FACTORS AFFECTING THE PURCHASE PRICE OF GAYO ARABICA COFFEE BEANS (CASE STUDY OF BAITUL QIRADH BABURRAYAN COOPERATIVE)

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Abstract

The purpose of this study was to determine the factors that influence the purchase price of Gayo Arabica coffee beans in the Baitul Qiradh Baburrayan Cooperative. The data used in this research is secondary data. The analytical method used in this study is quantitative analysis using SPSS version 25 and using an analytical model using multiple linear regression analysis. The results of research data processing show a correlation coefficient (R) of 0.898, this means that the variables of purchase quantity, moisture content, and trace content have a very strong relationship of 89.8 percent and have a significant effect on the purchase price of coffee together. By partial test in this study the variables that have a significant effect on the purchase price are the moisture content and trace levels.

1. INTRODUCTION

Coffee is a plantation crop as a source of people's income, a mainstay of export commodities, and a source of foreign exchange earnings. The Arabica coffee plant originally came from Africa, to be precise in the mountains of Ethiopia, but Arabica coffee became known to the world after being developed in a country in the Arab part of Yemen. Arab society calls the drink that comes from coffee beans as qahwa which means preventing sleepiness (Rahardjo, 2012). Indonesia is one of the largest coffee supplying countries in the world after Brazil, Vietnam and Colombia. In 2018, Indonesia was able to produce 756 thousand tons of coffee. In Indonesia, there are also many coffee-producing areas such as Bali, South Sumatra, North Sumatra and Aceh. There are three types of coffee that are often produced in Indonesia, namely, Robusta 75%, Aceh Province is one of the coffee-producing regions in Indonesia with production reaching 72,652 tons in 2019 (Ditjenbun, 2020). Central Aceh district is one of the coffee-producing districts in Aceh because almost all of the people who work as farmers in Central Aceh district cultivate Arabica coffee as a superior commodity due to geographical conditions which are at an altitude of > 1000 meters above sea level so that Arabica coffee is very suitable for planting and can grow. well. According to (BPS Aceh Tengah, 2019) the total area of coffee plantations in Central Aceh Regency is 49,834 hectares with total production reaching 34,608 tons. Gayo Arabica Coffee has been widely exported to foreign countries such as the USA, Germany, Japan and several other European countries.

The value of coffee exports from Aceh for the January-December 2022 period reached US$89.4 million, of the total coffee exported around 14,869 tons (Tribun News, 2023). The increase in the volume of exports abroad cannot be separated from the existence of cooperatives engaged in exports in Central Aceh District. One of them is the Baitul Qiradh Baburrayan cooperative, this cooperative was founded in 1995 which then temporarily closed and was restarted in 2002 until now it has 6000 assisted farmer members. This cooperative has penetrated the world market and has even become one of the coffee suppliers to Starbucks outlets. The higher market demand for cooperatives is not without reason, because these cooperatives consistently maintain the quality of coffee beans.

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The quality of coffee beans can be influenced by various factors such as planting material (variety), natural factors, management factors, harvesting methods and post-harvest handling methods. The post-harvest handling process is one of the determining factors for the moisture content and traceability of coffee beans. The better the post-harvest handling process carried out by farmers, the better the quality of the coffee beans produced. This is stated in research (Saleh, 2020) to produce good quality coffee beans by optimally processing and will produce rice coffee beans that meet the general quality requirements of coffee beans. Good coffee quality can be seen from the water content, the higher the water content (above 12.5%) will facilitate the growth of fungi on the beans during storage and cause physical damage and taste. If the seeds are too dry it will cause the seeds to lose their flavor or become more brittle so that many seeds break when peeling the skin. Moisture content is the percentage of water content of a material which can be expressed based on wet weight or based on dry weight. The water content of coffee is affected by the processing of coffee beans, namely the soaking process. Water content that is too high will cause the risk of faster mushroom growth and cause physical changes and taste.

Trace levels in coffee are also affected by post-harvest handling in the process of stripping red cherry skins and horn skins. The water content also affects the traceability of coffee beans, the higher the water content, the higher the rate of damaged beans. The way that can be done so that the number of broken beans is not much is to maintain the moisture content of the coffee beans, so that the quality of the coffee produced is getting better. (Kembaren, 2021) A test alignment is carried out to find out the percentage of defective beans in 100 grams of coffee beans. Trace testing is carried out by weighing the defective seeds and normal seeds separately. The result of the weight of the defective seeds is what is referred to as the trace percentage. The test alignment is carried out at the green bean stage and the high trace indicates the low quality of the coffee beans.

Good quality coffee beans brought by farmers to the cooperative will be purchased at high prices. The price of coffee beans bought by the cooperative is between IDR 60,000 – IDR 80,000 per kilogram. This price is of course influenced by the quality of the coffee beans and world coffee prices. Like research (Purwandhini, 2015) that the price of Arabica coffee in Indonesia is significantly influenced by world Arabica coffee prices and time trends. Price is a marketing policy that will directly affect revenue. Price also becomes more important because it will become a reference point for consumers to buy products (Rahmat, 2018). The price currently being asked in the market must be considered reasonable, in other words, the price chosen does not cause a loss because it is too expensive or too cheap (Harahap et al, 2020). Kotler and Armstrong (2012), price is the amount of money charged for a product or service, or the amount of value exchanged by consumers for the benefits of owning or using the product. The Baitul Qiradh Baburrayan Cooperative determines the amount of purchases based on the number of provisions requested for one purchase period. The number of purchases of coffee beans will be higher if the world demand for coffee increases. As stated in the law of demand "the lower the price of an item, the greater the demand for that item, conversely the higher the price of an item, the less demand for that item." Coffee beans purchased from farmers go through various inspection processes. The coffee beans obtained from the farmers are then checked and the samples are sent to the lab. If the coffee passes, it will be processed and purchased, but it is found that coffee has been returned because it is not up to standard and corrected to the farmer. So that the purchase price process in the cooperative is greatly influenced by the moisture content and trace content and the amount purchased is influenced by both, as well as the demand for coffee beans for export.

2. IMPLEMENTATION METHOD
2.1 Place and time of research
The location chosen in this study was Central Aceh District, to be precise at the Baitul Qiradh Baburrayan Cooperative and the time of the research was conducted from August to November 2022.
2.2 Types of research
This type of research is quantitative research.

2.3 Research variables

The variables to be analyzed in this study were obtained from data from one cooperative period consisting of the variable purchase price (Y), purchase amount (X1), moisture content (X2), and trace content (X3).

2.4 Data collection techniques

The data used in this study is in the form of quantitative data derived from secondary data sources at the Baitul Qiradh Baburrayan Cooperative in the period May-July 2022.

2.5 Design of data analysis

The analytical method that will be used in this study is quantitative analysis using tools in the form of the SPSS version 25 program. The data analysis model used in this study is a multiple linear regression equation with the following formula.

$$Y = c + b1X1 + b2X2 + b3\ X3 + e$$

With:
Y   = Purchase Price (Rupiah)
b1…b3 = Regression coefficient
X1   = Number of Purchases (Kg)
X2   = Moisture Content (Percent)
X3   = Trace Content (Percent)
e   = Error.

3. RESULTS AND DISCUSSION

Table 1 shows that the correlation coefficient (R) is 0.898, so this means that the amount purchased (X1), water content (X2), and trace content (X3) have a very strong relationship to the purchase price (Y) of coffee at the Baitul Qiradh cooperative Baburrayan, Central Aceh. The magnitude of the influence of the variable number of purchases (X1), moisture content (X2), and trace content (X3) on the purchase price variable (Y) is 0,898 or 89.8 percent and the remaining 10.2 percent is influenced by other variables. From the coefficient of determination (R^2) it can be seen that the contribution of all independent variables (X) is given to the dependent variable (Y). As seen in table 1, it is known that the coefficient of determination (R^2) obtained is 0.806. This explains that the independent variables, namely the number of purchases, water content and trace levels have an effect on the purchase price of coffee as much as 80.

Table 1. Multiple Linear Regression Test Results.

Summary model b

Model	R	R Square	Adjusted R Square	std. Error of the Estimate	Durbin-Watson
1	.898a	.806	.790	268,670	.377

a. Predictors: (Constant), X3, X2, X1
b. Dependent Variable: Y
Source: SPSS Output Ver 25 (2023)

3.1 Hypothesis Testing Results

Simultaneous Testing (Test F). The F test aims to prove whether all of the independent variables (X), namely the amount purchased, water content and trace content together have an influence on the purchase price of coffee (Y) by including it in the model. The results of the F test calculations can be seen in table 2. In table 2, the values for Fcount are 51,191 and Ftable 2.86. This explains that Fcount > Ftable with a significance of $0.000 < 0.05$. Then H0 is rejected and Ha is accepted, which means that the amount purchased, the water content and the trace content have a significant effect on the purchase price of coffee at the Baitul Qiradh Baburrayan Cooperative, Central Aceh.

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Table 2. Multiple Linear Regression Test Results

ANOVAa

	Model	Sum of Squares	Df	MeanSquare	F	Sig.
1	Regression	11085312.924	3	3695104.308	51,191	.000b
	residual	2670784637	37	72183.369		
	Total	13756097.561	40			

a. Dependent Variable: Y
b. Predictors: (Constant), X3, X2, X1
Source: SPSS Output Ver 25 (2023).

In table 2 it can be seen that the multiple linear regression equation is as follows. Y = 100879.641 + 0.586X1 − 1019.888X2 - 643.195X3
The explanation of the equation is as follows.
   a. The constant value of 100879.641 in this study explains that if the purchase amount, water content and trace content are zero (0) or constant, then the purchase price of coffee will increase by 100879.641.
   b. The regression coefficient of the number of purchases (X1) has a value of 0.586 which explains that the number of purchases has a positive relationship to the purchase price of coffee, if the number of purchases increases by one unit, the purchase price of coffee will increase by 0.586.
   c. The regression coefficient for water content (X2) has a value of -1019,888 which explains that water content (X2) has a negative relationship to the purchase price of coffee, if the water content increases by one unit, the purchase price of coffee will decrease by -1019,888.
   d. The regression coefficient of trace content (X3) is -643,195 which explains that trace content has a negative relationship to the purchase price of coffee, if the trace content increases by one unit, the purchase price of coffee will decrease by -643,195.

Table 3. Multiple Linear Regression Test Results

Coefficientsa

	Model	Unstandardized Coefficients		Standardized Coefficients	Q	Sig.
		B	std. Error	Betas		
1	(Constant)	100879.641	2593,283		38,900	.000
	X1	.586	.805	.060	.728	.471
	X2	-1019,888	123,191	-.669	-8,279	.000
	X3	-643,195	64,640	-.894	-9,950	.000

a. Dependent Variable: Y
Source: SPSS Output Ver 25 (2023)

3.2 Partial Test (t test)
The t test is used to prove whether the independent variables, namely the amount purchased, moisture content and trace content, have an individual or partial effect on the purchase price of coffee. The results of tcount can be seen in table 3 above which can be explained as follows.
   a. The variable number of purchases (X1) obtained tcount 0.728 < ttable 2.028 with a significance of 0.471 > 0.05. This means that H0 is accepted and Ha is rejected, so the purchase quantity variable has no significant effect on the purchase price of coffee.
   b. The moisture content variable (X2) obtained tcount -8.279 < ttable 2.208 with a significance of 0.000 <0.05. This means that H0 is rejected and Ha is accepted, so the moisture content variable has a significant effect on the purchase price of coffee.

c. The trace level variable (X3) obtained tcount -9.950 < ttable 2.208 with a significance of 0.000 <0.05. This means that H0 is rejected and Ha is accepted, so the trace level variable has a significant effect on the purchase price of coffee.

3.3 Discussion of Research Results

a.   Effect of the purchase amount on the purchase price of coffee

From the results of multiple linear regression analysis it is known that there is a positive relationship between the number of purchases and the purchase price of coffee and the regression coefficient value is 0.586. This means that every time there is an additional purchase of 1 kg, the purchase price of coffee increases by 0.586 Rp. In the t test the variable number of purchases has a significant $0.471 > 0.05$. So it can be interpreted that H0 is accepted and Ha is rejected, which means that the amount purchased has no significant effect on the purchase price of coffee at the Baitul Qiradh Baburrayan cooperative, Central Aceh. The research results obtained (Alfiah et al, 2023) in his research that the price variable has a significant positive influence on purchasing decisions. In contrast to the results of this study that the number of purchases affects the purchase price in a positive but not significant.

b.   Effect of water content on the purchase price of coffee

From the results of multiple linear regression analysis it is known that there is a negative relationship between water content and the purchase price of coffee and the regression coefficient value is -1019.888. In the t test the variable moisture content has a significant $0.000 <0.05$. So it can be interpreted that H0 is rejected and Ha is accepted, the moisture content variable has a significant effect on the purchase price of coffee at the Baitul Qiradh Baburrayan cooperative, Central Aceh. In the study (Setiawati, 2020) the results showed a significant value of $0.000 <0.05$, this means that H0 was rejected and Ha was accepted with the variable moisture content affecting the determination of grain quality.

c.   Effect of trace grade on the purchase price of coffee

From the results of multiple linear regression analysis it is known that there is a negative relationship between trace levels and the purchase price of coffee and the regression coefficient value is -643,195. From the t-test, the trace level variable has a significant $0.000 <0.05$. So it can be interpreted that H0 is rejected and Ha is accepted, the trace level variable has a significant effect on the purchase price of coffee at the Baitul Qiradh Baburrayan cooperative, Central Aceh. This study has the same significant results as research (Bramana et al, 2022) has a significant value of $0.000 <0.05$, this means that H0 is rejected and Ha is accepted with the variable quality of coffee beans affecting farmers' income, while the variables used in this study are different. Even though there are differences in the variables in the research, this research has the same goal.

4. CONCLUSION

Calculations from the use of SPSS show that the correlation coefficient (R) is 0.898, so this means that the amount purchased, water content and trace content have a very strong relationship of 89.8% to the purchase price of coffee at the Baitul Qiradh Baburrayan cooperative, Central Aceh. Simultaneous testing (F) shows that the amount of purchase, water content and trace content together have a significant effect on the purchase price of coffee at the Baitul Qiradh Baburrayan cooperative, Central Aceh. Partial testing (t) shows that the water content and trace content have a significant effect on the purchase price of coffee. While the number of purchases has no significant effect on the purchase price of coffee.

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