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ANALYSIS OF THE FACTORS AFFECTING EXPORT OF GUPPY FISH (*POECILIA RETICULA*) IN BEKASI THE PROVINCE OF WEST JAVA

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Abstract

This research is aimed to analyze the factors which affect the export number of Guppy fish in Bekasi and any other related factors which also significantly influence the increase of export volume in Bekasi. This research was conducted from August to September 2018 in Bekasi. The research method used in this research is a case study method. The unit case in this research is the decorative fish producers who sell their products locally or internationally. The case study aims to reveal a more detailed description of the background character as well as a particular case and the status of an individual. The subjects of the research are the producers who sell Guppy fish locally or internationally. The data types are classified into qualitative data and quantitative data. One of the data types used in this study is quantitative data, which is the data measured on a numerical scale (numbers). Moreover, in this research, the quantitative data are collected through literature studies such as books, research journals, and data sources published by certain agencies. The result of the research reveals that significant factors could affect the export number of Guppy fish in Bekasi.
Keywords: Bekasi , Export, Guppy fish

INTRODUCTION

Indonesia is a tropical country that has a large potential for fish resources. One of them is ornamental fish, both freshwater and marine ornamental fish. The potential of abundant ornamental fish wealth and the supporting natural conditions open up opportunities for Indonesia to increase non-oil and gas exports, especially in ornamental fish commodities.(Rizal and Nurruhwati, 2019)

Ornamental fish has great opportunities both for the local market and also for big opportunities for export. The advantage of this ornamental fish business is that it can be breeding on a large scale or household scale due to its relatively fast turnaround, its nature, the ornamental fish business can absorb labor anywhere, both in the countryside and also in big cities. One of them is Bekasi City, West Java. Examples of fish that can be exported and breeding are Koi, Arowana, Goldfish, and Guppy.(Rizal et.al.,2019 : Rizal et.al., 2017)

One of the advantages of ornamental fish business is that it can be breeding on a small or large scale, or a household scale, besides that in terms of capital turnover in this business that is

relatively fast. The existence of ornamental fish in Indonesia is very much in the area of West Java Province. Ornamental fish cultivators, one of which is ornamental fish Breeders in the Bekasi City area, has been exporting fish.(Rizal and Nurruhwati, 2018)

Based on the Bekasi Regulation number 10 of 2013 concerning the RPJP of Bekasi in 2015-2025 it is stated that ornamental fish is one of the products directed to build local economic strength in the Bekasi in the long run. Meanwhile, based on observations in the field many ornamental fish entrepreneurs face several obstacles as complained by the ornamental fish practitioners themselves in the form of the difficulty of obtaining additional capital, the absence of facilities, and other problems (Budiyono and Setyawasih, 2013).

According to information from several actors in the city of Bekasi at the moment, the type of fish most sought after in the market is the type of guppy. Currently guppy ornamental fish, despite having a small size, is no less competitive with other types of ornamental fish, precisely because of their small size as an attraction for buyers. This guppy fish has many types, that's what makes many people maintain and even cultivate this type of fish. Ornamental fish species that are widely traded in Bekasi, one of which is guppy ornamental fish, a large number of guppy fish orders in Bekasi City makes the population there to breed and even not only domestically, the demand for guppy ornamental fish is now also abroad. Currently, the demand for guppy ornamental fish has reached overseas and one of the exporters of this type of ornamental fish comes from the city of Bekasi. The large demand for guppy is easy to maintain and easy to breed. (Rizal, 2018)

From the demand side, the marketing of Indonesian ornamental fish is dominated by foreign markets or exports, because the export fish business from within Indonesia is already quite good and only needs to be considered by the government to be more competitive in the international world. This study aims to analyze the factors that influence guppy fish exports in Bekasi and the factors that have a significant influence on the increase in export volumes in Bekasi City.

RESEARCH METHOD

This research was conducted in Bekasi, The Province of West Java. The time of data collection and research was carried out on 28 August 2018 - 18 September 2018. The research method used in this study was the case study method. The case unit here is a producer that markets ornamental fish both domestically and abroad. Case studies are research on the status of research subjects regarding a specific phase of data typical of the whole person (Nazir 1998). Case studies have the aim to provide a detailed description of the background characteristics and characteristics of a particular case or status of an individual. Research subjects are producers who market guppy fish both domestically and abroad.

Types of Data and Sources

The data source used in this study is secondary data. Secondary data was obtained from documents and information related institutions such as libraries; the Central Statistics Agency; the Ministry of Fisheries and Maritime Affairs and others related to this study. The types of data can be classified into qualitative and quantitative data. The type of data used in this study is quantitative data, which is data measured on a numerical scale (number). In this study using quantitative data sources collected through literature studies both books, research journals, and data sources published by certain institutions.

Data analysis

The analytical method used in this study is the multiple linear regression analysis methods. In analyzing the factors that influence the level of ornamental fish exports in Bekasi, a model is used:

$$Y = b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + e \ldots$$

Information :
Y : Export Volume
X_1 : Export Price

X_2 : Fish Size
X_3 : Dollar Exchange Rate Against Rupiah
X_4 : Domestic Guppy Fish Prices
b_1 : Export Price Coefficient
b_2 : Fish Size Coefficient
b_3 : Dollar Exchange Rate Against Rupiah coefficient
b_4 : Domestic Guppy Fish Prices Coefficient
µ1 : Disruptive Factor

Testing Models

Correlation Test

The correlation test is used to determine the degree of relationship and contribution of independent variables to the dependent variable. In this study, a simple correlation used is the correlation technique that is the Product-Moment technique. The Product-Moment correlation technique is a correlation between independent variables and dependent variables. Numbers that show the direction and magnitude of the relationship between an independent variable and a dependent variable are called correlation coefficients. Correlation analysis can be calculated using the Pearson Product-Moment correlation formula (Riduwan 2011) as follows:

$$r_{xy} = \frac{n\,(\Sigma\,XY) - (\Sigma\,X)(\Sigma\,Y)}{\sqrt{[n\,\Sigma\,X^2 - (\Sigma\,X)^2][n\,\Sigma\,Y^2 - (\Sigma\,Y)^2]}}$$

Information:

r_{xy} : Correlation Coefficient Value
n : Number of Sample Members
ΣX : Independent Variable
ΣY : Dependent Variabel

F-Test

The F test was used to determine the effect of all independent variables together on the variation of the dependent variable (the number of ornamental fish exports) with a confidence level of 95%. The calculated F formula is as follows:

$$\text{F hitung} = \frac{R^2/(k-1)}{(1-R^2)/(N-k)}$$

Information:
R^2 : Coefficient of Determination
N : Amount of Observation
K : Amount of Variable

T-Test

T-test was used to determine the effect of each independent variable on the variation of the dependent variable, namely the number of export demand for ornamental fish at a certain significant level (α), namely α = 5%. T arithmetic formula is as follows:

$$\text{t count} = \frac{\beta i}{Se(\beta i)}$$

Information:

T$_{count}$: Statistical t Value

βi   : The Regression Coefficient of the i-th Independent Variable

Se (βi) : Error Standard Coefficient i-th Independent Variable Regression

RESULT AND DISCUSSION

Data Analysis

The model that made ideally will be able to determine which factors are most significant in influencing the export volume of guppy fish in the city of Bekasi. The results of the guppy fish export regression model in Bekasi city are explained as follows:

$$Y = 68,832 + 0,000215 + 4,820 \text{ JI} - 0,002 \text{ HID} + 0,000104 \text{ HIL}$$

Based on the results of the regression equation above, it can be formulated the value of the factors that affect guppy fish exports in the city of Bekasi, with estimating factors including:

X1   : Guppy Fish Export Prices (Rupiah)

X2   : Guppy Fish Size (Centi meter)

X3   : Dollar Exchange Rate Against Rupiah ($/Rupiah)

X4   : Domestic Guppy Fish Prices (Rupiah)

The regression results from the four estimating factors are explained in Table 1.

Table 1. Regression Result of Guppy Fish Export in Bekasi City

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Y	68,832	334,556		0,206	0,838
X$_1$	0,000215	0,000197	0,222	1,090	0,284
X$_2$	4,820	13,041	0,067	0,370	0,714
X$_3$	-0,002	0,025	-0,017	-0,093	0,927
X$_4$	0,000104	0,000192	-0,109	-0,538	0,849

Information: *Significantly different at the 5% level.

The coefficient of export volume is 68,832 which means if the volume of guppy fish exports in the city of Bekasi tends to experience an increase, it will also affect the high production of fish so that the number of types of fish produced more and more varied, then the price of guppy fish increases; the countries that were importers of guppy fish would also have increased in number in the city of Bekasi. Broadly speaking, the export volume experiencing an increase will greatly affect the factors expected or the independent variable.

The value the significance will be seen based on the level value used, in this study the level value or α used is 0.05 or 5%. From the results of significance, the smaller than α is the high export price of 0.284 this means that the type of guppy fish is an independent variable that does not significantly affect the export volume of guppy fish in the city of Bekasi.

R-determinant

R-determinant is the result of information from multiple regression models that have been made. The R-determinant will provide a value that illustrates the accuracy of the independent variables. The R-determinant will show the amount of diversity of the dependent variable and how much influence the independent variable has on the dependent variable (Sugiyono 2014). In this case, knowing how much influence (1) the export price of guppy fish, (2) the size of guppy fish, (3) the exchange rate of the dollar against the rupiah, (4) the price of guppy fish in the country.

This determination coefficient value will produce a number between zero and one. If the value approaches one, it can explain the effect of the independent variable with the dependent variable. However, if the results obtained are close to zero then it can be said that the model is less able to explain the effect of the independent variables on the dependent variable (Sugiyono 2014).

The R-determinant obtained from this model is 0.68, meaning that 68% of the estimating variables can affect the export volume and the remaining 32% is the influence of other variables that are not included in the model or can be explained in error. This result is closer to one and it can be said that the formulated model can explain the effect of the independent variable with the dependent variable

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F-Test

F-Test or overall test is conducted to find out whether the independent variables together or simultaneously (overall) have a significant effect or not on the dependent variable or in this case the export volume of guppy fish in Bekasi. The results of the f test in this model are explained by the significance value obtained which is equal to 0.324. This means that the value is smaller than α of 5% or 0.05, which means that H0 is rejected and H1 is accepted. Then it is assumed that there is at least one independent variable in the model including (1) the number of freshwater ornamental fish species, (2) the price of freshwater ornamental fish in the city of Bandung for the importing country, (3) the price of freshwater ornamental fish abroad, (4) the number of export destination countries (5) the exchange rate of USD against rupiah, which significantly influences the dependent variable, namely the volume of freshwater ornamental fish exports in the city of Bandung. The results can be explained in Table 2.

Tabel 2. F-Test Result (Overall) on Regression Model

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3555,758	4	888,940	0,324	0,000078
Residual	84999,797	31	2741,929		
Total	88555,556	35			

t-Test

t-test or partial test is conducted to determine the effect of each independent variable, the estimating variables in this study are (1) the export price of guppy fish, (2) the size of guppy fish, (3) the dollar exchange rate against the rupiah, (4) price Guppy fish in the country, individually or not together have a real or not significant effect on the dependent variable, namely the volume of guppy fish exports in Bekasi City. For all t-test variables explained in table 3.

Tabel 3. Resul of t-Test

No	Variabel Bebas	t Hitung
1.	Export Prices (HE)	1,090
2.	Guppy Fish Size (UI)	0,370
3.	Dollar Exchange Rate Against Rupiah (NTDTR)	-0,093
4.	Domestic Guppy Fish Prices (HIGDN)	-0,538

The results of the t arithmetic above can be compared with t table of 1.688. So that there are no independent variables that affect export volume are the export price (HE) and the size of Bekasi city guppies for importing countries (UI) with t count values of 1.090 and 0.370, respectively. This value states that t table> t arithmetic which means H0 is accepted and H1 is rejected. Then it can be concluded that there is a significant influence on the number of fish species and the price of guppy fish in the country for importing countries significantly to the volume of guppy fish exports in the city of Bekasi.

The Effect of Independent Variables on Export Volume

The Price of Guppy Fish in Bekasi for Importing Countries

The price of guppy fish in Bekasi for importing countries will be different from the price of guppy fish sold abroad or in the importing country, why is that because importing countries will follow the value of their respective countries' currencies (Soelostyo 1986). Why do the importing

countries choose to import guppy fish from Indonesia, especially in the city of Bekasi because the value of the currency from within the country of Indonesia is lower than in the importing country so that the fish offered are considered to have lower prices compared to other countries or compared to producing in their own country, and the assumption regarding the quality of fish owned in Indonesia is superior (Soelostyo 1986).

The higher the price, the price of guppy fish in the city of Bekasi for the importing country will usually be determined by how the conditions of supply and demand in the international market. Prices can change to be lower or relatively cheap if there is a large amount of inventory and conversely prices will turn out to be expensive if there is a small amount of inventory (Soelostyo 1986). If there is an increase in guppy fish in the city of Bekasi for the importing country it will have an impact on the decreasing volume of guppy fish export volume in the city of Bekasi. Consumers who buy and sell ornamental fish will actually choose to buy the type of fish according to their needs and also according to their abilities, but consumers have a tolerance to continue to buy ornamental fish for sale if there is a price increase of 30% provided this is influenced by factors their income or in this case, will be affected by the Gross Domestic Product owned by the importing countries (Gumilar et al 2017).

This is consistent with the statement from Sukirno and Sandono (2000) which states that the higher the selling price, the less demand for these goods and services. This situation can cause the importing country to decide its buying and selling activities to the country concerned and will choose to look for cheaper guppy fish in other countries. The emphasis on production costs as well as marketing costs and other supporting costs are expected to be able to keep the price of guppy fish in Bekasi city for the importing country stable so that it will not have an impact on the decline in the volume of guppy fish exports in the city of Bekasi.

Guppy Fish Prices Abroad

Guppy fish domestically and abroad certainly have price differences. This difference is certainly by the currencies of each country. Countries that carry out international trade transactions have different levels of specialization - different in each of the goods and services to be produced which are then sold and bought (Lindert 1995). The reason the state imports guppies in the city of Bekasi is to supplement the existing demand but they cannot produce it themselves for various reasons, such as financing of swelling production of raw materials that are not available (Salvatore 1997). The results of this import activity certainly aim to generate profits from each transaction made.

As stated by Lindert (1995), the greater the price and also the demand for an item, the greater will the country's desire to meet market demand. The fulfillment of this market demand is done in two ways, firstly, producing the goods themselves on condition that the cost of production must be cheap, and secondly by importing those goods whose prices are much cheaper compared to self-producing. To generalize every currency in the importing countries the USD currency is used.

This comparison is used with the USD, because the USD currently holds full power for the world economy, dealing with export problems if the US dollar exchange rate increases, the volume of exports in certain countries that depreciate against the USD will increase (Sukirno 2000). The importance of knowing the price of guppy fish sold in the importing country to find out whether the price changes affect the volume of guppy fish exports in the city of Bekasi every month, from the calculation the coefficient value of 0.000215 results shows that every increase in the price of guppy fish in abroad by 1% will increase its export volume to 0,000215 so%.

Circumstances the selling price abroad with the price offered by Indonesia significantly differ due to changes in the value of currencies that adjust to each country as well as the condition of Indonesia which has depreciated from 2015 (Indopos 2018). Also, international trade transactions are based on profit, where buyers and sellers aim to have a profit in each transaction (Lindert 2000).

Of course, most importing countries also purchase freshwater ornamental fish to connect the buying and selling activities with other countries so that price changes will occur to generate sales profits. This price includes maintenance costs for the fish sold to the desired size, usually the size of

broodstock. Sales prices are adjusted to international market conditions. In some countries, not all guppies imported from the city of Bekasi are sold in their own country, some do import to be exported back to various countries, so the activity must look at the situation of the international market.

Dollar Exchange Rate against Rupiah

The exchange rates of the importing countries against the rupiah become an estimating variable that must be considered, why is that because when the value of the currency decreases against other countries or we can say depreciation in that country the price becomes relatively cheaper, different from when the currency value experiencing an increase in other countries or it can be said that appreciation will have a relative price that tends to rise (Salvatore 1995). In this case, the country will experience positive and negative advantages, the state of the exchange rate of the USD against the rupiah.(Rizal,2018 : Rizal et.al., 2018 :Rizal et.al., 2018)

In Indonesia, the current state of international trade depreciation will increase export volumes including guppy fish, that is because for some other countries the price of guppy fish in Indonesia, including in the city of Bekasi, is cheaper compared to other countries. So that this situation will increase the volume of exports. Evidenced by the achievement of the value of exports in Indonesia reached 14.46 billion USD until January 2018 (Central Statistics Agency 2018). In the calculation of the exchange rate of the currency against the rupiah has a coefficient of 1.7 this means that if there is a weakening (depreciation) of the exchange rate of the currency of the destination country by one percent, it will cause an increase in the volume of freshwater ornamental fish exports in Bekasi by 1.7%.

Below this is the value of the US Dollar against the rupiah associated with the volume of freshwater ornamental fish exports that occur in the city of Bandung. The situation below is taken from the average per year, so it seems to show that the more depreciating the rupiah exchange rate will increase. And will be seen as a whole if you look at the data every month for the past five years.

Tabel 4. Dollar Exchange Rate against Rupiah

No	Year	Dollar Exchange Rate against Rupiah
1	2015	13.525
2	2016	13.396
3	2017	13.466

Sumber : Bank of Indonesia (2018)

Following the theory of Mankiw (2013) which states that the weakening of the exchange rate of a country will increase the value of exports in that country because it has a cheaper price compared to other countries so that it becomes a choice for its importing countries. The strength of the dollar that has spread to various countries has been affected until now the US Dollar has become the primary foreign exchange reserve for most countries in the world. Its use is spread because the US Dollar is considered as the most trustworthy currency compared to other currencies or even the rupiah for Indonesia. (Merdeka news 2017).

CONCLUSION

Based on the results of research on the analysis of the factors that affect guppy fish exports in the city of Bekasi, West Java province, it can be concluded that the factors affecting the business of guppy fish in the city of Bekasi are still quite a lot and need to be resolved gradually so that they are well moral and material. The role of the government is very important in solving this problem. Factors affecting the export of guppy fish in Bekasi include the export price of guppy fish, the size of guppy fish in Bekasi for the importing country, the exchange rate of US Dollar against rupiah, the price of guppy fish in the country. The most significant factor affecting the export volume of guppy fish is the large demand for guppy fish in Bekasi city and the price of guppy fish in Bekasi for the importing country. the many types of fish that most influence the ups and downs of the export volume of guppy fish, the more the number of guppy fish to be exported, the more export volume will be requested. The price offered will greatly affect the changes in export volume that occur.

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