if the age increases, the productivity decreases.

Effect of work experience (X2) on work productivity

Based on data processing using SPSS 25 through the t-test, the t-test value obtained for the work experience variable on work productivity shows a tcount value of 1.670 <1.692 ttable and has a significance level of 0.105> 0.05 then H0 is accepted and H1 is rejected, this indicates that the work experience variable has no significant effect on work productivity.

From the test results above that work experience does not affect productivity in Fresh Sea PPTK because the tcount value is 1.670 < 1.692 ttable is not significant, which means that work experience has no effect because in PPTK workers only pick to get the number of wholesale tea pickings that have been set at PPTK and generally workers only do the work of picking tea and do not do other work so that work experience has no effect on productivity.

The results of this study are in accordance with the research of Ronika Nainggolan, et al (2012), entitled "Factors Affecting the Productivity of Palm Harvesting Workers at PT. Bio Nusantara Teknologi, Bengkulu "states that work experience does not affect work productivity. This is because young harvesters have more physical strength than old harvesters, so that their harvests are higher even though they have little work experience. On the other hand, harvesters who are old and experienced do not necessarily have high productivity.

Effect of gender (D1) on work productivity

Based on data processing using SPSS 25 through t-test, the t-test value for the sex variable on work productivity shows a tcount value of 3.137 > 1.692 ttable and has a significant level of 0.004 < 0.05 then H1 is accepted and H0 is rejected, this indicates that gender variable has a significant effect on work productivity.

The test results above indicate that gender has an influence on work productivity in the Fresh Sea PPTK. This is because the PPTK gives women a break for 2 days each month so that it affects productivity. And also from a physical point of view, it can be seen that women have a weaker physique compared to men so that gender has a significant influence on the work productivity of tea pickers in the Fresh Sea PPTK.

The results of this study are different from the research of Ary Rahmady Pratama, et al (2015), entitled "Analysis of Factors Affecting the Work Productivity of Tea Pickers at PTPN XII (Persero) Kebun Wonosari" which states that gender has no significant effect on productivity work. This is because the tea picking process requires skill and precision in picking tea so that it affects the quantity and quality of the tea obtained.

Conclusion And Suggestions
Conclusion

Based on the results of the analysis that has been carried out, it can be concluded that the factors that affect the work productivity of tea pickers in the Fresh Sea PPTK Sidamanik District, Simalungun Regency on the age variable (X_1) a significant level of 0.293> 0.05 then the age variable does not have a significant effect, work experience (X_2) has a significant level of 0.105 > 0.05 then the work experience variable has no significant effect, and gender (D_1) has a significant level of 0.004 < 0.05 then the gender variable has a significant effect. The results showed that of the 3 variables studied, only 1 variable had a significant effect, namely gender (D_1).

Suggestions

There are still limitations that arise in the implementation of the research. Therefore, the results of this study are not perfect. However, this research is expected to contribute. Based on the results of the study, there are things that must be done further, including researchers can conduct research by increasing the number of independent variables that are more influential and should conduct research in various places.

References

Damanik, A Desi. (2015). Analysis of Factors Affecting Tea Production (Case Study: PTP IV Bahbutong, Sidamanik District, Simalungun Regency, North Sumatra).

Ghozali. (2016). Multivariete Analysis Application With IBM SPSS Program. Semarang: Diponegoro University Publishing Agency.

Ghozali, Imam. (2018). Multivariate Analysis Application With IBM SPSS 20 Program. Diponegoro University Publishing Agency. Semarang.

Santoso, S. 2001. SPSS Exercise Book: Multivariate Statistics. Elex Media Komputindo, Jakarta.

Soekartawi, 2001. Introduction to Agroindustry, Jakarta: Publisher PT Raja Grafindo Persada.